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CÉLIA M.Q. RAMOS, University of Algarve, Faro, Faro, Portugal

RASHED ASHQAR, University of Science and Technology, 6th October, Giza, Egypt

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Guest Intelligence Applications Acceptance Model: An approach with the UTAUT Model and PLS-SEM

Célia M.Q. Ramos
CinTurs and ESGHT, Universidade do Algarve
Portugal
cmramos@ualg.pt

Rashed Ashqar
AI Zaytona University of Science & Technology (ZUST)
Palestine
rashedashqarphd@gmail.com

Abstract

In a world where innovations are made daily, how people interact with and use technology is becoming increasingly important. It is relevant to investigate how new technologies are used and accepted in this environment. Acceptance assessment has been done in research on creating information systems, considering the UTAUT model and the data analysis technique PLS-SEM. Although this digital environment is pertinent to society in general, it is even more appropriate when interacting with tourists because it may give personalised goods and services. In order to assess acceptance in terms of guest insights proportioned by technologies to recommend personalised services and products by evaluating an application that recommends products and services personalised, considering guests' intelligence, this article analyses the use and acceptance of a technological application whose characteristics meet the aforementioned.

CCS Concepts

• **Human-centered computing**; • **Computer systems Organization**; • **Information systems**;

Keywords

Personalization, Tourism, Hospitality, Innovation, Information Technology, UTAUT Model, Structural Equation Modelling

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1 Introduction

In the digital medium, interactions between humans and machines have no reciprocation. The relations are (usually) impersonal, which does not help communication, so it is necessary to develop mechanisms that enhance cooperation between both and contribute to personalising services and products [1].

The interactions between humans and computers must be developed and analysed in a way that defines strategies to increase associations, connections, friendliness, and reciprocity between humans and machines in a way that contributes to improving the relationships with one another and according to the preferences of humans [2]

In this sense, the collaboration between them should be researched regarding the interfaces, devices, applications, etc., in which they are used to personalise according to the user's preferences and special needs and behaviours [3]. This digital environment is generally relevant in society, but it is even more appropriate in the interaction with tourists, as it is potentially provided by personalisation in offering products and services [4].

This article analyses the acceptance and use of a technological application whose characteristics meet the aforementioned, applied to a Guest Intelligence Hospitality Application to evaluate the acceptance in terms of the guest insights proportioned by technologies to recommend personalised services and products (GuesTIC App).

The paper is structured as follows: the present section makes an introduction, contextualisation, and state-of-the-art. Next, the conceptual model for the application is presented, followed by the methodology and results, and finally, conclusions are drawn.

2 Technology Acceptance Models in Tourism and Hospitality

Recently, with the increasing use of mobile devices, mobile commerce has offered clients the possibility to find and search for information about hotels and travel from any place in the world at any time. Also, the hospitality and tourism industries use mobile technology to improve brand awareness [5, 6], enrich the tourist experience and overall tourist satisfaction [7], and increase customer loyalty [8, 9]. Therefore, it was important for hospitality and tourism businesses to keep pace with technology and develop phone applications to provide marketing messages to customers that affect their purchasing and travel decisions [10]. It is necessary to investigate the influence of customers' experiences of mobile apps on behavioural intentions [11].

Various technology usage models have been used to investigate the factors that impact users' intentions to continue using technology. For example, the Technology Acceptance Model (TAM) [12] and the Extended Unified Theory of Acceptance and Use of Technology Model (UTAUT2) [13, 14]. "Technology acceptance" refers to the degree to which a person is willing to adopt a technology [15]. The TAM is a widely recognised model for analysing how people use technology [16], which is based on the Theory of Reasoned Action (TRA) [17]. TAM highlights the factors that precede technology acceptance through user behaviour [18]. Perceived ease of use and perceived usefulness, which describes how people use technology, are the two primary components of the TAM [19].

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While perceived usefulness refers to how much a person believes technology will improve their performance, perceived ease of use refers to the assumption that using the technology will need less effort.

Information technology academics have given the TAM framework a great deal of attention, and much research has been done to examine user acceptance for a range of technological applications. However, few empirical studies have examined consumer information technology usage in tourism and hospitality by integrating TAM and experience economy features [20].

