



# Moderating role of privacy concerns on the determinants of mobile tourism adoption among Generation Z

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## ABSTRACT

Mobile tourism is transforming how consumers interact with travel services, yet its adoption remains limited among Generation Z in Selangor. Trust in wireless networks plays a pivotal role in encouraging mobile tourism app usage; however, heightened privacy concerns may undermine this trust and reduce users' willingness to adopt such technologies. Grounded in an integrated framework combining the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), this study examines the influence of perceived usefulness, perceived ease of use, social influence, and wireless trust on mobile tourism adoption intentions. It also explores the moderating role of privacy concerns on the relationship between wireless trust and behavioural intention. A quantitative cross-sectional survey of 384 Gen Z respondents was conducted in Selangor. The results indicate that perceived usefulness, ease of use, social influence, and wireless trust significantly influence mobile tourism adoption intentions. Importantly, privacy concerns was found to moderate the effect of wireless trust, weakening its positive influence. These findings contribute to mobile tourism literature by offering a comprehensive framework for understanding Gen Z adoption behaviour and provide practical implications for enhancing wireless trust while mitigating privacy concerns to promote broader adoption.

Keywords: **Mobile tourism adaption, Generation Z, privacy concern, wireless trust, social influence, perceived usefulness, privacy concerns, moderating effects, digital trust in tourism**

## INTRODUCTION

The increasing reliance on mobile technologies has transformed the tourism sector by enhancing user experience and enabling seamless interactions between consumers and service providers. Certainly, the rise of mobile phone contributed to the explosion of social media as an inextricable part of daily life.

Generation Z, being digital natives, is at the forefront of the adoption of mobile tourism. However, despite the advantages, privacy concerns remain a critical barrier that deters users from embracing mobile tourism solutions (Dinev & Hart, 2006). Existing literature emphasises the importance of wireless trust in driving adoption, yet the moderating effects of privacy concerns have been overlooked. This study aims to bridge this gap by examining the direct relationships between key determinants and adoption intentions while investigating the moderating role of privacy concerns. Thus, this research has three objectives:

- (i) To identify key determinants of mobile tourism adoption among Generation Z in Selangor,
- (ii) To examine the relationship between wireless trust and mobile tourism adoption intentions, and
- (iii) To analyse the moderating role of privacy concerns in the relationship between wireless trust and adoption intentions.

## LITERATURE REVIEW

### *Mobile tourism adoption*

The increasing prevalence of mobile applications in the tourism and hospitality sector reflects a significant shift in consumer behaviour. As reported by Statista (Ceci, 2025), consumers downloaded approximately 116 billion mobile applications in 2019, with projections up to 184 billion by 2024. This trend underscores the growing importance of mobile marketing tools in facilitating information exchange between consumers and service providers (Karjaluoto & Leppäniemi, 2005). In the hospitality industry, mobile apps enhance customer experiences by providing convenient access to information and services, thereby supporting strategic marketing efforts (Kwon et al., 2013). These applications offer a wide range of services, including booking management, navigation, and personalised recommendations, which contribute to customer satisfaction and loyalty. Current literature contributes to understanding how mobile apps are leveraged in emerging markets, particularly in developing countries, to optimise tourism services (Liebana-Cabanillas et al., 2020; Litvin et al., 2018). Moreover, the evolution of smart tourism ecosystems highlights the need for integrating intelligent mobile applications that cater to the dynamic expectations of modern travellers.

### *Generation Z: Digital natives and mobile tourism enthusiasts*

Generation Z (Gen Z), defined as individuals born between 1997 and 2012 (Anderson, 2019), is characterised by its high level of technological fluency and seamless interaction with mobile technologies. As “digital natives” (Prensky, 2001), Gen Z has grown up surrounded by smartphones, social media, and mobile applications, making them highly

proficient technology users (Azudin et al., 2023). Unlike previous generations, they engage with multiple devices simultaneously and rely on mobile apps for communication, entertainment, and decision-making (Kemp, 2020). According to Kemp (2023), an astonishing 87% of Generation Z admitted to sleeping with their smartphones nearby, underscoring their dependence on mobile devices, while 79% reported using mobile apps to stay connected with friends and family.

