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The role of digital tools in holiday planning among Polish residents

Abstract. This study delves into the influence of digital platforms, including mobile applications and online services, on how Polish residents plan and organise their holidays. Specifically, the research identifies which applications are most favored and examines the reasons for their popularity. A comprehensive survey was used as the primary research tool, the design and implementation of which is detailed in the following sections of the paper. This analysis explores key concepts such as 'e-tourism' and offers visual representations of the findings, highlighting current preferences and trends in relation to digital tools in the tourism sector. Finally, the paper attempts to define and understand the importance of information technologies in the modern development of the e-tourism sector. By integrating the findings of the survey and previous studies, the work aims to present a holistic perspective on the factors influencing the contemporary tourism landscape in Poland.

Keywords: e-tourism, information system, applications, holidays

Introduction

Online portals have undeniably become pivotal mediators, bridging individuals looking for tailored relaxation experiences and providers offering region-specific tourism services. The relatively low cost of promoting operations through a tourist portal, in contrast to the expenses associated with maintaining a tourism business and customer acquisition through traditional channels, appears to be a significant competitive advantage for existing agencies operating in this industry. Along with incessant technological development and the expanding availability of modern tools, we observe an exponential expansion of the possibilities of their applications in the tourism sector, particularly in the e-tourism segment (Luc et al., 2016, p. 253). For both consumers and providers, merely having IT solutions isn't enough. It's imperative that these technologies are deliberately tailored to align with the specific nature and nuances of the business. If not appropriately adapted, they can prove to be not only ineffective but also disrupt the company's operability.

In the rapidly evolving digital landscape, the role of information technology (IT) in shaping the dynamics of the e-tourism sector has become crucial. Over the past two

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decades, there has been a significant shift in the tourism industry, with an increasing emphasis on leveraging IT solutions to enhance the customer experience and streamline operations. (Buhalis and O'Connor, 2005; Ramos and Rodrigues, 2013; Li et al., 2023). The advent of the internet and the proliferation of digital platforms have fundamentally altered the way tourism products are marketed and consumed, offering a plethora of opportunities for both service providers and consumers (Halkiopoulos et al., 2020; Kuzior et al., 2021).

The introduction of smart tourism organizations, which focus on providing e-services tailored to the needs of tourists, stands as a testament to the evolving landscape of the industry (Ghorbani et al., 2019). Moreover, the integration of virtual reality (VR) in tourism content has opened up new avenues for attracting tourists, offering them immersive experiences that were previously unimaginable (Buhalis and Deimezi, 2004; Lee, 2022).

For both service recipients and providers, the mere presence of IT solutions is not sufficient – they should be consciously and precisely adapted to the nature of the business, taking into account its individual specifications. The utilization of e-business strategies, characterized by interactions among tourism organizations, customers, and other stakeholders, has underscored the importance of adopting a holistic approach to e-business, taking into consideration various internal and external factors (Stiakakis and Georgiadis, 2011; El-Gohary, 2012).

The global digital divide persists, highlighting the necessity for a broad view of e-readiness that encompasses not just the ICT infrastructure but also human capital and logistics infrastructure (Di Gregorio et al., 2005; Matopoulos et al., 2009). Therefore, as the e-tourism sector continues to evolve, it is incumbent upon service providers to ensure the judicious implementation of IT solutions, fostering a symbiotic relationship between technology and tourism that is both sustainable and beneficial for all stakeholders involved (Peng et al., 2014; Jeng, 2019). The study aims to delineate the role of digital tools in holiday planning from the perspective of Polish residents. For the attainment of this objective, a diverse array of research methodologies and techniques are employed. Foremost among these is the utilization of survey-based research.

An exploration of information systems, e-tourism development and semantic network implementations

The terms “digital city” and “smart city” emerged in the 1990s, when the development of computer technologies in various areas of life led to an expansion of the terminology of information technology (van der Besselaar, Tanabe, and Ishida, 2002). It's important to clarify two often confused terms: the information system and the computer system. The “information system” is a multi-layered structure that facilitates the transformation of input information into output through specific procedures and models. Conversely, the “computer system” refers to the computerised component of the information system (Kisielnicki and Sroka, 2005). These systems designate an integral element of the tourism industry, supporting its daily functioning and facilitating dynamic development. The normative document defines tourism as

“a set of activities undertaken by visitors who travel to the main destination located outside their daily environment for a period not exceeding one year, with various motivations, including business, recreational, or other personal purposes, excluding work on behalf of a local economic entity at the destination” (article 2. f., Regulation (EU) No 692/2011). In the context of the issue under discussion, logistics in e-tourism plays a crucial role, assisting in the effective management of resources and processes taking place in the dynamically developing tourism industry (Regulation of the European Parliament and of the Council, 2011).

