

## **Resistance to the Adoption of Online Travel Agencies in Indonesia after Covid-19**

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**Abstract.** The travel industry has been severely impacted by the Covid-19 outbreak, leading to international and domestic travel restrictions and a decline in Indonesia's tourism industry GDP contribution from 4.97% in 2019 to 2.24% in 2020. As the industry seeks to recover, online travel agencies (OTAs) play a vital role in revitalizing its growth. While understanding why users utilize OTAs is crucial, it is equally important to address the barriers preventing their adoption. Existing literature has explored reasons for OTA usage, but few have examined user resistance to OTAs. This study aims to bridge this gap by conducting a comprehensive analysis of user resistance to OTA adoption in Indonesia post-Covid-19. The study employs the innovation resistance theory (IRT) to identify barriers to OTA adoption. A survey consisting of close-ended and open-ended questions is distributed to collect data for testing the model. The findings indicate that users' perceived usefulness and image of OTA brands are the primary obstacles to OTA adoption. Armed with these insights, OTAs can devise strategies and develop product features that effectively address these issues, enabling them to capitalize on the increasing trend of information and communication technology (ICT) usage post-pandemic. Addressing and resolving these challenges early on will provide OTAs with a competitive advantage over industry rivals in the years ahead.

**Keywords:** online travel agency (OTA), innovation resistance theory (IRT), resistance, adoption, travel

## 1. Introduction

The SARS-COV-2 virus (Covid-19) outbreak in 2019 disrupted and reshaped how people live their lives. In an attempt to prevent the epidemic from spreading further, global leaders regulated laws to limit human interaction and minimize the spread of the virus. Countries closed their borders and imposed quarantine policies that prohibit people from traveling outdoors unless necessary. Early in 2020, the Indonesian government also took part in this attempt by implementing a social-distancing policy through Pembatasan Kegiatan Masyarakat (PPKM) and Pembatasan Sosial Berskala Besar (PSBB) which imposed travel restrictions for international and domestic trips (Kurniawan, 2021). Due to these restrictions, the tourism industry was negatively affected as they lost their source of income. The Indonesian government recorded the tourism industry's foreign exchange decrease from 16.91 million USD in 2019 to only 3.31 million USD in 2020 (BPS, 2021). The impact of this regulation was also vivid in the tourism industry's contribution to Indonesia's gross domestic product (GDP) which recorded a decrease from 4.97% in 2019 to 2.24% in 2020 (Statista 2023).

With the downfall of the tourism industry due to Covid-19, Indonesia's Directorate of General Budget allocated over 900 million USD in 2021 to revive the tourism industry. The government made long-term investments in building infrastructures in tourism sites with its top 5 priorities being Lake Toba, Borobudur, Mandalika, Labuan Bajo, and Likupang. This ambitious project includes the improvement of infrastructure in 3 harbors, 2 railways, 50 villages, and new road pavement with a 21.7-kilometers distance to increase the accessibility of multiple travel sites for local and global tourists. (Fitriani, 2021)

As Indonesia improved its tourism infrastructures with large investments these past few years, the next thing to do is to market the travel sites to the public. Attracting local and international tourists to travel in Indonesia is key to increase the travel industry's GDP contribution to Indonesia. To market the travel sites and increase travel activities, online travel agencies (OTAs) in Indonesia have an integral role to revive Indonesia's tourism industry. Indonesia is currently entering a new socio-economic situation post-covid in which people are now more tech-savvy and reliant to the internet. Data in 2022 shows that over 80% of people with the intention to book a trip prefer to book it online (Deane, 2022). A recent study also indicates that travelers are now more engaged in online information-seeking about Covid-19 situations and regulations in the travel destinations (Rizki, 2023). Furthermore, psychological studies reveal that post-covid situations generate more compensatory travel intentions (Yao et al., 2023). Hence, this study aims to provide insights for online travel agencies (OTAs) to utilize this momentum and contribute to revive Indonesia's tourism industry and grow exponentially.

To market travel sites and increase travel activities, OTA platforms need to attract and retain users on their platforms. Prior literature has analyzed different aspects of OTAs including factors that motivate users to book through an OTA. Studies have examined user loyalty (Roger-Monzó et al., 2014), price benefit (Talwar et al., 2020), information display (Agustin, 2018), brand knowledge (Barreda et al., 2016), and user satisfaction (Lee et al., 2017) correlations to users' intention to book through an OTA. However, none of these studies focus on the demotivators that prevent users from using an OTA. This study aims to fill in the gap by analyzing user's resistance in using an OTA so that the OTAs in Indonesia could remove these potential barriers, attract more users to use its platform, and market Indonesia's travel to revive the travel industry. A prior study has analyzed some potential demotivators (Talwar et al., 2020), but the research is limited to its given research model, variables, and data collection from a specific country that is not directly applicable to Indonesia's context. With that background, this study specifically aims to analyzed the demotivators of using an OTA for Indonesian users after the Covid-19 outbreak.

