

# Preparing for Pandemics: Reflecting on the Impact of Strategic Elements in the COVID-19 Influenced Online Travel Agencies' Marketing Mix

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**Abstract:** The landscape of online hotel booking, particularly through online travel agencies (OTAs), witnessed a transformation during the COVID-19 pandemic. This shift triggered intense competition among OTA marketers. Interestingly, amidst this competitive environment, while causal predictive models exist that focus on moderate to high effects of major features on Price and hotel BI, the strategic impact of minor features has largely been overlooked. To address this gap, a frequency analysis involving a comprehensive sample of 63 OTAs identified four minor features. Subsequently, a partial least squares structural equation modeling approach explored 499 consumers' perceptions. Two features were shown to be significant (COVID-19 Hygiene Label, Price Discount), with COVID-19 Hygiene Label mediating Price. However, Scarcity and Loyalty Program showed no direct or mediating effects. The model accounted for a strategic 0.298 R<sup>2</sup>. As COVID-19 is an ongoing recurring issue and preparation for future pandemics is prudent, the results provide valuable insights for OTA app developers aiming to gain additional predictive marginal performance advantages (i.e., .10 or greater). Implications and suggestions for future research are also offered.

**Keywords:** Consumer Behavior, Hotel Booking Intention, Online Travel Agency, Marketing Mix, Minor Features, Tourism, Pandemic, COVID-19

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## 1. Introduction

The landscape of online hotel booking, particularly through online travel agencies (OTAs), witnessed a transformation due to a greater focus on local tourism, resulting in a reduction in the availability of international destinations and a decrease in incoming international tourists. This triggered intense competition among OTA marketers, who focused on major features (those included in a large percentage of OTAs) influencing consumers' perceptions of Price and booking intention (BI). Interestingly, however, the strategic impact (.10 or greater, Raithel et al., 2011) of minor features (those included in less than 60% of OTAs) has largely been overlooked. As OTA features are costly to develop and maintain, COVID-19 is an ongoing and recurring issue that continues to affect BI, and additional future pandemics are a potential concern, it is prudent for marketers to understand the strategic, predictive marginal performance advantage of minor features.

To inform this area, this study, drawing on accepted BI-related theories (Theory of Reasoned Action, Theory of Planned Behavior, Technology Acceptance Model), we posed and tested a partial least squares structural equation model (PLS-SEM) to explore the effect of four minor features (COVID-19 Hygiene Label, Price Discount, Scarcity, Loyalty Program) on Price and BI.

## 2. Literature Review

### 2.1 COVID-19 label

Consumer (BI) is inherently complex, and COVID-19 has exacerbated this by heightening consumer safety and health risk anxiety (Kim, 2023), leading to a demand for safety assurance signals (Bove & Benoit, 2020) and resulting shifts in preferences and consumption patterns (Japutra & Situmorang, 2021). In response, the hotel industry has utilized hygiene safety marketing strategies to restore confidence and trust (Jimenez-Barreto et al., 2021). For example, communicating COVID-19 hygiene and safety efforts through digitized marketing, including COVID-19 Hygiene Labels (Pappas & Glyptou, 2020) aimed at addressing customer anxiety levels to facilitate industry revival (Sahoo & Mangaraj, 2020).

These efforts, in combination with other factors (e.g., brand, brand loyalty, pandemic-perceived risk), have generally demonstrated a positive impact on BI (Jimenez-Barreto et al., 2021; Ju & Yang, 2023), although results are inconsistent (Volgger et al., 2023). Moreover, this feature has been shown to interact with other elements, including Price (Pappas & Glyptou, 2021). Hence, the following hypotheses are proposed:

H1. COVID-19 Hygiene label has a significant influence on booking intention.

H1a. The influence of Price is mediated by COVID-19 hygiene label.

