African Journal of Hospitality, Tourism and Leisure **2025, Vol. 14 No. 2 pp. 395-404**
ISSN: 2223-814X

Mobile e-Booking Apps: e-Trust, Cybercrime, and e-Satisfaction towards TAM Components Linkage to Behavioral Intention

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Abstract

This study aims to investigate the impact of TAM components (perceived ease of use and usefulness) on perceived e-satisfaction and behavioral intention, considering perceived cybercrime risk and perceived e-trust when using mobile e-booking apps in Egyptian hotels. It examined the perceived e-satisfaction mediation in the relationship between both perceived ease of use and usefulness (each one separately) and behavioral intention. It scrutinized the mediation of perceived cybercrime risk in perceived e-satisfaction linkage to behavioral intention. Moreover, it investigated the moderation role of e-trust in the relationship between perceived e-satisfaction and behavioral intention. The study used a quantitative method and designed a questionnaire targeting 204 hotel clients in Egypt. The results obtained from SEM analyses confirmed all posited hypotheses except the influence of perceived cybercrime risk on behavioral intention and the mediation of perceived e-satisfaction in the relationship between perceived cybercrime risk and behavioral intention. The results support the TAM component's influences and may be eye-catching to review related constructs studied in the investigation. Besides, the hotel managers can benefit from the offered recommendations.

Keywords: e-booking mobile apps, perceived usefulness, perceived ease of use, perceived cybercrime risk, perceived e-trust, perceived e-satisfaction, behavioral intention

How to cite this article: Bindawas, A.M., Abdelkhair, F.Y.F., Attico, Y.T.A., Alshaebi, M.A.Q., Khairalseed, M.A. & Mohammad, R.A. (2025). Mobile e-Booking Apps: e-Trust, Cybercrime, and e-Satisfaction towards TAM Components Linkage to Behavioral Intention. African Journal of Hospitality, Tourism and Leisure, 14(2):395-404. DOI: https://doi.org/10.46222/ajhtl.19770720.620

Introduction

The present time has witnessed a significant and rapid progression in information and communication technology, stressing the paramount role of information technology as a valuable asset for every organisation, like hotels. In the tourism and hospitality industry, the digital emergence has compelled substantial change and transformations in the business world, pervading electronic platforms across the industry, altering competition and consumer behaviors, and forcing organisations to adapt to digital transformation (Hussein et al., 2024). Thus, smartly digital technologies are crucial strategic assets that provide a competitive advantage in the hospitality and tourist industries. Although the mobile, cloud, and social media technological revolution has forced prompt shifts in influencing human lives and business dealings over recent years (Parasuraman & Colby, 2015), technological innovation may not be beneficial unless customers perceive it as an improvement in service rather than just a novelty. In connection, mobile technologies enable users to access information and apps that provide flexible communication, affiliation, cooperation, and knowledge sharing. The strategic essence of mobile technology undervaluation is not accepted, as the prompt swiftness at which mobile technologies have been adopted and enhanced creates opportunities for untried creative services that mobile devices offer (Car & Stıfanıch, 2020). Mobile devices and mobile applications enable dynamic exchanges and instant gratification so that customers are no longer consuming the service but are increasingly engaging in the experience-building process (Buhalis & Sinarta, 2019). Hence, mobile applications in hospitality provide flexible product collections, furnish dynamic and alluring content, facilitate real-time updates, and often contain automated translation instruments offering good service to diverse customer wills. Most presumably, mobile hotel apps have significantly reduced the probability of human errors in relaying bookings throughout the communication chain from the client to the employees. In relation, contemporary electronic technology is vital for the tourism and hospitality industries, which include organisations' sensitive service providers. Electronic booking implies creating a scruple for a service using the Internet platforms (Bhatiasevi & Yoopetch, 2015). The adoption and use of booking technology may provide immediate and long-term

advantages for customers and organisations, which coincides with the rise in technological device usage. However, few investigations have presented the hotel customers' intention for e-booking based on Internet usage attributes, especially website interactivity (Abdullah et al., 2016). Therefore, there is a need for research to employ diverse methods and variables to analyze the effectiveness of mobile applications in hotel services, including ease of use, usefulness, functionality, and customer interaction attributes.