The objective of this study is to deep-dive into the underlying factors that prevent users from using an OTA in Indonesia to gain a better understanding and insights into the ways that OTAs could do to support the tourism industry in Indonesia after the Covid-19 outbreak. This study aims to understand Indonesian's booking intentions and behavior in booking online travel to further support the

development and adoption of OTA providers in Indonesia.

## 2. Literature Review

Prescribed from the condition of the travel industry in Indonesia due to Covid-19, this study aims to structure its research from an adapted model of the innovation resistance theory (IRT) coined by Ram and Sheth in 1989. The IRT model would serve as the foundation to contextualize and understand Indonesians' resistance of using OTAs after the pandemic.

### 2.1. Online travel agency (OTA)

Online travel agency (OTA) is an innovation that disrupts the traditional travel agent market and increases tourism potential to new heights. Adopting information technology in its product, OTA manages to provide an end-to-end booking process from product selection, value comparison, travel information, and payment process of multiple travel products including flights, accommodations, train tickets, attractions, and car rentals, among others. Over the years, there has been a gradual shift from traditional travel agents to OTA, which is also further boosted by the Covid-19 regulations that increase information and communications technology (ICT) adoption among the people (Curry, 2023).

Recent studies conducted after the pandemic indicate that ICT adoption is currently growing rapidly due to the pandemic lockdown restrictions. People were forced to adapt to the current technologies to fulfill their daily needs such as human interaction, commercial shopping, and many others. One of the adaptations of ICT advancements is OTA which allows people to book travel tickets without any physical presence (Rizki, 2023). Despite experiencing a decline due to social distance regulations, compensatory travel is also increasing due to the psychological factors that the pandemic brings. One of the popular forms of compensatory travel includes staycation, in which statistics from May 2021 to May 2022 indicate a 49.85 jump in the average occupancy of hotels (Mulyawan, 2022). This trend is also reflected in tiket.com's data where accommodations bookings increased by 204% in 2022, which is double the pre-pandemic levels (Mulyawan, 2022). Data shows that travel is recovering, and OTA platforms are capitalizing the opportunity to accommodate users' increasing travel demands.

### 2.2. Innovation resistance theory (IRT)

The innovation resistance theory (IRT) was theorized by Ram and Sheth in 1989. IRT was conceptualized to explain the factors underlying users' resistance to innovations. The theory groups users' resistance to functional and psychological barriers. The functional barrier aims to explain the reasons why users resist innovation due to the innovation's product and services. It analyzes usage, value, and risk variables that affected user decisions to adopt a certain innovation. In addition to the functional barrier, the psychological barrier aims to explain the traditional and image aspects of the innovation that affects user's resistance. (Ram and Sheth, 1989)

Diving deeper into the functional barriers, the first variable is the usage barrier. The usage barrier measures the degree of usability of the innovation and the learning curve required for users to adapt to it. It theorized that the degree of difficulty perceived by the users to learn the innovation is coherent with user's resistance. The second variable of the functional barrier is the value barrier. The value variable measures the benefits of the innovation in terms of performance, price, and advantages, among others, when compared to other competitors. It theorized that if the innovation provides less benefit to the users, the higher resistance they would have towards it. To complete the previous functional barriers, the third variable is the risk barrier. The risk variable measures the perceived risk of adopting an innovation. The higher the risk that user perceived, the higher their resistance would be to adopt the innovation (Ram and Sheth, 1989)

Complementing the functional barriers are the psychological barriers that explain the resistance caused by tradition and the image of innovation. The tradition barrier represents the resistance caused by users' habits and ways of working. The higher deviation to the users' habits an innovation requires, the higher possibility the users will resist adopting the innovation. In addition to that, the image of the

innovation is also influential to users' decisions as it measures their favorability towards an innovation's image and brand. (Ram and Sheth, 1989)

IRT has been used in multiple literatures to examine users' resistance behavior in using online shopping (Nel and Boshoff, 2018), mobile banking (Laukkanen, 2015), and OTA (Talwar et al., 2020) among others. Each study further customized the theory to suit the current situation of the research environment and topic. To complement previous studies, this study aims to expand previous research models by adding more adapted variables to gain insights into the current post-covid situation for OTAs adoption in Indonesia.

### **2.3. Perceived Usefulness**

According to Davis (1989), perceived usefulness is the variable that determines the discerned level to which using technology would enhance work performance. As individuals were seeking values before adopting technology, their belief of how useful and beneficial innovation is for them would be a crucial strand to their decision. Factors that are measured include how technology would influence the productivity, effectivity, and efficiency of work done by its user. Prior studies indicate that users' perceived usefulness towards innovation has a positive correlation with their intentions to use the product and experience its benefits. (Davis, 1989)

This variable has also been analyzed further in the context of OTA. Perceived usefulness is identified as an influencing variable with direct affects to user's decision to book through an OTA. A study done in India indicate that benefits of an OTA persuade user to use an OTA compared to other booking platforms. The study indicates that low benefits perceived by users in India has the highest impact towards their resistance in using an OTA. (Talwar et al., 2020)