The experience economy model is a useful framework for comprehending users' experiences in this setting, given the widespread acceptance of the extended TAM model in understanding user experience in human and technology interaction [21]. Therefore, Hospitality research benefits from developing a conceptual model to examine consumers' motivations to use hotel apps by gaining access to their experiences. In a recent study, Ozekici [22] conducted a systematic literature review for 145 quantitative papers on the Technology Acceptance Model in tourism and hospitality. He concluded that samples from Europe-origin and employees or employers from hospitality systems, destination management organisations, museums as industries, sharing economy, robotic technology, or smart technology as contexts were not sufficiently addressed. Hence, it is necessary to consider these elements in future research.

Some of the previous research examined personalised tourism recommendations, personalisation, and personalised services and users based on TAM in different settings. For example, Yang et al. [23] found some factors that stimulate consumers' perceptions of personalised tourism recommendations (PTR): perceived personalisation, visual appearance, and information quality. Also, they showed that consumers' reactions to PTR can be divided into an internal processing organism, which contains the perception of the technology as "technology trust" and the perception of the recommended content as "PTR attitude." Also, Lim and Zhang [24] examine the viability of the perceived contingency model and the integrative model of the TAM in predicting users' adoption of AI-driven personalisation in digital news platforms. They discovered that perceived contingency is a key factor in predicting users' adoption of AI-powered news platforms, with a significant direct and indirect effect mediated by improved user engagement and a positive attitude.

Moreover, Su et al. [25] inferred that TAM factors, mobile service quality factors, and personalisation were positively associated with customer trust in mobile food delivery apps, which was, in turn, positively related to customer loyalty towards mobile food delivery apps. In addition, Hsu and Kulviwat [26] observed customer satisfaction and delight derived from using personalised applications and services based on TAM in mobile commerce. They concluded that the number of generalised messages customers receive does not affect either customer satisfaction or delight. Also, the preference for multimedia messages and the perceived usefulness of personalised messages could increase customer satisfaction. Furthermore, Krishnaraju et al. [27] extended the 'Consumer Acceptance and Use of Information Technology' theory to include web personalisation as a moderator in an E-Government context. They showed that personalising the Web by self-reference and content relevance has an important moderator role in the relationship between determinants of intention to use and behavioural intention in certain cases.

On the other hand, some researchers established a theoretical framework that combines a privacy calculus model with a TAM and observed the role of personalised services and users' perceived information control in the mobile application context. For example, Liu et al. [28] concluded that perceived enjoyment had replaced perceived ease of use as a core predictor of perceived behavioural intentions in a mobile TAM. In addition, they showed that personalised services and users' perceived information control strongly influence both privacy calculus and mobile TAM.

Other studies focused on health and fitness mobile applications based on TAM. For example, Tao et al. [29] investigated the factors affecting consumers' acceptance and usage behaviours of mobile health, and they found that consumer usage behaviours of mobile health were influenced by factors such as self-motivation, technology perceptions, and task–technology fit. Besides, Cho et al. [30] examined health and fitness app users' decision-making process by integrating the TAM and the Investment Model. They inferred that Users' intention to keep using the applications is further influenced by their perception of the apps' utility, which is positively correlated with their perceived ease of use. Furthermore, users' satisfaction, the size of their investment, and the quality of their available alternatives are significantly impacted by their perceptions of the apps' usefulness and usability. These three constructs also impact users' relationship commitment to the apps, affecting their intention to continue using them.

Furthermore, Huang et al. [19] developed an integrative model that extends the TAM with the experience construct and examines the antecedents influencing hotel consumer behavioural intentions toward mobile app usage. They found that perceived ease of use and usefulness positively influence hotel consumers' experiences of mobile apps, and perceived usefulness and user experience affect hotel app acceptance by customers

3 Conceptual Acceptance and Use Model of a GuestIC Application

How users interact and use technology is increasingly relevant in a society where new developments emerge daily. In this context, it is pertinent to investigate the acceptance and use of new technologies. In research associated with the development of Information Systems, acceptance assessment has been carried out considering the TAM model (Technology Acceptance Model) proposed by Davis [16], which considers two factors associated with the model: perceived usefulness (PU) and perceived ease-of-use (PEOU). Perceived usefulness considers the degree to which a person believes the technology is advantageous, and perceived ease of use considers the degree of effort a user needs to use the technology [16, p. 320].

