

What Hinders Repurchase Intention in Travel Apps? Investigating the Constraint Role of Users' Perceived Concerns

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ABSTRACT

The increasing use of travel apps has made it easier for travellers to plan their trips. However, few studies have investigated how travellers' purchasing decisions are influenced by their concerns about the use of these apps. Based on the psychological reactance theory (PRT), data from a purposive sample of 387 travellers was analysed using PLS-SEM. The findings revealed that repurchase intention is negatively influenced by concerns about privacy and business integrity, but is not influenced by security concerns. Additionally, it was found that users who perceive greater usefulness from travel apps have higher repurchase intention due to the alleviation of their business integrity concerns. This research makes important contributions to the literature and practice of tourism marketing by identifying the factors that negatively affect repurchase intention.

Keywords: Travel App; Psychological Reactance Theory; Privacy Concern; Security Concern; Business Integrity Concern; Perceived Usefulness; Repurchase Intention

INTRODUCTION

The rapid growth of travel apps has provided travellers with a seamless and user-friendly platform to search, compare, and book various travel options, including flights, accommodations, and activities (Ali, Terrah, Wu, Ali, & Wu, 2021; Tak & Gupta, 2021). According to TravelPerk, (2023), in 2021, the global online travel industry was valued at \$433.2 billion, with 83% of travellers relying on travel apps for trip planning. These numbers highlight the increasing importance of travel apps in the tourism sector, especially for staying competitive (Gao et al., 2023).

Despite the benefits of travel apps, the annual retention rate was only 33% in 2020 (Doyle, 2022). This may be because various concerns emerge during the usage process, deterring individuals from further use and purchases. For instance, 60% of travellers express concerns about the reliability and trustworthiness of travel companies, particularly regarding hidden costs associated with their purchases (TravelPerk, 2023). Advanced technologies, such as big data, can extract and manage user data, which can threaten users' privacy and information control and subsequently raise concerns about privacy, security, and trust (Xiang, Magnini, & Fesenmaier, 2015). Furthermore, travel app usage is not often part of people's daily routine, leading to feelings of unfamiliarity and increased vigilance, which then fuel privacy- and

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security-related concerns. These concerns play a crucial role in shaping the user experience and can significantly impact an app's reputation and user behaviour. Therefore, it is essential for travel providers to identify potential constraints that may negatively affect travel app users' favourable responses.

Theoretically, the extant tourism marketing literature presents limited evidence on the impact of constraint factors on travellers' behavioural intentions. As noted by Gao et al. (2023), most studies on travel apps have focused on their technological features and motivators, while little attention has been paid to the factors that may hinder behavioural intentions. Additionally, although perceived concerns (i.e., risks) have been acknowledged as important for decision-making in the marketing literature, previous research has yielded conflicting results (Li et al., 2020). Some studies have found no significant relationship between perceived concerns and behavioural intentions (e.g., Chang, Liu & Shen, 2017; Ventre & Kolbe, 2020), while others have found significant relationships (e.g., Chopdar & Sivakumar, 2019; Sharma, Tak & Kesharwani, 2020). Furthermore, few studies on travel apps have expanded beyond adoption intention to consider purchase or repurchase intention (Lim, Cheah, Morrison, Ng, & Wang, 2022). All these gaps and inconsistencies highlight the need to investigate the impact of a variety of perceived concerns or risks on repurchase intention in the context of travel apps.

The aforementioned practical and theoretical gaps motivated the two objectives of this study, which were:

- (i) To investigate which perceived concerns influence users' repurchase intention towards travel apps.
- (ii) To examine the moderating role of perceived usefulness in the relationship between perceived concerns and repurchase intention towards travel apps.

Data was collected from travel app users in China to offer several insightful contributions to the travel app sector and research literature. First, underpinned by the Psychological Reactance Theory (PRT) (Brehm, 1966), this study intended to explore whether perceived concerns, which are seen as risks, affect repurchase intention in the context of travel apps. Repurchase intention refers to the likelihood of a user returning to the same travel app for future trip planning and booking (Lim, Cheah et al., 2022). Understanding the relationship between perceived concerns and repurchase intention is crucial for travel providers to improve the user experience and encourage repeat purchases (Li et al., 2020; Rehman, Baharun, & Salleh, 2020). Ergo, this study provides valuable information to travel providers about how to address these concerns to increase users' behavioural loyalty (i.e., repurchase intention).