Additionally, Generation Z exhibits a higher propensity than other generations to engage in mobile-related activities such as mobile banking, e-commerce, and social networking (Wang et al., 2023). Their reliance on mobile tourism applications (MTAs), such as Skyscanner, Booking.com, and Google Maps, enables them to explore destinations, book accommodations, and access real-time travel information effortlessly (Xu et al., 2021). However, despite their enthusiasm for mobile technologies, Generation Z expresses heightened privacy concerns and awareness of the potential risks associated with sharing personal information through mobile platforms (Kim & Lee, 2022). These privacy concerns may moderate the relationship between wireless trust and mobile tourism adoption intentions, emphasising the need for developers to ensure secure and trustworthy applications. As digitally engaged and tech-savvy consumers, understanding the adoption behaviour of Generation Z is critical for mobile tourism providers aiming to meet their expectations for personalised, secure, and efficient mobile services (Zhang et al., 2024).

### *Key factors influencing generation Z's use of mobile tourism applications*

Understanding the factors that influence the adoption of mobile tourism applications (MTAs) among Generation Z is essential for developing user-centric, trustworthy, and effective digital tourism platforms. This study extends the Technology Acceptance Model (TAM) by incorporating key variables relevant to mobile contexts, including wireless trust and privacy concerns, which are especially critical for tech-savvy but privacy-aware users like Generation Z (Kim & Lee, 2022; Xu et al., 2021). Drawing from the extended TAM framework, five key factors were identified:

- i. Perceived Usefulness reflects the extent to which users believe that using the mobile tourism app will enhance their travel planning and experience. For Generation Z, apps must offer timesaving, efficient, and informative features to be perceived as useful (Davis, 1989; Zhang & Li, 2024).
- ii. Ease of Use denotes the level of effort required to use the app. Well-designed with intuitive navigation and low complexity increases user satisfaction and adoption rates among younger digital natives (Chen et al., 2020; Kemp, 2020).
- iii. Social Influence refers to the influence of peers, social media, and online communities in encouraging app adoption. For Generation Z, peer validation and digital recommendations significantly impact decision-making in mobile app usage (Femenia-Serra et al., 2021; Schomakers et al., 2022).
- iv. Wireless Trust represents users' confidence in the app's reliability, data integrity, and security. High levels of wireless trust positively influence adoption intentions, especially when users are expected to share personal or financial information (Gefen et al., 2003; Wang et al., 2023).

- v. Privacy Concerns acts as a moderating variable that may weaken the positive relationship between wireless trust and behavioural intention. Although Generation Z values convenience and functionality, they are also acutely aware of potential data misuse and privacy violations, which may reduce their willingness to adopt mobile tourism platforms (Falcão et al., 2019; Xu et al., 2021).

This study builds on the M-S-QUAL framework, which highlights these elements as critical to constructing a comprehensive conceptual model (Taneja et al., 2024). This research framework aligns with recent literature and builds upon the Mobile Service Quality (M-S-QUAL) perspective, emphasising the importance of functional value, security, and user experience in app adoption (Taneja et al., 2024). By examining these interrelated factors and their influence on mobile tourism adoption behaviour, this study offers a comprehensive view of the determinants relevant to the preferences, habits, and privacy expectations of Generation Z mobile users.

### *Technology acceptance model (TAM) and the role of privacy concerns and wireless trust*

The Technology Acceptance Model (TAM), developed by Davis (1989), remains one of the most widely used frameworks to understand user adoption of technology. TAM posits that two key constructs—Perceived Usefulness (PU) and Perceived Ease of Use (PEOU)—significantly influence individuals' intentions to use technology. Perceived Usefulness refers to the degree to which an individual believes that using a system enhances their performance (Abu Seman et al., 2020), while Perceived Ease of Use reflects the extent to which the system is perceived as effortless to operate (Davis, 1989; Venkatesh & Davis, 2000). Behavioral Intention (BI) to adopt a technology is directly influenced by these perceptions, ultimately leading to actual usage. Although TAM has been widely validated across various domains, it has been critiqued for its inability to fully capture the influence of social, contextual, and psychological factors affecting user adoption, particularly in the context of mobile technologies (Chen et al., 2020; Kim & Lee, 2022).