## **2.2 Scarcity**

Scarcity occurs when commodity demand exceeds supply (Kemp & Bolle, 1999) and is employed as a marketing strategy, i.e., scarcity cues or messages (Aggarwal et al., 2011). By influencing consumer value and urgency perceptions, these cues encourage consumers to think, feel, or act in a particular manner (Teubner & Graul, 2020). These behaviors are driven by psychological reactance theory (Föbker, 2018), i.e., consumers are more motivated by fear of loss rather than gain, so limited-availability products appear more attractive (Parker, 2011). Aligned with this, when consumer behavior is restricted, a sense of now more than ever may increase BI (Brehm, 1966).

A growing number of studies have found that Scarcity, in conjunction with other features, positively affects BI (popularity and price reviews, perceived enjoyment) (Biswas, 2023; Nake, 2020). However, results are inconsistent as scarcity can infer risk due to crowded spaces during pandemics (Li et al., 2023). Hence, the following hypotheses are posed:

H2. Scarcity has a significant influence on booking intention.

H2a. The influence of Price is mediated by scarcity.

## **2.3 Loyalty programs**

Consumer loyalty program marketing efforts reward and encourage loyal consumer behavior (Sharp & Sharp, 1997). Guided by customer relationship management theory, loyalty programs establish and maintain profitable customer relationships by identifying and rewarding customers (Chen et al., 2020), which increases customer satisfaction and retention. These programs can vary in form. For instance, members may earn rewards by collecting points, stamps, or coins (Meyer-Waarden, 2008), potentially motivating members to increase purchase frequency to earn rewards (Joe, 2014), which, in turn, drives BI.

Loyalty programs, in conjunction with other factors (e.g., convenience, digital media engagement, customer service experience, Internet-based communication, employee knowledge, satisfaction, price) have generally shown positive results (Chanchomsri, 2023; Saber et al., 2021), although findings have been inconsistent (Iranmanesh et al., 2023). Hence, the following hypotheses are posed:

H3. Loyalty programs have a significant influence on booking intention.

H3a. The impact of Price is mediated by loyalty programs.

## **2.4 Price discount promotion**

Price discount promotions involve redeemable price reductions at the point of sale (Christou, 2011), providing a direct short-term stimulus to attract and increase sales (Kotler et al., 2017). Aligned with this, potential guests tend to evaluate the value of OTA offers by weighing listings' perceived costs and benefits (Hu & Yang, 2019), preferring to book hotels that offer maximum benefits at low costs. Acknowledging that customers often engage price reductions when booking through OTAs (Hanks et al., 2002), this tool effectively boosts short-term sales (Hu & Yang, 2019) and addresses slow bookings (Lee et al., 2015).

COVID-19 era research has generally shown that this feature, along with others (e.g., advertising) (Yusnita et al., 2021), positively affects BI. However, this has been explored with other features (e.g., offer timing, customer type, consumer reviews, and bundling of mixed membership promotions (Hu & Lee, 2020; Wen et al., 2021; Zhi et al., 2023). Hence, the following hypothesis is posed:

H4. Price discount has a significant influence on booking intention.

## **2.5 Price**

As part of the marketing mix, Price illustrates a product's or service's value (Jobber & Ellis-Chadwick, 2016). Although several factors influence BI, only Price generates revenue (Wirtz & Lovelock, 2018). Thus, Price is a critical variable (Lien et al., 2015) when addressing BI. Accordingly, consumers are shown OTAs' comparative prices during information searches, including higher and lower sales prices and those offered by other intermediaries (Kim et al., 2019). Due to the ease and accessibility of OTA apps and this process, potential guests are often attentive to a listed room price and use it as an external reference to help evaluate the value of an available deal (Kim et al., 2019).

This feature has been shown to have a consistent major effect during the pandemic (Kaewkitipong 2021). Hence, it has been included in our model, and the following hypothesis is posed:

H5. Price has a significant influence on booking intention.