### **2.4. Perceived ease of use**

According to Davis (1989), perceived ease of use is a variable that determines the discerned level to which using technology would be free of effort. To make use of the innovation's values and usefulness, it is important for the users to be able to utilize the technology to its potential. Users want to gain expertise in the technology and maximize its features to their own benefit. Factors that are measured include how technology is understandable, controllable, easy to learn, and requires low mental effort for users to comprehend. Prior studies indicate that users' perceived ease of use towards innovation has a positive correlation with their intentions to use the product and learn its functions. (Davis, 1989)

This variable has also been analyzed further in the context of OTA. Research done in Indonesia implies that Indonesians do not view the usage of OTA to have a steep learning curve for them. Due to the familiar booking experience and clear information structure of the platforms, OTA are commonly viewed to be easy-to-use by its users. Another possible reason that the study suggests is that the current user experience designs of OTA platforms are easy to understand, thus not preventing users from booking through their platforms (Aristio et al., 2022)

### **2.5. Perceived risk**

Perceived risk is a variable coined by Bauer (1960) which explains how one's subjective risk motivates behavior and action. There are two main types of risks, inherent risk and handled risk. Inherent risk is identified as the latent risk of a product or service, meanwhile handled risk is the probability that a certain behavior could cause conflicts in the future. An influencing factor to scale the perceived risk is to evaluate the amount of stake considered to attain the work's goal. Prior studies indicate that users' perceived risk toward innovation has a positive correlation with their intentions to use the product. Moreover, users prefer to make decisions with smaller risks given that other variables are constant. (Mitchell, 1999)

This variable has also been analyzed further in the context of OTA. In adopting new innovations such as OTA, there is a certain degree of risk that the users perceive due to the information security and privacy concerns (Talwar et al., 2020). OTA requires its user to share their personal information such

as resident identity card, financial credentials, among others. Prior studies suggest that it is essential for OTA to gain trust from the users in order for them to start using OTA and experience the benefits that OTA has to offer (Ponte et al., 2015).

## **2.6. Subjective norm**

Subjective norm represents the variable in which one's perception is influenced by others around them. People's behavior often is impacted by others' experiences and suggestions (Wu, 2007). Individuals often exhibit a certain behavior depending on their surroundings' approval. If their surroundings support a certain behavior, the individual would be motivated to exhibit that specific conduct. On the contrary, if their surroundings perceive the behavior as unacceptable, the individual is more likely to refrain from such conduct. The subjective norm variable is commonly used to predict people's behavior given a particular context and situation. Prior studies indicate that users' subjective norm towards an innovation has a positive correlation with their intention to use the product or service. (Singh et al., 2022)

This variable has also been analyzed further in the context of OTA. According to Liang & Shiau (2018), subjective norms have a significant impact in user's intention to purchase flight through an OTA. People are more likely to book flights from online platforms that are recommended by their peers, and they would be dissuaded from using online booking platforms with poor reviews and ratings from other users. (Liang & Shiau, 2018)

## **2.7. Tradition**

According to Sheth (1989), tradition is the psychological barrier that determines the discerned level of cultural adaptation required to adopt an innovation. It aims to measure the amount of deviation required to adopt new technology and observe how it impacts the users' resistance. Factors that are measured vary across different users depending on their established ways of working and norms. These variables are impacted by users' demographic, backgrounds, and socioeconomic conditions. Prior observations and studies indicate that an innovation that is found to be socially acceptable tends to have higher adoption. While attitude could change over time, these factors would instill resistance until the amount of deviation decreases. (Ram and Sheth, 1989)

This variable has also been analyzed further in the context of OTA. According to Talwar et al. (2018), users do not view the need for them to deviate from their normal ways of booking in order to use OTA. Users are used to the advancements of technology which promotes online bookings and payments. (Talwar et al., 2020)

## **2.8. Image**

According to Sheth (1989), image is a perceptual variable that determines the discerned level of innovation's image that affects adoption. An innovation's image is influenced by various factors. Individuals' perceptions could be influenced by the industry the innovation is in, the brand's image, the business processes, and the impact on its surroundings, among others. Prior observations and studies indicate the favorability of an innovation's image has a positive correlation to people's intention to use the product. (Ram and Sheth, 1989)

This variable has also been analyzed further in the context of OTA. Prior studies indicate that a positive image of an OTA would have direct correlations to user's intention to use. The branding of an OTA is deemed to be an important factor before the user would use an OTA and make bookings in its platform. Prior studies emphasize the importance of OTA platforms to creating a distinct positive identity for the business to the targeted potential users (Talwar et al., 2020)

## **3. Research Methodology**

The study utilized the IRT model with several adaptations from other variables deemed necessary to increase the reliability of the research (Ram and Sheth, 1989). The research model serves as the framework to identify associations between the barriers introduced by IRT and the adoption of OTA in

Indonesia after the Covid-19 outbreak. In this study, the dependent variable is the adoption of OTA in Indonesia, and the independent variables are the functional and psychological barriers that are further detailed down into its components. The functional barriers are detailed into perceived usefulness, perceived ease of use, and perceived risk; meanwhile, the psychological barriers are detailed into subjective norm, tradition, and image.