Second, this study adds value to the literature by exploring the moderating effect of perceived usefulness on the relationship between perceived concerns and repurchase intention. Perceived usefulness has been noted as a risk reducer in several studies (Li, Wang, Lin, & Hajli, 2018; Sharma & Crossler, 2014). However, it does not mean that functionalities can automatically relieve concerns or risks (Rehman et al., 2020). In a sense, perceived usefulness adds certainty to an uncertain and risky environment (Hong, Sun, & Lee, 2020; Ventre & Kolbe, 2020), thereby alleviating users' ambiguity and concerns. Hence, this study explored whether perceived usefulness can mitigate the potential negative impact of perceived concerns on users' repurchase intention, which can help travel providers understand the compensating factors that aid in alleviating user concerns.

Therefore, adopting the PRT (Brehm, 1966) as its theoretical foundation, this study's objective was to investigate the impact of three types of perceived concerns (i.e., privacy concerns, security concerns, and business integrity concerns) on user repurchase intention towards travel apps, while accounting for the boundary effect of perceived usefulness as a risk reducer in these relationships.

LITERATURE REVIEW

Psychological Reactance Theory (PRT)

The PRT posits that individuals will exhibit psychological reactance when anything restricts or inhibits their specific freedom (Brehm, 1966). The process involves four stages: freedom, the threat to freedom, reactance, and restoration of freedom (Brehm, 1966; Dillard & Shen, 2005). After its widespread usage in social psychology, the PRT has evolved to include both cognitive and emotional reactions to regain lost control over freedom (Amarnath & Jaidev, 2021; Quick, 2012; Rains, 2013). Specifically, reactance is a driving force behind the restoration of freedom and is triggered by the perception of a threat to specific freedom (Rosenberg & Siegel, 2018). As a result, this theory has been frequently employed in the marketing literature to explain resistance to technology driven by perceived risks or concerns (Feng & Xie, 2019; Wen, Liu, & Yu, 2020; Youn & Kim, 2019). For example, travel companies that frequently demand personal information may make tourists feel uneasy because the latter perceive a lack of control over their freedom to not share their information. Moreover, the negative image of travel businesses would cause travellers to assume that their freedom to trust the company has been undermined, making them cautious of the company's products and services. Generally, reactance occurs in response to threats, such that a strong perceived threat would result in greater reactance as it impairs perceived control of freedom (Laird & Frazer, 2020; Rosenberg & Siegel, 2018). Nonetheless, the concept of freedom in the PRT is narrow and limited to what the individual can perceive (Youn & Kim, 2019). This means individuals must be able to recognise their freedoms first to be motivated to restore them.

In the digital age, people are both empowered and threatened by technology, as increased freedom comes with increased risk or concern. For instance, travellers in the online setting often face information privacy concerns (Esmark, Noble, & Breazeale, 2017; Jung, 2017), payment security concerns (Choi, Wang, Sparks, & Choi, 2021; Liu, Li, Edu, & Negricea, 2020), and business integrity (i.e., trust) concerns (Kim, 2020). Based on the PRT, these potential concerns are risks that may provoke travel app users' psychological reactance towards travel providers' products and services. Notwithstanding this phenomenon, research has shown that apps' high perceived usefulness and benefits can mitigate hostile reactance (White, Zahay, Thorbjørnsen, & Shavitt, 2008). Consequently, this study used the PRT as the underpinning theory to investigate the impact of perceived concerns on travel app users' repurchase intention via the moderation of perceived usefulness.

Perceived Concerns and Repurchase Intention

Perceived concerns or risks are related to users' subjective feelings of potential losses while using a travel app (Li et al., 2020), while repurchase intention indicates the likelihood of making another purchase through the travel app (Gao et al., 2023). Reducing perceived concerns is crucial for enhancing repurchase intention. However, the concept of perceived concern is multifaceted, and may vary based on the situation or context (Li et al., 2020; Rehman

et al., 2020). Thus, it is important to understand specific concerns in their respective contexts to effectively address them.

The perception of concern or risk has been a topic of interest in online commerce since its inception (Chang, Chih, Liou, & Yang, 2016; Ha, Canedoli, Baur, & Bick, 2012). Historically, perceived concern was primarily linked to fraud and product quality, but now encompasses various types of online transaction risks (Wu & Wang, 2005). With the rise of mobile technology, these concerns have become even more pronounced. Researchers have attempted to identify potential concerns in different contexts such as mobile banking (Ha et al., 2012) and mobile payment (Liébana-Cabanillas, Molinillo, & Ruiz-Montañez, 2019), and generally concur that privacy, security, and business reliability are the most common user concerns (Kim, 2020). In the context of online travel, the intangible nature of travel services exacerbates uncertainty, driving travellers' desire for information to reduce their concerns and increase satisfaction (Choi, Wang, & Sparks, 2019; Gursoy, 2019). However, there has been a lack of research on perceived concerns in the context of mobile travel apps (Amaro & Duarte, 2015), indicating a gap in the literature. This study thus proposed privacy, security, and business integrity concerns (Kim, 2020) as the collective concerns perceived by travel app users in the e-commerce setting.