## **2.6 Booking intention**

Marketing managers regularly rely on consumer Purchase Intention (PI), a consumer's decision about a future action (Bagozzi, 1983), to pretest and evaluate concepts for predicting sales (Bird & Ehrenberg, 1966) as this informs strategic planning regarding a concept's further development (Morwitz, 2007). This approach extends to online BI, i.e., the willingness to book products or services online (Kambe et al., 2020), especially in the context of online travel app booking

intention, where Internet-assisted reservation systems facilitate the booking and payment of hotel stays. Aligned with supporting these marketing activities, researchers often employ PI as a dependent variable in causal predictive model explorations, estimating statistical structural causal explanations with various independent variables and mediating relationships.

**2.7 Gap in the Literature**

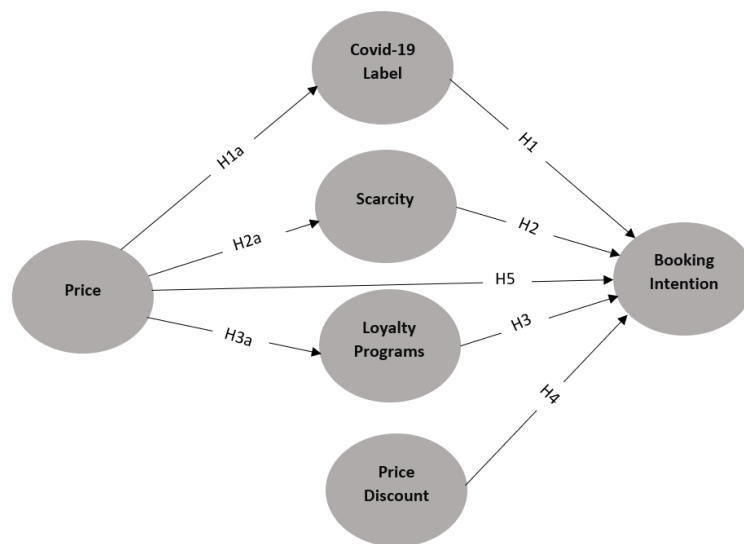
Previous studies have explained the impact of various minor features alongside groups of other major features found inside and outside apps in composite models. These models often illustrate moderate to high predictive relevance (e.g., R<sup>2</sup> values of 0.50-0.75) (Hair et al., 2011) due to the combined inclusion of major and minor features. However, to our knowledge, no study has explored the strategic impact of minor features’ performance advantages (e.g., 0.10) (Hair et al., 2022; Raithel et al., 2011). Acknowledging this, we have developed and evaluated a PLS-SEM model to investigate this phenomenon.

**3. Methods**

The study examined the impact of minor features in the OTA app mix on consumer online BI during the COVID-19 pandemic. Minor features were identified by analyzing OTAs available on the Apple Store and Google Play (N = 63).

Each OTA was analyzed using descriptive statistics (frequency analysis), and minor features were identified as those employed by less than 60% of OTA apps. Following this, based on the extant literature, five hypotheses (and sub-hypotheses) were posed regarding four minor features (COVID-19 Label, Discount, Scarcity, Loyalty Program) and Price.

To operationalize the hypotheses, a PLS-SEM predictive model was developed. The first part of the model examined the direct effect of the latent variables on BI (H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub>, H<sub>4</sub>, H<sub>5</sub>). The second part explored the effect of the mediating variables (H<sub>1a</sub>, H<sub>2a</sub>, H<sub>3a</sub>) (Fig. 1).



**Fig 1: Proposed Partial Least Squares Structural Equation Model**

Drawing further on the literature, a seven-point Likert questionnaire was created to operationalize this model and explore the hypotheses (Table 1).

