

Digital Tourism Behaviour and Platform Usage in the Post-COVID-19 Era



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Abstract: This study examines digital tourism behaviour in the post-COVID-19 era, focusing on changes in the use of online tourism platforms from a user perspective.

The study applies the Uses and Gratifications Theory to understand motivations influencing engagement with digital tourism services. A quantitative survey design was used, with data collected from 204 respondents. The study compares pre-pandemic and post-pandemic patterns of digital platform use for tourism-related activities. Descriptive analysis and correlation tests were used to examine the relationship between user gratifications and engagement with digital tourism platforms.

The findings indicate that the COVID-19 pandemic substantially increased reliance on digital platforms for tourism search and planning. Informational, emotional, social, and tension-release gratifications were found to be positively associated with the use of digital tourism platforms in the post-pandemic period. The results also show a shift in user perceptions toward greater acceptance of digital tools for travel-related decision-making. The study concludes that digital tourism platforms have become an important component of post-pandemic travel behaviour, and understanding user motivation provides useful insights for improving digital tourism services and enhancing user experience in the evolving tourism industry.

This study extends the application of Uses and Gratifications Theory to the post-COVID-19 tourism context by comparing digital tourism behaviour before and after the pandemic. It provides empirical evidence on the motivations driving engagement with digital tourism platforms and offers insights that can help tourism stakeholders improve digital services and enhance user experiences.

Keywords: tourism; digital platforms; user behaviour; U&G theory; post-COVID-19.

JEL Classification: Z31; Z33; Z32.

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Introduction

The tourist sector is essential for the economy and contributes to the GDP of countries (Shrestha *et al.* 2021). The pandemic and global travel restrictions have had a significant impact on the tourism industry (Akhtar *et al.* 2021; Li *et al.* 2021; Santoso *et al.* 2021; Shrestha *et al.* 2021; Škare *et al.* 2021; Toubes *et al.* 2021; Wachyuni & Kusumaningrum 2020). International tourism and travel was down 80% in 2021 compared to the same time in 2019,

a pre-pandemic year, according to the World Tourism Organization (UNWTO 2021). The COVID-19 pandemic has impacted the global economy. The physical nature of tourism has caused many businesses to close or struggle to survive (Sigala 2020). The impossibility of travelling has posed a challenge for the survival of tourism industry businesses (Toubes *et al.* 2021). Compared to the pre-pandemic period, tourism consumer patterns are changing (Orîndaru *et al.* 2021; Toubes *et al.* 2021). The post-COVID pandemic is reshaping how users behave, influencing how they interact with technology and digital platforms for tourism purposes, changing their motivations to use such platforms (Chavez *et al.* 2020; De' *et al.* 2020; Gössling 2020; Jarratt 2021).

1. Research Background

1.1 Tourism-Related Digital Platforms

The rapid growth of digital technologies has impacted the tourism industry (van Nuenen & Scarles 2021). For tourism industry, digital platforms make information more accessible to customers, facilitate information sharing, and present tools to make travel-related decisions (Ho & Gebsumbut 2019; Mathew & Soliman 2021; Stare & Križaj 2018).

Tourism companies use online travel agents (OTAs) and booking platforms to generate revenue (Schuckert *et al.* 2015). Additionally, the Internet and digital platforms are used to share experiences and communicate about tourism destinations (Stare & Križaj 2018). Multiple online travel review (OTR) sites and apps such as Google Reviews, TripAdvisor, Booking.com, among others, present user-generated content (UGC) reviews of destinations and services. The information is at one click of distance and has become highly relevant in influencing travellers' decision-making (Mendes-Filho *et al.* 2015; Schuckert *et al.* 2015). The peer-to-peer service platforms as part of the "shared economy" in the tourism sector have changed the use of digital platforms for tourism-related purposes (Minoia & Jokela 2021; Romero 2018). Digital platforms such as Airbnb create mediation between users, in this case, a service provider and a customer looking for the service. The latter creates a completely new digital economy effect that empowers individuals and establishes new business models (Romero 2018). Websites and social media platforms are also used in the tourism industry for online media sharing. Users can experience a place by interacting with multimedia sites and watching tourism videos, which lead to the construction of a destination image (DI) in their minds (Molinillo *et al.* 2018). Platforms such as YouTube have become the trend for video sharing. People share their experiences with platform visitors without the interference of service providers, converting them into content creators, acting as a space to express original ideas, and an effective place for tourism promotion and marketing (Kumar *et al.* 2020). Another use of digital platforms for tourism is for product or service promotion.

Digital platforms are used for marketing purposes, to build customer relationships, generate brand awareness and trust. Digital content marketing (DCM) for tourism effectively influences customers' decisions and behaviour (Mathew & Soliman 2021; Toubes *et al.* 2021). In the context of your research paper the literature review should be a critical synthesis of previous research in the subject field.

1.2 Customer Behaviour Tourism after the COVID-19 Pandemic

Since the global pandemic, customers' travel priorities have changed (Toubes *et al.* 2021) and, for some people, the idea of travel causes feelings of fear (Orîndaru *et al.* 2021). The importance of health measures and tourism quality has increased, affecting users' consideration to planning a trip (Santoso *et al.* 2021). However, tourism customer behaviours and interest in travel are starting to change to a more open perspective presenting opportunities for the industry. People have motives and purposes when using a service or platform to fulfil their needs (Santoso *et al.*, 2021). The global pandemic is affecting how users interact with digital platforms, their behaviour, motivations and the purposes of using them (De' *et al.* 2020). It creates the need for different digital experiences to engage with new user demands. The pandemic has made people more conscious about their well-being (Li *et al.* 2021; Rokni 2021), directly evidenced by how users interact with digital platforms. Studies affirm that the global pandemic has exacerbated sentiments of isolation and loneliness (Gössling 2020; Novotný *et al.* 2020), and that the use of digital tourism platforms can provide an escape from reality, evoking happy emotions and memorable times from sharing experiences online (Toubes *et al.* 2021).