Privacy Concern and Repurchase Intention

The concept of privacy concern refers to the anxiety and distress caused by the potential loss of personal information (Cheah, Lim, Ting, Liu, & Quach, 2022). When individuals are asked to provide personal information in exchange for access to services, they may experience uncertainty about the proper handling of their data, leading to concerns about unauthorised use or disclosure (Rahman, Noh, Kim, & Lee, 2022). This uncertainty creates a constant state of concern about the lack of control over their personal data (Feng & Xie, 2019). According to the PRT, individuals respond to the loss of control over their personal data by exhibiting negative behaviours in an effort to regain control (Amarnath & Jaidev, 2021). In the travel app context, this means that privacy concerns reduce users' trust in the travel app and their willingness to make purchases from it (Cheah et al., 2022). Therefore, this study proposed that:

H1: *Privacy concern is negatively associated with repurchase intention.*

Security Concern and Repurchase Intention

In line with the concern about unauthorised data usage, security concern focuses largely on the potential risk of payment fraud associated with the misuse of personal financial information (Kim, 2020). Nowadays, personal bank/credit card information is required for online transactions, as in internet banking and e-wallet systems (Hossain, Xi, Nurunnabi, & Hussain, 2020; Wu & Wang, 2020). Regardless of advancements in online payment systems, fraudulent activities such as illegal or unapproved transactions still occur and account for a significant portion of online purchases (Kim, 2020). When users feel that a travel app is not secure and is vulnerable to malicious attacks, they view the app as unreliable (Hossain et al., 2020), leading to a loss of trust that impedes future transaction behaviours like repurchase intention (Lăzăroiu, Neguriță, Grecu, Grecu, & Mitran, 2020). Accordingly, the following hypothesis was proposed:

H2: *Security concern is negatively associated with repurchase intention.*

Business Integrity Concern and Repurchase Intention

Business integrity, also known as trust, refers to the belief that a service provider is reliable and trustworthy in their dealings (Zhang, Gordon, Buhalis, & Ding, 2018). In other words, it means that users expect companies to act with honesty and fulfil their commitments (Al-Debei, Akroush, & Ashouri, 2015). High levels of business integrity have been linked to positive customer outcomes, such as increased loyalty and favourable behavioural intentions (Ayaburi & Treku, 2020; Shaheen, Zeba, Chatterjee, & Krishnankutty, 2019). Conversely, concerns about business integrity represent fear that a travel provider may engage in actions that harm the user's well-being or security (Ahmad, Kim, Choi, & Haq, 2021). This lack of trust can lead to negative feelings and reduce users' confidence in the service, causing them to refrain from further use or purchases (Tseng, Chang, & Zhu, 2021). As a result, it was hypothesised that:

H3: *Business integrity concern is negatively associated with repurchase intention.*

The Moderating Role of Perceived Usefulness

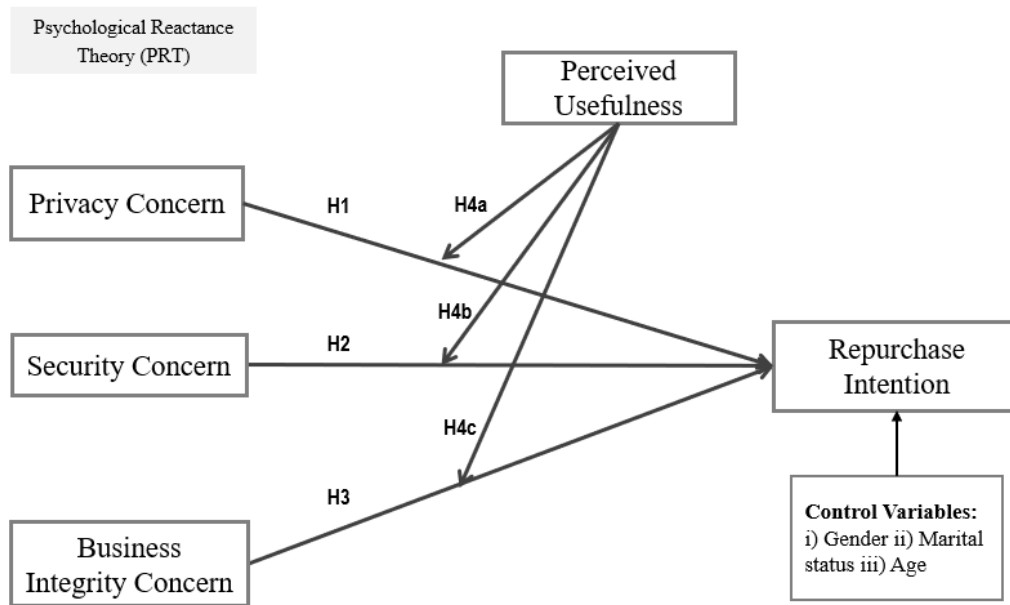
Perceived usefulness refers to the advantages that users perceive from using a travel app (Fang, Zhao, Wen, & Wang, 2017). These advantages tend to be of a practical nature, where users expect to perform tasks more efficiently and save time and money through the app's features (e.g., travel planning, ticket booking, and travel communities) (Bilgihan, Kandampully, & Zhang, 2016; Fakfare & Manosuthi, 2022; Ho, Amin, Ryu, & Ali, 2021). While concerns about privacy, security, and business integrity may harm the credibility of online businesses (Cheah et al., 2022), studies have shown that perceived usefulness can alleviate the anxiety caused by these concerns and thus mitigate the likelihood of hostile reactance (Li et al., 2018; Sharma & Crossler, 2014; White et al., 2008). In this way, there is a trade-off between the risks and benefits of using a travel app, wherein individuals ignore potential concerns if the perceived usefulness is significant enough (Hew, Tan, Lin, & Ooi, 2017; Norberg, Horne, & Horne, 2007). Consequently, the hypotheses below were formulated:

H4a: *Perceived usefulness moderates the relationship between privacy concern and repurchase intention, with higher perceived usefulness leading to higher repurchase intention.*

H4b: *Perceived usefulness moderates the relationship between security concern and repurchase intention, with higher perceived usefulness leading to higher repurchase intention.*

H4c: *Perceived usefulness moderates the relationship between business integrity concern and repurchase intention, with higher perceived usefulness leading to higher repurchase intention.*

Figure 1 depicts the research framework. The next section provides a detailed explanation of the methodology.

Figure 1: Research Framework

RESEARCH METHOD

This study collected quantitative data from respondents in Beijing, China through a self-administered survey on the *Wenjuanxing* platform (China's version of Qualtrics). A final sample size of 387 was obtained using purposive sampling during the period from January to March 2022, surpassing the 200 suggested by Hair, Hult, Ringle and Sarstedt, (2021). The participants were Chinese nationals who had used and purchased from travel apps within the month preceding the survey. The majority of respondents were female (55.8%), married (72.9%), and aged between 25 and 35 years old (75.9%) (see Table 1).

The measurement items were adapted from previous studies, modified to fit the travel app context, and checked by 10 experts for grammar and wording accuracy. The items measured perceived concerns (i.e., privacy concern, security concern, and business integrity concern) based on Kim's (2020) scale, perceived usefulness based on Fang et al.'s (2017) scale, and repurchase intention based on Lee, Chan, Chong and Thadani.'s (2019) scale. Partial least squares structural equation modelling (PLS-SEM) was utilised to examine the proposed relationships (Ciavolino, Aria, Cheah, & Roldán, 2022). This method was chosen due to its flexibility with regard to assumptions and its ability to assess moderation effects (Becker, Cheah, Gholamzade, Ringle, & Sarstedt, 2023). The SmartPLS 4 software was used to conduct PLS-SEM (Ringle, Wende, & Becker, 2022).

Table 1: Demographics of the Respondents (n = 387)

Category	Item	Frequency (n = 387)	Percent (%)
Gender	Male	171	44.2
	Female	216	55.8
Marital Status	Single	105	27.1
	Married	282	72.9
Age	20 years old and below	9	2.3
	21-25 years old	32	8.3
	26-30 years old	119	30.7
	31-35 years old	175	45.2
	36-40 years old	52	13.4

RESULTS

Common Method Bias (CMB)

This study aimed to minimise potential common method bias (CMB) by adopting both procedural and statistical remedies. Procedure-wise, the variables were measured using Likert scales, with independent variables rated on a 5-point scale and repurchase intention rated on a 7-point scale. Statistically, the results of Harman's single-factor analysis showed that the primary variable accounted for only 45.284% of the total variance, which is below the recommended threshold of 50% (Aguirre-Urreta & Hu, 2019; Fuller, Simmering, Atinc, Atinc, & Babin, 2016). Additionally, the full collinearity test produced variance inflation factor (VIF) values ranging from 1.007 to 2.749, all less than the threshold of 3.33 (Kock & Lynn, 2012) (see Table 2). These findings, supported by both procedural and statistical approaches, demonstrated that there were no significant CMB issues in the data.

Measurement Model

The reliability of the constructs was evaluated using Cronbach's alpha and Composite Reliability (CR), the values of which were all above the threshold of 0.70 recommended by Hair et al. (2021) (see Table 2). The outer loadings and average extracted variance (AVE) values were also deemed adequate, with values higher than 0.65 and 0.50, respectively (Bagozzi, Yi, & Phillips, 1991; Fornell & Larcker, 1981). Finally, as shown in Table 3, the Heterotrait-Monotrait (HTMT) ratio analysis confirmed that all HTMT values were less than 0.85, suggesting that the constructs had satisfactory discriminant validity (Henseler, Ringle, & Sarstedt, 2015).