To address these limitations, TAM2 was introduced by Venkatesh and Davis (2000), incorporating social influence and cognitive instrumental processes to better explain user acceptance. However, recent studies highlight the need to explore privacy concerns and wireless trust as additional determinants influencing mobile technology adoption, particularly among Generation Z users in the tourism industry (Smith et al., 2022; Wang et al., 2023). While TAM assumes that rational decision-making drives adoption, it does not adequately consider the role of privacy concerns and trust in moderating the relationship between perceived usefulness, ease of use, and adoption intentions (Xu et al., 2021; Zhang & Li, 2024). As MTAs require users to share sensitive personal information, privacy concerns significantly impact the trust-adoption relationship by influencing the willingness of Generation Z to engage with such platforms (Santos et al., 2021).

### *Incorporating privacy concerns and wireless trust into TAM*

In the context of mobile tourism adoption, wireless trust (WT) is an essential construct that reflects users' confidence in the reliability, security, and privacy of mobile applications. Gefen et al. (2003) argue that trust is a critical factor influencing technology adoption,

particularly when users perceive potential risks in online environments. Recent studies have extended TAM by incorporating privacy concerns and trust as moderating variables, demonstrating that higher privacy concerns can weaken the positive impact of trust on adoption intentions (Kim et al., 2022; Xu et al., 2021). Consequently, in this study, privacy concerns was proposed as a moderator between wireless trust (WT) and behavioural intentions (BI), potentially weakening the positive influence of trust when privacy concerns are high.

### *TAM in mobile tourism adoption: An extended perspective*

The extended TAM framework used in this study investigates how perceived usefulness, ease of use, social influence, and wireless trust influence adoption intentions of MTAs among Generation Z in Selangor. By integrating privacy concerns as a moderating factor, this model accounts for the nuanced relationship between trust and adoption intentions, thereby addressing the theoretical gaps in traditional TAM. Zhang and Li (2024) emphasised that Generation Z users, while highly engaged with mobile technologies, are also more cautious about privacy risks, which underscores the importance of considering privacy concerns and wireless trust in the adoption framework.

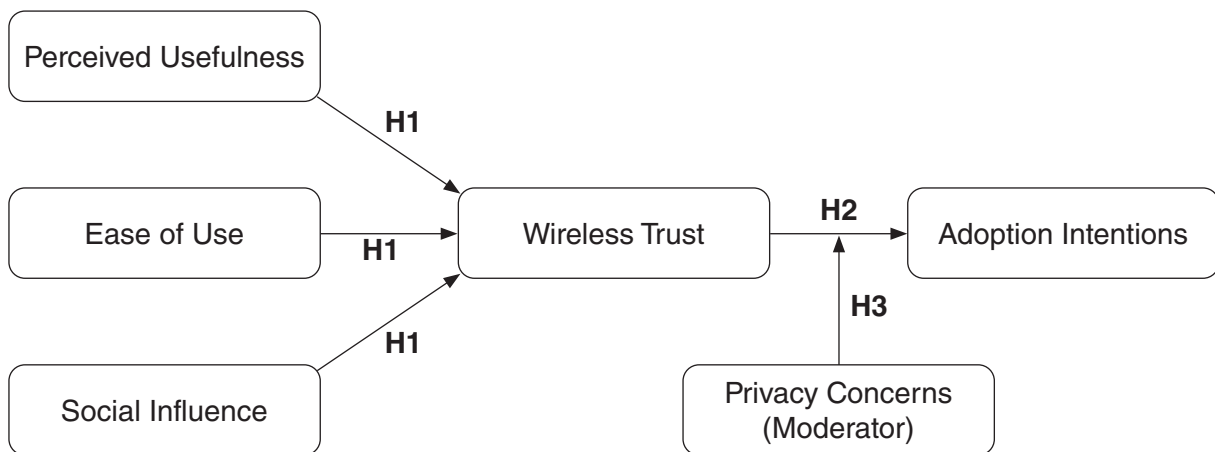
The Technology Acceptance Model (TAM), introduced by Davis (1989), posits that perceived usefulness (PU) and perceived ease of use (PEOU) are primary drivers of technology adoption. This model has been widely used in tourism technology research, particularly in explaining traveller behaviour toward mobile applications (Morosan & DeFranco, 2016). However, TAM has been criticised for lacking contextual and social factors, which are crucial in a mobile and highly interactive environment (Leung & Law, 2007).

The Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) expands on TAM by incorporating performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). This model has proven especially effective in studies of mobile technology in dynamic sectors such as tourism (Wang et al., 2016). UTAUT addresses the limitations of TAM by capturing external influences and technological infrastructure, both of which are highly relevant in the mobile tourism context.

This study integrated TAM and UTAUT to offer a comprehensive lens for examining mobile tourism adoption among Generation Z. While TAM captures internal cognitive appraisals of technology (e.g., usefulness and ease), UTAUT introduces broader determinants such as peer influence and environmental support. Integrating these models allows for a more robust investigation of behavioural intention, especially among Gen Z, who are digital natives but also highly privacy-conscious (Priporas et al., 2017).

Furthermore, existing studies often use these models in isolation, limiting explanatory power. This study contributes to the literature by combining both, particularly in the underexplored context of mobile tourism adoption moderated by privacy concerns. In doing so, it offers an enriched theoretical foundation to explain how individual, social, and contextual factors interact to shape Gen Z's technology adoption behaviours in tourism.

### Conceptual framework



**Figure 1.** Conceptual framework

Figure 1 outlines the conceptual framework combining TAM and UTAUT constructs to investigate mobile tourism adoption among Generation Z. Constructs from TAM, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), capture users' internal beliefs about the effectiveness and usability of mobile tourism applications. UTAUT constructs, namely Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) extend the model by including social and environmental enablers that are particularly relevant in digital tourism ecosystems.

The integration was designed to address both individual cognitive evaluations and broader contextual influences on mobile technology use. The addition of Privacy Concerns as a moderating variable reflects Gen Z's growing sensitivity to data security and its potential impact on trust and behavioural intention (Shin, 2010). This integrated model helps unpack the nuanced ways in which Gen Z navigates mobile tourism technologies under the lens of utility, ease, social pressure, support systems, and privacy awareness.

### Hypotheses development

This study aims to explore the determinants of mobile tourism adoption among Generation Z in Selangor by integrating key constructs from the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The conceptual framework investigates the direct relationships between perceived usefulness, ease of use, social influence, and wireless trust on mobile tourism adoption intentions. Furthermore, it analyses the moderating role of privacy concerns in the relationship between wireless trust and adoption intentions.

*H1: Perceived usefulness, ease of use, and social influence are significant determinants of mobile tourism adoption among Generation Z in Selangor*

The first objective of this study is to assess the impact of perceived usefulness, ease of use, and social influence on mobile tourism adoption intentions among Generation Z in Selangor. Perceived usefulness (PU) reflects the degree to which users believe that adopting mobile tourism applications will enhance their travel experience (Venkatesh

et al., 2016). Ease of use (EOU) assesses the level of effort required to operate mobile tourism apps, with greater ease leading to higher adoption intentions (Sánchez-Torres et al., 2021). Social influence (SI) highlights the role of societal expectations, peer influence, and social media recommendations in shaping technology adoption behaviours, which is particularly significant among digitally engaged populations like Generation Z (Dwivedi et al., 2019).

*H2: Wireless trust positively influences mobile tourism adoption intentions among Generation Z in Selangor.*

The second objective is to explore the relationship between wireless trust and mobile tourism adoption intentions among Generation Z in Selangor. Wireless trust (WT) reflects users' confidence in mobile tourism applications regarding data security, reliability, and privacy protection (Alalwan et al., 2018). High levels of wireless trust foster confidence in mobile platforms, leading to greater acceptance and usage of mobile tourism applications (Chong et al., 2012). Trust in wireless technologies plays a pivotal role in alleviating security concerns and encouraging the adoption of mobile tourism technologies (Navio-Marco et al., 2019).

*H3: Privacy concerns moderate the relationship between wireless trust and mobile tourism adoption intentions, such that higher privacy concerns weaken the positive relationship.*

The third objective is to analyse the moderating role of privacy concerns (PC) in the relationship between wireless trust and adoption intentions. Privacy concerns represent users' fears regarding data security, information misuse, and personal privacy while using mobile tourism applications (Sun et al., 2015). Despite high levels of wireless trust, privacy concerns can discourage users from adopting mobile tourism apps due to perceived risks (Chang et al., 2016). Privacy concerns weaken the trust-adoption relationship by increasing the perception of vulnerability and risk in mobile environments (Hassan et al., 2021).