1.3 Industry Challenges and Recovery Scenarios

Due to COVID-19, tourism is migrating to an innovative digital path that creates more digitalised strategies for tourism recovery (Akhtar *et al.* 2021; Jarratt 2021; Santoso *et al.* 2021; Toubes *et al.* 2021). The industry may need to re-think the concepts and strategies to create innovative solutions to build long-term strategies for survival (Mizrachi & Gretzel 2020; Pocinho *et al.* 2021). In May 2020, the UNWTO released "Global guidelines to start tourism", a report highlighting the importance of innovation, sustainability and digital transformation in the industry.

Mobile devices and enhanced technology are key to promoting safe, seamless and touchless travel (Santoso *et al.* 2021; UNWTO 2020). New concepts such as e-tourism (Gretzel *et al.* 2020), smart tourism (Ho & Gebbsombut 2019; Yoo *et al.* 2017) and digital tourism (Akhtar *et al.* 2021) have been introduced to refer to the use of digital technologies and information technology advances in the tourism industry.

Many tourism companies have started to adapt their digital strategies to survive in the market, using digital platforms in new, creative ways to engage with customers, looking for future recovery. Tourism industry businesses have focused on retaining customers and increasing interest after the COVID-19 pandemic. Companies are making efforts based on factors such as online service quality, time of delivery, user satisfaction, and ease of use to retain and attract customers to use digital platforms (Toubes *et al.* 2021). From service to product innovation, organisations have started their journey to digital transformation. COVID-19 is accelerating this transformation into a new era of digital innovation (Santoso *et al.* 2021). The use of emerging technologies such as cloud computing, artificial intelligence (AI), Internet of Things (IoT), blockchain and virtual reality (VR), among others, will take an important role in the digital transformation of many industries in a post-COVID-19 future (De' *et al.* 2020; van Nuenen & Scarles 2021). In this new world, technology is likely to play an active role, including robots and automation technologies for tourism with the automation of routine tasks, for instance, with virtual tours (Ivanov & Webster 2020; Kim *et al.* 2020; Lin & Chen 2017).

The tourism industry's response to the COVID-19 outbreak has been extensively researched. However, the changes this has caused in the use of digital technologies for tourism are unknown. Technology and innovation are playing an essential role in developing the tourism industry, looking towards the post-pandemic scenario and industry recovery. In the post-pandemic world, perceptions of travelling have been changing, impacting on the use of digital platforms for tourism. Therefore, it is crucial to understand how user behaviour towards using digital platforms for tourism has been affected due to the COVID-19 pandemic by analysing the pre-pandemic status, usage after the global pandemic, and new user expectations for tourism companies to generate an effective response and creative alternative solutions for the industry recovery. To fill the gap in research, the following research questions have been formulated:

1.4 Research Questions

RQ1: How is the use of digital platforms for tourism affected by the COVID-19 pandemic?

RQ2: For what purposes are digital tourism platforms used after the COVID-19 pandemic?

RQ3: What are users' perspectives about digital travel experiences in a post-pandemic scenario?

1.5 Literature Review and Hypothesis Formulation

The theory of uses and gratifications (U&G) is utilized as a theoretical framework to help understand a variety of factors about why individuals use media in diverse contexts, and the gratifications users search for when consuming online content. This theory helps understand why individuals could use certain media such as tourism websites and social platforms to satisfy their needs before and after the COVID-19 pandemic. On this foundation, numerous hypotheses are developed to address the study's research questions and objectives.

1.5.1 COVID-19 Pandemic and Use of Digital Platforms for Tourism

The time consumers spend on online travel platforms is a consequence of psychological drivers such as the desire to share information, social bonding, learning and discovery (Chavez *et al.* 2020). It is demonstrated that the COVID-19 pandemic affects consumer patterns (Orîndaru *et al.* 2021; Toubes *et al.* 2021), time users spend online, how users interact with digital platforms, and the motivations behind their actions (Chavez *et al.* 2020; De' *et al.* 2020; Jarratt 2021). User behaviour towards digital platforms has been affected by the COVID-19 pandemic, where exacerbated feelings of loneliness and isolation produced by the pandemic (Gössling 2020; Novotný *et al.* 2020) have led users to search more for well-being online (Jarratt 2021; Li *et al.* 2021; Rokni 2021), looking to escape from reality, evoke happy emotions and memorable times (Toubes *et al.* 2021). The motives and purposes of people when using a digital platform to fulfil their needs (Santoso *et al.* 2021) have changed compared to the pre-pandemic period. Based on the literature mentioned, the following hypothesis is proposed.

H1: There is a significant difference in the use of digital platforms for tourism after the COVID-19 pandemic compared to a pre-pandemic period.

1.5.1.1 Informational

In terms of the tourism industry, digital platforms are facilitators of information access for potential customers. Tourism websites are used to share information, helping travellers to make travel-related decisions (Ho & Gebsoombut 2019; Mathew & Soliman 2021; Shrestha *et al.* 2021). Company brand websites are presented as an information source about the company and services, often presenting transactional options such as an online store or reservation systems. Other tourism websites that are information sources include blogs, booking engines, ranking and recommendations, among others (Ho & Gebsoombut 2019; Shrestha *et al.* 2021), in addition to using online reviews from other consumers to find the best information to make travel-related choices (Chavez *et al.* 2020; Mendes-Filho *et al.* 2015). Online travel agencies, tourism search engines and peer-to-peer booking systems such as Booking.com, Trivago and Airbnb have been on the rise as information sources for tourism users (van Nuenen & Scarles 2021).

Before the COVID-19 pandemic, the main use of digital platforms for tourism-related purposes was to obtain information to make travel-related decisions (Ho & Gebsoombut 2019; Mathew & Soliman 2021; Shrestha *et al.* 2021). When the pandemic started, the idea of physical travel created feelings of fear, and economic priorities changed compared to the pre-pandemic period (Orîndaru *et al.* 2021). However, two years after the pandemic started, the idea of local travel seems more appealing to customers who have shifted preferences (Pocinho *et al.* 2021). The use of digital platforms to gather information has been an essential tool for users after the pandemic. It is proposed that information gratification maintains its predominance from pre-pandemic to post COVID-19 pandemic times. As a result, the following hypothesis is proposed:

H2: The use of digital platforms for tourism after the COVID-19 pandemic has a positive relationship with informational purposes.