In the literary context, it has not been possible to establish a unified definition of the e-tourism phenomenon. According to analyses conducted by the Nottingham University Business School, e-tourism manifests as “... the digitization of all processes and value chains in the tourism, travel, and hospitality sectors, enabling companies to increase their efficiency and operational effectiveness” (Wang, 2001). In 2003, an attempt was made to systematize the concept of e-tourism, resulting in the formulation of a definition presenting it as “a reflection of the digitization process of all operations occurring in the tourism industry, including:

- a) tactical level – e-commerce sector, utilizing information and communication technologies, referred to as ICT, to maximize the efficiency of its organization (Toffler, 2006),
- b) strategic level – value chain and strategic contacts with all partners within the areas of e-tourism” (Buhalis, 2003).

“E-tourism, which largely relies on obtaining information from the internet, is an area particularly predisposed to the implementation of semantic network tools. Services offering tourist content function not only as a database for travelers but also as an area of activity for semantic search algorithms” (Gontar and Papińska-Kacperek, 2011).

E-tourism focuses on consumers and the technology that surrounds them, providing dynamic e-commerce communication (Halkiopoulos et al., 2020). E-tourism refers to the field of electronic tourism, including mobile technologies and approaches to intangible cultural heritage (Mitsche and Strielkowski, 2016). E-tourism is a perfect application area for semantic web technologies, since information dissemination and exchange are the key backbones of the travel industry (Ödemiş, 2022). E-tourism is characterised as the application of information and communication technologies (ICT) in the tourism sector. It includes the transactions of buying and selling tourism products and services through electronic channels such as the Internet, cable television and others (Kanellopoulos, 2010).

E-tourism, a contemporary facet of the tourism industry, has gained considerable attention in recent years. At its core, e-tourism involves the application of digital technologies, especially information and communication technologies, to facilitate and enhance the experience of both tourists and tourism service providers. One notable study introduced the concept of the “Smart Tourism Organisation” (STO), which emphasises the importance of e-services for tourists and suggests that these services play a central role in the development of the STO (Ghorbani et al., 2019). This perspective is based on a comprehensive review of existing literature and expert opinion, which highlights the

transformative potential of e-services in shaping the future of tourism management (Ghorbani et al., 2019).

Additionally, empirical data accentuates e-tourism's significance, positing it as a tool to underscore the importance of digital platforms in tourism. When adeptly developed and supported, these platforms can transform tourist interactions with service providers, streamlining and enhancing the process (Jeng, 2019).

A bibliometric review from 2004 to 2020 offers a comprehensive e-tourism research overview, spotlighting prevailing trends and pinpointing emerging research areas (Singh and Bashar, 2021).

Research methods

The main subject of the presented study is the analysis of the influence of platforms and digital applications on the vacation planning process. The research focuses on the following research issues: The impact of apps on holiday planning: do digital tools like applications genuinely facilitate the vacation planning process for users? This study aims to explore the influence of digital travel planning tools on how Polish residents plan and organize their holidays. Sources of travel information: where do respondents obtain the information necessary for planning their trip? This study turns to various information channels, including online platforms, social media, and traditional forms of media, to understand which sources are most reliable and popular among users.

App preferences: which applications are most frequently chosen by users for organizing vacations? This part of the study aims to identify the most popular apps and understand why they are preferred, analyzing their functionalities, usability, and other features that may influence users' choices.