The TAM model aroused the interest of other researchers, who expanded and improved it to produce theories such as the Unified Theory of Acceptance and Use of Technology (or UTAUT, [13]), which can be applied to investigate the intentions and use of users in the face of new technologies. Considering the consumption environment, the UTAUT model was developed for UTAUT2 [31] to incorporate other factors such as performance expectation, effort expectation, social influence, conditions of use, attitude towards the

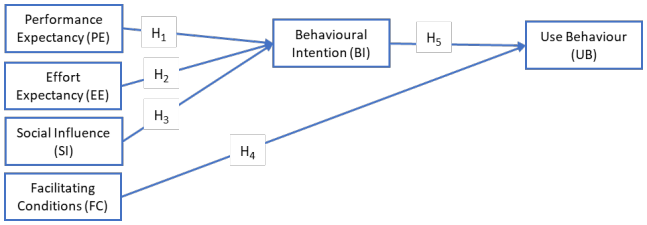

Figure 1: Conceptual Acceptance and Use Model of a GuestIC Application. Source: Adapted from Venkatesh et al. (2003).

use of technology, self-efficacy and intention to use new technology. Given the above, the UTAUT2 model was adapted to reflect the characteristics associated with the GuestIC project, which was considered to investigate and evaluate the acceptance and use of the GuestIC application.

The GuestIC application (GuestIC App) must be evaluated before being made available to the public. In the testing phase, including the constructs from UTAUT 2: Hedonic Motivation and Price Value does not make sense. When removing these constructs, the model to evaluate the acceptance and use of new technologies will be UTAUT [13], as shown in Figure 1.

Performance expectation or Performance Expectancy (PE) [13] is the degree to which a user believes that using the GuestIC App will benefit from using it. It aims to evaluate the perception of the hotel consumer and whether they have expectations of improving their performance when using the application. In this context, we present the following hypothesis:

H_1. The expectation associated with performance positively influences the intention to use or behavioural intention (BI) for the GuestIC application.

Effort Expectancy (EE) [13] is the degree of ease associated with using the GuestIC App application. Regardless of the hotel consumer's technological skills, this construct allows for assessing whether users expect to encounter difficulties in using the application, with the premise that if it is easy to use, it will enhance its use in the future. In this context, we present the following hypothesis:

H_2. Effort Expectancy (EE) positively influences the intention to use or Behavioural Intention (BI) of the GuestIC application.

Social influence (SI) [13] aims to measure the influence of family and friends on the user's use of the application; it aims to ascertain users' perception of whether family and friends believe that hotel consumers should use the GuestIC App. In this context, we present the following hypothesis:

H_3. Social influence (SI) positively influences the intention to use or Behavioural Intention (BI) of the GuestIC application.

The conditions that facilitate use or Facilitating Conditions (FC) [13] refer to how users believe that the application's technological infrastructure is developed to help them when using the GuestIC application whenever necessary. Using technology requires skills like connecting to the Internet and navigating its features. Users with access to an application characterised by conditions that facilitate its use will influence it. In this context, we present the following hypothesis:

H_4. The conditions that facilitate the use of the GuestIC App (SI) application positively influence the usage behaviour or Use Behaviour (UB) of that application.

Behavioural intention (BI) [13] is the concern that substantially influences technology use. In this context, we present the following hypothesis:

H_5. The behavioural intention of use (BI) positively influences the usage behaviour or Use Behaviour (UB) of the GuestIC application.

4 Methodology and Instrument

Following the literature review carried out and based on the UTAUT model by Venkatesh et al. [13], the GuestIC App UTAUT model was developed, presented in Figure 1, and a survey was prepared. In addition to questions that allowed the sample to be characterised, the survey presented a set of questions for each construct or latent variable, which were answered by users who belong to the testing team (June 2023).

The survey was divided into two parts: the first, consisting of the constructs of the GuestIC UTAUT model and the second, the questions that allow us to characterise the sample. Each construct could be answered on a Likert scale from 1 to 5, where "1" means "totally disagree" and "5" "totally agree".

