Using technology acceptance model in online booking accommodation (Airbnb, Booking, Hotels)

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Introduction

The Internet has subtly altered modern lifestyle and state at a time when tourism and Internet information technology are developing quickly. With 418 million Internet users, or 48.9% of the total, online travel booking has the third-highest usage rate among business-related Internet applications, only behind online shopping and takeout. In that situation, an increasing number of businesses and users now accept online travel reservations. Students make constitute the largest percentage of netizens, up to 26%

It's a well-liked traveller solution that offers a quick and practical way to look for and reserve a variety of hotels. But as this technology gains in acceptance, concerns about the suitability of this kind of home surface. In richer countries, mobile bookings are widely used and accepted. Meanwhile, a number of researchers hypothesized that trip booking on mobile devices is the way of the future. They argued that it should be a top priority to comprehend the factors that influence how people choose to book hotels online in general.

The current work's objective is to assess how well technological acceptance models are used in online accommodations booking platforms like Booking, Hotels, and Airbnb. A behaviour model is created based on the Technology Acceptance Model to investigate the impact of perceived usefulness and perceived ease of use, attitude on online booking behaviour.

To do this kind of research, I need to focus on several aspects. First of all, evaluate the advantages and disadvantages of using online reservation, convenience, location, availability, price policy, as well as the profitability of the mobile application and payment system. And compare all this with traditional accommodation booking. Second, I will investigate the impact of the technology acceptance model on users and housing owners.

1. Literature Review

The number of Internet users is growing, and the types of businesses offering travel services online are diversifying, therefore studies on how people book travel online both domestically and internationally are also rapidly becoming more common.

In the previous studies, It has been discovered that perceived usefulness continues to be the most important element affecting consumers' online travel booking decisions, with perceived usability being a close second. It has been discovered through research into the TAM-based model of online travel booking behaviour among college students that 67.867% of this model may be attributed to perceptions of usefulness, usability, attitude toward use, and relevant Internet word-of-mouth experiences (Xiaoru Chen, 2020).

According to the study's findings (Robert Jeyakumar Nathan, 2020), price value, social influence, performance expectations, and effort expectations as the biggest predictor of travellers desire to use the Airbnb app. This demonstrates the effectiveness of value-based pricing, which helps tourists choose hotels in a city with a rich history.

Considering the other aspects, that may have impact on the behaviour of using online booking accommodation such as reviews system. One of the research (Dawood Amin, 2021) suggest online reviews would positively affect booking intention, PU, PEOU. Finally, the results were unexpected and relationship tends to be insignificant

If the age of the respondents are evenly distributed, the outcome could be different because various generations perceive things differently, which can result in a more generalized outcome (Mohamad Amiruddin Mohamad, 2021)

According to the findings of the study (Dahlan Abdullah, 2018), perceived website interactivity effects customers desire to book a hotel online as well as how useful they view the hotel booking website to be.

Taking into account all different variables and aspects, it would be useful for the creating own technology acceptance model. In the figure 1, it is observed the TAM for the research study with all considered variables.
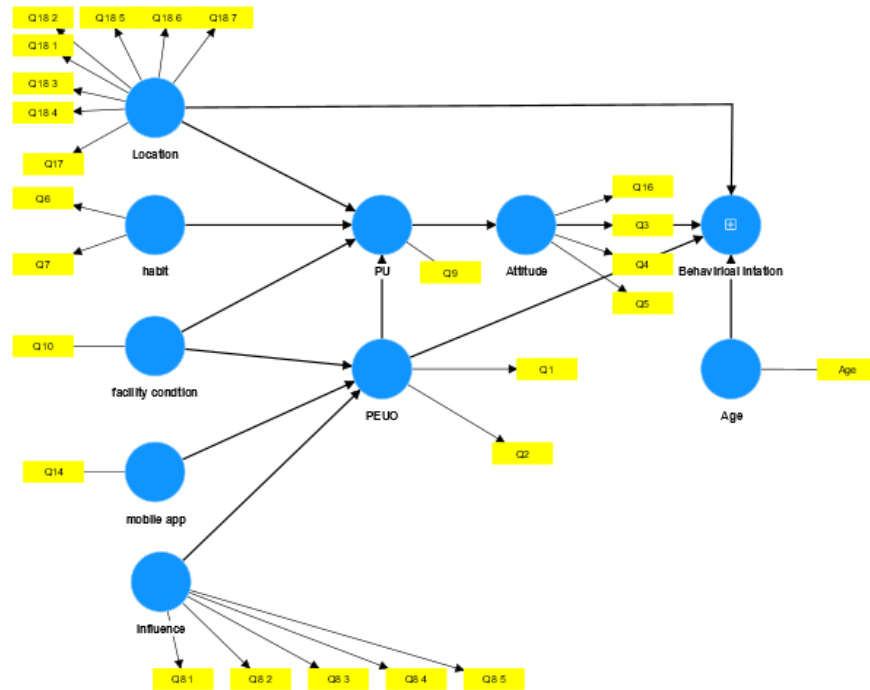
Figure 1. Technology Acceptance Model