To analyze the research problems and ensure the reliability of the collected data, a diagnostic survey method was employed, operationalized using a questionnaire technique. The study was conducted in August 2023. The survey tool was designed to allow respondents to intuitively and efficiently understand the questions posed, encouraging them to provide honest answers. The estimated time to complete the survey ranged from 5 to 10 minutes, aiming to minimize the burden on respondents and thus enhance the quality of the collected data. The primary instrument employed for data collection was an electronic questionnaire disseminated predominantly via social media platforms. It is imperative to underscore that, although this modality facilitated extensive accessibility, the sampling might not epitomize a strictly random selection. Consequently, potential biases associated with the demographic distribution and behavioral tendencies inherent to social media user populations should be taken into consideration. The survey consisted of 25 closed questions and 2 open questions, allowing the exploration of research issues in both quantitative and qualitative dimensions. A total of 170 individuals participated as respondents, with each participant completing the response process for all the questions. This engagement from the respondents ensures data completeness, which in turn provides a solid basis for analyzing results and responding to the research questions posed. A representative sample of respondents and prior pilot studies are essential to fully

understand the phenomenon. This approach allows the research tool to be refined and provides more reliable information on respondents' preferences and behaviour in the context of holiday planning using modern digital tools. The research carried out provides valuable insights and allows certain conclusions to be drawn about the phenomenon under study. However, it must be emphasised that these findings are not exhaustive and may require further, more detailed research in the future.

Research results

Analyzing the gender data, 62.4% of the respondents were women, making them the majority in the sample. Men represented 35.9%, and non-binary individuals accounted for 1.8% (3 individuals).

Regarding education, 71.8% of the respondents had higher education. Those with secondary education represented 21.8%, followed by individuals with vocational education at 3.5% (6 individuals). Only 2.9% had primary education.

In terms of age distribution, 55.9% of the respondents fell within the 25–40 years age bracket (95 individuals). The 41–55 years age group represented 28.8%. Respondents below 25 years made up 10%, while those above 55 years constituted 5.3%. After analyzing the demographic data, it was evident that the study involved a diverse group of respondents in terms of education and age, albeit with a dominance of individuals with higher education. In the gender context, a certain disproportion was also noticeable, with a higher number of women participating in the study.

It was demonstrated that the largest group was made up of individuals living in large cities with a population exceeding 500,000 inhabitants, comprising nearly 38% of all respondents. These individuals were the most represented in the sample. The second-largest group included residents of cities with up to 100,000 inhabitants, accounting for 29.41% of the sample. Next, there was the group of rural inhabitants, which constituted 17.65% of the sample, and the smallest group consisted of residents of medium-sized cities (from 101,000 to 500,000 inhabitants) with a 15.29% share in the sample.

The analysis of respondents' preferences in terms of vacation organization reveals distinct inclinations towards various available options. A significant proportion, 53.53%, indicated a preference for organizing their vacations independently. This doesn't necessarily mean they avoid online platforms; rather, they might be bypassing traditional travel agency packages in favor of creating their own experiences. Such individuals likely use online platforms like Booking.com or other applications to reserve accommodations, but they prefer to design their itinerary, suggesting a desire for a more personalized and flexible holiday experience. This can be seen as an expression of independence and a tailored approach to holiday planning, as opposed to relying solely on predefined packages.

The next significant group, constituting 31.76% of respondents, chose to organize vacations online through various applications. This form of vacation organization may suggest a preference for using modern technologies, which often offer a wide selection of options and tools facilitating planning. The ability to compare offers, read reviews