The investigation was developed to evaluate the GuestIC App application, which offers personalised services and products. Tests were conducted to evaluate the prototype and survey and detect some situations that could be improved.

The data collection was carried out through the questionnaire, and the analysis of the results was divided into two parts: descriptive analysis and test of acceptance and use of the GuestIC App.

After data collection in June 2023, the responses were coded to enable data analysis through descriptive statistics methods, to characterise the sample, and the application of concepts associated with the structural equation model to evaluate the proposed research model by adapting the UTAUT model by Venkatesh et al. [13].

The PLS-SEM structural equation model (PLS-SEM – Structural Equation Model) in the present investigation due to its characteristics since it is the model indicated to overcome the need to measure multidimensional concepts that are not directly observable, also called constructs or latent variables [32–34]. There are two approaches to SEM: the one based on covariance CB and the one based on variance VB. In this work, the SEM-VB PLS-SEM was used.

5 Results – Descriptive Analysis

The descriptive analysis began by characterising the sample and considering each construct in the GuestIC App acceptance and use tests.

5.1 Sample characterisation

Regarding the characterisation of the sample, most respondents were male, 59.2%, with 42 responses, and the remainder were female, with 29 responses. About ages, 22 respondents were between 20 and 29 years old, 35 were between 30 and 39 years old, and the remaining 14 were between 40 and 55 years old.

Table 1: - Results on Motivation

	Using the APP is fun	Using the APP is enjoyable	Using the APP helps to entertain	Using the APP makes the experience more interesting
1	0.0%	9.9%	0.0%	0.0%
2	9.9%	0.0%	29.6%	9.9%
3	59.1%	19.7%	60.5%	29.6%
4	31.0%	49.3%	0.0%	19.7%
5	0.0%	21.1%	9.9%	40.8%

Source: Own elaboration.

Table 2: Usability Results

	The APP rarely fails or causes problems	The APP runs without errors	The APP is easy to use	It is easy to navigate within the APP
1	9.9%	9.9%	9.9%	9.9%
2	0.0%	0.0%	0.0%	0.0%
3	0.0%	0.0%	9.9%	9.9%
4	21.1%	29.5%	9.9%	19.7%
5	69.0%	60.6%	70.3%	60.5%

Source: Own elaboration.

In terms of educational level, 6 have a doctorate (8.5%), 7 have a master's degree (9.9%), 49 have a bachelor's degree (69.0%) and the remaining 9 (12. 7) % secondary education. In terms of occupation, 22 (30.1%) of respondents are "self-employed", 43 (60.5%) are "employed" and the remaining 6 (8.4%) responded "other".

To complement the characterisation of the sample, questions were created to understand the motivations that can enhance the use of the GuestIC App. Most respondents responded "indifferent" to whether they consider using the APP fun, with 59.1% of responses. Regarding the question "Do you consider it pleasant to use an APP?" most respondents responded that they "agree", with 49.3% of the answers. Regarding the question "whether the APP helps to entertain", most respondents responded that it is "indifferent" with 60.5% of responses. Finally, on the question "Using the APP makes the experience more interesting," they responded, "completely agree", with 40.8% of responses.

The results on the motivations for using the GuestIC APP can be seen in Table 1, which were answered according to a Lickert scale from 1 to 5, where 5 means "totally disagree" and 5 "totally agree".

Regarding usability, most respondents responded that they "completely agree" with the question "the APP rarely fails", with 69.0% of responses. Regarding the question "the APP works without errors", the majority answered, "I completely agree", with 60.6% of the answers. About the question "Is the APP easy to use?", most respondents answered "completely agree" with 70.3% of responses. Finally, most respondents responded" completely agree" about whether the APP is easy to navigate within the APP", with 60.5% "completely agree" responses.

Regarding usability, most respondents responded that they "completely agree" with the question "the APP rarely fails", with 69.0% of responses. Regarding the question "the APP works without errors", the majority answered, "I completely agree", with 60.6% of the answers. About the question "Is the APP easy to use?", most respondents answered "completely agree" with 70.3% of responses. Finally, most respondents responded" completely agree" about whether the APP is easy to navigate within the APP", with 60.5% "completely agree" responses.The results on the usability of the GuestIC APP can be seen in Table 2, which were answered according to a Lickert scale from 1 to 5, where 5 means "totally disagree" and 5 "totally agree".