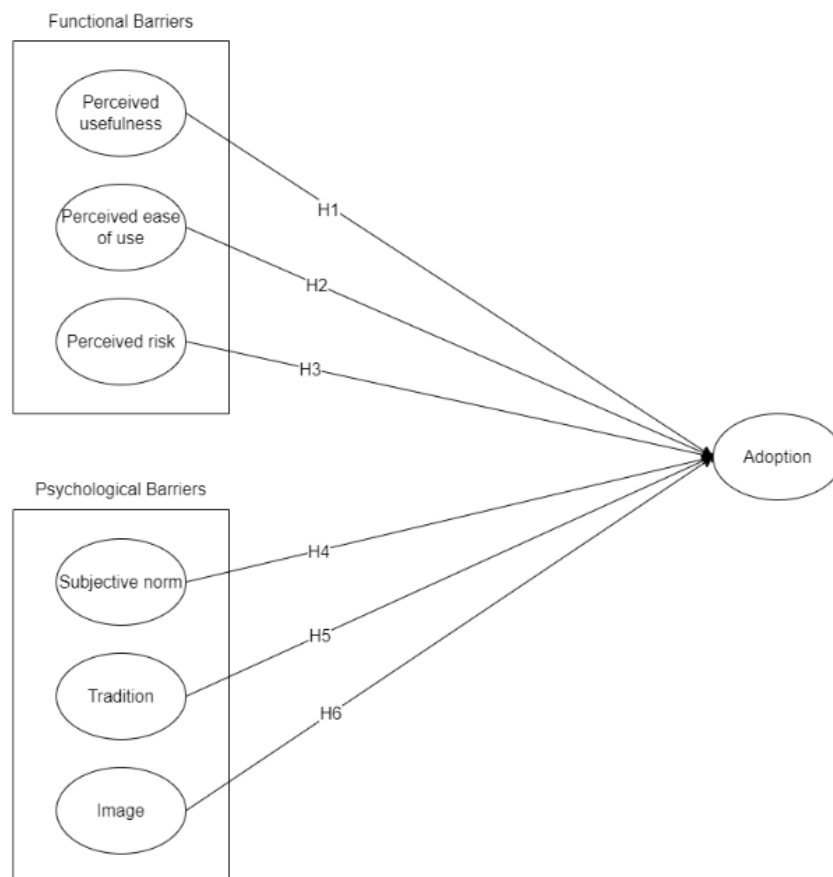


Fig. 1: Research Model

### 3.1. Hypothesis and Operational Variables

Hypotheses:

- H1: Perceived usefulness barrier has a negative impact on adoption
- H2: Perceived ease of use barrier has a negative impact on adoption
- H3: Perceived risk barrier has a negative impact on adoption
- H4: Subjective norm barrier has a negative impact on adoption
- H5: Tradition barrier has a negative impact on adoption
- H6: Image barrier has a negative impact on adoption

Table 1: Operational Variables

Factor	Definition	Item	Question	Reference
Perceived Usefulness	The people's perception of the degree to which using technology would enhance work performance.	PU1	OTA offers a convenient and practical booking experience compared to direct on-site bookings	Talwar et al., 2020
		PU2	OTA offers a convenient and practical booking experience compared to direct online bookings	
		PU3	OTA offers inventories that are not available on other platforms	
		PU4	OTA offers competitive prices compared to other platforms	
		PU5	OTA offers various payment options that are useful for users	
		PU6	OTA offers loyalty programs that are useful for users	
		PU7	OTA offers customer service that is useful for users	
Perceived Ease of Use	The people's perception of the degree to which using technology would be free of effort.	PEOU1	I find no difficulty in purchasing products in an OTA	Aristio et al., 2022
		PEOU2	I find no difficulty to use mobile tickets booked from an OTA	
		PEOU3	I find no difficulty to contact OTA customer services for my inquiry	
Perceived Risk	The people's perception of the degree to which using technology would cause negative consequences.	PR1	I am not concerned to share my financial details with an OTA	Talwar et al., 2020
		PR2	I am not concerned to share my personal information (ID card, passport) with an OTA	
		PR3	I am not concerned about any privacy and security provisions of booking through an OTA.	
Subjective Norm	The people's perception of the degree to which other people would approve or disapprove a certain behavior.	SN1	My decision to use an OTA is not affected by App Store and Play Store rating	Singh et al., 2022
		SN2	My decision to use an OTA is not affected by people's reviews	
Tradition	The people's perception of the degree to which an innovation requires deviation from established ways of working.	TRA1	Using an OTA does not require a significant change from my normal way of booking	Ram and Sheth, 1989
		TRA2	Using an OTA does not go against the stigma of my surroundings	
Image	The people's perception of the degree to which an innovation is viewed positively.	IMA1	I had a good image of OTA platforms	Ram and Sheth, 1989
		IMA2	I had a good experience using OTA platforms	