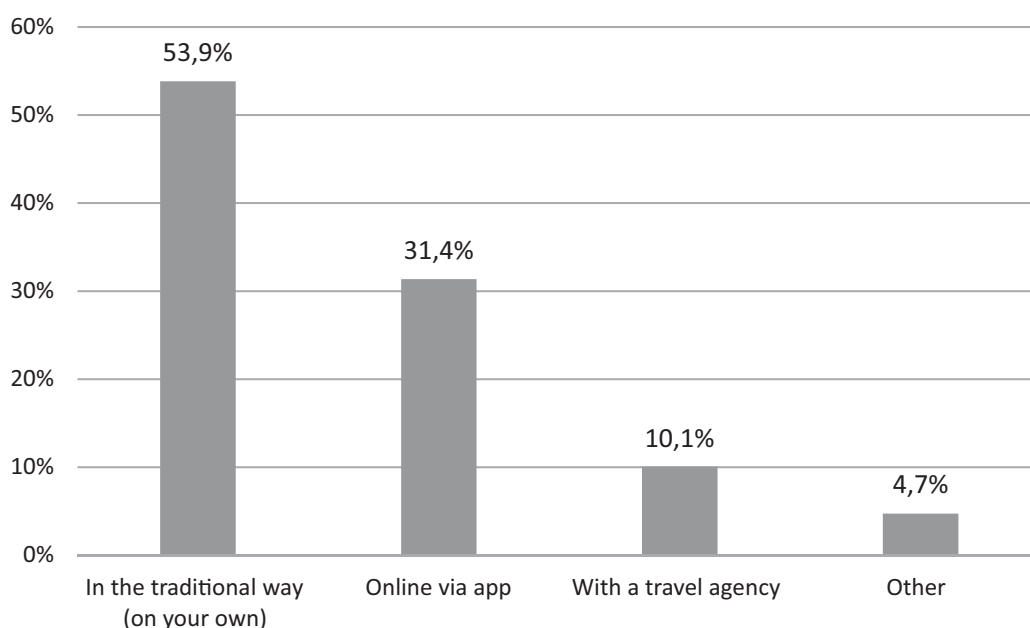


Figure 1. Forms of leisure organisation

Source: own research.

from other users, and take advantage of various promotions are just some of the benefits derived from this form of vacation organization (Fig. 1).

A decidedly smaller, yet still significant percentage of respondents, 10%, opted to use the services of travel agencies. This choice might be motivated by a desire to leverage the experience and knowledge of specialists who assist in vacation organization. By using the services of a travel agency, customers can expect support in case of potential problems and professional advice in choosing the best offer.

The “Other” category, which represents 4.71% of all respondents, may encompass various, unusual forms of vacation organization that were not included in the main survey categories. This can include, for instance, relying on recommendations from acquaintances or family or organizing vacations within informal groups or clubs. The ambiguity of this category suggests that these respondents might have unique or non-traditional methods of planning their vacations.

The analysis shows that most people preferred more autonomous forms of vacation organization. Nevertheless, the percentage values indicate that traditional forms of vacation organization, such as travel agencies, still find their supporters, suggesting that a variety of organizational options is vital for different social groups.

Which type of applications do respondents most frequently used in the context of organizing their vacation? It is noticeable that there is a clear primacy of the “Booking.com” application, which was used by nearly 75% of the respondents. The dominance of this platform may be due to its established position in the market, a wide range of offers, and functionalities that facilitate users in finding the appropriate offer.

An interesting phenomenon is the significant percentage of individuals (over 10%) who declared not using any applications while planning their vacation. This

might suggest a preference for more traditional methods of planning, such as direct contact with service providers or relying on recommendations from friends and family. Alternatively, it might indicate the use of web platforms accessible through browsers rather than mobile applications.

From the data, it appears that a considerable portion of respondents utilizes a combination of different applications, which might be a result of striving to find the most favorable offer and taking advantage of the diversity of offers available on different platforms.

The diversity of combinations of different applications chosen by respondents draws attention, suggesting a high degree of individualization in the vacation planning process. Some of these combinations are represented by a very small percentage of respondents, pointing to individual, specific preferences. In a study conducted on a sample of 170 respondents, preferences regarding the use of various booking platforms were examined. The survey was of a multiple-choice nature, allowing participants to indicate several platforms they use. From the analysis, it is evident that Booking.com commands the highest trust among the respondents, with 75% indicating their use of this platform. This suggests a dominant position of this platform in the market. Airbnb was indicated by 26% of respondents, indicating its significant popularity within the studied group. Wakacje.pl and Rainbow were used by 16% and 6% of the respondents, respectively, indicating their moderate popularity. Travelist and Kayak.pl had a similar number of proponents, at 6% and 5% respectively. Travelplanet and TUI, with 3% and 10% of users respectively, represent different market segments, but both platforms have their loyal user base. It is intriguing that as many as 25% of respondents indicated using other options than those listed, suggesting a diverse