1.5.1.2 Emotional

The COVID-19 pandemic has affected collective emotional well-being (Gössling 2020). After pandemic times, users migrate to digital platforms searching for pleasurable and enjoyable experiences to overcome the pandemic effect (Canale *et al.* 2021). Jarratt (2021) finds that using digital platforms for tourism-related activities after the global pandemic generates feelings of freedom, connection and nostalgia associated with subjective well-being (Jarratt, 2021). Additionally, it has been studied that people enjoy returning to the idea of travelling and getting back vacation memories (Pocinho *et al.* 2021). Based on the literature and U&G theory, the following hypothesis is proposed:

H3: The use of digital platforms for tourism after the COVID-19 pandemic has a positive relationship with filling the emotional needs of the user.

1.5.1.3 Social

Social media platforms are generally used to generate communication spaces and create more personalised engagement with the tourism industry user (Florenthal 2019). The U&G theory is applicable to social media platforms and corroborates that users search for diverse gratifications including social interaction, connection bonding, and a sense of belonging when using this type of media (Florenthal 2019; Ho & Gebsoombut 2019; Ho & See-To 2018; Hossain 2019; Papacharissi & Rubin 2000). The desire to socialise and connect with others is one of the main travel motivators after the COVID-19 pandemic (Aebli *et al.* 2021). Social network sites such as fan pages also present a space for socialising and have a significant impact on user attitudes towards tourism attraction pages (Ho & Gebsoombut 2019; Ho & See-To 2018).

Social media platforms such as Facebook, Instagram, YouTube and TikTok have gained popularity in the tourism industry. Many companies and individuals started using the platform to create creative travel content by sharing travel experiences on video and in written blog format. More studies demonstrate the socialising, social presence and self-presentation aspects of U&G theory when using social media (Ho & Gebsoombut 2019; Ho & See-To 2018; Hossain 2019; Papacharissi & Rubin 2000). The COVID-19 pandemic has impacted people's social dimension, changing how users interact with digital platforms for this purpose. The lockdowns and travel restrictions around the globe have exacerbated loneliness and isolation feelings (Novotný *et al.* 2020), resulting in users looking for more social interaction on digital platforms to overcome the pandemic effects (Canale *et al.* 2021; Gabbiadini *et al.* 2020). Therefore, the following hypothesis is presented:

H4: The use of digital platforms for tourism after the COVID-19 pandemic has a positive relationship with social purposes.

1.5.1.4 Escapism and Tension Release

The COVID-19 pandemic has influenced tourists' perception of psychological well-being, changing travel behaviour, intentions and motivation. The global outbreak has produced uncertainties, increasing fear, anxiety and depression (Rokni 2021). It is recognised that tourism activities enhance subjective well-being and promote stress reduction (Buckley & Westaway 2020). However, to create desire and motivation for travelling after the COVID-19 pandemic, hygiene factors and perceived safety must be addressed; otherwise, motivation decreases (Aebli *et al.* 2021).

After the global pandemic, digital platforms have been used to compensate for the lack of physical tourism-related activities. The use of technologies such as virtual reality (Kim *et al.* 2020) and virtual tours are proposed as a substitute to promote people's subjective well-being (Li *et al.* 2021; Rokni 2021). Less sophisticated technologies such as webcam travel can also promote well-being while in isolation (Jarratt 2021). People use digital platforms for tourism to escape from the reality of the current situation, evoke happy emotions, and recall memorable times (Toubes *et al.* 2021). The latter evidenced the use of digital platforms for tourism-related activities with the intention to relieve stress and release tension produced by the global pandemic. Therefore, the following hypothesis is proposed:

H5: The use of digital platforms for tourism after the COVID-19 pandemic has a positive relationship with users' search for escapism and tension release.

1.5.2 Digital Technologies Development in the Tourism

The pandemic outbreak will lead to alternative solutions for the tourism industry's survival. The increase in the use of information technology (IT) developments such as virtual reality (VR) (Ball *et al.* 2021; Kim *et al.* 2020; Li *et al.* 2021; Schiopu *et al.* 2021) and augmented reality (AR) (Lin & Chen 2017), among other technologies, are possible solutions in development for the industry's survival (Akhtar *et al.* 2021; De' *et al.* 2020; Santoso *et al.* 2021).

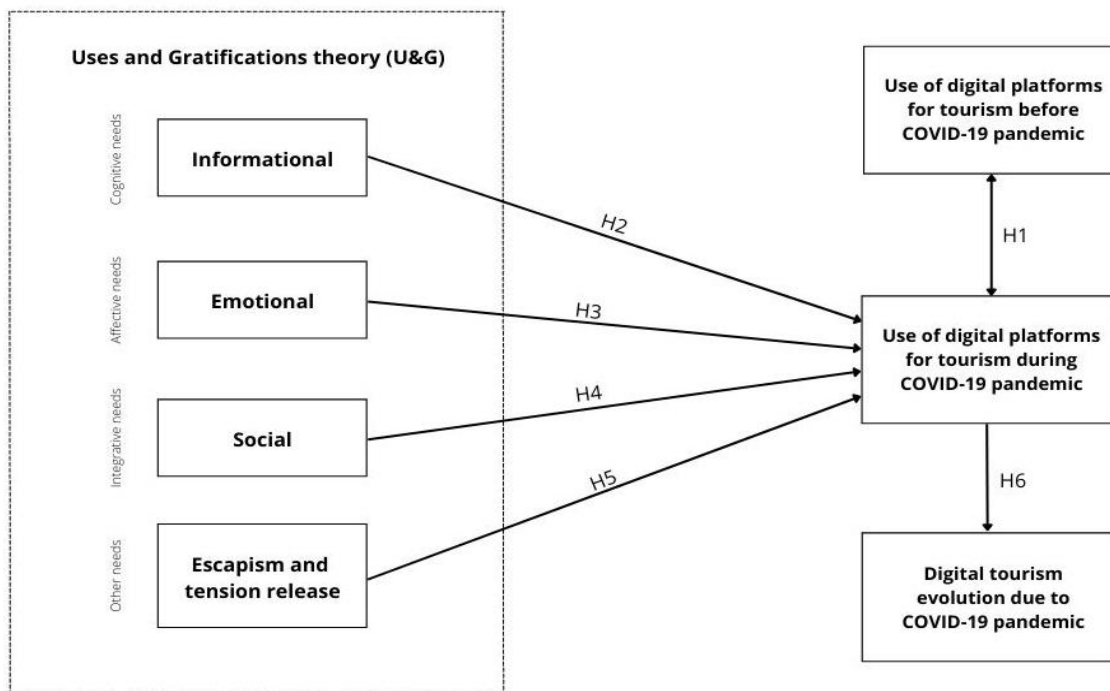
Smart tourism technologies can change user behaviour by providing unique experiences. It has been studied that users search for gratifications related to well-being and have an authentic experience when looking for tourism virtual reality tours (Kim *et al.* 2020). VR and AR technologies could improve people's mental health by allowing safe connections between people and places (Ball *et al.* 2021). Therefore, companies can adapt their communication strategies and use new technology to attract new consumers (Ho & Gebsumbut 2019). The tourism industry presents different levels of digitalisation, affecting the adaptation to a digital economy and possibilities of creating better digital experiences. It is recommended to consider time consumption and cost factors before investing in more sophisticated digital experiences (Pocinho *et al.* 2021). It is possible to use less sophisticated technologies such as webcams to create new travel experiences, proposing a more affordable, widely available, and unedited experience. The creative use of technology can be a good strategy and produce improved results for the business (Jarratt 2021). The efficiency and quality of the technologies and platforms are essential factors to meet the needs of users. Among the factors are the features, ease of access, website design, innovation and the usefulness of health protocols (Kim *et al.* 2020; Lin & Chen 2017; Santoso *et al.* 2021; Schiopu *et al.* 2021; Toubes *et al.* 2021). Therefore, the following hypothesis is proposed:

H6: Users' interest in using digital travel experiences has a positive relationship with the quality of digital travel technology.

1.5.3 Conceptual Model

A conceptual model for this study is shown in Figure 1 to illustrate the relationship between the purposes for using digital platforms and the proposed hypothesis based on the literature review and U&G theory, in order to understand the COVID-19 pandemic effect on the use of digital platforms for tourism pre-pandemic and post-pandemic overview to address the research objectives and answer the study's research questions.

Figure 1. Conceptual model, based on the theory of U & G.



Source: Authors

2. Materials and Methods

This research is based on a mono-method, a quantitative study using a survey strategy and questionnaire tool designed to collect primary data. An online questionnaire is designed using Google Forms (an online survey tool) to conduct the research. In total, 204 valid responses were collected. A total of 27 statements are developed in the questionnaire with their corresponding responses using dichotomous, single-option variables, multi-option and five Likert scale responses for the survey respondents to select the level of agreement with the statements.

Table 1. Questionnaire Variable Items Definition

Definition	U&G dimension	Variable items	H
Use of digital platforms purposes	Informational	To gather information	H2
		To compare prices and discounts	
		To read reviews	
	Emotional	To get entertained	H3
		To evoke memories	
		To get inspired	
	Social	To share experiences	H4
		To talk with others	
		To find more travellers	
	Escapism & tension release	To escape reality	H5
		To release tension	
		To pass the time	

Cronbach's Alpha test was used to determine the scales' reliability, measuring the study variables: informational, emotional, social, escapism and tension release purposes. As displayed in Table 2, all the results show values higher than 0.7, which indicates that the scales used are highly reliable in the study context. The values of Cronbach's Alpha are 0.861 for informational purposes, 0.743 for emotional purposes, 0.843 for social purposes, 0.816 for escapism & tension release purposes in a pre-pandemic period, and 0.874 for information purposes, 0.858 for emotional purposes, 0.943 for social purposes, and 0.901 for escapism & tension release purposes in a post- pandemic period. Additionally, pre-testing with ten users is used to corroborate the validity of the questionnaire statements.

Table 2. Cronbach's Alpha Test for Scale Reliability

Period	Dimension	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
Pre- pandemic	For information purposes	.861	.862	3
	For emotional purposes	.743	.744	3
	For social purposes	.843	.843	3
	For escapism and tension release purposes	.816	.815	3
Post- pandemic	For information purposes	.874	.876	3
	For emotional purposes	.858	.859	3
	For social purposes	.943	.943	3
	For escapism and tension release purposes	.901	.900	3

3. Findings and Discussion

The outcomes of the data collected from the online questionnaire are described and discussed in this section.

3.1 Demographics

Demographic measures in this study include gender, age group, and general digital platforms' frequency of use for the 204 valid responses, as illustrated in Table 3.

Table 3. Demographics Frequency Results

		N	%
Gender	Female	109	53.4
	Male	93	45.6
	Prefer not to say	2	1.0
Age group	18-24 years old	23	11.3
	25-34 years old	109	53.4
	35-44 years old	59	28.9
	45-54 years old	11	5.4
	55+ years old	2	1.0
	Several times a day	135	66.2
Digital platforms' frequency of use	Daily	59	28.9
	Twice a week	6	2.9
	Fortnightly	1	.5
	Once a month	3	1.5

In terms of gender, slightly more than half were women, with 53.4% of the total 204 respondents, 45.5% were men, and only 1.0% of respondents preferred not to mention their gender as displayed in Table 3 above. The frequency of use of digital platforms reflect that the respondents were highly active, with 66.2% using digital platforms several times a day, followed by 28.9% of respondents using digital platforms daily, and only 4.9% using digital platforms less than twice a week as shown above. The majority of respondents were between 25-34-years-old, representing 53.4% of the total responses, people aged between 35-44-years-old were 28.9%, followed by the 18-24-year-old group with 11.3%. People aged between 45-54 and over 55 were only 5.4% and 1%, respectively. This result is aligned with statistics on the average age for internet users worldwide as of 2019, where 32% of users worldwide are between 25-34-years-old (Johnson, 2022). Therefore, it is inferred that respondents are active users of digital platforms.

An independent T-test was conducted to explore if gender variances had an influence on digital platform use for this study, as illustrated in Table 4. The results of Levene's Test indicate a ($p = .793$), which is greater than 0.05 and indicates variances are not significant; it is then inferred that both genders, female and male, are equal. The results of the T-test indicate ($p = .504$), which is greater than 0.05 and indicates means are not significantly different.