Adoption	The people’s willingness to utilize innovation.	ADO1	I plan to book my travel necessities through an OTA in the future	Talwar et al., 2020
		ADO2	I will recommend the use of OTA to others	

### 3.2. Data Source

The study made use of literature reviews, open-ended questions, and cross-sectional surveys to derive insights for the research. The primary data were collected through an online survey with a combination of open-ended and close-ended questions. The open-ended questions are distributed to retrieve rich qualitative answers from the respondents and were developed from literature reviews on innovation resistance. To supplement the open-ended questions, the survey also collected close-ended answers to retrieve quantitative data to be further tested through statistical calculations. To test reliability of the data, this study analyzed the loading factor, Average Variance Extracted (AVE), and Composite Reliability (CR) of the variables. After passing the reliability test, the data were analyzed through the structural equation modeling (SEM) taking into account sample mean calculation, standard deviation, t-Statistic, and p-Values employed in SmartPLS version 4 (Talwar et al., 2020).

There are two screening criteria for the sample selection process. The criteria for the respondents are: a) Respondents should have used an OTA at least once. b) Respondents are domiciled in Indonesia. The study did not implement any age restriction as it aims to capture the perceived barriers by the public. Most respondents are from Java which is also where the capital city Jakarta is located, and respondents range from the age of 17 to people over 46 years old. 78.4% of the respondents have previously booked a hotel through an OTA, 64.3% have previously booked a flight, and 26.8 have booked a ticket for an attraction or event such as travel tour, concerts, and others. To remove potential limitations and bias, this study collected data from a similar distribution of age groups and genders based on the OTA users.

Based on the data collected, the total number of domestic travelers in Indonesia from January 2022 - December 2022 is 52,600,000 (BPS, 2023). With that data, this study calculated the minimum number of respondents utilizing the Slovin formula with a 5% margin of error or  $e=0.05$  (Zach, 2023).

Slovin Formula:

$$n = N/(1+Ne^2)$$

Where:

n = sample

N = population

e = error term

$$n = 52,600,000/[1+52,600,000(0.05)^2]$$

$$n = 399.997 \approx 400$$

Based on the calculation above, the target number of respondents to be the sample for this study is at least 400 respondents. The online survey was distributed in April 2023 with 402 respondents that provided data points for the study.

## 4. Results and Discussion

The study was analyzed through the structural equation modeling (SEM) employed in SmartPLS version 4 (Talwar et al., 2020). The modelling is used to test the hypotheses of each operational variables correlation to user’s decision in adopting the usage of OTA to book their travel necessities.



