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# Comparing Online User Experience across Different Digital Business Ecosystems and Platforms When

## Booking Vacations

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### Abstract

While various combinations of business eco-systems (desktop, laptop, tablet, mobile, smartwatch, and TV) and platforms (apps, websites, and social media pages) can be used to shop online, little is known about consumers' preferences to choose one over another. The user experience on each eco-touchpoint and eco-channel is not the same. By comparing four groups of respondents (595 observations) using two different systems (Brand Website vs Brand Facebook page) and two different channels (PC vs Smartphone), this research examines how utilitarian values, hedonic values, satisfaction, and flow experience, might differ across these various business ecosystems for those booking a vacation. Participants were randomly guided to one of the four experimental groups based on their device. The results show that flow experience, utilitarian values, and hedonic values influence booking intentions. These effects differ from digital platform to digital platform and from one e-channel to another. This research deepens our theoretical understanding of the online user experience across business ecosystems and gives practical insights into how e-retailers could enhance consumers' shopping experiences through the different e-channel and digital platforms that contribute, in a different way, to the online experience.

**Keywords:** User Experience; Business Ecosystems; Customer Satisfaction; Digital Platforms

## 1. Introduction

While social media and e-commerce websites have become the norm for self-service purchasing and information, little is known about consumers' preferences to choose a particular combination of avenues available to them, or an eco-business system. Is it a better experience to shop on a smartphone or a home computer? Should the consumer check the brand's website or social media pages to examine the offer? Which interface is the best to create higher value for the customer? The user experience on each digital platform and e-channel differs because the user interface varies considerably, both in terms of the context of use and the size of the screen. Wagner, Schramm-Klein, and Steinmann (2020: p. 256) emphasized that differentiating between an e-channel and a digital platform is required. "An e-channel represents the hardware alternatives that consumers can use to shop online, while a digital platform represents the software alternatives that retailers can provide for e-channels". A digital platform is defined as any means allowing customers to directly or indirectly initiate interaction with a firm through a website or social media (Hallikainen, Alamäki, and Laukkanen 2019; Bolton, et al. 2021).

The various combinations of e-channels (desktop, laptop, tablet, mobile, smartwatch, speakers, and TV) and digital platforms (apps, websites, web progressive apps, and social media) consumers can use will shape online customer experiences differently depending on the fit of the e-channel and the digital platform. Omnichannel presence allows a diversity of shopping experiences from showrooming, wherein consumers search and source products on the shelves and buy online, to webrooming wherein they search online and buy from brick-and-mortar touchpoints (Park and Kim 2018). Similarly, purchasing products and services that involve emotions such as excitement and enjoyment motivates customers to search the Internet, read online content about offerings, and engage in conversations with providers and other customers on websites and social media. Consequently, digital platforms have the potential to differently engage consumers and motivate purchases (Nilashi et al. 2018). However, managers currently have only a limited insight of how to allocate their resources for digital innovation management (Endres and Huesig 2022). Therefore, more detailed knowledge is needed to inform managers about which category or class of particular IT tools can serve as levers for improving certain performance metrics of new product development such as apps, websites or social media for the software, and screens for the hardware.

Unlike official websites that are managed by marketers, the contents of social media pages are mainly controlled by users who produce and consume content conceived by peers to express themselves and share their experiences with others (Duarte Alonso et al. 2013). Additionally, some users who open a website are already aware

of the offerings and revisit the website with a prior intention to book a journey or explore suggested destinations (Abdullah et al. 2016). Some users find their way to the website by following the links available on other websites, blogs, or social media pages (Zhang and Cabage 2017).

Psychological and perceptual aspects impact the user experience at each touchpoint (Zheng et al. 2019). Scholars have investigated cognitive and emotional factors inducing user engagement and satisfaction with interfaces and their behavioral outcomes. Achieving the desired outcomes through digital platforms, as well as users' positive emotive and multisensory experiences while interacting with interfaces, are studied as utilitarian and hedonic values (Liu et al. 2020; Zheng et al. 2019). Researchers have also examined the influences of pleasant mental states, namely flow, experienced through digital platforms on user engagement and behavioral intentions (Hoffman and Novak 1996; Pelet, Ettis, and Cowart 2017).

Online presence of marketers and the way digital platforms are managed significantly impact their financial performance (Anagnostopoulou et al. 2019). Online retailers need a deep understanding of the way customers interact with e-channels to decide the best ways to distribute their marketing time, effort, and financial resources among their digital platforms and improve the interfaces (Hallikainen, Alamäki, and Laukkanen 2019). This ultimately creates value for customers following two key processes: building up relations and cooperation (Sanchez-Gutierrez et al. 2019). Hence, it is necessary to study the role of user interface characteristics and their effects on consumer experience and behavior. In doing so, this research aims to answer the following questions: Which channel is more effective in terms of instigating behavioral intentions?; and Should marketers focus on website content or social media interaction with customers?

This research compares the above relationships between respondents who approach travel e-tailers through their official Website or the Facebook page as two distinct digital platforms, using either their smartphone or their laptop/desktop computer, making two distinct e-channels. The findings give practical insights into how e-retailers could enhance consumers' shopping experiences and even create higher value, through the alternative e-channel and digital platforms that contribute, in a unique way, to the online experience (Sanchez-Gutierrez et al. 2019). Beyond the practical importance of the question, this research enhances our theoretical understanding of the online user experience across electronic platforms and e-channels. Even if past studies in information systems and marketing have offered large theoretical and empirical support for the effects of digital platforms and e-channels, this study might be the first to provide evidence, through experimentation, that the online experience can influence intentions

and these effects differ from digital platform to digital platform and from one e-channel to another. Therefore, this research contribute to the explicit call for future works that identify a more specific consideration of digital infrastructures and technologies (Endres, Huesig, and Pesch 2022).

## **2. Literature Review**

### ***2.1. User Interface, User Experience, and Consumer Satisfaction***

*User Interface (UI)* – UI refers to how a user interacts with a computer system, software application, or any other electronic device. It encompasses all the visual and interactive elements that enable users to communicate with and control the system (Pelet and Taieb 2022). The primary goal of a user interface is to facilitate a smooth and intuitive interaction between the user and the system. It allows users to input commands, navigate through various features and functionalities, and receive feedback or output from the system (Pelet and Taieb 2022). Cyr et al. (2006) argued that for the design of an m-commerce website, the attributes of color, shape, font type, music, and animation play an important role. The interface of a website is of paramount importance for the success of e-commerce, due to its influence on customer interactions and behavior, as well as in m-commerce (Pelet and Taieb 2022).

Online interfaces vary in terms of interactivity and vividness (Hoffman and Novak 1996). Vividness represents the richness of information accessible through the media and is subject to the resolution and the diversity of sensory information. Interactivity refers to the responsiveness and speed of the feedback provided by the media. Enhanced interactivity conveys the perception of easy navigability and enhanced pleasure (Kervenoael et al. 2008). The interactivity of mobile devices differs from those of desktop computers and laptops. Smartphones, as ubiquitous devices, can attract the attention of consumers through notifications and initiate interactions with them (Carvalho, de Castro Andrade, and de Oliveira 2017). However, interactivity is not confined to user-system interaction. Instead, some websites, as well as social media pages, provide users with opportunities to interact with one another and with marketers.

*User Experience (UX)* – UX refers to the overall experience and satisfaction that a user has when interacting with a product, system, or service. It encompasses the user's perceptions, emotions, and responses that result from their interaction with the product or service (Pelet and Taieb 2022). User experience is not limited to the visual or functional aspects of the interface but encompasses the entire user journey, including their expectations,

perceptions, and interactions at various touchpoints. It involves understanding the user's needs, goals, and behaviors to create a positive and meaningful experience, leading to more satisfaction.