According to the technology acceptance model (TAM), people develop their intentions and attitudes toward technology by considering the beliefs of perceived ease of use (PEOU), which denotes the deck of simplicity with which consumers may use the technology, and perceived usefulness (PU), which pertains to the capacity to which users derive advantages in accomplishing their objectives (Davis, 1989). Literature indicates that PU and PEOU are key factors influencing users' behavioral intentions (BI) in the context of online hotel booking. Also, Sahli (2015) ensured that the cognitive components of PU and PEOU concerning tourism websites impact consumer attitudes towards e-bookings. Also, Abdullah et al. (2016) confirmed that PEOU and PU influence e-booking intentions on hotel websites, increasing the likelihood of using these services. PEOU and PU manners in electronic usage reveal a correlation with satisfaction. For instance, in HRM processes, Rawashdeh et al. (2021) confirmed that both PEOU and PU impact users' satisfaction. However, satisfaction impacts users' intent to resume using electronic apps (Choi et al., 2023). According to Abd Ghani et al. (2017), customer satisfaction mediates the relationship between PEOU, PU, and BI for online usage. Hotel websites praise leading managers who evaluate customers' e-booking intentions by investigating the correlations between PEU, PU, perceived risk, interactivity, value and trust as the pillars of hotel e-booking websites (Ayoub & Briez, 2020). Thus, dealing with online applications for hotel reservations and other services poses significant security risks resulting from hackers, criminals, and fraudsters, who create what are known as cybercrime risks. By default, perceived cybercrime risk (PCR) may represent a potential barrier to the use of these applications, as it negatively impacts customer intentions, trust, and ultimate satisfaction. In principle, Mahadin et al. (2020) verified that security and privacy have cheerful consequences on e-satisfaction and users' intent to continue utilising the apps (Choi et al., 2023). However, perceived risks negatively impact users' booking intention in the context of tourism (Ayoub & Briez, 2020; Sahli, 2015) and e-satisfaction (Oktariani et al., 2022). Ali et al. (2016) affirmed that unfavorably perceived cybercrimes impact satisfaction and intention (Apau & Koranteng, 2019; Chao, 2019), whereas e-trust impacts e-satisfaction (Oktariani et al., 2022). Despite the perceived risks of cybercrime, e-trust can mitigate the harmful impacts of cybercrime if it succeeds in increasing trust in digital systems and devices, thereby enhancing customer satisfaction and boosting the intention to use online booking services in hotels. Hence, Choi et al. (2023) affirmed that trust determines the user's intent to resume utilising the apps. Alnaim et al. (2022) ascertained that e-trust is a key determinant of e-satisfaction. In turn, perceived e-trust (PET) may interactively moderate to strengthen the relationship between PES and BI. Therefore, the study's objective is to examine the state of customers' usage of e-booking apps in the hotel sector, where an investigation attempts to cover the impact of PU and PEOU on PES and BI, respectively, as BI mediates the relationship between PU, PEOU, and ES. Additionally, the study probes the mediating impact of PES on the PCR links to BI. Besides, it scrutinises the moderation of PET on the relationship between PES and BI.

Literature review

The hospitality industry has widely recognised the TAM components as a valuable and applicable approach for predicting intention to accept and use advanced smart technology (Bano & Siddiqui, 2024). The two TAM essential components are PEOU and PU. Davis (1989) stated that PU is the capacity of a user to judge specific technological devices to use that enrich the ability to work or perform a task. He also refers to PEOU as the breadth to which a person thinks employing a particular system will be effortless. However, PU is the value that a user perceives when utilizing the system to improve productivity, efficiency, or convenience. Behavioral intention represents a person's impressionistic likelihood of following to act determined behaviors and is a pivotal predictor of actual behavior use (Yi et al., 2006). It is a predictor of actual behavior, particularly in technology adoption studies and cognitive, attitudinal, and behavioral research, like perceived usefulness, ease of use, trust, and perceived risk. Therefore, BI reflects the user's desire or predicted decision to use a particular technology for online booking. Cybercrime refers to the act of facilitating or committing crimes utilising a computer, digital device, network, hardware, or software programs (Gordon & Ford, 2006). Thomas & Loader (2000) previously described cybercrime as illegal activities or illicit by third parties in computers through global electronic networks. Consequently, perceived cybercrime risk refers to an individual's assessment of the likelihood of falling victim to cybercrimes such as fraud, identity theft, or cyberattacks. This perception is influenced by their awareness, past experiences, and the information available to them. Trust is the willingness and readiness to depend on an interaction with a person who has the confidence to get mutual benefits (Aryee et al., 2002). E-trust is key to customer confidence, and consequently, customers utilise various transactions, devices, computer-based systems, and the Internet to deal with online risk and security (Yusuf et al., 2022). Thus, perceived e-trust reflects one's willingness and readiness to accept susceptibility in a digital environment based on favorable expectations about other parties' online behavioral intentions despite the perceived risk. Satisfaction is the process of an affective form resulting from a transactional affection and mental evaluation process (Jameel et al., 2021). Satisfaction arises from a process of interior assessment when an individual's expectation is met or surpassed (Sarhan et al., 2025). In e-environment, Anderson & Srinivasan (2003) noted that satisfaction is a customer's contentment regarding their previous buying experience with a provided electronic commerce business. Satisfaction in hospitality and tourism spaces indicates the joy or happiness experienced by guests when a hotel's product quality meets customers' needs and expectations (Assaker et al., 2020). Accordingly, Hassan et al. (2024) noted that e-customer satisfaction occurs when online goods and services surpass customers' expectations. Therefore, perceived e-satisfaction is the

thorough evaluation a user forms after interacting with an electronic system or service where performance matches expectations. It is also considered a pivotal mediating element in research models.