### 4.1. Measurement Model

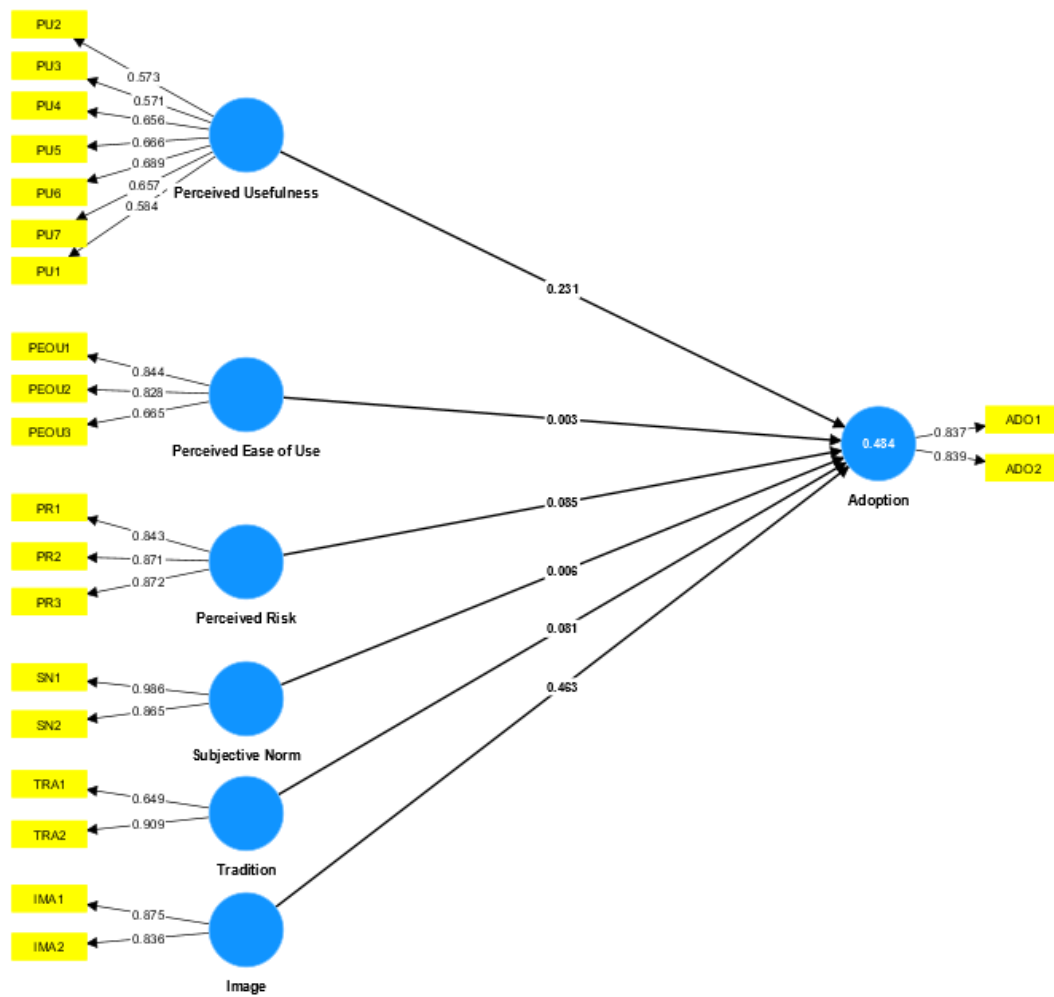


Fig. 2: Measurement Model

The study utilized the loading factor, Average Variance Extracted (AVE), and Composite Reliability (CR) to ensure the validity and reliability of the model. According to Hair et al. (2010), the indicator of the loading factor should be greater than 0.5, the Average Variance Extracted (AVE) should be greater than 0.5, and the Composite Reliability (CR) should be greater than 0.6.

Table 2: Validity and Reliability Analysis

No.	Variable	Loading Factor	AVE	CR
1	Perceived Usefulness (PU)		0.396	0.821
2	PU1	0.584		
3	PU2	0.573		
4	PU3	0.571		
5	PU4	0.656		
6	PU5	0.666		
7	PU6	0.689		
8	PU7	0.657		
9	Perceived Ease of Use (PEOU)		0.614	0.825
10	PEOU1	0.844		
11	PEOU2	0.828		

12	PEOU3	0.665		
13	Perceived Risk (PR)		0.744	0.897
14	PR1	0.843		
15	PR2	0.871		
16	PR3	0.872		
17	Subjective Norm (SN)		0.860	0.925
18	SN1	0.986		
19	SN2	0.865		
20	Tradition (TRA)		0.623	0.763
21	TRA1	0.649		
22	TRA2	0.909		
23	Image (IMA)		0.732	0.845
24	IMA1	0.875		
25	IMA2	0.836		
26	Adoption (ADO)		0.702	0.825
27	ADO1	0.837		
28	ADO2	0.839		

From Table 2 above, the values of loading factor varied between 0.571 to 0.986 which is above the 0.5 threshold. These values indicate the reliability of each item in the measurement model utilized in this study. Next, the study's reliability scale is also tested with composite reliability (CR). This study used CR over Cronbach alpha because it was more reliable (Henseler et al., 2009). The values of CR varied between 0.763 to 0.925 which is above the 0.6 threshold. Moreover, the validity of the study is also tested using convergent validity in which average variance extracted (AVE) functions as the criterion. The values of AVE varied between 0.396 to 0.860 in which PU is below the 0.5 threshold with a value of 0.396. Despite having a value under the threshold, the convergent validity of the construct is adequate because the CR value of PU is 0.821, well above the 0.6 CR threshold. The reliability and validity of the measuring items of this study are acceptable and adequate as it passes the calculation requirements of loading factor, AVE, and CR.

After confirming the reliability and validity of the measurement items, the study executed the bootstrap process on SmartPLS version 4 with 5000 subsamples and a 0.05 significance level. Table 3 shows the path coefficient and hypothesis analysis results conducted from the bootstrap process. According to Hair et al. (2010), the hypothesis would be accepted if the t-value is more than 1.96 and the p-value is less than 0.05.

Table 3: Path Coefficient and Hypothesis Analysis

Relation	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	t-Statistic ( O/STDEV )	p-Values	Results
PU → ADO	0.231	0.236	0.064	3.599	0	Significant
PEOU → ADO	0.003	0.007	0.061	0.046	0.963	Non - Significant
PR → ADO	0.085	0.083	0.050	1.713	0.087	Non - Significant
SN → ADO	0.006	0.010	0.038	0.148	0.882	Non - Significant
TRA → ADO	0.081	0.085	0.051	1.610	0.882	Non - Significant
IMA → ADO	0.463	0.455	0.053	8.725	0	Significant

#### **4.2. Perceived Usefulness on Adoption**

Based on the statistical test result of this research, H1 which proposed a negative association between constraints in perceived usefulness towards the adoption of OTA was supported by the results of this study. This finding is in line with prior studies done in India which indicate that the benefits and value that OTAs provide are influential to users' decision in using an OTA platform (Talwar et al., 2020). Previous studies also imply perceived usefulness of an innovation has the most significant association towards user's resistance in using the innovation (Talwar et al., 2020). The statistical result implies that users are dissuaded from using OTA apps when they think the app failed to enhance their work performance. This is a reasonable factor in which OTA would be used only when it adds value to users' goals and work performance. This study identifies that users value OTA's convenient booking process, exclusive inventory, competitive price, various payment options, loyalty programs, and customer service as the strengths in using OTAS. This finding implies that OTAs should continuously improve these strengths to further lower users' resistance of using an OTA platform and retain existing users to reduce the churn rate of the platforms.