**Table 1: Operational Variables**

Variable	Description	Measurement
COVID-19 Hygiene Label	COVID-19 safe sign on the OTA website and mobile apps.	This feature would positively influence my decision to make a booking.
		This feature would encourage me to make a booking.
Scarcity	The cues indicate “Only 1 room left!”, “booked 13 times today”, “7 people are looking at this room right now”, “on high demand,” and “book right now” on the website and mobile	This feature increases the likelihood that I would book this room.
		This feature would positively influence my decision to make a booking.
		This feature would encourage me to make a booking.

	apps.	This feature increases the likelihood that I would book this room.	
<b>Loyalty Program</b>	"Free night after 10 stays", and "Hotel points" in a loyalty program that motivates customers to redeem the points on the website and mobile apps.	This feature would positively influence my decision to make a booking.	Christou, 2011; Joe, 2014
		This feature would encourage me to make a booking.	
		This feature increases the likelihood that I would book this room.	
<b>Price Discount</b>	Price cuts, percentage-off, and special deals listed on the OTA website and mobile apps.	This feature would positively influence my decision to make a booking.	Hu & Yang, 2019
		This feature would encourage me to make a booking.	
		This feature increases the likelihood that I would book this room.	
<b>Price</b>	Hotel listed Price on the OTA website and mobile apps.	Price is a consideration when making an online booking for a hotel.	Augustine & Adnan, 2020; Lien et al., 2015
		I tend to book hotels that offer the best service for its Price.	
		I look for hotels offering the best possible price to meet my needs.	
<b>Booking Intention</b>	Consumer intention to book the hotel room through the OTA.	I am likely to use online travel websites to search for hotel deals.	Chen, 2014
		When I need to book a hotel room, I plan to use travel websites.	
		My willingness to book hotel rooms from travel websites is high.	

The study was operationalized in Indonesia with Indonesian consumers; therefore, the questionnaire used a local scenario-based approach and was translated into Indonesian. To address potential ambiguities in the translation, feedback was sought from several native speakers (N = 20) before launching the survey. Subsequently, a social media marketing company advertised the survey on three platforms (Facebook, Instagram, Twitter) to gather a purposive sample of Indonesian consumers from April 5 to June 15, 2021. This method is particularly useful when identifying or contacting respondents is challenging (Cooper & Schindler, 2014) and helps minimize researcher bias (Luu & Baker, 2021). No incentives were provided to the respondents. A total of 499 valid surveys were collected from OTA customers who had booked a hotel room through an OTA at least once.

The research scenario was introduced to familiarize the participants with the survey. Afterward, respondents rated how each feature would affect their BI. An image of the feature preceded each question. These images were inspired by those found in the 63 OTAs reviewed for this study. Next, participants rated variables related to their BI. The final section collected demographic data.

Results were analyzed using partial least squares structural equation modeling (PLS-SEM). A PLS-SEM design was employed as it enables the investigation of complex models with various constructs and mediating relationships, estimating a statistical structural model to provide causal explanations (Hair et al., 2022).

## 4. Results

To present the results, first, respondent demographics are presented. Next, the measurement and structural models are assessed, and the path coefficients' statistical significance and relevance are evaluated.

### 4.1 Demographics

Females (52.51%) and males (45.29%) were the dominant respondent genders. Others included prefer not to say (2%) and others (.20%). Ages were less than 35 (80.15%), 35 to 44 (17.03%), and 45 and above (2.80%). Domicile was reported as Jakarta (12.83%), Surabaya (9.22%), Bandung (4.81%), Medan (2.20%), and other smaller cities (70.94%). Monthly income was less than IDR 2,000,000 (47.49%), 2,000,000-3,999,999 (27.66%), 4,000,000-5,999,999 (12.22%), 6,000,000-7,999,999 (4.61%), 8,000,000-9,999,999 (3.81%), more than 10,000.000 (4.21%).

## 4.2 Assessing the Measurement Model

The first step in evaluating PLS-SEM results involves assessing the measurement model. This consists of an examination of (a) Indicator Loadings, (b) Internal Consistency (Cronbach alpha, Composite Reliability), (c) Convergent Validity, and (d) Discriminant Validity.