Table 2: Results of Measurement Model (Reliability, Convergent Validity, and Full Collinearity)

Construct	Loading
Privacy Concerns (PC) [$\alpha=0.943$; $CR=0.957$; $AVE=0.816$; $Full\ Collinearity=2.654$]	
PC1: I am concerned that the travel app is collecting too much personal information from me.	0.890
PC2: I am concerned that the travel app will use my personal information for other purposes without my authorisation.	0.927
PC3: I am concerned that the travel app will share my personal information with other entities without my authorisation.	0.919
PC4: I am concerned that unauthorised persons (e.g., hackers) may have access to my personal information collected by the travel app.	0.887
PC5: I am concerned about the privacy of my personal information during e-transactions with the travel app.	0.891
Security Concerns (SC) [$\alpha=0.878$; $CR=0.924$; $AVE=0.803$; $Full\ Collinearity=2.749$]	
SC1: I am concerned that the travel app will not implement appropriate security measures to protect its consumers.	0.897
SC2: I am concerned that the travel app will not ensure that my transactional information is protected from being altered or destroyed accidentally during the transaction.	0.909
SC3: In general, I hesitate to make e-transactions with the travel app because I am concerned about the security of my credit card information.	0.883
Business Integrity Concerns (BIC) [$\alpha=0.898$; $CR=0.929$; $AVE=0.766$; $Full\ Collinearity=1.007$]	
BIC1: In general, I am concerned that the travel app is untruthful in its dealings with me.	0.860
BIC2: In general, I would characterise the travel app as not honest.	0.867
BIC3: In general, I am concerned that the travel app would not keep the promises they have made.	0.880
BIC4: In general, I am concerned that the travel app is not sincere and genuine.	0.894
Perceived Usefulness (PU) [$\alpha=0.741$; $CR=0.836$; $AVE=0.561$; $Full\ Collinearity=1.272$]	
PU1: The travel app enhances my travelling experience.	0.767
PU2: The travel app makes it easier for me to understand travel destinations.	0.759
PU3: The travel app helps me save a lot of time.	0.691
PU4: The travel app makes my travelling more effective.	0.777
Repurchase Intention (RPI) [$\alpha=0.866$; $CR=0.909$; $AVE=0.713$; $Full\ Collinearity=1.197$]	
RPI1: I intend to continue to purchase from the travel app.	0.876
RPI2: I intend to acquire products and services from the travel app.	0.876
RPI3: I intend to choose the travel app as the preferred brand for my future purchases.	0.810
RPI4: Except for any unanticipated reasons, I intend to continue to purchase from the travel app as usual.	0.814

Note: CR=Composite Reliability; AVE=Average Variance Extracted.

Table 3: Discriminant Validity via HTMT Ratio

Construct	1	2	3	4	5
1. Business Integrity Concern					
2. Perceived Usefulness	0.484				
3. Privacy Concern	0.688	0.252			
4. Repurchase Intention	0.569	0.686	0.451		
5. Security Concern	0.818	0.407	0.848	0.442	

Note: HTMT < 0.85 (Hair et al., 2021)

Structural Model

As displayed in Table 4, the inner VIFs for the exogenous constructs ranged from 2.199 to 3.264, verifying that there was no issue with collinearity in this study (Becker, Ringle, Sarstedt, & Völckner, 2015). The path coefficients were then generated using bootstrapping analysis with 10,000 sub-samples (Becker et al., 2023), the results of which are reported in Table 4. Figure 2 provides a visual representation of the structural model results.

Contrary to expectations, security concern ($\beta = 0.085$, $p = 0.126$) had no significant effect on repurchase intention (H2 was not supported). Nonetheless, privacy concern ($\beta = -0.182$, $p < 0.010$) and business integrity concern ($\beta = -0.446$, $p < 0.001$) were found to have a negative impact on repurchase intention, supporting H1 and H3. The control variables (i.e., gender, marital status, and age) had no significant effect on repurchase intention, indicating that these variables did not influence the results.

Based on the result for the coefficient of determination (R^2), 26.9% of the variance in repurchase intention was explained by perceived concerns (i.e., privacy concern, security concern, and business integrity concern). Also, effect size, which was evaluated using Cohen's (1992) guidelines, indicated that both privacy concern ($f^2 = 0.02$) and business integrity concern ($f^2 = 0.124$) had small effects on repurchase intention (see Table 4).