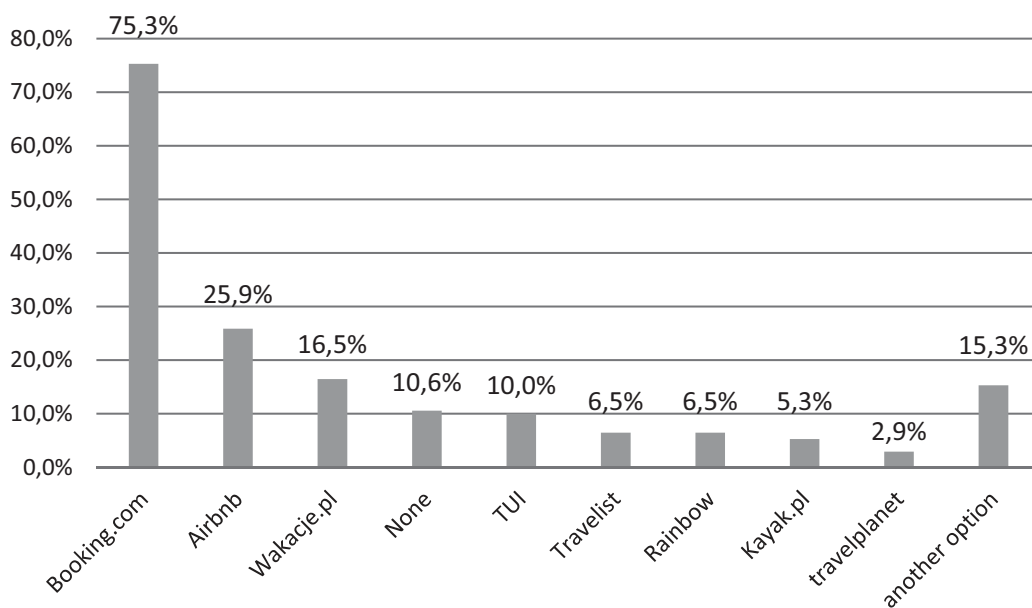


Figure 2. Applications used most frequently by respondents

Source: own research.

range of preferences and the potential presence of other, less traditional solutions in the market (Fig. 2).

In light of the presented data, it can be observed that the vacation planning process is complex and multidimensional, with various strategies being adopted by different users. The percentage values suggest that there is a significant degree of variation in the approach to selecting applications, which might be a result of individual differences, application availability, as well as differences in functionalities offered by various platforms.

At the same time, it cannot be overlooked that as many as 10.59% of respondents declared that they do not use applications in the vacation planning process. This observation suggests that traditional planning methods still have their place among user strategies and have not been completely replaced by digital counterparts.

In the recent part of the study, the focus was placed on analyzing the preferences of sources of information among respondents in the context of travel planning. The results suggest an evolution in the way consumers gather information and an adaptation to modern digital tools. Tourism websites, indicated by 37% of respondents, is undeniably the pivotal medium in today's information world (Fig. 3). Its dominance is understandable in the digital era, where the accessibility and speed of information are of paramount value. Google, as a specific digital tool, accounts for 21%, underscoring that search engines have become an indispensable element in the decision-making process concerning travel. The prominence of blogs (18%) points to the rising significance of micro-influencers and user-generated content in shaping consumer perceptions and decisions. Interestingly, despite the ubiquity of technology, recommendations from friends (13%) still play a crucial role. This highlights the enduring importance of the human element – trust and personal relationships - in the decision-making process.