Hypothesis development

TAM key components, perceived e-satisfaction, behavioral intention

Brandon-Jones & Kauppi (2018) indicated that TAM has two cognitive attributes (PEIU and PU) connected to human technology adoption. Previously, Davis (1989) revealed the importance of these elements in shaping users' acceptance of technology and behavioral intentions to use new technology systems. Thus, there is a need for customers to acknowledge the numerous benefits of technological apps, enabling them to participate in communities using modern technologies. Calinao & Gamoso (2024) ascertained the essence of immersive and elevated quality virtual reality content in improving guest or visitor experiences and affecting their forthcoming behaviors, such as revisiting or recommending the hotels. Accordingly, Bae et al. (2020) stated that PU, credibility, equipment risk, and change risk impacted customers' intent to book a room in a hotel via hotel smartphone applications. Hence, the technology usage and benefits determine the BI to acquire real advantages that yield attitudinal and behavioral outcomes. Additionally, Kim et al. (2010) analysed the mobile payment behavior adoption services and realised a favorable prediction of services' of PEOU and PU on the use of them intentionally. PEOU and PU directly affect users' intention to adopt mobiles, as they symbolize the need for customers to utilize the devices and their apps in booking (Luarn & Lin, 2005). Amoako-Gyampah (2007) affirmed that PU and PEU impact the intention to use modern technology. PU influences the intent to use electronic services (Tsai et al., 2014) and to use mobile (Nikou, 2017; Vărzaru et al., 2021). The literature pool indicates that PEOU is an influential factor in users' BI, as the more leisurely a system is to use, the more likely individuals will embrace it. PEOU determines the intention to use electronic services (Henseler et al., 2009) and to use mobile (Nikou, 2017; Vărzaru et al., 2021). Examinations in the tourism and hospitality sector have shown that consumers' perception of technology benefits directly influences their intent to behave (Tavitiyaman et al., 2022; Verma et al., 2018). Similarly, Alfadda & Mahdi (2021) affirmed that the PEOU correlates with BI under favourable attitudes toward technology. Yoon (2009) also confirmed that the PEOU has an association with BI, especially in e-commerce environments. As such, users perceive the PEOU and PU of a system or application in attaining pursuits as an incentive to use it. Furthermore, PU is a prominent determinant of ES, as users assume that apps or systems that help them effectively achieve their goals improve their satisfaction with the digital experience. Most likely, technical applications significantly influence consumers' satisfaction when they experience their ease and usefulness. Hence, PEU and PU impacted hotel guest satisfaction significantly (Dianawati et al., 2024). Additionally, Dewi et al. (2020) confirmed that PUOE and PU predict customer satisfaction. Vărzaru et al. (2021) affirmed that PEOU and PU positively influence customers' satisfaction when they use mobile technology. Likewise, Abd Ghani et al. (2017) confirmed that PEOU and PU affect customers' satisfaction. Hence, the study developed the following hypotheses:

H1: Perceived ease of use impact behavioral intention.
H2: Perceived ease of use impact perceived e-satisfaction.
H3: Perceived usefulness impact behavioral intention.
H4: Perceived usefulness impact on perceived e-satisfaction.

Perceived e-satisfaction and behavioral intention

Customers generally recognise smartphone applications for providing crucial factual and experiential information about hotels' products and services offered online on the Internet and feel satisfied with hotel smartphone applications since they provide a range of experiences. The hospitality industry (including lodging, food services, travel, and tourism) should know, understand, and predict consumer behavior to enrich customer satisfaction. A fundamental trend is the increasing use of mobile technology for booking and managing travel experiences, with mobile apps revolutionising consumer interactions and improving convenience and personalisation (Nyagaka, 2024). Consequently, hospitality managers must prioritise and ensure that online booking apps provide an enjoyable and exceptional experience that allows guests to use apps easily, get the benefit of apps, access information, and order or receive services that meet the unique distinct preferences of various customer segments who would be satisfied by e-services preluding the inspiration of customer behavioral intention to repeat the experience in e-booking or other delivered services preluding the inspiration of customer behavioral intention to repeat the experience in e-booking or other offered services. Accordingly, Ahmad & Sharma (2023) found that information satisfaction and service satisfaction impact online booking intents. Nevertheless, BI is a crucial indicator of users' expectations, willingness, and readiness to resume using online applications and influences their satisfaction favorably. In accordance, application users with positive intentions toward using digital services will exhibit higher levels of online satisfaction. Much previous literature indicates a fundamental relationship between online satisfaction and BI (Gounaris et al., 2010). Also, the satisfaction level determines the intention to use electronic services (Tsai et al., 2014). In addition, Abd Ghani et al. (2017) affirmed that customer satisfaction influences behavioral intention to adopt online dealings. Vărzaru et al. (2021) concluded that customer satisfaction influences BI to use mobile technology. Recently, Nguyen (2022) confirmed that PES significantly affects the intent to use mobile tourism apps for electronic booking. In light of the debate, the study developed the following hypothesis:

H5: Perceived e-satisfaction impact behavioral intention

The perceived e-satisfaction mediation

Favorable attitudes toward technology attributes impact behavioral intentions and drive more desire to use technology positively. In contrast, if a person has a negative attitude toward technology, he is less likely to use it. Several studies analysed in the context of utilising modern technology direct relationships between technological attributes, for instance, PEOU and PU (Amoako-Gyampah, 2007; Luarn & Lin, 2005; Kim et al., 2010). However, this direct relationship between hotel e-booking necessarily should be under continuous investigation as long as many factors that can be influenced by technology attributes like e-satisfaction (Dianawati et al., 2024; Dewi et al., 2020; Vărzaru et al., 2021) and at the same time satisfaction stand as determinant factors to BI such satisfaction (Abd Ghani et al., 2017; Gounaris et al., 2010; Nguyen, 2022; Tsai et al., 2014).
People utilize technology because it helps them execute their work activities more effectively (Davis, 1989), and is advantageous if it is simple to use and beneficial. Therefore, customers who enjoy their interactions with hotel booking apps are more likely to have positive feelings, which inspire them to repeat these enjoyable experiences. Of course, a satisfied client will rebook from the same hotel whenever possible, continue to promote it, and exhibit positive behavioral intentions towards the regular hotel. Thus, customers' favorable attitudes toward technology attributes (ease use and usefulness) will influence their e-satisfaction, which inspires their BI to use technological innovations in hotels, such as online booking applications. Therefore, it is reasonable to accept that ES mediates the association of both PEOU and PU to BI. In light of the debate, the study developed the following hypotheses:

H6a: Perceived e-satisfaction mediates the relationship between perceived ease of use and behavioral intention.
H6b: Perceived e-satisfaction mediates the relationship between perceived usefulness and behavioral intention.

Perceived cybercrime risk, e-satisfaction, and behavioral intention

In the e-booking of hotels, security issues are a critical agenda in technology systems or device utilization online regardless of the ease of use and usefulness advantages users access, as cyber incidents and events are the highest risks. Notable, cybersecurity issues in the hospitality industry highlight cyber risks and susceptibility problems (Chen & Fiscus, 2018). Additionally, cybercrime refers to illegal internet-mediated activities and practices that are often spread in global electronic networks and are perpetrated by criminals at individual or group levels with a criminal motive to willfully damage their reputation or generate physical or mental using modern telecommunication networks (Nayak, 2016). Thus, the perceived cybercrime risk represents dangers and obstacles to electronic services as a detrimental effect on booking hotel apps. Hotels are seductive targets for cybercriminals who hack and attack system programs or apps searching for wealthy people with sensitive personal, financial, or travel itinerary information (Pipyros & Liasidou, 2025). Thus, cyberattacks reflect critical issues in the hospitality industry, which has attributes of a sensitive business environment where hotel consumers use online booking systems via an expanded variety of website services, pay bills electronically, connect their mobile to the hotel network and free Wi-Fi (Chen et al., 2018). Pizam et al. (2024) confirmed that perceived risk impacts customers' intention to use technology services negatively in the hotel industry. Conversely, cyber security affects customer satisfaction (Hasan et al., 2025). Consequently, cybercrime perceptions form negative predictors of online users' intentions (Apau & Koranteng, 2019). Chao (2019) perceived risk negatively impacts mobile usage behavioral intention. However, cybercrime risk negatively impacts customer satisfaction (Ali et al., 2016). Therefore, researchers may need to investigate whether perceived cybercrime directly influences users' intention to engage with online services. In turn, perceived online satisfaction may mediate such an influence. When users perceive a high risk of cybercrime, their satisfaction with the digital experience may decline, which in turn guides to a decline in their intent to use services in the future. Therefore, perceived online satisfaction can be considered a mediating variable that explains how cybersecurity concerns influence behavioral intentions. Based on the presented debate, the study develops the following hypotheses:

H7: Perceived cybercrime risk impacts perceived e-satisfaction.
H8: Perceived cybercrime risk impacts behavioral intention.
H9: Perceived e-satisfaction mediates the relationship between perceived cybercrime risk and behavioral intention.

The moderation of e-trust

The development of booking mobile apps exhibits that trust is more important than ever, and hotels that increase clients' confidence in using their electronic services will succeed in the fierce competition (Wang & Emurian, 2024). A shortage of trust is one of the sharpest barriers to using online purchases (Lien et al., 2015) when considering e-booking services. However, consumers may have confidence in mobile banking and find it beneficial, secure, and smallish risky. Hence, they believe that there is no necessity to test it out (Al-Jabri & Sohail, 2012). Trust is a critical yet intangible asset for building long-range affinities between companies and consumers, especially in the often uncertain and insecure environments of mobile and online booking channels. E-trust plays a substantial role in facilitating intricacies and uncertainties in exchanges and transactions in online markets. Consumers who have a higher level of confidence in websites are more likely to visit those sites and complete purchases (Baki, 2020). Therefore, trust in mobile booking is a vital factor that influences consumers' perceptions and their willingness to use mobile technology. Trust is a significant determinant predictor of online users' intentions (Apau & Koranteng, 2019). Koufaris & Hampton-Sosa (2004) declared that trust in technology plays a critical role in affecting the behavioral intention to adopt information technology. Likewise, Shukla & Rodrigues (2022) announced that e-trust is a key factor in online behavioral intention. Additionally, several studies have confirmed that e-trust is a paramount determinant of e-satisfaction (Kundu & Datta, 2015). Notably, Luarn & Lin (2005) verified that PEOU and PU may not fully predict BI in the context of

mobile use. These findings highlight the need to explore additional factors that can better predict acceptance of mobile technology, such as trust within the Technology Acceptance Model (TAM) in the context of online shopping (Gefen et al., 2003). In light of this discussion, this study proposes to view e-trust as a moderating factor that strengthens the relationship between perceived e-satisfaction and behavioral intention by reducing psychological barriers and enhancing the overall user experience. Based on these insights, the study proposes the following hypothesis:

H10: Perceived e-trust moderates the relationship between perceived e-satisfaction and behavioral intention

Methodology

This study presents a framework that integrates the TAM aspects, cybercrime risk, e-trust, e-satisfaction, and behavioral intention within a theoretical model based on the accessed literature. The concerned model suggests varied influences and correlations between different variables with mediation and moderation roles drawn in Figure 1. Based on a quantitative method, the study examines the relationship between variables. The study adapted questionnaire items from Cheng (2011) for measuring perceived usefulness and ease of use, from Sharma et al. (2020) for behavioral intention of using Internet reservation services, (Abdelkhair, 2023) for perceived risk of cybercrime, (Doney & Cannon, 1997) for perceived e-trust, and (Vasic et al., 2019) for perceived e-satisfaction. The measures ensure the instrument's validity and comparability. A five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used to assess each attribute. The data was collected directly from hotel clients in Egypt via a self-administered online questionnaire sent randomly to a sample of clients who had a hotel reservation and used the mobile booking apps. Finally, a total of 204 random sample hotel clients completed and submitted the questionnaire.

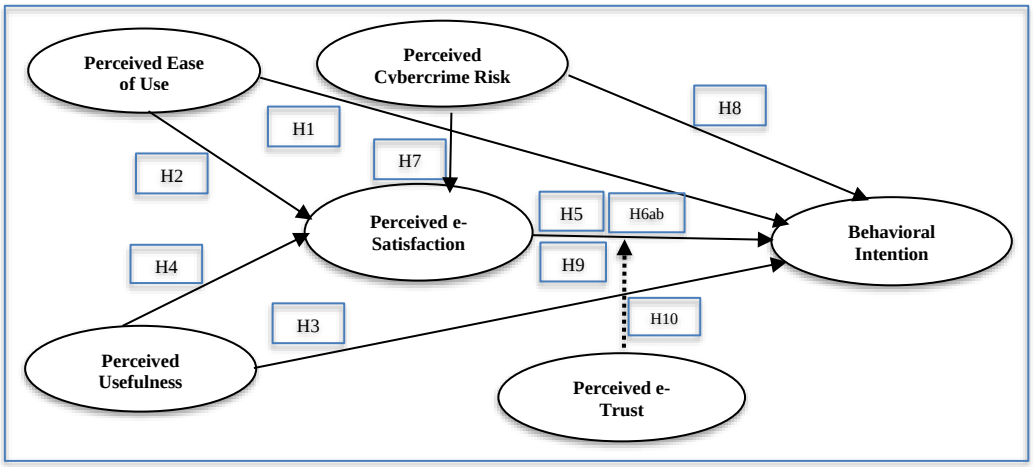

Figure 1: Study's model

SEM with maximum likelihood estimate was performed and evaluated to investigate the hypothesised direct and indirect relationship between the constructs and the proposed model. The analysis procedure followed steps in the measurement and structural models based on suggestions made by Hair et al. (2010). Firstly, the analysis identified the essential initial constructs using exploratory factor analysis (EFA) and employed confirmatory factor analysis (CFA) to specify factor loadings and determine how accurately specific questionnaire questions reflected their associated underlying components. Secondly, it determined the causal relationships between these constructs through path analysis (Leong et al., 2015). The study evaluated internal consistency using alpha and composite reliability. Measures not conceptually significantly related to one another were tested for actual lack of relationship using construct validity (Hubley, 2014). The study specifically used average variance extracted (AVE) to assess the validity of convergent constructs. It used the Fornell & Larcker (1981) approach to evaluate the discriminant construct validities. The structural model evaluation came after the measurement model assessment. The analytical process tested the hypotheses of the collected data and analysed significant relationships using bootstrapping.

Results

Sample profile

The experimental results show a variance in the characteristics of the respondents, as shown in Table 1.

Table 1: Distribution of gender, age, job level and years of experience

Indictor	Category	Percentages
Gender:		
Male	107	52.5
Female	97	47.5
Total	204	100%
Age:		
Under 25	9	4.4
From 25 to less than 35	78	38.2
From 36 to less than 45	76	37.3
Over 46 years old	41	20.1
Total	204	100%
Education level:		

Bachelor's degree	68	33.3
Postgraduate and professional degree	78	37.7
High Diploma	59	28.9
Total	204	100%

Table 1 shows that males accounted for the highest of 52.5%. Regarding age, the highest was 38.2% for those aged 25-35, while the lowest was for under 20, at approximately 9.9%. Regarding academic degrees, 37.7% of the respondents had postgraduate degrees, while the lowest percentage was for those with a diploma, at 28.9%.