Finally, Q^2_{predict} (Geisser, 1975; Stone, 1974) and PLSpredict (Shmueli et al., 2019) were used to examine the model's predictive relevance. Table 4 shows that the value of Q^2_{predict} for repurchase intention (0.254) was greater than zero, indicating that this model had predictive relevance (Chin et al., 2020). Additionally, the PLSpredict results in Table 5 indicated that all items for repurchase intention (RPI1 to RPI4) had lower RMSE and MAE in the PLS model than in the linear model, which suggests that this model had strong predictive power and small predictive errors (Shmueli et al., 2019).

Table 4: Results of the Structural Model

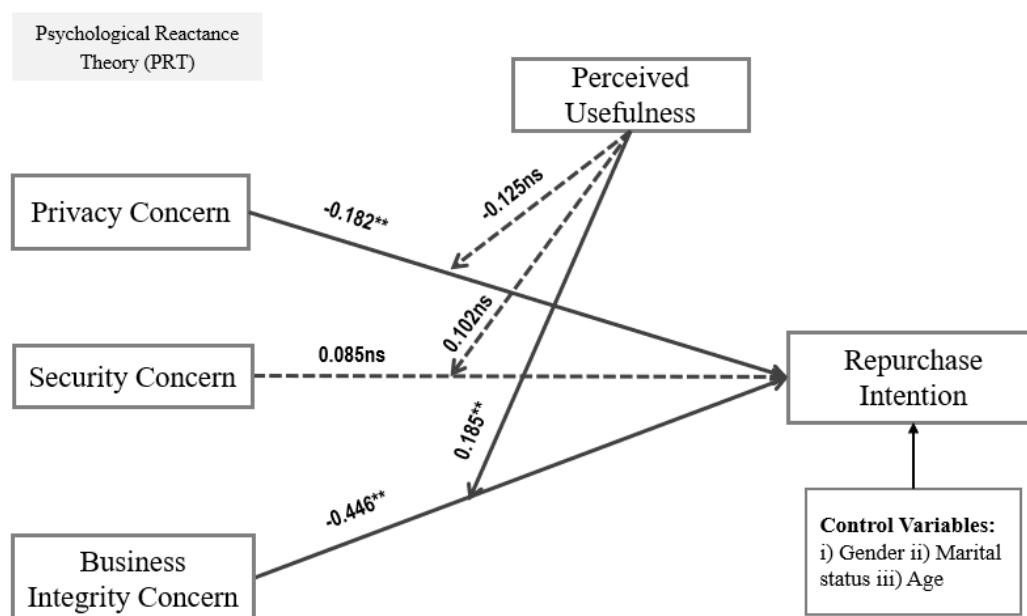
Path Relationship	Std. Beta	Std. Error	t-value	p-value	CI (2.5%, 97.5%)	VIF	f ²	R ²	Q ² _predict
H1) PC -> RPI	-0.182	0.069	2.620	0.004**	(-0.301, -0.073)	2.565	0.020 (S)	0.269	0.254
H2) SC -> RPI	0.085	0.074	1.146	0.126	(-0.034, 0.209)	3.264			
H3) BIC -> RPI	-0.446	0.071	6.294	0.000**	(-0.559, -0.326)	2.199	0.124 (S)		
H4a) PU*PC -> RPI	-0.125	0.085	1.481	0.069	(-0.271, 0.011)				
H4a) PU*SC -> RPI	0.102	0.093	1.102	0.135	(-0.052, 0.249)				
H4c) PU*BIC -> RPI	0.185	0.050	3.726	0.000**	(0.106, 0.270)				
Control variables									
Gender -> RPI	-0.058	0.090	0.649	0.258	(-0.203, 0.091)				
Marital Status -> RPI	0.102	0.116	0.884	0.188	(-0.082, 0.299)				
Age -> RPI	-0.053	0.053	0.992	0.161	(-0.142, 0.036)				

Note: **p < 0.01; PC (Privacy Concern); SC (Security Concern); BIC (Business Integrity Concern); PU (Perceived Usefulness); RPI (Repurchase Intention); CI (Confidence Interval); Effect Size (S: Small; M: Medium; L: Large)

Table 5: Assessment of PLS Predict

Item	Q ² predict	PLS		LM		PLS-LM		Predictive Power
		RMSE	MAE	RMSE	MAE	RMSE	MAE	
RPI1	0.187	1.024	0.788	1.049	0.809	-0.025	-0.021	Strong
RPI2	0.196	1.163	0.880	1.181	0.898	-0.018	-0.018	
RPI3	0.160	1.223	0.944	1.244	0.956	-0.021	-0.012	
RPI4	0.178	1.060	0.840	1.084	0.865	-0.024	-0.025	

Note: RPI (Repurchase Intention)