### 4.2.1 Indicator loadings

Reflective measurement model assessment begins with analyzing indicator loadings (Hair et al., 2022), which is the relationship between an indicator and its latent variable. i.e., the contribution of an indicator to its relevant constructs. Each loading was found to be above the 0.70 (0.708) threshold. Thus, item reliability is established.

### 4.2.2 Internal consistency

The next step is to examine internal consistency. The two most often used methods for establishing internal consistency are Cronbach's alpha ( $\alpha$ ) and Composite Reliability (CR). Cronbach's alpha ranged from .827 to .919, whereas CR ranged from .897 to .961. Accordingly, both indicators have a reliability statistic over the required 0.70 threshold (Hair et al., 2011). Hence, construct reliability is established.

### 4.2.3 Convergent validity

The third step in measurement model assessment is to address convergent validity (Hair et al., 2022), the extent to which a construct converges with its indicator through an exploration of the average variance extracted (AVE) across all items associated with a particular construct. All items were above .50, which explains more than 50% of the variance. Hence, there are no convergent validity issues.

### 4.2.4 Discriminant validity

The final step is to assess discriminant validity, the extent to which a construct is empirically distinct from other constructs in terms of how much it correlates with other constructs and how distinctly the indicators represent only the construct. This is explored in several ways. e.g., (a) the Classical Approach (e.g., drawing on the Fornell and Larcker Criterion and Cross Loadings) and (b) the more recent Heterotrait-monotrait Ratio (HTMT) correlation.

### 4.2.5 Classical approach

According to Fornell and Larcker (1981), discriminant validity is established when the square root of AVE for a construct exceeds its correlation with all other constructs. Each construct's square root of AVE was greater than its correlation with other constructs, thus providing strong support for discriminant validity.

Cross loadings determine whether a construct's items load more strongly onto its parent construct than others. All items were found to have stronger loadings on their constructs than on others. Hence, discriminant validity is established.

### 4.2.6 Heterotrait-monotrait ratio (HTMT)

Henseler et al. (2015) proposed a third approach to assess discriminant validity: heterotrait-monotrait ratio (HTMT) correlations, where a threshold of 0.85 or less should be used when constructs are conceptually distinct. Results indicated that the ratio is less than the required threshold (.90). Hence, no HTMT issues were found.

## 4.3 Assessing the structural model

The next step in PLS-SEM is the assessment of the structural model, specifically, the predictive capabilities of the model as indicated by the following criteria: (a) Multicollinearity, (b) Determination ( $R^2$ ), (c) Blindfolding ( $Q^2$ ), and (d) Assessing the Path Coefficients.

### 4.3.1 Multicollinearity

The first step in this procedure is to check for potential multicollinearity issues that might bias results, checking that Variance Inflation Factor (VIF) levels are below the threshold of 5, since greater levels indicate poorly estimated coefficients and questionable p values. All levels were below 5, except for two items (LP2 and S2), which were removed.

### 4.3.2 Determination $R^2$

The second step of assessing the structural model is to explore  $R^2$ . This indicates the variance explained in each of the endogenous constructs.  $R^2$  ranges from 0 to 1, with values of 0.10 being considered satisfactory in contexts where small measures (e.g., predicting stock returns), in this case, minor features in a highly competitive OTA hotel industry, explain important predictive marginal performance advantages (Hair et al., 2022; Raithel et al., 2011). The resulting model (Fig. 2) indicated  $R^2$  0.298, aligning with the study's purpose of exploring the strategic impact of minor features.