In terms of the probability of respondents recommending GuestIC APP to a friend or colleague, most respondents responded "90%" with a total of 60.5% of respondents, followed by "100%" with 30.0 % of responses, and the remainder responded below 90% (9.9%). The probability of recommending the GuestIC application reached a maximum of 100.0% and a minimum of 80.0%, with an average of 91.6% and a standard deviation of 0.6 p.p. (percentage points). What can be concluded is that the percentage of recommendations could be high.

5.1.1 Expectations about APP performance. Concerning Performance Expectancy (PE), most respondents considered the APP useful; 40.8% responded "completely agree" and 49.3% "agree". About having faster access to information, most respondents answered "I agree" with 39.4% of responses. Regarding the APP allowing personal data protection, the majority responded "completely agree" with 50.7%. Finally, regarding the APP allowing you to increase the chances of acquiring knowledge about the hotel's offers, the majority answered, "I agree", 49.2% of responses. The results on user expectations regarding the performance of the GuestIC application can be seen in Table 3, which were answered according to a Lickert scale from 1 to 5, with one meaning "totally disagree" and 5 "totally agree".

Table 3: Results of APP Performance Expectations

	I find the APP useful	Using the APP allows me to access information faster	Using the APP allows me to protect my data	Using the APP increases my chances of acquiring knowledge about the hotel' offer
1	0.0%	0.0%	0.0%	9.9%
2	9.9%	0.0%	0.0%	0.0%
3	0.0%	29.6%	19.7%	9.9%
4	49.3%	39.4%	29.6%	49.2%
5	40.8%	31.0%	50.7%	31.0%

Source: Own elaboration.

Table 4: Results on Effort Expectation

	The interaction with the APP is clear and understandable	I find the APP easy to use	Learning to use the APP is easy for me	It is easy for me to become an expert in using the APP
1	9.9%	9.9%	0.0%	9.9%
2	0.0%	0.0%	9.9%	0.0%
3	0.0%	9.9%	19.7%	9.9%
4	49.3%	39.4%	1.4%	19.7%
5	40.8%	40.8%	69.0%	60.5%

Source: Own elaboration.

Table 5: – Results on Social Influence

	People who are important to me think I should use the APP (friends. family)	People who influence my behaviour think that I should use the APP	People whose opinions I value say I should use the APP	Hotels encourage the use of the APP
1	0.0%	9.9%	9.9%	9.9%
2	0.0%	0.0%	9.9%	0.0%
3	39.4%	49.3%	29.5%	39.4%
4	50.7%	21.1%	40.8%	40.8%
5	9.9%	19.7%	9.9%	9.9%

Source: Own elaboration.

5.1.2 Expectation about effort. About Effort Expectancy (EE) when using the APP, most respondents "agree" that their interaction with the APP is clear and understandable, with 49.3% of responses and 40.8% "totally agree". Regarding whether they found the APP easy to use, most respondents answered "completely agree" with 40.8% of responses. Regarding the question "whether it was easy to learn how to use the APP," most respondents answered, "I completely agree", with 69.0% of responses. Finally, on the question, "Is it easy for me to become an expert in using the APP, most respondents responded, "I completely agree", 60.5% of the responses.

The results on the expectations of the effort required to use the GuestIC application can be seen in Table 4, which were answered according to a Lickert scale from 1 to 5, where 0 means "completely disagree" and 5 means "completely agree".

5.1.3 Social influence. Concerning social influence or Social Influence (SI), the majority of respondents "agree" with the question, "People who are important to me think I should use the APP (friends, family) with 50.7% answers. Regarding the question "People who influence my behaviour think I should use the APP", most respondents answered "indifferent" with 49.3% of responses. The question "People whose opinions I value say I should use the APP" responded, "I agree with 40.8% of the answers. Finally, on the question "Do hotels encourage the use of the APP?" 40.8% of responses were "agree".

The results on social influence for using the GuestIC application can be seen in Table 5, answered according to a Lickert scale from 1 to 5, where 5 means "totally disagree" and 5 means "totally agree".