Users' experience with an application or website page is not only affected by the characteristics of the page or application but also by the choice of the channel. Since smartphones are equipped with an operating system, they can execute third-party applications such as travel apps, social media apps, and web browsers (Wu 2015). The performance of each smartphone model depends on many factors such as its catch size, micro-architecture, and core. The resolution of the display, measured in pixel-per-inch (PPI), and the color accuracy reflected in the extent to which displayed colors represent true colors vary from device to device (Yan et al. 2019). Even though users might be able to complete a transaction, many small inefficiencies can accumulate and influence user experience and eventually decrease users' behavioral intention to perform a transaction (Albert and Tullis 2013). The smartphone displays, such as size, screen resolution, and color accuracy, play determinant roles in the experience of the user when watching videos or photos. Device performance, on the other hand, is fundamental when the user performs business applications (Yan et al. 2019).

Using a smartphone with different screen sizes, browsing a task on the move, and distractions of environmental factors make smartphone experiences different from those on laptops/desktops. When interacting with ubiquitous environments, users' concentration is scattered among various physical and mental activities. The user might be walking, talking, waiting behind red light in traffic, or any other everyday world activities while interacting with ubiquitous applications (Carvalho et al. 2017).

*Consumer satisfaction* - Consumer satisfaction refers to the level of contentment or fulfillment experienced by consumers when using an app, website, smartphone, or e-commerce website (Yoo, Lee and Atamja 2023). It is a measure of how well the product or service meets or exceeds the expectations and needs of the consumer (Yoo, Lee and Atamja 2023). Consumer satisfaction in the context of e-commerce websites is influenced by several factors, including ease of use, functionality, performance, content and information, personalization and customization, customer support, trust and security, feedback and reviews.

Satisfaction is the most used criterion to measure the experience of users with an interface (Jiao, Chen, and Yuan 2020; Albert and Tullis 2013). What users think, feel, and say about their experiences with interfaces are determinant in shaping behavioral intentions (Albert and Tullis 2013) and to create better value co-creation of the system (Preikschas et al. 2017). Value co-creation is defined by Reichwald and Piller (2009: p.52) as “*a cooperative*

*(and voluntary) team process between producer and customer, which might focus on both operating activities and the development of solutions, and might be started by either the supplier or the customer”*. The objective of value co-creation is to adapt to current circumstances, and cooperate with customers, suppliers or other agents. It also explains the obtained value that firms are seeking to maintain successful relational exchanges (Ghosh et al. 2004; Briggs and Grisaffe 2010). Co-creation processes can favor value generation, long-term relationships (Biong and Silkoset 2006) and customer retention (Preikschas et al 2014). The experience of users is influenced by their interaction with the computing system and depends on the hardware, software, visual features of the interface, customer services, and environmental conditions (Albert and Tullis 2013, 2022; Yan et al. 2019).

Satisfaction with an e-commerce website or social media page, as a result of a pleasurable user experience, leads to behavioral intention directed towards the website. The user might consider future use or think about purchasing the products offered by the website and recommending them to a friend. He/she might experience arousal and show subconscious reactions to the contents of the website such as impulse purchasing (Albert and Tullis 2013). E-travel providers use online tools available on their website or other virtual digital platforms such as MakeMytrip.com, TripAdvisor, or Booking to boost customer value, enhance customer experience, enhance loyalty, and increase booking intention (Hollebeek and Rather 2019). In the hospitality and travel industry, booking intention is of prominent importance, because booking and the resultant occupancy rate of the destination are associated with the financial outcomes of the travel providers (Anagnostopoulou et al. 2019). Since varied factors affect users’ satisfaction and their intention to conduct a transaction, the association between the intention to perform a transaction, such as booking a trip, and satisfaction might depend by the digital platform.

## ***2.2. Utilitarian and Hedonic Values***

In search of understanding the drivers of consumers in certain behaviors, scholars have highlighted hedonic and utilitarian values that motivate consumer behavior and lead to satisfaction. Individuals engage in activities that satisfy their cognitive and affective motivations (Koo, Chung, and Nam 2015; Zheng et al. 2019). While utilitarian aspects of consumer behavior highlight accomplishing certain goals, hedonic aspects address sentimental and emotional states experienced by consumers (Liu et al. 2020; Kijek, Angowski, and Skrzypek 2020).

Individuals find pleasure in activities that provide them with opportunities for gaining the information they need and experiencing enjoyment in the activity (Kim et al. 2007; Zheng et al. 2019). Online reviews are available on websites and social media pages dedicated to travel and are perceived as credible and trustworthy sources of

information about destinations and potential experiences. Consumers perceive both utilitarian and hedonic values from such reviews (Ham et al. 2019; Anagnostopoulou et al. 2019). After a systematic review of hospitality research papers involving online reviews, Kwok, Xie, and Richards (2017) found that users perceive both utilitarian values such as usefulness and informativeness, as well as hedonic values such as enjoyment from digital platforms. Thus, this study considers hedonic and utilitarian experiences in the digital platform as the antecedents of online behavior.

### **2.3. Flow**

Flow is a positive mental state experienced by users engaged with interactive interfaces (Hoffman and Novak 1996; Pelet, Ettis, and Cowart 2017). When individuals concentrate on an activity that demands selective attention and challenges their skills, they experience an optimum, pleasurable state referred to as flow by scholars in positive psychology (Csikszentmihalyi, Graef, and Gianinno 2014; Csikszentmihalyi and Nakamura 2010). Flow happens during interactions with computer technologies that are characterized as playful, exploratory, and challenging (Park and Sohn 2003). The challenge is an inseparable prerequisite of experiencing a flow state. For e-commerce websites to be satisfactory and to create a pleasant user experience, it is not enough to be easy to use. E-commerce websites need to be challenging, inciting, and even moderately addictive (Albert and Tullis 2013).

Telepresence, another prerequisite of experiencing a flow state, occurs when consumers forget about their physical surroundings and feel their presence in online spaces with other users or marketers (Pelet et al. 2017). Images and video clips influence users more strongly than text-based information and help users imagine themselves in places depicted on digital platforms (Albert and Tullis 2013). The sense of telepresence increases with auditory and visual information's added vividness and interactivity. The more users can interact with each other, and with the information available on the digital platform, the more telepresence they experience (Kervenoael et al. 2008). Browsing and comparing images of the destination, keeping in mind travel requirements and plans, and comparing prices, places, and features engages consumers and helps them imagine the destination.

Although consumers can evaluate the quality of travel services during the experiences of actual travel (Lovelock and Wright 2001; Park and Sohn 2003), travel websites and social media pages enable potential travelers to explore the destination and form an image of the travel experience in advance. Travelers decide about potential experiences, destinations, transportation, accommodation, stay length, food, and travel budget while navigating travel pages. The smart use of digital amenities can help tourism destinations sell experiences to consumers. A digital ecosystem connects smart e-channels allowing a range of innovative technologies to work in sync and

exchange value (e.g., information, entertainment, promotion, and economy) between manufacturers and buyers (Pelet, Barton, and Chapuis 2018). Such challenging tasks instigate a state of flow that can, in turn, affect travel decisions and engagement with the travel pages (Park and Sohn 2003).

### **3. Theoretical Framework and Hypotheses**

#### ***3.1. Conceptual model of the research***

Prior research in information systems has found that digital platforms differ in their features and thus provide users with different surfing experiences which do affect their perceived experience (Albert and Tullis 2013; Carvalho et al. 2017; Yan et al. 2019). The degree to which the website provides beneficial information and allows consumers to complete a transaction smoothly, without being confused, is critical to purchase. Because user experience depends on the digital platform and its interface characteristics and e-channels, four groups of consumers are identified and studied according to their preferences in this study. The conceptual model of this research (Figure 1) postulates the effects of user experience on behavioral intention in each group: (i) access the brand website of an e-tailer through a PC (laptop or desktop); (ii) access the brand website of an e-tailer through a smartphone; (iii) access the brand Facebook page of an e-tailer through a PC; and (iv) access the brand Facebook page of an e-tailer through a smartphone.