Table 4. Independent Samples t-test for Gender Difference

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Digital platform use	Equal variances assumed	.069	.793	.669	200	.252	.504	.068	.101	-.132	.268
	Equal variances not assumed			.674	198.903	.251	.501	.068	.101	-.131	.266

3.2 Use of Digital Platforms for Tourism Pre and Post COVID-19 Analysis

The descriptive results are presented in a comparative overview of a pre-pandemic and post-pandemic period for a better understanding of the COVID-19 pandemic influence on user behaviour. Additionally, inferential analysis was used to test hypothesis 1. Therefore, the intention is to answer the study's first research question.

3.2.1 Use of Digital Platforms for Tourism

From the 204 valid responses, it was found that 96.1% of the respondents searched tourism content online before the COVID-19 pandemic, and only 3.9% of respondents answered no to using digital platforms for tourism before the pandemic, as shown in Table 5. These numbers indicate that from the total of 204 valid responses, there were 196 responses valid for the deeper analysis of digital platforms before COVID-19. This result indicates that a high number of the total respondents were active users of tourism platforms after the pandemic.

Table 5. Use of Digital Platforms for Tourism Before the COVID-19 Pandemic

Use of Digital Platform	N	%
Yes	196	96.1%
No	8	3.9%

Table 6. Use of Digital Platform for Tourism After the COVID-19 Pandemic.

Use of Digital Platform	N	%
Yes	173	84.8%
No	31	15.2%

Table 6 above shows that 84.8% of respondents continued using digital platforms for tourism after the COVID-19 pandemic. Due to lockdowns and travel restrictions, physical tourism activities were reduced. However, when talking about digital activities, the results indicate that users continued searching for tourism online after the global pandemic, which is consistent with the study of Vargo *et al.* (2021) related to the increasing use of digital technologies during the pandemic. Additionally, only valid responses were included in further analysis of each period. Table 7 illustrates the number of valid responses included and the number excluded from the analysis of the following sections.

Table 7. Valid responses for Further Analysis

	Valid		Missing		Total	
	N	%	N	%	N	%
Before pandemic	196	96.1%	8	3.9%	204	100.0%
After pandemic	173	84.8%	31	15.2%	204	100.0%

3.2.2 Tourism Digital Platforms' Frequency of Use

The results in terms of how frequently users searched for tourism content on digital platforms are presented in a comparative overview displayed in Table 8 and Table 9, indicating that the pandemic brought a significant change in the frequency of use of digital platforms for tourism.

Table 8. Digital Platform Frequency of Use Before the Pandemic

Frequency	N	%
Once a year	18	8.8%
Every six months	53	26.0%
Once a month	73	35.8%
Once a week	34	16.7%
Daily	18	8.8%
Missing System	8	3.9%

Table 9. Digital Platform Frequency of Use After the Pandemic

Frequency	N	%
Once a year	9	4.4%
Every six months	15	7.4%
Once a month	41	20.1%
Once a week	55	27.0%
Daily	53	26.0%
Missing System	31	15.2%

As shown in Table 8, before the pandemic, most respondents searched for tourism content once a month, being 35.8% of the total, followed by every six months, with 26% as the second position. On the other hand, after the COVID-19 pandemic, the distribution of the results changed, with 27% of respondents using digital platforms for tourism once a week, followed closely by 26% of respondents who affirmed they used digital platforms to search for tourism daily, as displayed in Table 9. The results indicate that active users of digital platforms searched more frequently for tourism after the pandemic.

3.2.3 Types of Searches in Digital Platforms for Tourism

Findings from the previous section in Table 9 indicate that users searched more often for tourism-related content online after the global pandemic. Therefore, it is relevant to explore when people searched. Table 10 and Table 11 provide a comparison of results related to when users searched for tourism on digital platforms.

Table 10. Users Search before the Pandemic

When searched?	N	%
Only when is the holiday season	15	7.4%
Only when I am planning a trip	65	31.9%
Sometimes when I see a promotion	17	8.3%
Occasionally when I want to get travel ideas	77	37.7%
All the time	22	10.8%
Other	0	0.0%

Table 11. Users Search After the Pandemic

When searched?	N	%
Only when is the holiday season	4	2.0%
Only when I am planning a trip	28	13.7%
Sometimes when I see a promotion	9	4.4%
Occasionally when I want to get travel ideas	62	30.4%
All the time	69	33.8%
Other	1	0.5%

According to the results, before the pandemic, most people searched for tourism on digital platforms occasionally when they wanted to get travel ideas, representing 37.7% of the total, and 31.9% searched only when they were planning a trip. However, after the pandemic, 33.8% of respondents searched all the time, and 30.4% occasionally when they wanted to get travel ideas. The latter aligns with the findings of De' *et al.* (2020) and Rokni (2021) studies related to the changes in behaviour after the COVID-19 pandemic.

3.2.4 Type of Platforms

This study analysed two types of digital platforms: websites and social media platforms used for tourism before and after the pandemic. In the research instrument, five types of websites were included: tourism company providers' sites, review sites, reservation sites, blog sites and local travel agency sites. On the other hand, social media included Facebook, Instagram, YouTube, TikTok and Pinterest.

3.2.4.1 Websites

Table 12 and Table 13 describe how frequently respondents used the websites before and after the pandemic, respectively. Before the COVID-19 pandemic, the most used types of websites were reservation sites such as Booking.com or Airbnb, with 29.3% of total respondents, closely followed by review sites such as Tripadvisor.com or Google Reviews, with 28.5%, continuing with tourism service providers' sites, blog sites and local travel agencies.

Table 12. Tourism Website Use Before the Pandemic.

Tourism Websites	Responses		% Cases
	N	%	
Tourism company provider sites	86	18.4%	43.9%
Review sites	133	28.5%	67.9%
Reservation sites	137	29.3%	69.9%
Blog sites	68	14.6%	34.7%
Local travel agency sites	38	8.1%	19.4%
Others	5	1.1%	2.6%
Total	467	100.0%	238.3%
a. Dichotomy group tabulated at value 1 = selected.			

Table 13. Tourism Website Use After the Pandemic.

Tourism Websites	Responses		% Cases
	N	%	
Tourism company provider sites	95	17.7%	54.9%
Review sites	152	28.3%	87.9%
Reservation sites	141	26.3%	81.5%
Blog sites	98	18.2%	56.6%
Local travel agency sites	47	8.8%	27.2%
Others	4	0.7%	2.3%
Total	537	100.0%	310.4%
a. Dichotomy group tabulated at value 1 = selected.			