5.1.4 Conditions of use. Regarding the conditions of use or Facilitating Conditions (FC), most respondents answered "completely agree" to whether they have the necessary resources to use the APP, with 59.1% of responses. Regarding the question "Do I have the necessary knowledge to use the APP?" most respondents answered "completely agree" with 70.3% of the responses. Finally, when asked whether the APP is compatible with other technologies, most respondents responded, "completely agree", with 70.3% of responses.

Table 6: Results on Conditions of Use

	I have the necessary resources to use the APP	I have the necessary knowledge to use the APP	The APP is compatible with other technologies I use
1	0.0%	0.0%	9.9%
2	9.9%	9.9%	0.0%
3	9.9%	9.9%	9.9%
4	21.1%	9.9%	9.9%
5	59.1%	70.3%	70.3%

Source: Own elaboration.

Table 7: Results on Usage Intentions

	I intend to continue using the APP in the future	I intend to continue using the App where possible	I intend to use the APP because it is a good idea	I want to use the APP because it makes the experience more interesting
1	9.9%	9.9%	9.9%	9.9%
2	0.0%	0.0%	0.0%	0.0%
3	9.9%	0.0%	0.0%	9.9%
4	49.2%	59.1%	49.3%	29.5%
5	31.0%	31.0%	40.8%	50.7%

Source: Own elaboration.

The results on the conditions of use of the GuestIC APP can be seen in Table 6, which were answered according to a Lickert scale from 1 to 5, where 5 means "totally disagree" and 5 "totally agree".

5.1.5 Intention of use. Regarding Intention to Use or Behavioural Intention (BI), most respondents "agree" to use the APP in the future, with 49.2% of responses. Regarding the question "I intend to use the APP whenever possible", most respondents answered "I agree" with 59.1% of the answers. About the question "I intend to use the APP because it is a good idea", most respondents answered "I agree" with 49.3% of responses. Finally, to the question, "I want to use the APP because it makes the experience more interesting", the majority answered, "I completely agree", 50.7% of the answers.

The results on intentions to use the GuestIC APP can be seen in Table 7, answered according to a Lickert scale from 1 to 5, where 5 means "totally disagree" and 5 "totally agree".

5.1.6 Using the APP and its features. About the User's behaviour when using the APP or Use Behaviour (UB), it includes the following functionalities: (i) creating an account in the application that allows you to segment personalised offers and transact data securely; (ii) improving the experience in terms of accessing recommendations; (iii) access to personalised service offers according to the user's health characteristics and preferences; and (iv) allows you to safely carry out transactions, which include health and financial data.

Regarding the possibility of creating an account in the application that allows you to segment personalised offers and transact data securely, most respondents responded, "completely agree" (40.8%), followed by "indifferent" with 39.4% of responses.

Regarding the possibility of improving the experience in terms of access to recommendations, most respondents responded, "completely agree" (39.4%), followed by "indifferent" with 31.0% of responses.

Regarding the possibility of accessing personalised service offers according to the user's health characteristics and preferences, the majority of respondents responded "completely agree" (39.4%) and "indifferent" (39.4%), with the same number of responses.

Regarding the possibility of allowing transactions to be carried out safely, which include health and financial data, most respondents responded, "completely agree" (40.8%), followed by "indifferent" with 29.6% of respondents. answers.

The results on the use of the App and its functionalities can be seen in Table 8, which were answered according to a Lickert scale from 1 to 5, where 5 means "totally disagree" and 5 means "totally agree".

After the descriptive analysis to characterise the sample, other analyses were also carried out to describe the constructs that will be used in the research model, which will be considered in the following point about the Technology Testing and Acceptance model called GuestIC App, following the adaptation made to the UTAUT Model [13].

5.2 Results – Technology Acceptance Model –GuestIC App

Structurally, equation models were considered using the SmartPLS software to estimate the research model presented in Figure 1.

According to Pinto [34, p. 19], in a SEM model, "the relationships that are established between the latent variables and the respective indicators represent the so-called measurement model", which "seeks to test a theory that establishes relationships between the latent variables" that constitute the structural model.

Estimating the model through the concepts inherent to structural equation models involves dividing the results into two stages: (i) assessment of the model's goodness of fit and (ii) assessment of the structural model [35].