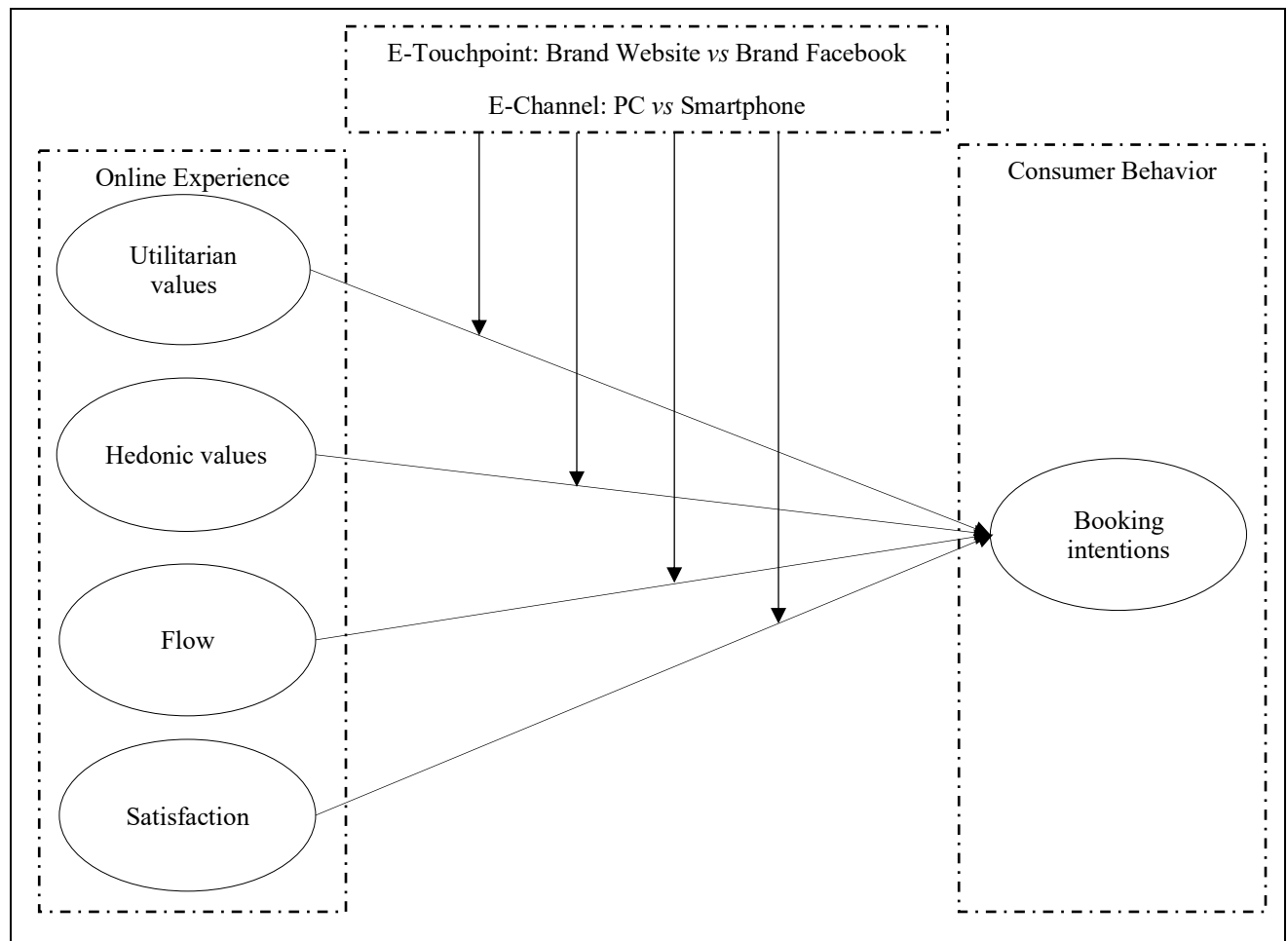


Figure 1: Conceptual model of the research

### ***3.2. Online User Experience and Behavioral Intentions***

Perceived value has often been examined as an antecedent to behavioral intentions (Sweeney and Soutar 2001). It plays an important role in determining purchase intentions (Zeithaml 1988). More recent research highlights the importance of perceived utilitarian and hedonic values with services in shaping behavioral intention (Ham et al. 2019; Kijek et al. 2020; Zheng et al. 2019).

Flow state is experienced in interactive online activities that are engaging, challenge user's skills, and demand concentration (Hoffman and Novak 1996; Pelet et al. 2017). As a pleasurable and joyful experience, flow makes users lose track of time and forget about their surroundings (Mao et al. 2016; Pelet et al. 2017; Ettis 2017). Travel digital platforms that allow users to imagine themselves in the destination, compare accommodations, and interact with other travelers provide the right context for potential travelers to experience the state of flow (Kervenoael et al. 2008; Park and Sohn 2003). Behavioral intentions are a direct outcome of flow during website

navigation such as the exploratory behavior (Hoffman and Novak 2009), the amount of time spent on the site (Hoffman and Novak 2009), visit intentions (Hsu et al. 2012), unplanned purchases (Koufaris 2002), and the likelihood of purchasing from a website (Luna et al. 2003). Higher levels of concentration and enjoyment characterizing flow lead to a more approach behavior during shopping in online stores (Ettis 2017).

In the literature on offline commerce, research has demonstrated a positive satisfaction-behavioral intention relationship (Oliver 1999). Prior research on online commerce showed that satisfaction plays a determinant role in shaping behavioral intentions. For instance, Zhao and Dholakia (2009) revealed that satisfaction with a website selling consumer electronics products positively affects behavioral intentions. Audrain-Pontevia et al. (2013) found that consumer e-satisfaction is directly and positively related to e-loyalty.

### ***3.3. Digital Platforms, E-channels, and the Online User Experience***

As stated at the beginning of the literature review, consumer behavior differs among digital platforms and e-channels because online interfaces vary in terms of interactivity and vividness (Hoffman and Novak 1996). The platforms differ by hardware, software, visual features, screen size and resolution, ubiquity, and color accuracy, customer services provided, and environmental conditions (Albert and Tullis 2013; Yan et al. 2019). In January 2022, about 98 percent of active user accounts worldwide accessed Facebook via mobile phone (Statista 2023). Use of mobile devices greatly exceeds the PC in terms of audiences and time spent on-line and Facebook consistently ranks among the top downloaded applications (Statista 2023).

Websites and social media pages have several traits in common. In both, the user clicks on links and scrolls on the page at their rate. Furthermore, both kinds of e-channels require active participation. Consumers decide for themselves how much of the content they engage with. However, there is a major difference between the two e-channels. Websites pages are more vivid and offer a multitude of stimuli, but social media pages suggest a greater degree of interactivity and sociability. Brand Websites have an explicit commercial communication orientation, but social media pages have an informal and familiar communication orientation. Websites lack interactive features that allow firms to engage with consumers, such as commenting and sharing opportunities (Pinto et al. 2019). Social media are more powerful for users to post and share new content, review and rate products/services and/or brands, share experiences, and exchange opinions (Pelet et al 2023). Thus, it will be expected that users will exhibit different (or at least more intense) online experiences between the two e-channels.

Studies have examined differences in consumers' responses to websites compared to traditional print media (Eveland and Dunwoody 2002; Dahlén et al. 2004). Still, few works to date have investigated the differences in consumers' responses to brand social media pages compared to brand websites. Among these works, Ramos, Rita, and Moro (2019) stated that the degree of usability of each e-channel influences and determines their use, revealing the propensity of users to choose social media and mobile applications instead of brand websites. In a study by Ramos, Rita, and Moro (2019), usability influenced the user's online experience and led to behavioral change among different e-channels. In a subsequent paper, the researchers show that consumers prefer to use social media and application platforms over retail websites to search for a product or service. The vital aspect that makes consumers prefer a retail website is due to service quality while the choice for social media and applications platforms is related to the act of online searching for a product or service (Ramos, Rita, and Moro 2022).