Model assessment

When performing the confirmatory factor analysis recommended by Hair et al. (2010), it is essential to consider reliability, convergent, and discriminant validity. The study constructed and validated the study's model of all variable configurations to examine the interactions among variables. In Table 2, CFA demonstrated the measurement model construct validity, which showed a satisfactory acceptance of the analyzed data. The chi-square statistics were significant since the ratio of the chi-square value to the degree of freedom was less than 3 (2.72 = 495.82, df = 182). Additionally, the different statistical predictors showed acceptance level (the GFI value was 902, the NFI value was 916, the TLI value was 934, the CFI value was 946, and the RMSEA value was 0.059). The three primary indicators of convergent validity (CV) are composite reliability (CR), factor loadings (standardized estimates), and average variance extracted (AVE) that an appropriate recommendation for the construct should have loading estimates of 0.5 or higher and an average variance extracted (AVE) of 0.5 or higher to get proper convergence and reliability estimates (Hair et al., 2010). The present investigations reveal that the AVE ranges from 0.55 to 0.74 over the threshold. Table 2 shows the composite reliabilities (CR), which varied from 0.83.5 to 0.92.1 (Brunner & Süß, 2005). Finally, the results indicate that the measurement model has a high level of conformity with the data.

Table 2: Validity and reliability of measurement model

Constructs	Standardized Loadings	CR	AVE
Perceived usefulness (PU)		0.835	0.557
1) Mobile E-booking application prevents waiting in lengthy queues for booking.	0.647		
2) Minimizes errors caused by humans.	0.740		
3) Enhances customer engagement.	0.878		
4) Data is secure as these bookings use modern technology to ensure safe registration.	0.793		
Perceived ease of use (PEU)		0.882	0.656
1) I find my connection with mobile E-booking application is understandable.	0.621		
2) I find it easy to use the mobile E-booking application to fulfill what I want.	0.812		
3) The mobile E-booking application is enjoyable and accessible.	0.810		
4) I use the mobile E-booking application to acquire a satisfactory adaptable level of interpersonal engagement.	0.958		
Perceived e-trust (PET)		0.865	0.684
1) As a customer, I have confidence in the hotel's online mobile E-booking platform.	0.766		
2) I trust that my hotel ensures the security of online purchases.	0.715		
3) My data is confidentiality guaranteed when I use the mobile E-booking application.	0.685		
Behavioral intention (BI)		0.921	0.742
1) As long as the mobile E-booking application offers a wide range of electronic services, I am ready to use it.	0.885		
2) I desire to use a mobile E-booking application instead of relying on traditional booking services in the future.	0.947		
3) The mobile E-booking application's wide services enhance my interaction with online booking.	0.792		
4) The mobile E-booking application offers an active electronic communication platform for hotel services that drives me to repeat online bookings.	0.811		
Perceived cybercrime risk (PCR)		0.894	0.680
1) I feel worried about the potential misappropriation of my data in online booking.	0.813		
2) I feel worried about the potential disclosure of my password in electronic booking.	0.896		
3) I doubt the ability to ensure the safe protection of my account during online booking.	0.805		
4) I still believe that using online booking has the potential for incomplete transactions..	0.777		
Perceived e-satisfaction (ES)		0.837	0.636
1) I'm happy to use mobile E-booking apps because they enhance the quality of hotel service experiences.	0.735		
2) Using a mobile booking app enhances meaningful interactions, which makes me feel satisfied.	0.883		
3) The mobile booking app meets my expectations and makes me comfortable with the offered service.	0.765		

The Fornell & Larcker (1981) criterion also require comparing the square root of the average variance extracted (AVE) for each construct to the correlations between that construct and other constructs. In Table 3, a construct square root of the AVE should be higher up than the correlations between the construct and other constructs in the model. This result indicates that the constructs have discriminant validity. After establishing a satisfactory measurement model, the investigation evaluates the structural model. The analysis uses six GIF metrics in line with the measuring approaches to evaluate the adequacy of the structural model. The results shown indicate that all the metrics ($\chi 2/df=2.9$, p=0.00; GFI=0.937; GFI=0.90; CFI=0.937; TLI=0.926; RMSEA=0.061) surpassed the suggested levels. Hence, the structural model achieves a high consistency in the analysed data.

Table3: Discriminant validity

Variables	AVE	PET	BI	PCR	PEOU	PU	PES
PET	0.684	**0.827**					
BI	0.742	0.302	**0.861**				
PCR	0.680	0.42	0.078	**0.824**			
PEOU	0.656	0.236	0.412	-.0.077	**0.810**		
PU	0.557	0.186	0.535	0.017	0.632	**0.746**	
PES	0.636	0.275	0.617	0.082	0.418	0.731	**0.797**

Hypothesis testing

Table 4 summarises the findings of the path coefficient analysis. The results suggest a significant impact of PEOU on BI and PES ($\beta = 0.068$ and 0.202, $p < .05$, respectively).

Table 4 Indicators of hypothesis evaluation

No.	Path			Estimate	P-values	Decision Tick
1	PES	←	PEOU	0.202	0.001	✓
2	BI	←	PEOU	0.068	0.013	✓
3	PES	←	PU	0.624	0.001	✓
4	BI	←	PU	0.545	0.001	✓
5	PES	←	BI	0.239	0.001	✓
7	BI	←	PCR	0.064	0.096	X
8	PES	←	PCR	0.062	0.016	✓

The beta coefficients for these relationships are (0.068 and 0.202), and the p-values are less than 0.05. Therefore, the results verified H1 and H2. Additionally, there is a substantial effect of PU on BI and PES (β = 0.545 and 0.625, p < .05, respectively). Consequently, the results support H3 and H4. Additionally, the result verified that PES impacts BI (β = 0.239, p < 0.05). Hence, the result affirmed H5. However, the results confirmed that PCR does not influence BI (β = 0. 0.064, p > 0.05), whereas it affects PES (β = 0.062, p <. 05). Therefore, the results reject H7 and accept H8.