Figure 2: Research Framework with Structural Results

Note: **p < 0.01; dotted lines indicate insignificant paths; ns (not supported)

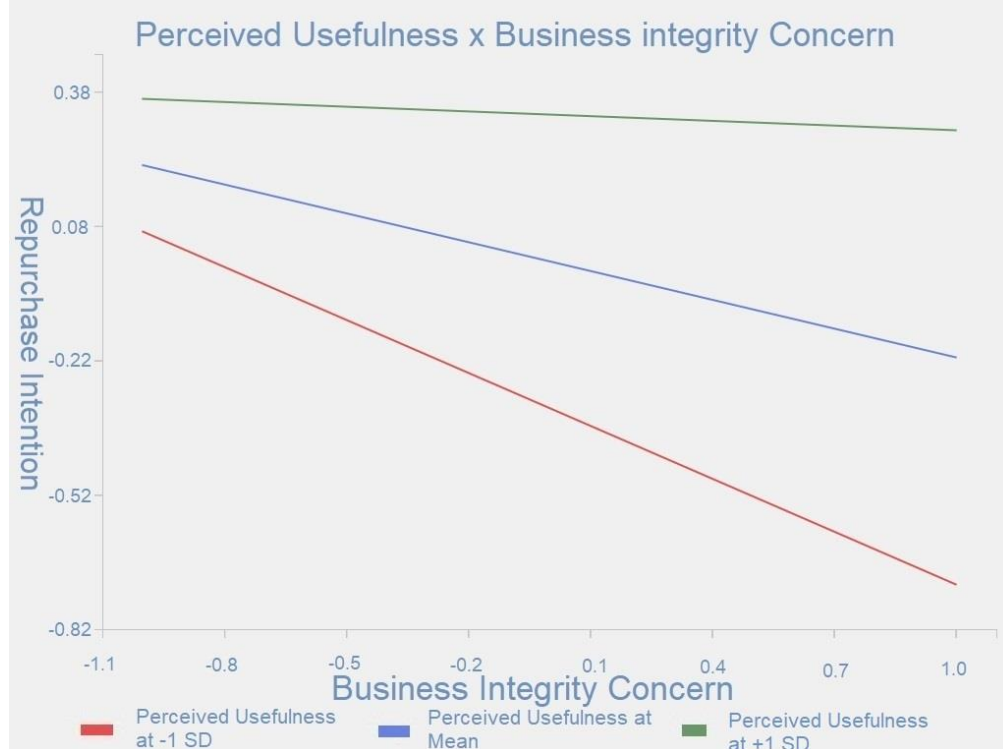
Moderation Effect

The study employed Becker, Ringle and Sarstedt's (2018) two-stage latent interaction approach to assess the moderating effect of perceived usefulness. The results revealed no significant moderation of perceived usefulness on the effects of privacy concern ($\beta = -0.125$, $p = 0.069$) and security concern ($\beta = 0.102$, $p = 0.135$) on repurchase intention (see Table 4 and Figure 2). Consequently, H4a and H4b were rejected. On the other hand, perceived usefulness was found to significantly moderate the effect of business integrity concern on repurchase intention ($\beta = 0.185$, $p < 0.010$), supporting H4c. The interaction plot (Figure 3) further depicts that as perceived usefulness decreases, these effects become weaker and vice versa.

DISCUSSION

The first objective of this study was to investigate the relationships between perceived concerns (i.e., privacy concerns, security concerns, and business integrity concerns) and repurchase intention. Based on the PRT (Brehm, 1966), the results showed that privacy concern and business integrity concern have significant negative impacts on repurchase intention (H1 and H3 were supported), while security concern does not influence repurchase intention (H2 was rejected). This lack of significance contradicts previous studies that have reported security concern as a constraint factor affecting behavioural intention (Belanche, Flavián, & Pérez-Rueda, 2020; Kim, 2020). This discrepancy may be the result of the widespread usage of online payments and e-wallets in Chinese people's daily lives (i.e., familiarity) as well as their good security records (i.e., reliability) (Shao, Zhang, Li, & Guo, 2019), which have given users positive personal experiences and a high level of confidence in security when using travel apps. In other words, users assume by default that they have no need to worry about security issues when they purchase from travel apps.

