

The role of Wi-Fi networks to understand tourist's behaviour

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Objectives | In recent years we have seen an increasing use of mobile devices as a means of accessing the Internet, allowing individuals access to tourist platforms. Currently, wireless connectivity is increasingly appreciated by tourists, being, according to Anuar & Yulia (2017) service quality of the Wi-Fi the strongest factor influencing tourist experience and satisfaction, and according to Reyes-Menendez et al. (2018) a mean to promote customer loyalty in the restaurant sector. Wi-Fi networks can be a differentiating element in the strategy of tourism organizations and destinations, and should therefore be considered a priority in the strategies and policies defined for the sector. The involvement of European and national organizations has been quite significant in recent years. The European Commission created the Wi-Fi4EU initiative with the aim of providing access to free, high-quality Wi-Fi in public spaces for residents of the European Union and local visitors to a municipality (European Commission, 2021), and, in Portugal, Tourism of Portugal approved, in 2016, the support line for investment in projects to provide high-quality Wi-Fi access in historic centers and public spaces with the highest influx of tourists.

In accordance with Normative Order No. 10/2016, the provision of Wi-Fi networks in the suggested locations will ensure that tourists, and also populations, have access to informative content in a faster and simpler way, and that they will be created the conditions for the emergence of new businesses based on digital and for the intelligent management of tourist destinations.

Furthermore, the data collected by organizations can be used to understand consumer behavior in tourism, assisting in decision-making and in the development of products and experiences tailored to the needs and profiles of visitors. About 90% of Portuguese municipalities, taking advantage of the community funds made available for this purpose, however, only 12 municipalities offer Wi-Fi4EU access (Parreira, 2020). Although the significance and benefits of Wi-Fi networks for both tourists and stakeholders are acknowledged, researchers and public organizations have largely overlooked the study of Wi-Fi network usage among the Portuguese population, particularly within the context of tourism. Additionally, there has been a lack of analysis regarding the usefulness of the data obtained for understanding consumer behavior and defining destination tourism strategies. As Rafailova & Hadzhikolev (2020) refer, one of the main conclusions of their study is that there is a

need to find if tourists get information in advance or upon arrival for available places with free Wi-Fi.

Methodology | In this study, we applied a mixed-methodology approach (quantitative and qualitative) with the aim of analyzing the use of free municipal Wi-Fi during tourist trips in the years 2020, 2021, and 2022. Three questionnaires were administered, one each year, which, although distinct, contained similar main and specific objectives. For data collection in each of the years, snowball sampling was used, which allowed us to obtain a greater number of responses from connections between respondents (Neuman, 2011). 89, 246, and 304 responses were obtained in 2020, 2021, and 2022, respectively. Each questionnaire was constructed on the Google Forms platform and distributed through social networks, namely Facebook and Instagram, with data collection taking place between the months of December and January of each of the three years. The data are analyzed using SPSS 27.0 software. As randomness of the sample relative to the population was not guaranteed, the results of each questionnaire underwent statistical treatment focused on univariate and bivariate analyses (contingency tables) of a descriptive nature. With the results, an analysis was carried out to understand and characterize the use of Wi-Fi networks in Portuguese tourist trips in 2020, 2021, and 2022. Additionally, we will conduct three semi-structured interviews with municipalities that have implemented Wi-Fi infrastructures in Portugal to understand their opinion and experience regarding the use and usefulness of free Wi-Fi in order to comprehend tourist consumer behavior.

Main Results and Contributions | With this study it is concluded that the Portuguese knows and considers the existence of Wi-Fi networks in municipalities to be important, even indicating that this should cover other less touristic areas. On tourist trips, respondents tend to use free Wi-Fi networks in their visits. To access the wi-fi system, most respondents use a Smartphone, just by the fact that it's more practical and most of the people have access to it. When asked about the place of access, most responded that they access in historic city centers. The use of these networks has increased in recent years, with unusual behavior in 2020, due to the effects of the COVID-19 pandemic. Most respondents use free Wi-Fi networks to browse social networks and consult tourist information. The realization of this study has practical implications for tourism organizations, allowing them to understand the user profile of the Wi-Fi network and its usefulness for the visitor in enjoying tourism at a given destination.

Limitations | This study has some limitations related to the fact that the sample is not representative and that the interviews were carried out only in some municipalities, in an exploratory manner. In future investigations, it is suggested to apply the questionnaire and conduct interviews

with tourists and local organizations, respectively, that have implemented Wi-Fi infrastructure in the main tourist attractions.

Conclusions | Wi-Fi networks are very important and necessary infrastructure for destinations to become smart destinations and to improve the tourist experience; as connectivity, speed and free internet access are increasingly valued aspects of tourism trips. In Portugal, municipal organizations are taking significant advantage of financial support and existing European and national initiatives for this purpose, which means that almost all municipalities will be covered with this infrastructure. With access points located in areas with the highest tourism affluence, tracking user data as well as their perception and use of the service, helped organizations to obtain insights into consumer behavior in tourism and become more competitive tourist destinations.

With this study, it was possible to verify that Portuguese's use Wi-Fi networks during their travels to search for tourist information and access social networks. Municipalities have been investing in the implementation of Wi-Fi networks and recognize their potential. However, they have still largely underutilized the data obtained through this technology to support decision-making and improve the tourist experience.

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