Therefore, the following hypotheses postulate that if the platform is a PC, the online user experience on the brand website will generate more favorable behavior than the brand's Facebook page. If the platform is a smartphone, the online user experience on the brand's Facebook page will generate more favorable behavior than on the brand's website. Indeed, customers prefer easy-to-use websites to optimize their actions; the more intuitive an experience is, the higher the quality of that experience (Pelet and Taieb 2018; 2022). Such an experience might be created through interactivity which might enhance shopping experiences, provided that the consumer keeps control of their moves on the screen and feels 'dominate'. The objective of designers of such e-commerce websites is to turn the in-store experience into an online environment using object interactivity, virtual try-on, and mix-and-match functionalities (Perry, Blazquez, and Padilla 2013). This is possible on an e-commerce website where web designers can add technology such as image interactivity on pages, but not on social media such as Facebook, where technology is frozen. PC applications allow for rollover, but not mobile, whether on apps or websites. Thus, it is hypothesized that:

*H.1 (Website on PC vs Website on Smartphone): While browsing the brand website, the online user experience on a PC (H.1.1 utilitarian values, H.1.2 hedonic values, H.1.3 flow, and H.1.4 satisfaction) will generate more booking intentions than a smartphone.*

*H.2 (Facebook page on PC vs Facebook page on Smartphone): While browsing the brand Facebook page, the online user experience on a PC (H.2.1 utilitarian values, H.2.2 hedonic values, H.2.3 flow, and H.2.4 satisfaction) will generate less booking intentions than a smartphone.*

*H.3 (Website on PC vs Facebook page on PC): When using a PC, the online user experience on the brand website (H.3.1 utilitarian values, H.3.2 hedonic values, H.3.3 flow, and H.3.4 satisfaction) will generate more booking intentions than the brand Facebook page.*

*H.4 (Website on PC vs Facebook page on Smartphone): The online user experience while browsing the brand website on a PC (H.4.1 utilitarian values, H.4.2 hedonic values, H.4.3 flow, and H.4.4 satisfaction) will generate less booking intentions than while browsing the brand Facebook page on a smartphone*

## **4. Methodology**

### ***4.1 Data Collection Procedure***

An online experiment was conducted to test the hypotheses. A website was created that invited participants to the study, provided links to access the experimental digital platforms using a PC or smartphone, and another link to the survey questions. The first page: (1) explained the object of the study; (2) instructed respondents to thoroughly explore the offer of the tourism e-tailer Club Med, spend as much time as he/she wants, and simulate the booking of a holiday that corresponds to their preference and budget; and (3) finally fill out the survey. The first page also indicated the estimated time to participate and insured subjects regarding data privacy and anonymity. Upon clicking the start button on the invitation on the first page, participants were taken to a second page asking them if they have used their PC or smartphone.

Based on their device, participants were randomly guided to one of the four groups with links and questions adapted for each digital platform and channel as follows: (1) access the brand website through a PC; (2) access the brand website through a smartphone; (3) access the brand Facebook page through a PC; and (4) access the brand Facebook page through a smartphone. To increase participation, subjects were qualified to win an e-coupon for € 30. Attention was devoted to facilitating the handling of the survey on any screen size, especially on smartphone devices. The questionnaire contained the measurement scales of the study and socio-demographic questions. Each scale was presented on a single page in the online survey (Peytchev et al. 2006). Google Forms was used to design the questionnaire.

### ***4.2 Sampling***

Due to the difficulty of using probability sampling, a non-probability convenience sampling method was used. The link to the invitation website was sent to participants via email and Facebook. No other social media sites were used to solicit participants. Similarly, traditional methods of survey administration (face-to-face, telephone, or

mail) were not used. Any participant who accepted to contribute to the experiment is included in the sample. A pre-test of the survey was conducted. Problems of clarity, wording, and logical validity were amended. There were no significant issues with the questionnaire in terms of duration. A final sample of 595 users responded to the questionnaire.

### **4.3 Stimuli**

Club Med, an e-travel provider previously known as *Club Méditerranée SA*, is a Chinese-owned company headquartered in France, specializing in all-inclusive holidays. Club Med started its operation in the tourism industry in the 1950s, growing to be a chain of hotels in France, and controlling 191 tourism establishments and sales agents in 30 countries. Like many other travel retailers, Club Med established its online presence to communicate its messages and offerings to consumers.

Club Med was chosen for the following reasons: Club Med showcases tempting and vivid photos of destinations and provides commercial information. Such content and design features encourage potential travelers to imagine their tour to the destination, plan a journey, and shape travel intentions (Kim 2010; Park and Sohn 2003). Club Med presents a variety of interactive and vividness features such as choosing the colors, photos, and videos, ordering online, contacting the company, and viewing comments from other customers. This guarantees a realistic, valuable, and rich experience, which helps provide respondents with a truly real, natural, and compelling experience. Therefore, Club Med can facilitate “flow opportunities” in which visitors are completely engaged and communicate hedonic and utilitarian values to visitors. Other e-tailers might be used such as *tatil.com* and *saklikoy.com* as well as many other online travel providers around the globe (Kervenoael, Ozturkcan, and Bisson 2008).

Only one brand (Club Med) was chosen as the stimulus for this study. More than one brand would make the experiment complex and challenging. With two brands, the factorial plan will be double comprised of eight factors (2x2x2) which will be difficult to implement and manage. Furthermore, if not controlled, the effect that the brand name will probably have on consumers’ responses might bias the results. It is recommended to extend the external validity of the results in future research by testing our model on other cases. Among social media, Facebook is used as a basis for our empirical study because it is the most used social media with more than 2.7 billion monthly active users (Statista 2023), and is widely used by tourism providers as a crucial tool in their mix-communication strategy (Önder, Gunter, and Gindl 2019).

## ***4.2 Measurements Scales***

To measure the variables of the model, the constructs from established scales were used. The hedonic and utilitarian values scale were adapted from Babin et al. (1994). The scale measuring flow state was adapted from Bilgihan et al. (2014)'s work. The scale for booking intentions is from Dodds, Monroe, and Grewal (1991). Finally, the satisfaction scale was adapted from Mattila (2003). All the constructs were assessed on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree) (Appendix 1).

## **5. Results**

### ***5.1. Sample***

Sixty percent of the sample were females, 77 % were under 34 years old, 77 % had a bachelor's degree or higher, 39% were students, and 60% percent earned less than \$2,000 monthly. The analyses found respondents were similarly distributed among the four groups based on their gender ( $\chi^2 = 4.41$ ,  $df = 3$ , ns), age ( $\chi^2 = 14.64$ ,  $df = 9$ , ns), education ( $\chi^2 = 6.36$ ,  $df = 6$ , ns.), and occupation ( $\chi^2 = 17.69$ ,  $df = 12$ , ns.). Respondent's income was skewed a bit toward lower categories for those using the Facebook page on their smartphone ( $\chi^2 = 32.17$ ,  $df = 15$ ;  $p < 0.01$ ) (see Appendix 2).

Results of ANOVA and the following LSD found that group four (Facebook on a smartphone) differed in the perceived time spent on the interface compared to group two (website on a smartphone), with a mean difference of 4.61 ( $p < 0.05$ ) and group three (Facebook on PC) with a mean difference of 4.28 ( $p < .05$ ). Group one (website on PC) spends more time than group three (laptop on Facebook) with a mean difference of 3.65 ( $p < 0.05$ ). This time comparison is based on the perception by the respondents about the number of minutes they spent on the interface (see Appendix 3).

### ***5.2. Measurement Model***

A PLS-SEM approach analysis was run in the SmartPLS software package version three (Ringle, Wende, and Becker 2015) as the sample sizes in the experimental group "Facebook page on PC" (64) and "Facebook page on Smartphone"(90) are relatively small. The PLS-SEM approach is widely used in recent works with smaller sample sizes (Hair et al. 2019). Our structural model is complex and includes many constructs, indicators, and relationships. PLS-SEM is useful with complex models (Hair et al. 2019). The structural relationship is closer to CB-SEM if a consistent PLS algorithm is undertaken in PLS-SEM (Dash and Paul 2021).