Figure 3: Perceived Usefulness*Business Integrity Concern and Repurchase Intention



Importantly, the study found that privacy concerns and business integrity concerns are significant constraints of repurchase intention. Specifically, the coefficient of business integrity concern was found to be two times greater (-0.446) than that of privacy concern (-0.182), suggesting that consumers are more concerned with the honesty and fairness of travel providers than with the protection of their personal data. Previous research has widely discussed the negative impact of privacy concerns on consumer behaviour (e.g., Cheah et al., 2022; Choi et al., 2021; Jozani, Ayaburi, Ko, & Choo, 2020; Wieringa et al., 2021), as individuals are becoming increasingly aware of the potential misuse of their personal information. However, few studies have emphasised the importance of business integrity concern to consumers. The results of this study indicate that although privacy concern is still a hindrance, its negative impact has decreased due to people's increased exposure to information collection in the digital age. It appears that individuals may have become familiar with constant data collection and may no longer be as concerned with privacy as they once were. On the other hand, businesses should do everything possible to maintain the trustworthiness and authenticity of their products and services for their consumers, which can help alleviate many of the latter's anxieties.

The second objective was to examine the moderating effect of perceived usefulness on the links between perceived concerns and repurchase intention. The findings reveal that of the three types of concerns studied, perceived usefulness only significantly moderates the relationship between business integrity concern and repurchase intention. This means that perceived usefulness does not effectively alleviate privacy and security concerns when users make repeat purchases from travel apps. However, it does have a significant effect on reducing concerns about the reliability and honesty of the business. When users perceive a travel app as useful, they are likely to have positive experiences, which can lead to positive word-of-mouth and increased trust in the app (Hong et al., 2020; Ventre & Kolbe, 2020). This higher level of trust may make users more willing to forgive occasional lapses in business integrity, as they are more likely to prioritise the benefits they receive from using the app.

THEORETICAL IMPLICATIONS

This research contributes to the existing literature in several ways. First, it has expanded the theoretical boundaries of the PRT by exploring the effects of privacy, security, and business integrity concerns on repurchase intention in the context of travel apps. Unlike previous studies that have mainly focused on positive factors (e.g., Ali et al., 2021; Fang et al., 2017; Ho et al., 2021; Tak & Gupta, 2021), this study sheds light on negative factors or constraints. The findings highlight that privacy and business integrity concerns are significant issues faced by users of travel apps, while security concerns are not considered a major problem due to the widespread use of online payments and e-wallets in China (Shao et al., 2019). This provides new insights to the literature by re-evaluating the role of perceived security in the context of online purchases in China and challenging previous conclusions about the negative impact of security concerns.

Additionally, prior research has mostly focused on the direct impact of perceived usefulness on repurchase intention (Hong et al., 2020; Ventre & Kolbe, 2020), but this study has gone further by examining its moderating effect. The results show that perceived usefulness can alleviate business integrity concerns when consumers decide to repurchase from travel apps. This adds a novel perspective to the field of tourism marketing and opens an interesting direction for future studies, such as the relationship or trade-off between usability and business integrity risk.

MANAGERIAL IMPLICATIONS

Overall, travel providers should prioritise addressing potential risks and concerns to maintain customer satisfaction and loyalty. To establish trust with their customers, they must emphasise the protection of user data and be transparent in their business practices. Failing to do so could lead to decreased customer loyalty, damaged brand reputation, financial losses, and even legal consequences. It is thus crucial for businesses to maintain a positive image of integrity and continuously work to protect their customers' privacy.

In particular, travel providers can minimise privacy concerns by obtaining clear and informed consent from customers before collecting their personal data and soliciting only the minimum amount necessary for business operations. Additionally, they can prevent users' concerns about their business integrity by openly communicating their values, policies, and practices to customers, promptly addressing any customer concerns, and being transparent in their resolution processes. By taking these proactive measures, travel providers can reduce privacy and business integrity concerns and build trust with their customers, leading to increased satisfaction and loyalty.

Furthermore, perceived usefulness can act as a concern reducer for travel providers. The quality of products and services remains the most crucial aspect for companies, as customers' primary objective is to effectively accomplish the tasks they require (Li, Aw, Tan, Cham & Ooi, 2022; Lim, Cheng, Cham, Ng & Tan, 2019; Lim et al., 2022; Yuan et al., 2023). Thus, travel providers must provide app users with more visible benefits such as discounts, competitive prices, and user-friendly navigation to enhance their level of trust and minimise potential business integrity concerns.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

While this study has several advantages, it also has some limitations that require further investigation. Firstly, the study only focused on travel apps, and therefore, the findings may not be generalisable to other areas of tourism that are less reliant on technology. Going forward, it is important to understand the potential differences in perceived concerns across different contexts. Secondly, the lack of a significant relationship between security concerns and repurchase intention indicates the need for further research into the perception of payment security in the digital age where online payments and e-wallets are widely used (Shao et al., 2019; Tew et al., 2022). To clarify these conflicting findings, additional research should be conducted to determine if Chinese consumers have altered their views on payment security. Finally, the insignificant moderation effect of perceived usefulness on the relationship between privacy concerns and repurchase intention raises questions about why it alleviates business integrity concerns but not privacy concerns. This issue also requires further research for clarification.

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