## METHODOLOGY

### *Data collection*

A quantitative approach was adopted using a cross-sectional survey distributed through Google Forms. Purposive and snowball sampling methods targeted Generation Z consumers active on social media platforms. The target sample size was 384, calculated using the Krejci and Morgan method (Krejcie & Morgan, 1970).

### *Data analysis*

Perceived usefulness, ease of use, social influence, wireless trust, privacy concerns, and adoption intentions were measured using validated scales adapted from prior research. The questionnaire incorporated a 5-point Likert scale to capture responses. Descriptive statistics summarised the data, while multiple regression analysis examined direct

relationships. Moderation analysis using the PROCESS macro by Hayes tested the moderating effects of privacy concerns, and normality testing ensured data appropriateness (Hair et al., 2010).

## FINDINGS AND DISCUSSION

### *Profile of respondents*

Table 1 summarises the demographic characteristics of the 384 respondents who participated in the study on mobile tourism adoption among Generation Z in Selangor, Malaysia. Descriptive information reveals that 56.5% of respondents were female and 43.5% were male. The majority of respondents were single (88.8%), reflecting the demographic characteristics of Generation Z. Regarding travel frequency, 45.8% of respondents reported travelling 4 to 5 times within the past 12 months. In terms of monthly household income, 68.5% of respondents indicated earning within the range of RM3,000 – RM5,000, reflecting the financial status of young adults who were either studying or just entering the workforce.

**Table 1.** Demographic characteristics of respondents (n=384)

Characteristics	Frequency	Percent (%)
<b>Gender</b>		
Male	167	43.5
Female	217	56.5
<b>Marital Status</b>		
Single	341	88.8
Married	43	11.2
<b>Monthly Household Income (RM)</b>		
Less than RM2,000	22	5.7
RM2,000 – RM3,000	41	10.7
RM3,000 – RM5,000	263	68.5
RM5,000 – RM7,000	38	9.9
More than RM7,000	20	5.2
<b>Travel in the last 12 months</b>		
Less than 3 times	65	16.9
3–4 times	98	25.5
4–5 times	176	45.8
More than 5 times	45	11.7

### *Reliability analysis*

The results of the reliability analysis indicate that all constructs used in this study exhibit acceptable to excellent internal consistency, with Cronbach's alpha values ranging from 0.750 to 0.906. According to Nunnally (1978), Cronbach's alpha value of 0.70 or above is generally considered acceptable for social science research. Since all constructs exceeded this threshold, the measurement items can be considered reliable and valid for further analysis.

**Table 2.** Reliability analysis

Variables	Cronbach's Alpha	Number of Items
Perceived Usefulness (PU)	0.895	3
Perceived Ease of Use (PEOU)	0.906	4
Social Influence (SI)	0.868	4
Facilitating Condition (FC)	0.887	4
Wireless Trust (WT)	0.842	3
Privacy Concerns (PC)	0.750	3
Behavioural Intention (BI)	0.802	3

**Normality testing results summary**

Normality testing was conducted to assess whether the data from 384 respondents met the assumptions required for parametric analysis. The tests included the Shapiro-Wilk Test and Kolmogorov-Smirnov (K-S) test to evaluate the normality of the constructs: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Social Influence (SI), Facilitating Conditions (FC), Wireless Trust (WT), Privacy Concerns (PC), and Behavioural Intention (BI). The results indicate that PU, SI, FC, and WT followed a normal distribution with p-values > 0.05 in both tests, along with skewness and kurtosis values within the acceptable range of -1 to +1. Although PEOU exhibited a slight deviation from normality in the Shapiro-Wilk test (p-value = 0.033), the K-S test p-value > 0.05 and acceptable skewness and kurtosis values suggest that the deviation is negligible, and the data can be treated as sufficiently normal. Since all constructs met the normality requirements, parametric tests such as regression analysis and moderation effects testing can be conducted.