All the model's constructs were operationalized with reflective indicators since the indicators were expected to measure the same phenomena and each construct is a combination of interchangeable indicators (Hair et al. 2017). The t-values were assessed using the bootstrap resampling procedure with a bootstrap sample number equal to 5000 (Hair et al. 2017). All the scale's indicators are significantly related to the constructs ( $p < 0.01$ ) and all standardized indicator loadings are higher than the critical value of 0.70, showing adequate indicator reliability (Hair et al. 2017; Hulland 1999). The Cronbach's alpha values of the constructs were a minimum of 0.83. The composite reliability value of the scales was between 0.89 and 0.95. Thus, the scales have satisfactory internal consistency reliability (Hair et al. 2017).

The convergent validity was estimated using the Average Variance Extracted (AVE) constructs. The AVE value was above the critical value of 0.50 for all the scales varying from 0.63 to 0.79, indicating sufficient convergent validity (Bagozzi and Yi 1988; Hair et al. 2017). No collinearity issues were observed since the VIF values for all the items were less than 5. The measurement model properties were assessed (Falke et al. 2020). The results indicated a good overall fit. The SRMR value was 0.040 and the NFI was 0.89 respecting the recommended threshold respectively less than 0.08 and almost equal to 0.90 (Table 1).

*Table 1: Indicators of reliability and validity of measurement scales*

<i>Constructs</i>	<i>Loadings</i>	<i>VIF</i>	<i>t values</i>	<i>Cronbach's Alpha</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted (AVE)</i>
Flow1	0.88	2.10	68.93***	0.83	0.90	0.75
Flow2	Deleted	Deleted	Deleted			
Flow3	0.87	2.06	60.09***			
Flow4	0.85	1.74	59.93***			
Hedonic shopping value1	0.78	2.30	40.91***	0.94	0.95	0.63
Hedonic shopping value2	0.76	2.24	36.34***			
Hedonic shopping value3	0.80	2.45	46.77***			
Hedonic shopping value4	0.80	2.67	45.28***			
Hedonic shopping value5	0.75	2.05	31.71***			
Hedonic shopping value6	0.81	2.75	45.24***			
Hedonic shopping value7	0.82	2.61	49.46***			
Hedonic shopping value8	0.82	2.71	51.95***			
Hedonic shopping value9	0.76	2.20	37.76***			
Hedonic shopping value10	0.81	2.48	51.98***			
Hedonic shopping value11	0.83	2.85	56.83***			
Booking intention1	0.87	2.52	67.57***	0.91	0.93	0.79
Booking intention2	0.88	2.83	73.20***			

<i>Constructs</i>	<i>Loadings</i>	<i>VIF</i>	<i>t values</i>	<i>Cronbach's Alpha</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted (AVE)</i>
Booking intention3	0.89	2.88	78.46***	0.84	0.90	0.76
Booking intention4	0.91	3.38	99.65***			
Satisfaction1	0.88	2.07	83.14***			
Satisfaction2	0.88	2.02	65.04***			
Satisfaction3	0.86	1.91	53.33***			
Utilitarian shopping value1	0.86	1.92	52.69***	0.83	0.89	0.74
Utilitarian shopping value2	0.84	1.78	46.10***			
Utilitarian shopping value3	0.89	2.11	89.10***			
Utilitarian shopping value4	Deleted	Deleted	Deleted			
Model fit	SRMR = 0.040 Chi-Square = 1138.526 NFI = 0.894					

\*\*\*: P<0.01

The Fornell-Larcker-Criterion, cross-loadings of indicators, and Heterotrait-Monotrait Ratio (HTMT) were used to evaluate the discriminant validity (Fornell and Larcker 1981; Hair et al. 2017). The square roots of the AVE values are greater than the correlations between the construct and any other construct. As the square root of the AVEs is higher than the pairwise correlations of the constructs, all items loaded more highly on their constructs, and all the HTMT values are below 0.90, the discriminant validity of the constructs is satisfied (Fornell and Larcker 1981; Hair et al. 2017). The discriminant validity matrix is listed in Table 2.

*Table 2: Indicators of discriminant validity of constructs (Fornell-Larcker Criterion and HTMT; N = 595)*

	(1)	(2)	(3)	(5)	(6)
Flow (1)	0.87				
Hedonic Values (2)	0.77 (0.87)	0.80			
Booking intentions (3)	0.69 (0.79)	0.68 (0.73)	0.89		
Satisfaction (5)	0.73 (0.87)	0.74 (0.82)	0.73 (0.83)	0.87	
Utilitarian Values (6)	0.66 (0.79)	0.77 (0.87)	0.60 (0.69)	0.65 (0.78)	0.87

Note: The diagonal elements show the square root of the Average Variance Extracted; the off-diagonal elements show the correlations between the constructs; (HTMT values).

### 5.3. Structural Model Evaluation and Hypotheses Testing

A PLS-SEM path analysis was performed. The predictive relevance of the model was appraised with Stone-Geisser-Criterion ( $Q^2$ ) (Geisser 1975; Stone 1974). The blindfolding procedure with an omission distanced of seven shows  $Q^2$  values larger than zero for the model's exogenous construct: booking intention ( $Q^2 = 0.47$ ) demonstrating

that the predictive relevance of the model was acceptable (Hair et al. 2017). The SRMR value was 0.02 and the NFI was 0.93 respecting the recommended threshold respectively less than 0.08 and more than 0.90.

A Partial Least Square-based Multi-Group Analysis (PLS-MGA) is utilized to evaluate the hypotheses (H1 to H4) in the four groups under study (Hair et al. 2017; Ringle et al. 2015). Before conducting PLS-MGA, the three-step measurement invariance of composite models (MICOM) procedure was performed. MICOM results are summarized in Table 3. The objective is to check for configural invariance, compositional invariance, and equality of composite mean values and variances (Henseler, Ringle, and Sarstedt 2015). The configural invariance is established (Step 1) because identical indicators per measurement model, identical data treatment, and identical algorithm settings were used.

As Table 3 shows, the permutation tests (with Maximum Iterations of 5000, Stop Criterion defaults to 7, and two-tailed significance level of 0.05) showed that the original correlations are equal to or greater than the 5.0 % quantile correlations for the six composites. So, compositional invariance is established, and a partial measurement invariance is obtained (Step 2). The mean–original differences fall inside the 95 % confidence interval (2.5 % as lower and 97.5 % as upper) for all the composites. The same tests indicated that the variance–original difference falls inside the 95 % confidence interval for all composites. Therefore, the full invariance requirements are observed for all the composites (Step 3). The full measurement invariance is respected, so the multi-group standardized path coefficients comparison is possible (Henseler et al. 2015).

*Table 3: MICOM results report*

	Step 1. Configural invariance	Step 2. Compositional invariance			Step 3. Equality of composite mean values and variances								Measurement invariance?
					Equality of composite mean values				Equality of composite variances				
					Original Corr.	5.0%	Test	MOD	2.5%	97.5%	Test	VOD	
Flow	Yes	1.00	0.99	Yes	0.01	-0.19	0.20	Yes	-0.21	-0.26	0.28	Yes	Full
Hedonic Values	Yes	1.00	1.00	Yes	-0.06	-0.19	0.20	Yes	-0.06	-0.27	0.28	Yes	Full
Booking intentions	Yes	1.00	1.00	Yes	-0.05	-0.19	0.19	Yes	-0.19	-0.26	0.28	Yes	Full
Satisfaction	Yes	0.99	0.99	Yes	-0.05	-0.18	0.19	Yes	-0.10	-0.27	0.29	Yes	Full
Utilitarian Values	Yes	1.00	0.99	Yes	-0.19	-0.20	0.18	Yes	-0.14	-0.23	0.26	Yes	Full

Note. MOD: Mean - Original Difference (Website on PC-Website on a smartphone); VOD: Variance - Original Difference (Website on PC-Website on a smartphone).