The study used a bootstrap approach to investigate a mediating effect. Additionally, a confidence interval estimate (95%) has been processed based on 5000 bootstrap samples. Additionally, the bootstrap assessment of the indirect impact examined the mediating function of PES. The study processed standard error in path coefficients and estimated an appropriate confidence interval of 95% CI of bootstrap samples (5000) (Preacher & Hayes, 2008). Table 5 reveals that the mediation analysis of PES in the indirect relationships between PEOU, PU, and BI was significant (P = 0.047 and 0.001), suggesting that PES mediates these relationships. Accordingly, this remains significant in both the presence and absence of a mediator. Therefore, the results support H6a and H6b. On the other hand, there is no mediation of perceived e-satisfaction between perceived cybercrime risk and behavioral intention as long as the indirect effect is not significant (P = 095). Therefore, the result rejects H9.

Table 5: The mediation of behavioral intention (BI)

No.	Path	Direct effect without Mediator		Direct effect with mediator		Indirect		Decision Tick
		Effect	P	Effect	P	Effect	P	
6	PEOU → PES → BI	0.106	0.001	0.067	0.012	0.049	0.047	✓
6	PU → PES → BI	0.733	0.001	0.624	0.001	0.131	0.001	✓
9	PCR → PES → BI	0.081	0.002	0.620	0.033	0.016	0.095	X

Moreover, Table 6 results implicitly cued that PET positively affects the PES and BI as long e-trust moderates perceived e-satisfaction link to behavioral intention, with a beta value of 0.115 and a significance level of 0.001. Therefore, the results backs H10.

Table 6: Moderation of perceived e-trust

Hypothesis/ Path/Indicator	PET → PES → BI	R2	T	B	P	Decision Tick
10	Perceived e-Trust Moderator	0.503	4.150	0.115	0.001	✓

Discussion and conclusion

This study addressed the influence of TAM's components (perceived ease of use and perceived usefulness) on customer e-satisfaction and behavioral intention when using mobile e-booking apps in Egyptian hotels. It also examined the mediation of PES in the PEOU and PU linkages to the BI. Additionally, this study scrutinized the influence of perceived cybercrime risk on BI and PES. Besides, it examined the mediation of PCR in the PES linkage to BI. Moreover, it investigated the moderation role of e-trust in the relationship between perceived e-satisfaction and behavioral intention. In conclusion, the analysis accepted most of the hypotheses except the influence of PCR on BI and the mediation of PCR in the PES relation to BI. The results found a significant influence of PEOU on BI and PES. The impact on IB is consistent with (Abdullah et al., 2016; Amoako-Gyampah, 2007; Bae et al., 2020; Kim et al., 2010; Luarn & Lin, 2005; Nikou, 2017; Tsai et al., 2014; & Vărzaru et al., 2021), whereas on the PES matches (Abd Ghani et al., 2017; Dewi et al., 2020; Dianawati et al., 2024; Rawashdeh et al., 2021; Vărzaru et al., 2021). This result indicates that the greater the ease of use of e-booking apps, the greater the behavioral intent to adopt e-booking and customer perceived e-satisfaction with the provided services. The results' attribution may be to the cause that perceived ease of use reduces the mental effort required to interact with hotel booking applications, which enhances customers' intent to use these applications and increases their online satisfaction with them in the context of their actual use of booking services. The results confirmed a significant effect of PU on BI and PES. As for the influence on BI, this result goes in line with those (Abdullah et al., 2016; Alfadda & Mahdi, 2021; Amoako-Gyampah, 2007; Bae et al., 2020; Kim et al., 2010; Luarn & Lin, 2005; Nikou, 2017; Tsai et al., 2014; Vărzaru et al., 2021; & Yoon, 2009), whereas the result on PES matches (Abd Ghani et al., 2017; Dewi et al., 2020; Dianawati et al., 2024; Rawashdeh et al., 2021; Vărzaru et al., 2021). The result implies that the greater the perceived usefulness, the greater the behavioral intention and perceived e-satisfaction. This result may attributed to the fact that perceived utility reflects the practical value a customer derives from using hotel booking apps, which enhances usage intent and contributes to higher online service satisfaction. At the mediation level, the analyses confirmed that PES mediates the relationships between PEOU and BI, as well as between PU and BI, which is in congruence with Abd Ghani et al. (2017) and Asmarina et al. (2022). These results indicate that when users perceive that a system is easy to use and offers usefulness, they develop an increased perceived e-satisfaction, which in turn leads to a robust intention to use it. These results' attribution may be due to satisfaction representing an attitudinal mechanism that links a user's assessment of PEOU and PU

with their ultimate behavioral intention with an electronic service. PES is the overall appraisal that some hotel customers form based on the interactive experience quality with hotel digital systems (such as e-booking applications), reflecting the online service quality. PES is a convincing predictor of digital usage and usefulness for increasing BI's probability of reusing the service.