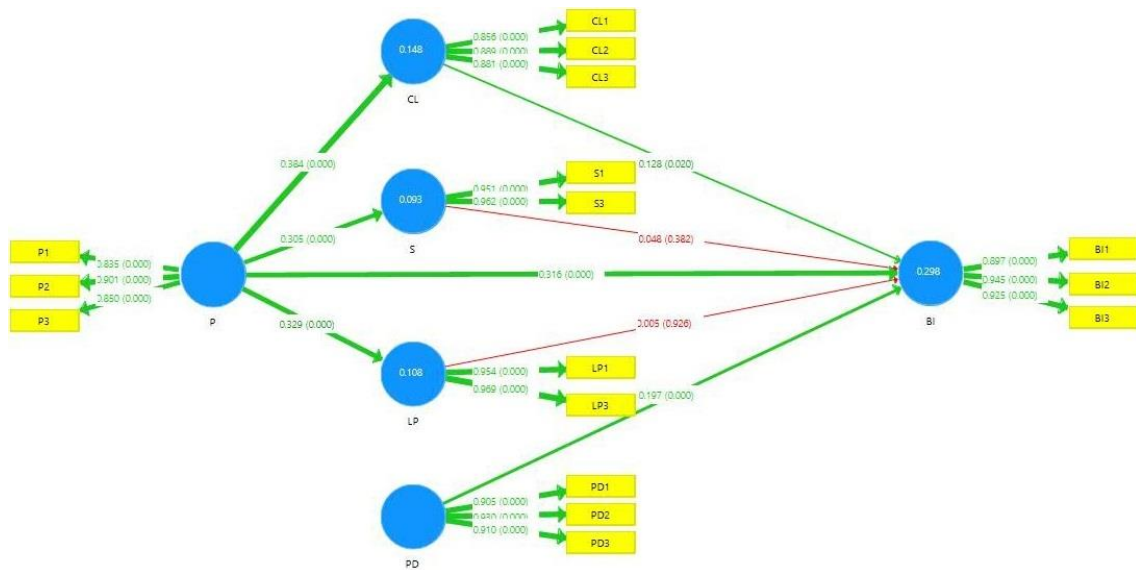


Fig 2. Coefficient of Determination (R<sup>2</sup>) and Path Coefficients

#### 4.3.3 Blindfolding test (Q<sup>2</sup>)

Model predictive relevance is determined by Q<sub>2</sub>, whether the model predicts endogenous latent construct indicators. This value is measured using a blindfolding procedure to explore cross-validated redundancy with a cut-off point of zero, as predictive accuracy is reasonable when values are more than zero for an endogenous latent variable and vice-versa (Sarstedt et al., 2014). Q<sup>2</sup> values for CL, S, LP, and BI were found to be 0.110, 0.082, 0.096, and 0.247, respectively. Hence, the path model has favorable predictive relevance.

#### 4.4.4 Assessing the statistical significance and relevance of the path coefficients

Having substantiated the model's explanatory and predictive power, the final step is to interpret path coefficient relevance, corresponding *t* values, and significance levels (*p*), as well as the hypotheses' direct and mediating relationships.

The results showed that three of the five direct hypotheses were supported. That is, two minor features (H<sub>1</sub> COVID-19 Hygiene Label and H<sub>4</sub> (Price Discount) had a significant influence on BI, as did Price (H<sub>5</sub>). However, H<sub>2</sub> (Scarcity) and H<sub>3</sub> (Loyalty Program) were not found to have a significant influence on BI (Table 2).

Table 2. Direct Relationships

	B	T	P	Hypothesis
CL -> BI	0.128	2.469	0.020	H <sub>1</sub> : Supported
S -> BI	0.048	0.889	0.382 <sup>ns</sup>	H <sub>2</sub> : Not Supported
LP -> BI	0.005	0.088	0.930 <sup>ns</sup>	H <sub>3</sub> : Not Supported
PD -> BI	0.197	3.693	0.000	H <sub>4</sub> : Supported
P -> BI	0.316	5.376	0.000	H <sub>5</sub> : Supported

An exploration of mediating relationships showed that one of the three sub-hypotheses (H<sub>1a</sub>, COVID-19 Hygiene Label) was supported, illustrating a mediating effect with Price. However, two sub-hypotheses (H<sub>2a</sub> Scarcity, H<sub>3a</sub> Loyalty Programs) were not supported (Table 3).