As shown in Table 13, all types of websites are more used in the post-pandemic era. The higher increase was in review sites present in 87.9% of the cases, followed by reservation sites in 81.5% of the cases, blog sites were present in 56.6% of the cases, and tourism company providers' sites were found in 54.9% of the cases. Reviews became more important than reservations for users after the pandemic, which aligns with conclusions by Orindaru *et al.* (2021) and Tourbes *et al.* (2021) about economic and travel priority changes during the pandemic. Another interesting finding is that blog websites had an increased presence in 34% of the cases before the pandemic, rising to 56% after the pandemic – the highest increase from one period to the other.

3.2.4.2 Social Media Platforms

Table 14 presents the social platforms people used for tourism before the pandemic. The results indicate that 35.6% used Facebook, being the platform more used for tourism before the COVID-19 pandemic, followed by Instagram with 30.4%, and YouTube with 23.6%, respectively.

Table 14. Tourism Social Media Use Before Pandemic.

Social Media Platform	N	Responses	% Cases
		%	
Facebook	130	35.6%	66.3%
Instagram	111	30.4%	56.6%
YouTube	86	23.6%	43.9%
Tiktok	9	2.5%	4.6%
Pinterest	14	3.8%	7.1%
Others	15	4.1%	7.7%
Total	365	100.0%	186.2%

a. Dichotomy group tabulated at value 1.

Table 15. Tourism Social Media Use After Pandemic

Social Media Platform	N	Responses	% Cases
		%	
Facebook	119	28.6%	68.8%
Instagram	143	34.4%	82.7%
YouTube	113	27.2%	65.3%
Tiktok	21	5.0%	12.1%
Pinterest	12	2.9%	6.9%
Others	8	1.9%	4.6%
Total	416	100.0%	240.5%

a. Dichotomy group tabulated at value 1.

On the other hand, after the pandemic, people chose Instagram with 34.4% as the most used platform for tourism, followed by Facebook with 28.6%, and YouTube with 27.2%, as displayed in Table 15 above. In this result, the three main social apps maintain their place with slight differences in the type of platforms users select when searching for tourism content online.

The findings are aligned with the study of Chavez *et al.* (2020) about the use of social media in the search for tourism content online. However, after the pandemic, there was a significant increase in usage for all platforms. Instagram was present in 82.7% of the cases after the pandemic. It is interesting to mention that even though TikTok was present in only 12.1% of the cases after the pandemic, it was double the pre-pandemic period, in accordance with the trends observed for this platform, indicating a possible evolution of this social media platform.

3.2.5 Type of Content

This dimension searches to understand what type of content users search for when using digital platforms for tourism. For this purpose, seven types of tourism content were included: service information, prices, reviews, social networks, images, videos and travel blogs. The results of the multiple response analysis are illustrated in a comparative overview of the pre-pandemic Table 16 and after pandemic Table 17, respectively.

Table 16. Type of Content Searched Before the Pandemic.

Type of content	Responses		%Cases
	N	%	
Services information	134	17.2%	68.4%
Prices	178	22.9%	90.8%
Reviews	148	19.0%	75.5%
Social network	44	5.7%	22.4%
Images	139	117.9%	70.9%
Videos	80	10.3%	40.8%
Travel blog	55	7.1%	28.1%
Others	0	0.0%	0.0%
Total	778	100.0%	396.9%

a. Dichotomy group tabulated at value 1.

Table 17. Type of Content Searched Before the Pandemic.

Type of content	Responses		%Cases
	N	%	
Services information	133	15.6%	76.9%
Prices	154	18.0%	89.0%
Reviews	145	17.0%	83.8%
Social network	76	8.9%	43.9%
Images	140	16.4%	80.9%
Videos	121	14.2%	69.9%
Travel blog	83	9.7%	48.0%
Others	3	0.4%	1.7%
Total	855	100.0%	494.2%

a. Dichotomy group tabulated at value 1.

Before the COVID-19 pandemic, users were most interested in looking for prices, at 22.9% of the total and representing the main type of tourism content chosen. In second place, with 19.0%, were reviews, followed by images with 17.9%, services information with 17.2%, and videos with 10.3%.

There is a similar behaviour presented after the pandemic as shown in Table 17, where the main interest continued to be prices, with 18% in the first position, followed closely by reviews with 17%, 16.4% for images, 15.6% for services information and 14.2% for videos. An interesting finding is that all content types were more searched after the pandemic, in alignment with all previous discoveries. Another important finding is that where most types maintained a similar number of selections in both periods, videos had a major increase, being present in 40.8% of the cases before the pandemic and rising to 69.9% of the cases after the pandemic.

3.2.6 The Pandemic Effect on The Use of Digital Tourism Platforms

The results from the descriptive analysis conducted in the previous section indicate a significant increase in the usage of digital platforms for tourism after the pandemic compared to the pre-pandemic period. To test the following hypotheses, a paired sample t-test was used to compare the means for frequency of usage before and after COVID.

H1: There is a significant difference in the use of digital platforms for tourism between the pre- and post-COVID-19.

The t-test results displayed in Table 18 show a level of significance of $p = <.001$, which relates to a p-value lower than 0.05, indicating that the difference between the scores is statistically significant. Then, the null hypothesis is rejected and, therefore, H1 is accepted, confirming that there is a difference in the use of digital platforms for tourism in the post-pandemic compared to a pre-pandemic period.

Table 18. Paired Samples t-test for Period Comparison.

	Mean	Std. Dev.	Std. Error Mean	Paired Differences		t	df	Significance	
				95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
				Lower	Upper				
Digital platforms' frequency of use before pandemic - Digital platforms' frequency of use after pandemic	-.760	1.340	.102	-.962	-.558	-7.420	170	<.001	<.001

3.3 Purposes for Using Digital Platforms for Tourism After the COVID-19 Pandemic

This section provides the results of the descriptive and inferential analysis conducted to answer the second research question and test the hypothesis related to the purposes for which users search digital tourism platforms after the COVID-19 pandemic.

3.3.1 Informational

To examine the statistical relationship between the digital platform uses for informational purposes and the COVID-19 pandemic.