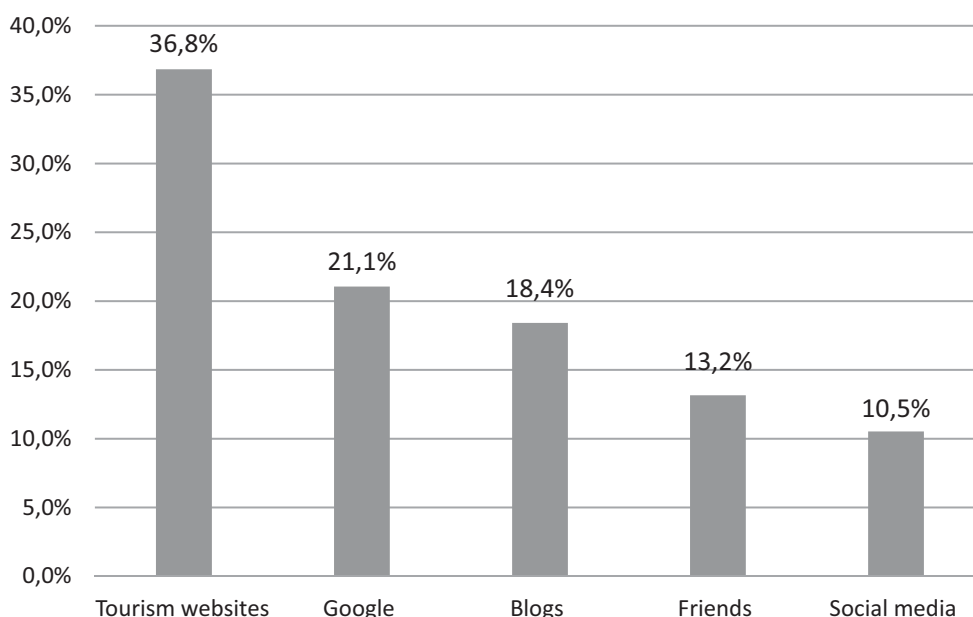


Figure 3. Main sources of travel information

Source: own research.

Social media (11%) emphasize the importance of social platforms as vital information channels, although their share is slightly lower than anticipated. The study confirms the growing role of digital technology in the process of information gathering. Tourism organizations should invest in optimizing their online presence, especially in search engines, to be more visible to potential customers. The increased importance of blogs and social media indicates the need to integrate user-generated content into marketing strategies. Despite digital transformation, the human element remains vital. This underscores the need to combine digital strategies with traditional methods of building relationships and trust. Although social media play a significant role, their share is lower than expected. This indicates an evolution of these platforms and the necessity for continuous monitoring of changing trends in their utilization.

Conclusions

Following the conducted scientific research, we were able to obtain answers to the posed research questions, which are presented in this article.

The survey data indicates that a significant majority of respondents actively seek information regarding their planned trips, allowing them to meticulously plan their travels. In the era of digitalization, characterized by ubiquitous access to devices such as smartphones, laptops, and tablets, there is a tendency for service providers to transition their operations online to promote their brand.

The data suggests that tourism websites are a pivotal tool in the process of gathering information necessary for trip planning, with 37% of respondents pointing to it as their primary source of information. Additionally, the "Google" search engine stands as a separate source, highlighted by 21% of the participants. The analysis also showcases a diversity of individual choices, with many respondents utilizing blogs.

Social media also play a significant role, with platforms such as Facebook and Instagram serving as essential information sources. Some respondents noted specific travel groups and Instagram profiles as places where they seek information.

This study allows for the formulation of several conclusions regarding the role of digital tools in vacation planning:

Dominance of mobile applications: mobile applications, particularly "Booking.com" and "Airbnb", are vital tools in the planning process, suggesting their foundational role in contemporary vacation planning strategies.

Complementarity of tools: a significant percentage of users utilize multiple tools simultaneously, indicating a desire to obtain a comprehensive view of available options and offers.

Diversified information sources: respondents employ various information sources, including search engines, social media, and traditional media, highlighting the multidimensional nature of the information gathering process.

Despite the ubiquitous dominance of digital tools in planning and organizing holidays, there is a noticeable continuation of traditional methods used by some users. This trend emphasizes the importance of further research into the reasons why conventional methods still play a significant role in vacation planning strategies.

Our data highlights the intricate nature of the holiday planning process and underscores the pivotal role of digital tools, especially mobile applications, in simplifying this process for many respondents.

The broad array of applications available on the market allows for individual tool customization according to user preferences, potentially greatly facilitating vacation planning by offering intuitive solutions and access to a wide spectrum of offers and reviews from other users. However, the presence of a group that does not use applications in this process points to a necessity for further research to understand the dynamics of choice between digital tools and traditional planning methods. Therefore, although digital tools undoubtedly ease the process, they have not entirely replaced traditional methods, suggesting a diverse landscape of preferences in vacation planning. The study illustrates a varied and multidimensional approach to the process of gathering necessary information for trip planning. A clear dominance of digital tools stands out, with the internet and Google search engine being the most popular tools. Nevertheless, the data also shows that this process is individualized, with many respondents utilizing a combination of various sources, both online and offline, suggesting that the diversity of available information sources allows for the customization of the planning process to individual preferences and styles. While there is a wide range of mobile applications used by respondents for vacation planning, some, such as “Booking.com,” appear to enjoy exceptional popularity.

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