#### **4.3. Perceived Ease of Use on Adoption**

Based on the statistical test result of this research, H2 which proposed a negative association between constraints in perceived ease of use towards the adoption of OTA was not supported by the results of this study. This finding is in line with prior studies done in Indonesia which indicate that the learning curve of using an OTA is not considered as a barrier for the users to use the OTA platform (Aristio et al., 2022). According to Aristio et al. (2022), Indonesians did not view using an OTA as challenging because they are familiar with mobile ticketing applications. The statistical result implies that users are not dissuaded from using OTA apps when they view the platforms as hard to use. A possible reason could be that participants were not facing any issues to use OTAs in Indonesia because the platforms successfully provided a well-designed onboarding feature and user experience flow that lowers the learning curve for its users. Practical and informative onboarding features would allow users to explore the OTA platforms conveniently which resulted in a higher adoption rate. Moreover, the Covid-19 pandemic also indicates that people are now more tech-savvy which further supports why the perceived ease of use factor is not considered as a barrier towards the adoption of OTA. As the pandemic boosts the adoption of ICT, people are now more familiar and comfortable in using tech-related products including booking their travel necessities through OTA platforms.

#### **4.4. Perceived Risk on Adoption**

Based on the statistical test result of this research, H3 which proposed a negative association between constraints in perceived risk towards the adoption of OTA was not supported by the results of this study. This finding is supported by prior studies which suggest that despite OTA's security and privacy concerns, these factors did not prevent users from using an OTA (Talwar et al., 2020). However, prior studies also indicate that an adequate amount of trust is necessary for users to start using an OTA in the first place (Ponte et al., 2015). As users explored the OTA platform, users are required to share their personal information during the booking process, and that requires a certain degree of trust to the platform that it could keep their personal information such as resident identity card and payment information safe through a secure data security. Complementary to those findings, the statistical result of this study implies that users are not dissuaded to use OTA apps when they doubt the OTA's security provisions. A plausible reason that the participants are not concerned about the risks that OTAs pose is that they are aware of the regulations that the Indonesian government implements to protect their financial details and other personal information. In using other tech-based platforms, users are also used to sharing their private information with the platform which could also be the primary enabler that prevents them to view OTA's security provision as a barrier to using the OTA platforms.

#### **4.5. Subjective Norm on Adoption**

Based on the statistical test result of this research, H4 which proposed a negative association between constraints in subjective norm towards the adoption of OTA was not supported by the results of this study. This finding contradicts prior studies which indicate a strong moderating impact that subjective norm brings to the intention of purchasing flights through online platforms (Liang & Shiau, 2018). The statistical result implies that users are not dissuaded to use OTA apps when they consider the degree to

which other people would approve or disapprove their usage of OTA. A possible reason that participants did not view subjective norms as a barrier is that the current OTAs that they used did not have poor ratings nor negative reviews from their peers. It also implies that the products and services that OTAs provide caused users to be more reliant on OTA platforms to book their travel necessities as the users and their surroundings prefer to use online bookings after the Covid-19 outbreak. This finding indicates that users rely more on their experience of using OTA themselves than the opinions of others around them, further implying the significant influence of perceived usefulness towards the adoption of OTA.

#### **4.6. Tradition on Adoption**

Based on the statistical test result of this research, H5 which proposed a negative association between constraints in tradition towards the adoption of OTA was not supported by the results of this study. This finding is in line with prior studies which indicate that customers do not view OTA usage to require a significant amount of deviation from their established ways of working in booking travel necessities (Talwar et al., 2020). The statistical result implies that users are not dissuaded from using OTA apps when they deviate from their normal ways of bookings. A plausible reason that participants did not view tradition as a barrier is that the current OTAs provided seamless booking processes that are like users' previous ways of booking. Furthermore, the advancement of technologies post Covid-19 caused more people to prevent physical onsite transactions, creating an environment that promotes online purchases including travel necessities through OTA platforms.

#### **4.7. Image on Adoption**

Based on the statistical test result of this research, H6 which proposed a negative association between constraints in OTA image towards the adoption of OTA was supported by the results of this study. This finding contradicts prior studies which indicate that customers have a positive perception of OTA platforms (Talwar et al., 2020). The statistical result implies that users are dissuaded from using OTA apps when they have a negative view of the OTA platforms. This is a reasonable factor in which OTA would be used when the users have a positive brand image towards the OTA. Users were also more likely to return when they had a pleasant booking experience through an OTA from their previous bookings. This finding implies that OTAs should keep on improving their platforms to provide a seamless booking experience, especially during high traffic seasons. Despite most users' satisfaction in using OTA platforms, this study also indicates that there are users with unpleasant booking experience due to bugs, booking errors, and customer service, which caused them to have a negative image towards the OTA platforms. Ensuring customer satisfaction in every booking is key in order for OTAs to lower this image barrier and increase the number of users on their platforms.