Table 8: Results on the use and features of the GuestIC App

	Create an account with an application that allows you to target personalised offers and securely transact data	Improve the experience in terms of having access to recommendations	Access to personalised service offerings according to my health characteristics and preference	Allows secure transactions of health and private data
1	0.0%	9.9%	9.9%	9.9%
2	9.9%	0.0%	0.0%	0.0%
3	39.4%	31.0%	39.4%	29.6%
4	9.9%	19.7%	11.3%	19.7%
5	40.8%	39.4%	39.4%	40.8%

Source: Own elaboration.

Table 9: Results of adjustment measures carried out to the GuestIC App UTAUT model

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Behavioural Intention (BI)	0.984	0.985	0.988	0.955
Facilitating Conditions (FC)	0.921	0.922	0.962	0.927
Performance Expectancy (PE)	0.788	0.910	0.900	0.818
Social Influence (SI)	0.941	0.975	0.957	0.848
Use Behaviour (UB)	0.984	0.987	0.989	0.968

Source: Own elaboration.

In the first stage, when studying the measurement model, a factor analysis of the indicators is carried out to understand the relationships between them and the latent variables or constructs. In the second stage, the structural model is estimated through regression observation, where the existing links between the constructs are estimated.

5.2.1 Assessment of model adjustment measures. In evaluating the model adjustment measures, tests must be carried out for convergent validity, internal consistency, and discriminant validity. Each test consists of measurement criteria and suitability according to the literature [35–37].

a) Convergent Validity. According to Henseler et al. [37], the test carried out on Convergent Validity implies that the AVE values (average variance extracted) are greater than 0.5. Using the SmartPLS software, the results of the PLS algorithm were obtained, which can be consulted in Table 9, where it can be verified that all latent variables considered in the model are adequate since the AVE values are greater than 0.5.

b)Internal Consistency. According to Hair et al. [35], two tests are carried out for Internal Consistency through the analysis of results according to the measurement criteria: Alpha Cronbach's, which is acceptable when greater than 0.6, and Rho A, which is acceptable when greater than 0.7. Using the SmartPLS software, the results of the PLS algorithm were obtained, which can be consulted in Table 9, where it can be seen that all latent variables considered in the model present values in the Cronbach's alpha measurement criterion greater than 0.6, as well as in the measurement criterion Composite reliability (rho_a) all variables present values greater than 0.7, therefore it can be considered that there is internal consistency in the investigation model.

Table 10: Fornell-Larcker criterion applied to the GuestIC App UTAUT model

	BI	EE	FC	PE	SI	UB
BI	0.977					
EE	0.798	1.000				
FC	0.792	0.867	0.963			
PE	0.813	0.754	0.618	0.904		
SI	0.807	0.508	0.577	0.579	0.921	
UB	0.820	0.664	0.843	0.591	0.603	0.984

Source: Own elaboration.

Table 11: Heterotrait-Monotrait Ratio applied to the GuestIC App UTAUT model

	BI	EE	FC	PE	SI	UB
BI						
EE						
FC	0.802					
PE	0.831	0.900				
SI	0.880	0.821	0.688			
UB	0.804	0.482	0.572	0.594		

Source: Own elaboration.

c)Discriminant Validity. To assess Discriminant Validity, three different measurement criteria must be applied: 1) Cross Loadings [37], where each indicator must have the highest correlation

Table 12: Goodness of fit of the GuestIC App UTAUT model

	R-square	R-square adjusted
Use Behaviour (UB)	0.773	0.767
Behavioural Intention (BI)	0.882	0.877

Source: Own elaboration.

Table 13: - Significance of correlations and regressions of the GuestIC App UTAUT model

		Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
H1	PE→BI	0.277	0.281	0.063	4.416	0.000	Supported (H0 Rejected)
H2	EE→BI	0.351	0.345	0.065	5.426	0.000	Supported (H0 Rejected)
H3	SI→BI	0.468	0.471	0.046	10.204	0.000	Supported (H0 Rejected)
H4	FC→UB	0.520	0.517	0.103	5.063	0.000	Supported (H0 Rejected)
H5	BI→UB	0.408	0.413	0.092	4.419	0.000	Supported (H0 Rejected)

Source: Own elaboration.