The results reveal no significant effect of PCR on BI and no favorable influence on PES. As for the insignificant influence on behavioral intention, results disagree (Apau & Koranteng, 2019; Chao, 2019), which affirmed that PCR negatively impacts IB, whereas the result influence on e-satisfaction does not agree with (Ali et al., 2016), as they reversely confirm a harm effect of PCR on PES. These results describe a case where a person's exposure to cybercrime risks becomes unlikely to be intentional for subsequent behavior. However, if a person is exposed to a cybercrime risk and does not overcome its harm, he is unfavorably satisfied with e-booking apps. The attribution is that although some customers are aware of the cybercrime risk, the need for comfort, exclusive offers, brand trust, and cyber-security may deter the perception's impact on behavioral intentions. The perceived value of using booking apps overshadows security concerns, directing customers to resume booking via apps despite their risk awareness. Additionally, high perceived cybercrime increases fear, anxiety, and insecurity, which vandalises user experience and declines e-satisfaction, nonetheless of service quality. Further, the results affirm that PES does not mediate the relationship between PCR and BI. Cybercrime does not impact behavioral intention and negatively affects perceived e-satisfaction. The result's attribution may be due to the perspective that although PCR perceived cybercrime risk negatively influences PES, this effect does not extend to IB, suggesting that privacy and security concerns influence users' satisfaction and are boosted by feelings of worry when utilising e-booking apps. In contrast, their e-booking intentions remain contingent on other, more pragmatic factors such as advantageous price, convenience, or urgent service. Therefore, satisfaction remains negatively affected, while behavioral intentions remain more resilient to the influence of cybercrime risk. At the moderation stage, the results ensured that PES mediates the relationship between PES and BI. In principle, perceived e-trust affects perceived e-satisfaction which agrees with (Apau & Koranteng, 2019; Ata et al., 2021; Choi et al., 2023; Koufaris & Hampton-Sosa, 2004; Shukla & Rodrigues, 2022) and behavioral intention, which agrees with (Alnaim et al., 2022; Ata et al., 2021; Kundu & Datta, 2015; Oktariani et al., 2022). The interpretation of the perceived e-trust moderation in the PES linkage to the BI relationship can be viewed through the theory of perceived risk reduction (Batter, l960), as satisfaction is a positive indicator of the quality of previous experience but the satisfaction is not necessarily translated into a future intention to book via mobile apps unless is accompanied by a high level of trust in the e-transaction environment. Thus, when trust increases, security concerns and negative perceptions are mitigated, the satisfaction increases to drive positive behavioral intentions.

Implications

Scientifically, the results support the significance of integrating components of the Technology Acceptance Model (TAM), specifically perceived ease of use and perceived usefulness, as key variables in explanatory models of technology behavior in the hospitality context. The results support the model's validity in online hotel booking applications and verify that perceived ease of use and perceived usefulness directly influence perceived e-satisfaction behavioral intention. E-satisfaction emerges as a key mediator between both perceived ease of use and usefulness and behavioral intention. However, it relinquishes its mediating impact when linked to the perceived cybercrime risks. The results indicate that perceived cybercrime risks have no effect on behavioral intention and imply a negative cognitive effect on e-satisfaction, which is insufficient to serve the indirect role concerning intention directly or indirectly and move beyond the logic of negative impact on e-satisfaction. However, cybercrime risk influences the evaluation of the experience, leading to a direct negative effect on emotional evaluations such as satisfaction. Thus, the idea is that e-satisfaction is not a permanent predictor of a sufficient path to depict and explain behavioral intent. As such, it raises the need to review models that assume a direct influence of risk on behavior, which focuses on the emotional dimensions of intentions. The results also confirm the moderating role of perceived e-trust as an interactive variable that bolsters the relationship between perceived e-satisfaction and behavioral intention. Consequently, it highlights the need for continuity to reconsider the trust function within theoretical models, not simply as an independent or dependent variable but as an interactive element that transforms satisfaction into a complete positive experience. It also emphasises the importance of studying the conditions that improve or limit the effectiveness of satisfaction as a mediator, such as the existence of e-trust as a behavioral modifier. Practically, to support customer e-satisfaction and behavioral intentions in hotel e-booking by increasing ease of use via reducing e-booking steps, hotel administrations must invest in developing simplified mobile booking app interfaces and improve the user experience to reduce mental load. Additionally, to enhance perceived usefulness, hotels should market e-booking apps based on the tangible added value and practical features they offer to customers, such as time savings, personalised offers, or seamless customisation. To reduce cybercrime risks, it is essential to provide clear security protection, such as encryption certificates, technical security, and a psychologically and behaviorally safe environment, within user interfaces to reassure users and enhance their online satisfaction and behavioral intentions. Furthermore, it is essential to build e-trust through transparent, secure, and high-privacy policies to transform customers' e-satisfaction with online hotel booking app usage, which boosts the e-satisfaction transformation into actual behavioral intention.

Acknowledgement

The current work was financially funded by the Deanship of Scientific Research at King Khalid University through the Small Group Research Project under grant number RGP1/112/44.

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