Table 3. Mediating Relationships

	B	T	P	Hypothesis
P -> CL -> BI	0.049	2.003	0.046	H <sub>1a</sub> : Supported
	0.365	6.435	0.000	
	0.316	5.448	0.000	
P -> S -> BI	0.014	0.858	0.391	H <sub>2a</sub> : Not Supported
	0.330	5.576	0.000	
	0.315	5.709	0.000	
P -> LP -> BI	0.001	0.078	0.938	H <sub>3a</sub> : Not Supported
	0.318	5.096	0.000	
	0.316	5.345	0.000	

H<sub>1</sub> explored whether COVID-19 Hygiene Label (CL) significantly influences BI. The results showed that CL significantly influences BI ( $\beta = .128, t = 2.469, p < .05$ ). Hence H<sub>1</sub> was supported. The related hypotheses H<sub>1a</sub> explored the mediating role

of CL. The results showed a significant ( $p < .05$ ) mediating role of CL ( $\beta = .049$ ,  $t = 2.003$ ,  $p = .046$ ). The total effect of P on BI was significant ( $\beta = .365$ ,  $t = 6.435$ ,  $p < .001$ ). With the inclusion of the mediator, the direct effect remained significant ( $\beta = .316$ ,  $t = 5.448$ ,  $p < .001$ ). Thus, CL mediates the relationship between P and BI. Hence,  $H_{1a}$  was supported.

$H_2$  explored whether Scarcity (S) has a significant influence on BI. The results showed that S has an insignificant influence on BI ( $\beta = .048$ ,  $t = .889$ ,  $p > .05$ ). Hence,  $H_2$  was not supported. The related hypothesis,  $H_{2a}$ , investigated the mediating role of S. The results showed an insignificant ( $p > .05$ ) mediating role of S ( $\beta = .014$ ,  $t = .858$ ,  $p = .391$ ). The total effect of P on BI was significant ( $\beta = .330$ ,  $t = 5.576$ ,  $p < .001$ ). With the inclusion of the mediator, the direct effect remained significant ( $\beta = .315$ ,  $t = 5.709$ ,  $p < .000$ ). Thus, S did not mediate the relationship between P and BI. Hence,  $H_{2a}$  was not supported.

$H_3$  explored whether Loyalty Programs (LP) significantly influence BI. The results showed that LP has an insignificant influence on BI ( $\beta = .005$ ,  $t = .088$ ,  $p > .05$ ). Hence,  $H_3$  was not supported. The related hypotheses  $H_{3a}$ , explored the mediating role of LP. The results showed an insignificant ( $p > .05$ ) mediating role of LP ( $\beta = .001$ ,  $t = .078$ ,  $p = 0.938$ ). The total effect of P on BI was significant ( $\beta = .318$ ,  $t = 5.096$ ,  $p < .001$ ). The direct effect was significant with the inclusion of the mediator ( $\beta = .316$ ,  $t = 5.345$ ,  $p < .001$ ). Hence, LP did not mediate the relationship between P and BI.

$H_4$  explored whether Price Discount (PD) significantly affects BI. The results showed that PD significantly affects BI ( $\beta = .197$ ,  $t = 3.693$ ,  $p < .001$ ). Hence,  $H_4$  was supported.

$H_5$  explored whether Price (P) has a significant influence on BI. The results showed that P significantly affects BI ( $\beta = .316$ ,  $t = 5.376$ ,  $p < .001$ ). Hence,  $H_5$  was supported.

## **5. Discussion and Conclusion**

Acknowledging the absence of a causal predictive model focused on the strategic impact (e.g., 0.10) of OTA's minor features (those included in less than 60% of OTAs) during the COVID-19 Pandemic, we, through frequency analysis, identified four minor features (COVID-19 Hygiene Label, Price Discount, Scarcity, Loyalty Program), posed related direct and mediating hypotheses, and tested a relevant PLS-SEM model.