Table 14: - Quality of a construct for model adjustment of the GuestIC App UTAUT model

	f-square
Behavioural Intention (BI) → Use Behaviour (UB)	0.274
Effort Expectancy (EE) → Behavioural Intention (BI)	0.445
Facilitating Conditions (FC) → Use Behaviour (UB)	0.445
Performance Expectancy (PE) → Behavioural Intention (BI)	0.248
Social Influence (SI) → Behavioural Intention (BI)	1.215

Source: Own elaboration.

with its respective latent variable; 2) Fornell-Larcker criterion [36], where the square root of the AVE of each construct must be greater than the correlation with another construct; and 3) Heterotrait-Monotrait Ratio [35], whose values must be less than one and are considered acceptable if they are less than 0.9.

Using the SmartPLS software, the results of the PLS algorithm were obtained, where it can be seen that all indicators have the highest correlation (formatted in bold) with their respective latent variable in Table 10, which presents the results according to the Fornell-Larcker Criterion, where it can be seen that the square root of the AVE (formatted in bold) of each construct is greater than the correlation with another construct; and in Table 11, which presents the Heterotrait-Monotrait Ratios.

The test values presented above present satisfactory values, which means that it is possible to proceed to evaluate the structural model, where we can test the hypotheses considered in the present investigation.

5.2.2 Assessment of the structural model. In the second stage, to evaluate the structural model, it is necessary to carry out tests on the general adjustment of the model, the significance of correlations and regressions, the quality of a construct for the adjustment of the model (Cohen's Indicator), following the work of Hair et al. [35].

a) Quality of fit of the model. According to Hair et al. [35], the test carried out on the goodness of fit of the model is through Pearson's coefficient of determination (R^2), which represents the proportion of the variance of the dependent variable that is explained through the independent variables. Table 12 presents the quality of the GuestIC App model, where R^2 = 77.3%, which is considered a high value in the consumer behaviour area according to the investigation by Hair et al. [35].

b)Significance of correlations and regressions. In the individual analysis of each construct considered in the model, the t-test was considered, which must be greater than or equal to 1.96 to reject the Null Hypothesis. The results of the T-Test can be analysed in Table 13, where all hypotheses are supported, and the null hypothesis is rejected in all.

c)Quality of a construct for model adjustment (Cohen Indicator). When analysing the quality of each construct to adjust the model, the Cohen Indicator was considered, which can be referred to as the effect that one construct has on the other. Values of 0.02, 0.15 and 0.35 are considered small, medium and large, respectively [35]. The results can be analysed in Table 14.

According to the results presented in Table 14, Social Influence greatly affects the intention to use the GuestIC App and the expectations associated with the effort. Regarding the acceptance of the GuestIC App, the conditions of use have a large effect, followed by the intention to use, which has a medium effect. The expectation associated with performance is the one that has an average effect on the intention to use, that is, the one that has an effect that has the most negligible impact.

6 Conclusions

According to the results obtained in the model analysis, adapted from UTAUT [13], the GuestIC App application presents an acceptance and use of 77.3% according to the variables considered in the model. All latent variables are considered significant. Therefore the null hypothesis is rejected for all hypotheses considered in the model under investigation regarding the use and acceptance of the GuestIC App, which means that the expectation associated with user performance (PE) positively influences the intention to use (BI), the expectation related to the effort (EE) required to use the App positively influences the intention to use (BI), social influence (SI) positively influences the intention to use (BI), the conditions that facilitate the use of the application (FC) positively influences the use of the GuestIC App (UB) and the intention to use also positively influences its use (UB).

Although all latent variables are considered significant, some have a greater effect on others, such as social influence (from family, friends and hotel influence), which has the greatest effect on the intention to use, followed by the expectation associated with effort, where ease of use is what has a large effect on the intention to use.

Regarding the use of the application and its functionalities, the conditions that facilitate use are the latent variables that have a greater effect on hotel consumer behaviour in terms of use, mainly concerning having the necessary resources and knowledge for your use.

In terms of final reflection, considering the results, to enhance the use of the application, strategies must be defined to publicise the application among hoteliers on social media platforms to encourage and promote its acquisition.

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