Lets make hypothesis for the current technology acceptance model:

- H1: Age has a positive influence on the behavioral intention of using online booking accommodation
- H2: Attitude has a positive influence on the behavioral intention of using online booking accommodation
- H3: Location has a positive influence on the behavioral intention of using online booking accommodation
- H4: Location has a positive influence on the PU
- H5: PEOU has a positive influence on the behavioral intention of using online booking accommodation
- H6: PEOU has a positive influence on the PU
- H7: PU has a positive influence on the attitude
- H8: Facility condition has a positive influence on the PEOU
- H9: Facility condition has a positive influence on the PU
- H10: Habit has a positive influence on the PU
- H11: Influence has a positive influence on the PEOU
- H12: Mobile app has a positive influence on the PEOU

2. Research Methodology

The data was collected from students of Faculty of Economic Science University of Warsaw, friends and how they used the Airbnb, Booking or Hotels mobile app to book their accommodation during their business trip, vacation or just travelling. Twenty samples are deemed to be the bare minimum needed for a study of this kind. The research conducted 30 respondents to ensure adequate data collection beyond the required minimum. The survey for data collection were shared on the Facebook faculty group, my course groupmates chats and direct message to my friends. For the purpose of gathering quantitative data, a standardized research questionnaire that included demographic inquiries and statements regarding each research variable was used.

After data collection, descriptive statistics were performed using the results from the Google Form (TAM questions for booking accommodation, 2023), then path modelling and hypothesis testing were developed using SmartPLS version 4.0's Partial Least Square (PLS) Structured Equation Modeling (SEM). In order to get a good goodness-of-fit in this study, we chose PLS-SEM to pinpoint the critical variables that have the largest and lowest effects on participants' intentions to book their accommodations through Airbnb, Booking, or hotels. Using the Jupiter notebook environment and the Python language, I changed every indicator from the original items so that they were appropriate for the current situation. Given these circumstances, PLS-SEM is thought to be reliable in evaluating the overall model's composite reliability and convergent validity, testing new indicators, and testing new hypotheses.

3. Results

Table 1. *Demographics Table*

No.	Category	Characteristics	Frequency	Percentage (%)
1	Gender	Male	20	66.7
		Female	7	23.3
		Other	2	6,7
		Non-binary	1	3,3
2	Age	18 - 24	8	26,7
		25 - 30	14	46,7
		31 - 36	8	26,7
		> 37	0	0

The higher participation was received from male respondents (66,7%). And the higher percentage of the respondents are between 25–30 years old, that's about 46,7%

A reliability test has been performed to look at the research's internal consistency. Cronbach's Alpha reveals internal consistency and the dependability of the data gathered. All values above.70 are regarded as sufficient, and the pertinent data as reliable. Looking on the result, It can be concluded, that majority of the indicators are lower than threshold, with Behavioural intention, PEUO are higher than 0.7.

Overall, the result should be more reliable, because it is only a few variables with accepted value, it should be improved with number of sample to have more sufficient data. All result are represent below (Table 2)

Table 2. *Construct Reliability and Validity*

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance Extracted (AVE)
Attitude	0.369	0.411	0.590	0.341
Behavioural intention	0.753	0.916	0.846	0.651
Location	0.095	0.355	0.061	0.205
PEUO	0.816	0.849	0.915	0.843
habit	0.611	-1.638	0.245	0.345
influence	0.343	0.442	0.177	0.290

When analysing the correlations between the variables, discriminant validity - which measures how well an instrument can distinguish between or among various concepts and characteristics - is used. The discriminant validity was evaluated using the HTMT criterion, which is shown in more detail in the table below (Table 3). It has been demonstrated that if the value is less than the 0.90, discriminant validity between a certain pair of reflective constructs has been established. It can be observed that all variables are lower than threshold