COVID-19 Hygiene Label was found to have a direct effect ( $H_1$ ) on BI and a mediating effect ( $H_{1a}$ ) on Price's influence on BI. These results support literature indicating that consumer concerns about COVID-19 Hygiene Label and related communication contribute significantly to BI (Bove & Benoit, 2020; Jimenez-Barreto et al. 2021; Ju & Yang, 2021) as well as COVID-19 Hygiene Label communication's interaction effect with Price (Pappas & Glyptou, 2020), as COVID-19 Hygiene Labels provide tourists with trustworthy pandemic-related information (Bove & Benoit, 2020). However, these results are converse with literature that has found the contrary (Volgger et al., 2021).

Scarcity was found to have neither a significant direct effect ( $H_2$ ) nor a mediating influence ( $H_{2a}$ ) on Price. These findings align with literature arguing that hotels should avoid such marketing tactics due to their potential negative effect on consumers' value perceptions (Li et al., 2023). However, this finding contradicts the literature suggesting these strategies lead to stronger BI (Biswas, 2023; Nake, 2023).

Loyalty Programs were found to have no significant direct effect on BI ( $H_3$ ) nor a mediating effect ( $H_{3a}$ ) on Price. These results support studies illustrating that customers do not value loyalty points (Iranmanesh et al., 2023; Saber, 2021). However, this contrasts with studies reporting that consumers value Loyalty Points during the booking process (Chanchomsri, 2023).

Price Discount ( $H_4$ ) was found to directly affect BI. This result is in accordance with literature that has demonstrated that price discounts have the potential to boost BI (Hu & Yang, 2019), as Price Discounts have a direct influence on consumer value perceptions (Yusnita et al., 2021). However, this finding does not support the literature showing that Price Discounts do not encourage BI (Zhi et al., 2023).

Price ( $H_5$ ) was found to have a significant effect on BI, consistent with other studies (Kaewkitipong et al., 2021; Zhang et al., 2021), but has a significant relationship with a mediating factor, COVID-19 Hygiene Label ( $H_{1a}$ ).

This study has shown that minor features played a strategic role in the competitive marketing mix during the COVID-19 era, accounting for 0.298  $R^2$  of BI. This result and the accompanying model further the literature and inform the strategic development and marketing practices of OTA App developers who wish to be competitive in pandemic eras by addressing marginal performance advantages of minor OTA features (e.g., .10). Suggestions for OTA developers, in addition to minor features' strategic importance, is to consider performance advantages alongside the cost and maintenance of these features. Additionally, the findings extend and enrich existing theories (i.e., the Theory of Reasoned Action, Theory of Planned Behavior, Technology Acceptance Model), as relevant to the focus of this study: the impact of strategic elements in the online travel agencies' marketing mix.

Overall, the study informs OTA marketing development practices and extends the literature during pandemic eras (e.g., COVID-19), but limitations exist that provide opportunities for future research. The medium-sized sample ( $N = 499$ ), for instance, may be under-representative of a country as diverse as Indonesia, as well as the larger global context. The model's 0.298  $R^2$  exceeds the 0.10 threshold for competitive advantages; however, further research is recommended to explore additional determinants of online consumer BI. Lastly, while the study highlights features potentially relevant to pandemic eras, additional research is needed for post-pandemic periods.

## Disclosure and Ethics statement

No potential conflict of interest was reported by the author(s).

The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

## Data Availability Statement:

Data is available upon reasonable request. Inquiries regarding this article may be directed to the corresponding author, John R. Baker, at the Creative Language Center, Ton Duc Thang University, Ho Chi Minh City, Vietnam, via email (drjohnrbaker@tdtu.edu.vn). <https://orcid.org/0000-0003-3379-4751>

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