The PLS-MGA results are summarized in Tables 4 and 5. For the first group (Website on PC vs Website on Smartphone, H1), the effects-differences between the two groups of the utilitarian values ( $t_{\text{value}} = 0.87$ ; n.s.), hedonic

values ( $t\text{-value} = 0.21$ ; n.s.), flow ( $t\text{-value} = 0.16$ ; n.s.), and satisfaction ( $t\text{-value} = 0.06$ ; n.s.) on consumer's booking intentions were not significant. Therefore, hypotheses H1.1 to H1.4 were rejected. For the second group (Facebook page on PC vs Facebook page on Smartphone, H2), the results revealed two significant results. First, the effect of perceived hedonic values of browsing the brand's Facebook page on booking intentions was significant for both PC ( $\beta_{PC} = 0.3$ ;  $t\text{-value} = 2.02$ ;  $p < 0.01$ ) and Smartphone ( $\beta_{Smartphone} = -0.4$ ;  $t\text{-value} = 2.52$ ;  $p < 0.01$ ) and the effect difference between the two groups is also significant ( $|\beta_{PC} - \beta_{Smartphone}| = 0.7$ ;  $t\text{-value} = 3.08$ ;  $p < 0.01$ ).

However, H2.2 was rejected because we postulated a more important effect on Smartphones than PC. Second, the effect of flow experienced while browsing the brand's Facebook page on booking intentions is not significant for a PC ( $t\text{-value} = 0.23$ ; n.s.) but significant for Smartphones ( $\beta_{Smartphone} = 0.57$ ;  $t\text{-value} = 4.02$ ;  $p < 0.01$ ) and the effect difference between the two groups is significant ( $|\beta_{PC} - \beta_{Smartphone}| = 0.52$ ;  $t\text{-value} = 2.02$ ;  $p < 0.05$ ). Though, H2.3 was accepted. The effects differ between the two groups on the utilitarian values ( $t\text{-value} = 1.15$ ; n.s.) and satisfaction ( $t\text{-value} = 0.87$ ; n.s.). However consumer's booking intentions were not significant. Therefore, hypotheses H2.1 to H2.4 were rejected.

For the third group (Website on PC vs Facebook page on PC, H3), the effects-differences between the two groups of the utilitarian values ( $t\text{-value} = 0.68$ ; n.s.), hedonic values ( $t\text{-value} = 0.55$ ; n.s.), flow ( $t\text{-value} = 0.65$ ; n.s.), and satisfaction ( $t\text{-value} = 0.22$ ; n.s.) on consumer's booking intentions were not significant. Therefore, hypotheses H3.1 to H3.4 were rejected.

For the fourth group (Website on PC vs Facebook page on Smartphone, H4), when using a smartphone, the effect of perceived utilitarian values on booking intentions while browsing the brand's Facebook page is significant ( $\beta_{Facebook} = 0.4$ ;  $t\text{-value} = 2.76$ ;  $p < 0.01$ ) but not significant while browsing the brand's website ( $t\text{-value} = 0.63$ ; n.s.) and the effect difference between the two groups is significant ( $|\beta_{Facebook} - \beta_{Website}| = 0.33$ ;  $t\text{-value} = 1.8$ ;  $p < 0.10$ ). So, H4.1 was accepted.

Likewise, when using a smartphone, the effect of perceived hedonic values on booking intentions while browsing the brand's Facebook page is significant ( $\beta_{Facebook} = -0.4$ ;  $t\text{-value} = 2.52$ ;  $p < 0.05$ ) and while browsing the brand's website ( $\beta_{Website} = 0.4$ ;  $t\text{-value} = 2.96$ ;  $p < 0.01$ ). The effect difference between the two groups is significant ( $|\beta_{Facebook} - \beta_{Website}| = 0.79$ ;  $t\text{-value} = 3.73$ ;  $p < 0.01$ ). However, H4.2 was rejected since we postulate a more important effect on the brand's Facebook page than the website. Also, with smartphones, the effect of flow state on booking intentions while browsing the brand's Facebook page is significant ( $\beta_{Facebook} = 0.57$ ;  $t\text{-value} = 4.02$ ;  $p < 0.01$ ) but not

significant while browsing the brand's website ( $t_{\text{value}} = 0.35$ ; n.s.) and the effect difference between the two groups is significant ( $|\beta_{\text{Facebook}} - \beta_{\text{Website}}| = 0.524$ ;  $t_{\text{value}} = 2.5$ ;  $p < 0.05$ ). So, H4.3 was accepted. Finally, the effects-differences between the two groups of satisfaction ( $t_{\text{value}} = 0.28$ ; n.s.) on consumers' booking intentions were not significant.

Table 4: PLS-MGA Results (N = 595)

	Website on PC vs Website on Smartphone (H1)				Facebook page on PC vs Facebook page on Smartphone (H2)				Website on PC vs Facebook page on PC (H3)				Website on PC vs Facebook page on Smartphone (H4)			
	Path coef. (β)-diff	t-Value	Test	Hypo.	Path coef. (β)-diff	t-Value	Test	Hypo.	Path coef. (β)-diff	t-Value	Test	Hypo.	Path coef. (β)-diff	t-Value	Test	Hypo.
Utilitarian Values → Booking intention	0.087	0.62	n.s.	H1	0.280	1.15	n.s.	H2	0.136	0.68	n.s.	H3	0.329	1.79*	✓	<b>H4</b>
Hedonic Values → Booking intention	0.210	1.32	n.s.	H1	0.698	3.07***	✓	H2	0.115	0.55	n.s.	H3	0.793	3.72***	✓	H4
Flow → Booking intention	0.159	0.94	n.s.	H1	0.519	2.02**	✓	<b>H2</b>	0.153	0.64	n.s.	H3	0.524	2.49**	✓	<b>H4</b>
Satisfaction → Booking intention	0.062	0.44	n.s.	H1	0.152	0.87	n.s.	H2	0.042	0.22	n.s.	H3	0.047	0.28	n.s.	H4

\*\*\*: P<0.01, \*\* P<0.05, \*: P<0.10, **Bold** hypotheses are accepted

Table 5: Multigroup bootstrapping results (N = 595)

	Website on PC (N = 281) Group 1			Website on Smartphone (N = 160) Group 2			Facebook page on PC (N = 64) Group 3			Facebook page on Smartphone (N = 90) Group 4		
	Path coef. (β)	t-Value	Test	Path coef. (β)	t-Value	Test	Path coef. (β)	t-Value	Test	Path coef. (β)	t-Value	Test
Utilitarian Values → Booking intentions	-0.02	0.22	ns	0.07	0.63	ns	0.12	0.55	ns	0.40	2.76**	✓
Hedonic Values → Booking intentions	0.18	2.02**	✓	0.405	2.96**	✓	0.30	2.01*	✓	-0.40	2.51**	✓
Flow → Booking intentions	0.21	1.99**	✓	0.05	0.34	ns	0.05	0.23	ns	0.57	4.01**	✓
Satisfaction → Booking intentions	0.43	4.77**	✓	0.37	3.36**	✓	0.47	3.56*	✓	0.32	2.93**	✓

\*\*\*: P<0.01, \*\* P<0.05, \*: P<0.10, ns.: not significant

## 6. Discussion and Implications

The objective of this research was to investigate the effect of perceived utilitarian and hedonic values, flow experience, and satisfaction on booking intentions of a holiday on a tourism e-tailer. This research compares the above relationships between respondents who approach the e-tailers through their official website or the Facebook page as two distinct digital platforms and using different e-channels either their smartphone or their PC. Appendix 4 gives a summary of the results. The findings of this research extend existing knowledge about the effects of online

experience on the user's behavioral intentions and possibilities to create greater customer value thanks to a better understanding of their preferences of devices and interfaces when buying online.

Prior researchers have highlighted the diverse ways devices differ from one another such as screen resolution (Yan et al. 2019) and size (Carvalho et al. 2017), and processing speed and quality (Albert and Tullis 2013; Yan et al. 2019). Different characteristics and features of digital platforms and interfaces affect online users' experiences that subsequently impact user satisfaction and behavioral intention (Albert and Tullis 2013). To the best of the authors' knowledge, this research is among the first empirical studies comparing the effects of e-channels and digital platforms on consumer behavior (Fulgoni 2015; Fulgoni and Lipsman 2016; Neijens and Voorveld 2015; Mort and Drennan 2007).