Table 19. Spearman's Correlation Analysis – Informational.

		Total use for informational purposes after the pandemic	Frequency of use of digital platforms after the pandemic
Spearman's rho	Total use for information purposes after the pandemic	Correlation Coefficient Sig. (2-tailed) N	1.000 . 173
			.300** <.001 173
	Frequency of use of digital platforms after the pandemic	Correlation Coefficient Sig. (2-tailed) N	.300** <.001 173
			1.000 . 173
**. Correlation is significant at the 0.01 level (2-tailed).			

The results of the correlation test shown in Table 19 above indicate a positive association between the variables, where the correlation coefficient is 0.300, which demonstrates a positive correlation. Additionally, the level of significance is lower than 0.01, which affirms that there is a statistically significant relationship between the variables. Therefore, the hypothesis is accepted, concluding that the use of digital platforms for tourism after the COVID-19 pandemic has a positive relationship with informational purposes.

3.3.2 Emotional

Spearman's correlation test was conducted to measure the statistical relationship between the digital platform frequency of use after the COVID-19 pandemic and the emotional purposes to test the hypothesis.

The results of the correlation analysis shown in Table 20 indicate a positive correlation between the variables, where the correlation coefficient is 0.337, which demonstrates a positive association. Additionally, the level of significance is lower than 0.01, which affirms the existence of a significant relationship between the variables. Therefore, it is possible to accept the hypothesis and conclude that the frequency of use of digital platforms for tourism after the COVID-19 pandemic has a positive relationship with filling the emotional needs of the user.

Table 20. Spearman's Correlation Analysis – Emotional Purposes

		Frequency of use of digital platforms after the pandemic	Total use for emotional purposes after the pandemic
Spearman's rho	Correlation Coefficient	1.000	.337**
	Sig. (2-tailed)	.	<.001
	N	173	173
	Correlation Coefficient	.337**	1.000
	Sig. (2-tailed)	<.001	.
	N	173	173

** . Correlation is significant at the 0.01 level (2-tailed).

3.3.3 Social

The third U&G dimension relates to integrative needs such as social gratifications included in the proposed conceptual model. The results of the correlation test shown in Table 21 illustrate a positive correlation between the variables, where the correlation coefficient is 0.454, demonstrating a moderate positive association. Additionally, the level of significance is lower than 0.05, which affirms the existence of a significant relationship between the variables. Therefore, it is possible to accept the hypothesis and conclude that the use of digital platforms for tourism after the COVID-19 pandemic has a positive relationship with social purposes. The latter demonstrates that interpersonal and social interaction were part of users' motivations to use digital platforms, as studied by Chavez *et al.* (2020).

Table 21. Spearman's Correlation Analysis – Social Purposes

		Frequency of use of digital platforms after the pandemic	Total use for social purposes after the pandemic
Spearman's rho	Correlation Coefficient	1.000	.454**
	Sig. (2-tailed)	.	<.001
	N	173	173
	Correlation Coefficient	.454**	1.000
	Sig. (2-tailed)	<.001	.
	N	173	173

** . Correlation is significant at the 0.01 level (2-tailed).

3.3.4 Escapism and Tension Release

The results of the correlation test shown in Table 22 indicate a positive association between the variables, where the correlation coefficient is 0.364, which demonstrates a moderate positive correlation. Additionally, the level of significance is lower than 0.01, which corroborates that a significant relationship between the variables exists. Therefore, the hypothesis is accepted, and it is concluded that the frequency of digital platforms used for tourism after the COVID-19 pandemic has a positive relationship with the users' search for escapism and tension release. After the COVID-19 pandemic, most of the respondents agreed they used digital tourism platforms to escape reality, release tension and pass the time, showing a significant change compared to the pre-pandemic period, in accordance with Toubes *et al.* (2021), Li *et al.* (2021) and Rokni (2021) studies.

Table 22. Spearmann's Correlation Analysis – Escapism Purposes

			Frequency of use of digital platforms after the pandemic	Total use for escapism & tension release after the pandemic
Spearman's rho	Frequency of use of digital platforms after the pandemic	Correlation Coefficient	1.000	.364**
		Sig. (2-tailed)	.	<.001
		N	173	173
	Total use for escapism & tension release purposes after the pandemic	Correlation Coefficient	.364**	1.000
		Sig. (2-tailed)	<.001	.
		N	173	173
**. Correlation is significant at the 0.01 level (2-tailed).				

** . Correlation is significant at the 0.01 level (2-tailed).

3.4 Perception of Digital Tourism in a Post-Pandemic Scenario

When asked about the evolution of tourism, the great majority of respondents answered that they think tourism evolved into a more digitalised experience after the COVID-19 pandemic, with 72.5% agreement; 20.6% think it evolved to some extent; and only 6.9% think it will not evolve to digital, as shown in Table 23. The latter is consistent with the studies of Akhtar *et al.* (2021), De' *et al.* (2020), and Santoso *et al.* (2021) about how digital technologies play an essential role in future possibilities for the tourism industry.

Table 23. Post Pandemic Tourism Evolution

Has tourism evolved into a more digitalised experience after the COVID-19 pandemic?	N	%
Yes	148	72.5%
To some extent	42	20.6%
No	14	6.9%

3.4.1 Knowledge of Virtual Tourism & Travel Concept

The results displayed in Table 24 indicate that 48% of respondents claim not to know what virtual tourism and travel is, 32.4% know about the concept, and 19.6% to some extent. These findings suggest that users do not have a strong knowledge of the new concept, which affects their perception.

Table 24. Virtual Tourism Knowledge

Do you know about virtual tourism?	N	%
Yes	66	32.4%
To some extent	40	19.6%
No	98	48.0%

3.4.2 Users' Perception of Digital Tourism

In relation to users' perception of virtual tourism and travel, the results displayed in Table 25 indicate that there are divided opinions. In the first place, 36.3% of respondents find digital tourism interesting, followed by 23.5%, who find it futuristic. The two majorities are aligned with how unknown the concept is, as previously shown in Table 25. Additionally, some respondents answered that they have never heard of it in the open statement "Other." The third place is for 19.6% of respondents who think virtual travel is not real. This vision is also represented in other answers, such as "I think it is interesting but no substitute for the real thing."