**Table 3.** Normality testing results

Variable	Shapiro-Wilk p-value	K-S p-value	Skewness	Kurtosis
Perceived Usefulness (PU)	0.104 (> 0.05)	0.959 (> 0.05)	-0.055	-0.069
Perceived Ease of Use (PEOU)	0.033 (< 0.05)	0.967 (> 0.05)	0.011	-0.454
Social Influence (SI)	0.095 (> 0.05)	0.913 (> 0.05)	-0.168	-0.086
Facilitating Condition (FC)	0.061 (> 0.05)	0.866 (> 0.05)	0.038	-0.397
Wireless Trust (WT)	0.346 (> 0.05)	0.998 (> 0.05)	-0.125	-0.042

**Relationship between perceived usefulness, perceived ease of use, social influence, wireless trust, and behavioural intention to adopt MTAs**

Multiple regression analysis was conducted to assess the relationship between perceived usefulness (PU), perceived ease of use (PEOU), social influence (SI), wireless trust (WT), and behavioural intention (BI) to adopt MTAs among Generation Z in Selangor. The results provide insights into the relative importance of these determinants in influencing mobile tourism adoption. PU has a positive and significant relationship with behavioural intention (BI) (B = 0.245, p < 0.001), suggesting that Generation Z is more likely to adopt MTAs when they perceive them as beneficial and effective in fulfilling their travel needs.

PEOU also demonstrates a significant positive relationship with BI (B = 0.198, p < 0.001), indicating that an easy-to-use mobile app increases the likelihood of adoption among Generation Z users. A user-friendly interface and minimal complexity contribute to higher adoption intentions. SI exerts a moderate but significant influence on BI (B

= 0.128,  $p = 0.002$ ), indicating that peer recommendations, social media, and digital communities play an essential role in shaping the adoption behaviour of Generation Z. WT shows the strongest positive influence on BI ( $B = 0.690$ ,  $p < 0.001$ ), demonstrating that trust in the security, reliability, and data protection of MTAs significantly increases adoption intentions. Generation Z users are more inclined to adopt mobile apps when they trust that their personal information is secure.

**Table 4.** Multiple regression analysis of perceived usefulness, perceived ease of use, social influence, wireless trust, and behavioural intention to adopt MTAs

R-squared	0.011				
Adjusted R-squared	0.001				
F	1.073				
Sig.	<0.001				
Coefficients Table					
	Unstandardized Coefficients				VIF
	$\beta$	Std. Error	t	Sig.	95% CI
(Constant)	3.5131	.198	1.566	0.120	-
PU	0.245	0.045	5.444		1.145
PEOU	-0.0330	0.047	4.213		1.232
SI	-0.0028	0.041	3.122	0.002**	1.091
WT	0.0974	0.052	13.269	<.001	1.000

Wireless trust (WT) emerges as the most influential factor in driving adoption intentions, emphasising the importance of ensuring security and data privacy to build user confidence. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) confirm the importance of providing efficient, intuitive, and user-friendly mobile applications to attract Generation Z users. Social influence (SI) highlights the need for leveraging digital communities and peer recommendations to encourage mobile tourism adoption. These findings underscore the critical importance of enhancing MTAs by improving their functionality, usability, and security to align with the expectations of Generation Z users.

#### *Moderating effect of privacy concerns on the relationship between wireless trust and behavioural intention to adopt MTAs*

The moderation analysis was conducted to determine whether privacy concerns (PC) moderate the relationship between wireless trust (WT) and behavioural intention (BI) to adopt MTAs among Generation Z in Selangor. The results of the moderation analysis provide insights into whether privacy concerns strengthen or weaken the trust-adoption relationship.

**Table 5.** Moderation analysis of privacy concerns on the relationship between wireless trust and behavioural intention to adopt mobile tourism

R-squared	0.020				
Adjusted R-squared	0.013				
F	2.627				
Sig.	<0.001				
Coefficients Table					
	Unstandardized Coefficients				VIF
	$\beta$	Std. Error	t	Sig.	95% CI
(Constant)	2.1267	1.861	1.861	0.064	[-0.121, 4.374]
Wireless Trust	0.4710	1.698	1.698	0.090	[-0.074, 1.016]
Privacy Concerns	0.5692	1.649	1.649	0.100	[-0.109, 1.248]
Wireless Trust x Privacy Concerns	-0.1430	0.084	-1.700	0.090	[-0.308, 0.022]

The interaction term (WT  $\times$  PC) was not statistically significant ( $p = 0.090, > 0.05$ ), indicating that Privacy Concerns (PC) does not significantly moderate the relationship between Wireless Trust (WT) and Behavioural Intention (BI). Although the moderation effect is not statistically significant, the interaction plot suggests an interesting trend where higher privacy concerns appear to weaken the positive relationship between wireless trust and adoption intentions.