Multigroup analyses showed mixed results. For Group 1, whether the visitor browsed the brand website, using a PC or smartphone had no significant difference in terms of the capacity of the online experience to generate booking intentions. So, for the brand website, there are no significant differences regarding the role of e-channels. This could be because booking a holiday is supposed to be a pleasurable activity. Henceforth, if a digital platform can induce an enjoyable experience, users would be satisfied with the browsing experience regardless of the type of channel.

The results of this study are in line with previous research regarding the effects of the brand website online experience on booking intentions regardless of the digital platform. Scholars argue that websites that provide opportunities for gratification and interaction with engaging content can grab the attention of consumers and cause an enjoyable mental state (e.g., Hoffman and Novak 1996; Pelet et al. 2017). Previous studies also provide evidence that emotional, economic, and functional values positively affect the consumers' intention to purchase (Li et al. 2012; Peng et al. 2019).

For Group 2, results show that while browsing the brand's Facebook page; 1) the perceived hedonic values generate more booking intentions on a PC than on a smartphone; 2) the flow state generates fewer booking intentions on a PC than on a Smartphone; and 3) the utilitarian values and satisfaction have no significant differences. This represents interesting results since they reveal that the screen size becomes important when examining destination pictures and videos, getting feedback, comments, or simply ideas. So, it seems that the screen size of the PC generates more hedonic values and thereby more booking intentions. However, the smartphone seems more immersive, enjoyable, and engaging when interacting with the brand's Facebook page, subsequently leading to more booking intentions. This could be due to the haptic nature of the smartphone creating a deeper emotional

connection when is use. There are no differences between PCs and smartphones regarding the influence of utilitarian values and satisfaction on booking intentions.

For Group 3, results do not show significant differences. When using a PC, the online experience while browsing the brand website or the brand's Facebook page generates the same booking intentions. This can be understood from the fact that on a PC, a website almost looks the same as a Facebook social media page. They give almost the same type of interface in terms of density of information, navigation bar, search engine, image sizes and quality, and interactive tools. It is maybe a reason why booking intentions are equal in our results.

For Group 4, results show that the perceived utilitarian values and flow while browsing the brand website using a PC generate fewer booking intentions than while browsing the brand's Facebook page using a smartphone. The convenience of navigating Facebook by smartphone, which becomes part of some user's everyday life, can explain these results. Our vision and habits get used to Facebook with a smartphone. Therefore, the utilitarian value of the online experience and the experienced flow state on Facebook with smartphones lead to more booking intentions than browsing the brand website using a PC. This seems not valid for the perceived hedonic values. The perceived hedonic values while browsing the brand website using a PC generate more booking intentions than while browsing the brand's Facebook page using a smartphone.

As stated earlier, the superiority of the screen size of the PC and interactivity tools of websites might explain the differences. Also, the possibility to compare offerings and particular information thanks to multiple tabs opened at the same time in the browser, can play in favor of inducing more hedonic value and consequently more booking intention on a PC. However, this is not the case when using a smartphone: the tiny interface represents a break for that. In this configuration where users browse a website on a PC vs a Facebook page on a smartphone, satisfaction plays no significant difference and therefore does not affect the booking intentions. Perhaps, consumer satisfaction is related to the product, which is promoted, during a holiday period, rather than the browsing experience itself whatever the e-channel/digital platform is.

The mixed results do not favor the smartphone over the PC, or brand website over the Facebook page. Therefore, the main managerial implication obtained from this research is that brands need to focus on the two e-channels and the two digital platforms to generate the desired consumer behavior and create higher value.

All the vividness and interactive variables of interface design seem important to increase the perceived utilitarian and hedonic values and encourage flow. The use of Virtual Reality headsets by Club Med in 2017 has not

shown excellent results (Mundubeltz-Gendron 2017). Enabling customers to sit in an egg, with a VR video to decide of a destination doesn't seem sufficient to increase hedonic values or even generate higher value. Indeed, the sinews of war is the content, story-telling and the learning that can be done, because things are changing very quickly, and the promises the metaverses have made are potentially too futuristic in 2023-2024. This reinforces the co-creation that should be pushed by managers and practitioners, regarding the use of social media and laptops (Pelet et al. 2023). PCs with their large screens and the ubiquitous nature of mobile devices are complementary and so is the Facebook page with non-formal nature and the formal nature of websites.

With the widespread adoption of smartphones, extensive social media usage, and the pervasive establishment of high-speed mobile Internet infrastructures, marketers need to add smartphones and social media to the portfolio of their marketing mix-communication. Consumers might use a variety of e-channels and digital platforms to connect to the Internet, explore their desired products and services, and collect information. Potential customers looking for a service or product search the Internet via search engines to find the websites of e-tailers. Some consumers might also be already familiar with an e-tailer and directly refer to their relevant website to place an order. Other customers might be attracted to the social pages of a brand while engaging with content shared by users on social.

Hence, the content shared on each touchpoint including information and images as well as the specifications of the interface of each channel might impact consumer behavior differently. Additionally, each touchpoint provides a unique opportunity for the interaction of consumers with marketers, with other consumers, and with the online user interface representing the e-tailer. Thus, each touchpoint might provide consumers with different sets of values and facilitate unique user experiences. An omnichannel presence for communicating with consumers seems crucial, even if, as pointed out by Ferreira et al. (2019), it is hardly possible for a single actor to provide a complete solution that meets all their clients' expectations in the digital age. We argue that some part of the platform that is used might serve other parts of the whole digital ecosystem aiming at fulfilling all the necessary observed requirements. Indeed, the effects of hedonic and utilitarian values of one platform for a type of user can be used differently with other types of customers on other types of platforms.

The use of rewards as it exists during live shopping sessions to maximize users' concentration could play in favor of more intentions. As explained by Pelet and Taieb (2022), the contextual environment becomes extremely important when we focus on smartphone apps and websites. Elements such as coldness or humidity might affect the consumer experience in such a way that the interface could adapt according to the latter. Depending on the weather

(measured partly through the lens of the smartphone) and the IP (Internet Protocol) of the user, the apps or website could make suggestions of trips to the user. The geolocalization can indeed provide contextualized information through the use of the IP aiming at modifying instantly the interface of the apps or website, which is different with laptops as IPs do not change that often onto them. When the smartphone of a user shows a negative temperature and bad weather conditions, the platform might promote sunny and warm places to book.

## **7. Limitations and Future Research**

Our study has some limitations that provide opportunities for further research. This research focuses on comparing the effects of hedonic and utilitarian values, flow experience, and satisfaction on the booking intentions of a journey on a tourism e-tailer when consumers use different digital platforms and e-channels. The replication of this research in other contexts rather than holiday booking and the use of other scales to measure the variables might bring additional insights to this question. More limitations are related to the empirical design. We used only email and Facebook to solicit participants, but Instagram, Youtube, LinkedIn, or other platforms might provide different results. Future research might also study the effects of factors such as affect, emotions, hedonism, and eudaimonism, which remain very important dimensions in the hospitality field. This research only studied the online experience for travel e-tailer websites dedicated to holiday booking. Nevertheless, the results are generalizable to other retailers with an online presence to sell their products and services.

Ubiquity is one of the most important characteristics of mobile devices (Okazaki and Mendez 2013). This is an important field of future research. Studies on this topic could look to make smartphones more responsive to consumers' reactions to surrounding physical environments. For example, the smartphone camera could track the user's facial reactions to capture emotions felt by the user and adapt the interface accordingly. The same could be applied to the computer, to compare emotional reactions. If users are cold because the ambient temperature is uncomfortably low, their faces might impart cues that they are cold, and then the smartphone could modify the colors, layouts, and fonts of the interface to make them more soothing. Alternatively, the user's voice generally projects a sense of mood, which is another important feeling leading to behaviors. As explained by Canziani and MacSween (2021), advances in voice-activated technology have wide-ranging implications for brands, consumers, and academic research. Taking these facial and vocal cues into account during an experiment conducted in real conditions might benefit this stream of research on consumer interaction with mobile shopping interfaces and put the computer a little bit more aside in the digital competition.

