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## Adoption of Tourist Mobile Applications

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## Motivating Factors for their Use, an Exploratory Study in Spanish Millennials

### Abstract

The objective of this article is to examine factors that affect the attitude to and use of tourist mobile applications. In line with previous studies, an empirical model that integrates variables of a technological nature and others related to the design and architecture of tourist apps was proposed. An online survey of 156 millennials in Spain was carried out and the data were analysed using the partial least squares methodology. The results validated the hypotheses proposed in the model, achieving a high level of statistical prediction. The results supported that, when choosing a tourist mobile application, tourists take into consideration design

aspects, such as visual design and navigation design; personal aspects, such as perceived personal outcome expectations, perceived enjoyment and subjective norm; and operational aspects, such as effort expectations, performance expectations, and conversion rate.

## Introduction

The fourth industrial revolution, which revolves around the latest ICT information and communication technologies, has permeated all sectors; the disruptive innovations it has generated have transformed interaction and daily processes, especially in regards to the company-client relationship ([Kuazaqui, 2018 \[7\]](#)).

Technological developments have significantly changed the lives of people and companies, improving certain aspects of the market, including accessibility, competitiveness, information, and its impact on consumer decisions ([Wei et al., 2019 \[8\]](#); [Zwillenberg, Field & Dean, 2014 \[9\]](#)).

This is why customer relationships are largely supported through ICTs and the Internet, which are the most effective mechanisms for connection in a globalised world ([Day, 2011 \[10\]](#)). According to the digital density index, the use of ICTs will increase by 1.25 trillion euros of the GDP of the main economies of the world ([Fundación Orange, 2016 \[11\]](#)).

In the last decade, the massification of the smartphone has been exponential, generating an increase in, and development of, applications (APPs) that offer different services and utilities to users ([Frey, Xu & Ilic, 2017 \[12\]](#)). Comprising 90% of the total in regards to strategic importance, APP technology has been the greatest development towards company success ([Fundación Orange, 2016 \[11\]](#)).

An 'app' is defined here as a mobile application on a smartphone/tablet that is used for purchases or the completion of some transaction that may result in a purchase ([Newman, Wachter & White, 2018 \[13\]](#)). The development and consolidation of tourist APPs in recent years have become great tools for world tourism; different services and applications, such as information search, reservations, and purchase of tickets, among others, are of great help for the tourist.

The growth of tourist APPs is largely due to two essential aspects, according to Morosan & DeFranco ([2016 \[14\]](#)): (1) A tourist is in constant interaction with the (online-physical) ecosystem; and (2) APPs can offer more services and promotions through the Internet.

The tourism sector has transferred many processes that were previously achieved physically to a digital format. Today, more than 95% of travellers use digital resources during the course of their trips ([Fundación Orange, 2016 \[11\]](#)).

The usefulness of APPs in tourism is broad: they can be used as an intermediation mechanism, a mechanism for a direct relationship with the client (to contract or buy tourist services or products, for example), or as a means of attaining information and the comparison of information. Additionally, APPs also save time and money, and they increase convenience for tourists ([Xu, Huang & Li, 2019 \[15\]](#)).

Some studies have found that even the feelings generated by APPs are factors in an individual's decision to use such technology, in relation to the experience, identity, and social interactions that they allow ([Ding & Chai, 2015 \[16\]](#)). There are even applications that have become their own brand ([Chen, Lu & Gong, 2019 \[17\]](#)), such as the famous Trivago, Waze, and TripAdvisor.

This dynamic has generated an increase in tourist-related mobile applications for smartphones (APPs) worldwide ([Xu, Huang & Li, 2019 \[15\]](#)).

The tourism sector in Spain is first in Europe and second in the world in regards to financial profitability: its income of approximately 57,866 million euros represented 11.7% of the GDP in 2015 ([Fundación Orange, 2016 \[11\]](#)).

However, many facets of the tourism sector in Spain make it extremely difficult for these technologies to develop; it

is a very atomised and competitive sector that struggles with financing, has uncertainty about the digital sector, maintains ignorance of the benefits and advantages of digitisation, and has a deficient ICT infrastructure (Fundación Orange, 2016 [11]).

There are several studies that have focused on the reasons tourists use tourist APPs (Morosan & DeFranco, 2016 [14]); however, the use of these technological applications is still in the introduction and development phases (Leon, 2018 [18]) and tourist behaviour regarding the use of these APPs has not been analysed in depth. While some studies have found that APPs improve customer engagement (Marino & Lo Presti, 2019 [19]), most do not consider all the variables that could be generating the adoption of this technology. In regards to Spanish populations, the only study of relevance is that of Palau-Saumell *et al.* (2019 [20]), which considered the adoption of APPs in restaurants; however, the only variables that were analysed were those related to the UTAUT-2 theory.

Therefore, there is a need to go deeper into this line of research to more fully understand the reasons that persuade tourists to use a mobile application. The main objective of the present study is to analyse the adoption of tourist mobile applications among Spanish millennials. More specifically, this study aims to explore a causal-relational model that groups together most of the variables that have been generally validated in previous studies as a contributing factor to peoples' use of tourist-related APPs.

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