## CONTRIBUTIONS AND IMPLICATIONS

From a managerial perspective, the study provides actionable insights for businesses and marketers aiming to increase the adoption of mobile tourism platforms. The strong influence of Perceived Ease of Use (PEOU) suggests that mobile apps should prioritise user-friendly interfaces with intuitive designs to reduce cognitive effort and improve the overall user experience (Kumar & Bhatt, 2022). Social Influence (SI) also emerged as a critical factor, indicating that marketing campaigns should leverage peer recommendations, influencer endorsements, and social proof to enhance trust and encourage adoption (Hossain et al., 2023). Additionally, the significant impact of Wireless Trust (WT) highlights the need for robust security measures, transparent privacy policies, and clear communication about data protection to build user confidence and reduce privacy-related concerns. These strategies can optimise mobile platforms, making them more appealing and trustworthy to Generation Z users.

The study also presents important policy implications for regulators and policymakers in the tourism and technology sectors. The findings emphasise the need for investment in digital literacy programs to enhance users' awareness of data privacy and cybersecurity risks while promoting safe engagement with mobile tourism technologies (Sharma et al., 2022). Policymakers should also encourage the development of privacy-compliant mobile applications by providing grants and incentives for IT businesses that prioritise user privacy and security. Moreover, expanding wireless network availability and affordability can address barriers to adoption, ensuring that mobile tourism technologies

are accessible and appealing to Generation Z. These policy initiatives can contribute to the growth of digital tourism and strengthen the overall tourism ecosystem in Malaysia.

Despite its contributions, the study acknowledges certain limitations that provide opportunities for future research. Expanding the sample size and including respondents from diverse geographic regions can enhance the generalisability of the findings. Additionally, future research should explore adoption behaviours of other generational cohorts, such as Generation Y, and examine the influence of emerging technologies such as augmented reality (AR) and artificial intelligence (AI) on mobile tourism adoption (Gretzel & Koo, 2021). Investigating cultural factors and their impact on technology acceptance can also provide a more comprehensive understanding of the determinants influencing mobile tourism adoption across different contexts.

## CONCLUSION

This study provides a comprehensive analysis of the factors influencing mobile tourism adoption among Generation Z Malaysians. The findings confirm that Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Social Influence (SI), and Wireless Trust (WT) significantly impact Behavioural Intention (BI) to adopt MTAs (Alalwan et al., 2021; Kumar & Bhatt, 2022). By identifying these key determinants, the study contributes to the theoretical understanding of mobile tourism acceptance and offers practical recommendations for businesses, marketers, and policymakers to encourage greater adoption.

The implications extend beyond theoretical contributions by offering practical strategies to optimise mobile tourism platforms. For businesses, the findings highlight the importance of designing intuitive interfaces, enhancing trust through security measures, and leveraging social influence to drive adoption. Marketers can develop targeted advertising campaigns that emphasise trust, privacy, and convenience, aligning with the expectations of Generation Z (Hossain et al., 2023). Policymakers, meanwhile, can focus on improving digital infrastructure and promoting privacy-compliant initiatives to create a supportive environment for mobile tourism growth (UNWTO, 2023).

Finally, while this study makes significant contributions, it highlights the need for further research to address its limitations and explore emerging technologies and consumer behaviours. Expanding the research to diverse demographic groups and geographic regions can improve the applicability of the findings, while examining the influence of technological advancements can provide deeper insights into the evolving landscape of mobile tourism adoption (Gretzel & Koo, 2021). Through continued investigation, researchers and stakeholders can develop more effective strategies to meet the dynamic needs of Generation Z and drive innovation in the tourism industry.

From a theoretical standpoint, this study advances mobile tourism literature by integrating TAM and UTAUT into a unified framework, moderated by privacy concerns. This combination addresses prior limitations of each model in isolation and provides a holistic view of Gen Z's mobile tourism behaviour. By introducing privacy concerns as a moderator, the model also responds to an emerging research need to account for trust and risk in technology acceptance studies. This integrative approach contributes new insights into how internal beliefs and external contexts, alongside data security considerations, shape the behavioural intentions of digital native consumers in tourism.

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