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## Appendix 1. Measurement Scales

### *Flow (Bilgihan, et al. 2014)*

*Instructions: the word "flow" is used to describe a state of mind sometimes experienced by people who are involved in some activity. One example of flow is the case where a user is shopping online and achieves a state of mind where nothing else matters but the shopping: you engage in online shopping with total involvement, concentration, and enjoyment. You are completely and deeply immersed in it. Many people report this state of mind when web page browsing, online chatting, and word processing*

Flow1. I experienced flow while surfing on this site/Facebook page.

Flow3. Most of the time; I feel that I am in flow while surfing on this site/Facebook page.

Flow4. While surfing on this site/Facebook page, I was fully engaged.

### *Hedonic shopping value (Babin, Darden, Griffin, 1994)*

Hedonic shopping value1. Browsing this site/Facebook page was truly a joy.

Hedonic shopping value2. I continued to browse, not because I had to, but because I wanted to.

Hedonic shopping value3. This browsing truly felt like an escape.

Hedonic shopping value4. Compared to other things I could have done; the time spent browsing was truly enjoyable.

Hedonic shopping value5. I enjoyed being immersed in exciting new trips.

Hedonic shopping value6. I enjoyed this browsing for its own sake, not just for the trips I might purchase.

Hedonic shopping value7. I had a good time because I was able to act on the "spur-of-the-moment."

Hedonic shopping value8. During the browsing, I felt the excitement of the hunt.

Hedonic shopping value9. While browsing, I was able to forget my problems.

Hedonic shopping value10. While browsing, I felt a sense of adventure.

Hedonic shopping value11. This browsing trip was a very nice time out.

### *Utilitarian shopping value (Babin, Darden, Griffin, 1994)*

Utilitarian shopping value1. I accomplished just what wanted on this visit.

Utilitarian shopping value2. I saw only what I really needed.

Utilitarian shopping value3. While browsing, I found just the trip(s) I was looking for.

### *Satisfaction (Matilla, 2003)*

Satisfaction1. While browsing this site/ Facebook page, I was delighted.

Satisfaction2. While browsing this site/ Facebook page, happy.

Satisfaction3. I was satisfied with my experience at this site/ Facebook page.

### *Booking intention (Dodds, Monroe, and Grewal 1991)*

Booking intention1. The probability that I would consider buying a trip is high.

Booking intention2. If I were to buy a trip, I would consider buying it from this site/based on this Facebook page.

Booking intention3. The likelihood of my purchasing a trip from this site/based on this Facebook page is high.

Booking intention4. My willingness to buy a trip from this site/based on this Facebook page is high.

## Appendix 2. Sociodemographic characteristics of the four groups

	<i>Website on PC (N = 281)</i>	<i>Website on Smartphone (N = 160)</i>	<i>Facebook page on PC (N = 64)</i>	<i>Facebook page on Smartphone (N = 90)</i>	<i>Total sample (N = 595)</i>
<i>Gender</i>	$\chi^2=4.411$ ; $p>0.10$				
Female	159 (56.6%)	106 (66.3%)	40 (62.5%)	57 (63.3%)	362 (60.8%)
Male	122 (43.4%)	54 (33.8%)	24 (37.5%)	33 (36.7%)	233 (39.2%)
<i>Age</i>	$\chi^2=14.638$ ; $p>0.10$				
< 25 years old	124 (44.1%)	90 (56.3%)	26 (40.6%)	44 (48.9%)	284 (47.7%)
25 to 34 years old	90 (32.0%)	44 (27.5%)	16 (25.0%)	23 (25.6%)	173 (29.1%)
35 to 44 years old	32 (11.4%)	11 (6.9%)	10 (15.6%)	14 (15.6%)	67 (11.3%)
45 and more	35 (12.5%)	15 (9.4%)	12 (18.8%)	9 (10.0%)	71 (11.9%)
<i>Education</i>	$\chi^2=6.364$ ; $p>0.10$				
Bachelor	83 (29.5%)	55 (34.4%)	14 (21.9%)	31 (34.4%)	183 (30.8%)
Graduate degree	135 (48.0%)	71 (44.4%)	30 (46.9%)	43 (47.8%)	279 (46.9%)
High school or less	63 (22.4%)	34 (21.3%)	20 (31.3%)	16 (17.8%)	133 (22.4%)
<i>Income</i>	$\chi^2=32.170$ ; $p<0.01$				
Less than \$700	61 (21.7%)	31 (19.4%)	12 (18.8%)	15 (16.7%)	119 (20.0%)
\$700 to \$1,499	63 (22.4%)	33 (20.6%)	8 (12.5%)	24 (26.7%)	128 (21.5%)
\$1,500 to \$1,999	48 (17.1%)	36 (22.5%)	12 (18.8%)	21 (23.3%)	117 (19.7%)
\$2,000 to \$2,499	30 (10.7%)	29 (18.1%)	17 (26.6%)	13 (14.4%)	89 (15.0%)
\$2,500 to \$2,999	20 (7.1%)	13 (8.1%)	7 (10.9%)	11 (12.2%)	51 (8.6%)
\$3,000 or more	59 (21.0%)	18 (11.3%)	8 (12.5%)	6 (6.7%)	91 (15.3%)
<i>Occupation</i>	$\chi^2=17.694$ ; $p>0.10$				
Student	108 (38.4%)	59 (36.9%)	27 (42.2%)	37 (41.1%)	231 (38.8%)
Professional	51 (18.1%)	34 (21.3%)	11 (17.2%)	13 (14.4%)	109 (18.3%)
Managers	71 (25.3%)	49 (30.6%)	10 (15.6%)	24 (26.7%)	154 (25.9%)
Workers	30 (10.7%)	8 (5.0%)	13 (20.3%)	9 (10.0%)	60 (10.1%)
Other	21 (7.5%)	10 (6.3%)	3 (4.7%)	7 (7.8%)	41 (6.9%)

## Appendix 3. Summary of LSD test results

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error
Time Perception (minutes)	1	2	-3.98	2.09
	1	3	-3.65*	1.72
	1	4	0.62	1.46
	2	1	3.98	2.09
	2	3	0.33	2.34
	2	4	4.61*	2.15
	3	1	3.65*	1.72
	3	2	-0.33	2.34
	3	4	4.28*	1.79
	4	1	-0.62	1.46
	4	2	-4.61*	2.15
	4	3	-4.28*	1.79

\*: The mean difference is significant at the 0.05 level.

## Appendix 4. Summary of PLS-MGA Results

<i>Groups</i>	<i>Results</i>
Group 1. Website on PC vs Website on Smartphone (H1)	<ul style="list-style-type: none"> <li>▪ No significant differences: While browsing the brand website using a PC or a Smartphone, the online experience generates the same booking intentions.</li> </ul>
Group 2. Facebook page on PC vs Facebook page on Smartphone (H2)	<p>While browsing the brand’s Facebook page,</p> <ul style="list-style-type: none"> <li>▪ the perceived hedonic values generate more booking intentions on a PC than a Smartphone.</li> <li>▪ The flow state generates fewer booking intentions on a PC than on a Smartphone.</li> <li>▪ Utilitarian values and satisfaction have no significant differences.</li> </ul>
Group 3. Website on PC vs Facebook page on PC (H3)	<ul style="list-style-type: none"> <li>▪ No significant differences: When using a PC, the online experience while browsing the brand website or the brand’s Facebook page generates the same booking intentions.</li> </ul>
Group 4. Website on PC vs Facebook page on Smartphone (H4)	<ul style="list-style-type: none"> <li>▪ The perceived utilitarian values while browsing the brand website using a PC generate fewer booking intentions than while browsing the brand's Facebook page using a smartphone.</li> <li>▪ The perceived hedonic values while browsing the brand website using a PC generate more booking intentions than while browsing the brand's Facebook page using a smartphone.</li> <li>▪ The flow state while browsing the brand website using a PC generates fewer booking intentions than while browsing the brand's Facebook page using a smartphone.</li> <li>▪ The satisfaction has no significant differences.</li> </ul>