Table 25. User Perception of "Virtual Tourism & Travel."

User Perception	N	%
A unique experience	17	8.3%
Futuristic	48	23.5%
Interesting	74	36.3%
Not real	40	19.6%
Safe travel	16	7.8%
Other	9	4.4%

3.4.3 Technologies for Digital Tourism

The results displayed in Table 26 indicate that 75% of respondents would like to see virtual reality tours developed more for tourism. The second is technologies to secure physical travel, which more than half of respondents want to see developed for tourism.

Table 26. Type of Technologies for Digital Tourism.

		Responses		% of Cases
		N	%	
Type of technology	Virtual reality tour	153	32.4%	75.0%
	Webcam travel	65	13.8%	31.9%
	Internet of things - IoT	47	10.0%	23.0%
	Artificial intelligence / Virtual assistant	94	19.9%	46.1%
	Technologies to ensure secure physical travel	111	23.5%	54.4%
	Others	2	0.4%	1.0%
Total		472	100.0%	231.4%

a. Dichotomy group tabulated at value 1 = selected.

3.4.4 Relationship Between Users' Interest in Digital Travel and Technology Quality

The results of the correlation test shown in Table 27 indicate a positive correlation between the variables, where the correlation coefficient is 0.409, which demonstrates a medium positive correlation. Additionally, the level of significance is lower than 0.05, which corroborates that a relationship between the variables exists. Therefore, it is possible to accept the hypothesis and conclude that users' interest in digital travel experiences has a positive relationship with the quality of digital travel technology.

Table 27. Spearman's Correlation for Digital Travel Relationship.

		Digital travel interest	Technology quality importance
Spearman's rho	Correlation Coefficient	1.000	.409**
	Digital travel interest		
	Sig. (2-tailed)	.	<.001
	N	204	204
	Correlation Coefficient	.409**	1.000
	Technology quality importance		
	Sig. (2-tailed)	<.001	.
	N	204	204

** . Correlation is significant at the 0.01 level (2-tailed).

4. Conclusions and Recommendations

4.1 The COVID-19 Pandemic Effect on the Use of Digital Platforms for Tourism

In nutshell, the increase in the use of online platforms for tourism can be attributed to changes in user needs such as getting travel ideas and supplying other unfulfilled needs. Additionally, there is a switch in the types of tourism content preferences, migrating from a focus on reservations and prices before the pandemic to an interest focused on reviews, social networks, and multimedia content. Social media for tourism after the COVID-19 pandemic highlights the use of Instagram, YouTube, and TikTok as opportunities for businesses. It is concluded that users continue using the platforms but with different needs and expectations. This is consistent with other studies about changes in consumer patterns and behaviour (De' *et al.* 2020; Orîndaru *et al.* 2021; Rokni 2021; Toubes *et al.* 2021).

In this study, when a post-pandemic scenario was presented, most respondents agreed that tourism would evolve into a more digitalised experience. However, from the findings, it is concluded that users do not fully understand this concept; lack of knowledge and technologies might be affecting the disposition to migrate to these experiences. There is a present interest in how this will evolve, with virtual tours as the most expected technology. Findings corroborate that the quality of the development will affect its success. Nevertheless, in the present perspective, most respondents prefer physical travel, even if it involves health risks. Respondents would also like to see more development in other technologies that will make physical travel safer. Therefore, it is concluded that users are looking forward to returning to physical travel activities with enhanced technologies and looking to digital tourism as a future interest where technology quality and innovation will play an essential role.

4.2 Theoretical Implications

The impact of the COVID-19 pandemic on tourism and travel has been widely studied in the literature (Li *et al.* 2021; Orîndaru *et al.* 2021; Pocinho *et al.* 2021; Wachyuni & Kusumaningrum 2020). However, this research provides a different overview, creating more knowledge about digital platforms used in the tourism industry, in addition to examining the changes when users search for tourism content online in the context of the pandemic. The study provides a comparison between pre-pandemic and post-pandemic scenarios from a user perspective. Additionally, this research tests the applicability of the U&G theory to explain what gratifications users search for after this unprecedented pandemic, filling a gap in the literature about behavioural changes in the use of digital platforms in tourism industry research.

4.3 Managerial Implications and Recommendations

The findings from this study provide relevant insights to help companies and tourism industry businesses to understand users of digital platforms, decide to invest in new technologies and create more effective digital strategies to face the pandemic effects. Firstly, it has been demonstrated that users continue searching for tourism online in the post-COVID-19 era. Therefore, it is recommended to invest in developing new strategies for digital tourism platforms through creative and enhanced content, adapting content to users' preferences. Another recommendation is to explore other platforms where users have been migrating after the pandemic. It is important to provide real and relevant information as users are more focused on reviews and getting relevant information to

plan and get travel ideas, rather than making reservations directly as before. In terms of digital tourism in a post-pandemic scenario, an important part of the predisposition users have towards this concept is related to how much they know about it. Thus, it is recommended to generate informative campaigns and awareness of new developments and ideas. If the business is interested in working with new technologies, virtual tours including technologies such as VR and AR are among users' favourites, in addition to technologies to ensure secure physical travel and artificial intelligence for virtual assistance.

4.4 Limitations of the Study

This study has several limitations that should be acknowledged. First, the relatively small sample size ($n = 204$) may limit the statistical power and robustness of the findings. Second, the use of a non-probability sampling approach restricts the representativeness of the sample and may introduce selection bias. As a result, the findings should be interpreted with caution and cannot be generalised to the broader population of tourism consumers. Third, the study relies on self-reported data, which may be subject to response bias. Future research could address these limitations by employing larger, probability-based samples and incorporating longitudinal or mixed-method approaches to validate and extend the findings.

Declarations

Credit Authorship Contribution Statement

Zarqa Shaheen: Conceptualization, Investigation, Methodology, Project administration, Supervision, Data curation, Validation, review and editing, Visualization.

Danitza Baeza: Conceptualization, Investigation, Methodology, Software, Formal analysis, Writing – original draft, Data curation, Validation, Writing.

Declaration of Competing Interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Use of Generative AI and AI-Assisted Technologies: The authors declare that they have not used generative AI and AI-assisted technologies during the preparation of this work.

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