### **5. Conclusion**

This study delivers valuable insights to understand the factors that caused resistance towards the adoption of OTA in Indonesia after Covid-19. The factors that were tested in this study are perceived usefulness barrier, perceived ease of use barrier, perceived risk barrier, subjective norm barrier, tradition barrier, and image barrier. The study tested how each factor impacts users' willingness to use OTA platforms and results indicated that the perceived usefulness barrier and image barrier have negative associations towards OTA adoption, meanwhile, the other factors did not. These findings imply that users are dissuaded from using OTA when the perceived usefulness is insufficient, and the image of the platform is negative. The results of this study are in line with previous literature studies which highlight the factor of the benefit barrier which has a significant effect on the intentions to book through an OTA.

There are multiple limitations to this study that future research could consider. The study collects data only from Indonesian citizens. This study aims to specifically understand the factors that resist Indonesian from adopting OTA platforms after the Covid-19 outbreak, thus others should be cautious in generalizing these findings in a global context. Moreover, the study measures the intention of OTA users to use an OTA instead of their actual behavior. To be able to measure users' actual behavior accurately, future studies are recommended to conduct a longitudinal research design to be able to measure the user's actual usage of OTA given the influencing factors and testing environment. Furthermore, future research could also further adapt the IRT model to test more variables that are adapted to people's traveling behavior based on different demographics and OTA platform references from various countries to identify findings in a global context.

### **5.1. Research Implications**

The results of this study provide multiple implications to literature research by identifying the barriers that caused resistance towards the adoption of OTA in Indonesia post-Covid-19. The study utilized an extended IRT framework adapted to the relevant OTA context. The IRT framework promotes two main barriers which are functional and psychological barriers which were further broken down to provide a deeper understanding of the specific constraints that caused resistance for users to adopt OTA services. The study implies that the perceived usefulness barrier and image barrier of the OTA platform dissuaded users from using OTA. These inferred benefits include a convenient booking process, exclusive inventories (examples include ticket concerts, apartment listings, and more), prices, payment options, loyalty programs, and customer service are factors that influence users' decision to use the OTA platforms.

Moreover, brand image and experience from previous bookings are crucial for users to make past customers return and recommend the usage of OTA to others. The study also suggested that perceived ease of use, perceived risk, subjective norm, and tradition do not cause any resistance toward the adoption of OTA. This implies that users do not have a negative perception and experience of the degree of difficulty in using an OTA, the risks, the perception of others around them, and the deviation required from their normal ways of booking. The advancements in technology post the pandemic are proven to build a tech-savvy environment that supports the adoption of OTA in Indonesia.

This study would serve as a point of reference for future research regarding the online travel industry in Indonesia. It provides data of users' considerations and behaviors in using booking their travel necessities through OTA platforms. The findings of this study extend the understanding of users' resistance towards OTAs in the Indonesian context after the Covid-19 pandemic. Perceived usefulness and image barriers are identified as the main barriers perceived by Indonesian which future study could dive deeper in different research environments.

### **5.2. Practical Implications**

The findings of this study enable OTA platforms in Indonesia to further understand the factors that promote and demotivate users toward using their platforms. Understanding the barriers that caused resistance towards adoption would be valuable insight for the OTA platforms to design features and execute marketing campaigns that increase users' willingness to use their products and services. The result of the study shows that users' perceived usefulness and image towards the OTA have negative associations with the adoption of OTA. First, OTA should continue its pursuit to provide features that enhance users' work performance. This could be done by understanding the user's pain points and providing a solution that relieves those pain points. Through the qualitative data collected, some notable suggestions that multiple users would like to see in OTA platforms are better customer service, more discounts, and a feature that enables users to book restaurant reservations through the OTA platform. Moreover, the AI chatbot trend such as ChatGPT is a technology that the users would like to see integrated into the OTA platforms that they use. This technology has been integrated by Expedia in 2023, enabling users to chat with an AI-powered chatbot to plan their travel more conveniently. This chatbot provides accurate inventory recommendations based on users' preferences to support their decision process of purchasing the best products for their travel desires.

Second, OTA should also focus on enhancing its brand image with the customers. Qualitative data indicates that customer value responsive customer service and platform stability. Maintaining a platform that could accommodate thousands of requests, especially during exclusive sales and promotions, is crucial. Bugs and timeouts during purchases are perceived as the main issues that OTA platforms should improve to minimize churn rate. To reinforce this, OTA platforms should build a platform that could sustain high traffic from the users. Moreover, an explanatory design and information structure would also prevent customer service requests to the OTA and increase the user experience in booking through its platform.

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