Table 3. *Discriminant Validity*

	Age	Attitude	Behavioural intention	Location	PEUO	PU	facility condition	habit	influenc	mobile app
Age										
Attitude	0.233									
Behavioural intention	0.274	0.735								
Location	0.286	0.770	0.467							
PEUO	0.199	0.517	0.306	0.614						
PU	0.267	0.188	0.300	0.462	0.447					
facility condition	0.084	0.214	0.513	0.359	0.328	0.09				
mobile app	0.067	0.392	0.184	0.173	0.265	0.30	0.087	0.15	0.369	

Basically, the significant level of 5% was used. Due even the small size of the sample, the confidence interval at 0.10 might use, but regarding the result, there is no such a sense. Initially, with the confidence level at .05, out of 12 hypotheses, 3 have been accepted, and 9 have been rejected.

Hypothesis H2 about attitude has a positive influence on the behavioural intention of using online booking accommodation was accepted. It means that If person has useful experience with mobile application and help to achieve some things quickly it has an impact on the final behaviour of use

Hypothesis H9 about Facility condition has a positive influence on the PU was accepted. Basically, the result shows that if there is some who can help with using app or have some difficulties it will have influence on Perceived Usefulness (it leads to the final review about the experience of using the current application)

Hypothesis H12 about Mobile app has a positive influence on the PEOU. The result presents that depending how often people use the mobile application it will have the direct attitude to the how it was easy to navigate the application.

As the most rejected hypothesis are so far from the significant level, there is no sense to interpret them, because these variables cannot influence on the outcome.

All details on T-Statistics and p-Values off all hypotheses can be seen below in table 4 (Table 4).

Table 4. *Hypothesis Testing Table*

Number	Hypothesis	T-Statistic	p-Value	Result
H1	Age has a positive influence on the behavioral intention of using online booking accommodation	0.090	0.928	The hypothesis was rejected.
H2	Attitude has a positive influence on the behavioral intention of using online booking accommodation	2.052	0.040	The hypothesis was accepted.
H3	Location has a positive influence on the behavioral intention of using online booking accommodation	0.953	0.340	The hypothesis was rejected.
H4	Location has a positive influence on the PU	1.079	0.281	The hypothesis was rejected.
H5	PEOU has a positive influence on the behavioral intention of using online booking accommodation	0.367	0.714	The hypothesis was rejected.
H6	PEOU has a positive influence on the PU	1.183	0.237	The hypothesis was rejected.
H7	PU has a positive influence on the attitude	0.010	0.992	The hypothesis was rejected.
H8	Facility condition has a positive influence on the PEOU	1.195	0.232	The hypothesis was rejected.
H9	Facility condition has a positive influence on the PU	2.049	0.040	The hypothesis was accepted.
H10	Habit has a positive influence on the PU	1.121	0.226	The hypothesis was rejected.
H11	Influence has a positive influence on the PEOU	0.852	0.394	The hypothesis was rejected.
H12	Mobile app has a positive influence on the PEOU	1.996	0.046	The hypothesis was accepted.

4. Discussion and Conclusion

This research attempts to explore the key influencing factors and links of online booking accommodation behavior. By introducing location, habit, facility condition, mobile app, and influence experience, combining PU, PEOU, usage attitude, the behavior model of online booking accommodation such as Airbnb, Booking, Hotels are constructed and modified.

The path coefficients between various model parameters are examined through the data analysis of the empirical research, and the majority of the hypotheses are rejected. Analyzing the hypothesis result, it is possible to conclude, that experience of using online booking application will lead to the actual behavior of use. Depending of frequency of using the mobile app will have impact on the how person can navigate it, that is pretty expected. The last conclusion from the result can be made that if there is a support service with using online booking accommodation it will influence actual final review.

In comparison to earlier research findings, it is discovered that attitude is the important factor influencing customers online booking behavior

Due the low response rate and getting only 30 respondents, the results of the empirical study and data analysis are therefore not sufficiently representative. It can be seen from the result of the reliability test, and hypothesis test where most of variables lower than threshold. The research may be improved with getting more responses from different group of people, that will probably lead to more reliable and sufficient result. Also changing the questions and extend the way of their interpretation help to investigate current topic.

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