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Examining the role of personal innovativeness and trust in predicting generation Z's online booking behaviour

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Abstract

This study responds to the Technological Acceptance Model (TAM) critics regarding the model's missing self-regulatory and motivational variables. The research integrates personal innovativeness and perceived risk in the TAM model and explores the interrelationships among those constructs. A self-administered questionnaire was used to collect the data for this study, and 293 consumers of the Indonesia Online Travel Agent (OTA) industry participated. The data were analysed using Partial Least Square, which employed the inner and outer model evaluations to analyse the data. The results demonstrated that Generation Z's attitude toward using the OTA application is positively affected by its perceived usefulness and ease of use. Moreover, three variables significantly affect Generation Z's behavioural intention to use e-commerce applications. Personal innovativeness significantly affects perceived transaction risks and attitudes toward using the OTA application. These results imply that in order to enhance customers' willingness to keep using the application, the OTA practitioners should ensure that their customers experiencing the ease-of-use dan the usefulness of the application, so that the customers will have a greater willingness to use the same application in the future.

Keywords:
behavioural intention; generation Z; perceived risk; personal innovativeness.

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Introduction

Today's technological developments are causing rapid changes in the business environment. Technological advancement will affect demand patterns, shifts in customer values, and increasing competitive intensity (Pae & Hyun, 2002). Business organisations must be flexible and adaptive to environmental changes to remain competitive. Business organisations can take advantage of technological developments by conducting technology-based innovation activities and providing the best service for their customers by connected to internet (Rajapathirana & Hui, 2018). Internet allows a global and rapid exchange of information and enables business organisations to market and sell their products. This process is commonly referred to e-commerce. E-commerce market share has proliferated worldwide, with a high potential for digital business marketing. Thus, it is necessary to investigate how customers respond to the new technology and what variables influence their use (Turban et al., 2015).

This study uses the Technological Acceptance Model (TAM) pioneered by Davis (1989) and later completed to determine the online booking acceptance level by Venkatesh & Davis (2000). TAM is regarded as a robust model that can predict the attitudes and behaviours of users regarding new developments in technology (Wijesundara & Xixiang, 2018). Although the model has been widely discussed as appropriate in predicting users' acceptance of new technology, there are some criticisms. The model has low predictive power as it does not include self-regulatory and motivational content, essential in shaping users' behaviours (Bagozzi, 2007). Furthermore, the model excludes socioeconomic variables, such as better economic well-being, internet access, and technological proliferation, which are believed to improve the understanding of user behaviour. TAM framework should be extended by integrating other variables to enhance the model's predictive power (Dutot, 2015; Bailey et al., 2017; Lim, 2018).

Personal innovativeness and perceived transaction risks are essential in measuring the acceptance rate of the customers' new technology. Personal innovativeness is considered a personal control factor, which should be analysed along with the social and environmental factors integrated with the original TAM model (Jackson et al., 2013). Perceived transaction risk is likely to be involved in internet-based activities and it needs to be explored as the antecedent of consumers' technological acceptance rate. Thus, integrating personal innovativeness and perceived transaction risk into the model is important to better predict Generation Z's behaviour toward using online booking applications (Khedmatgozar & Shahnazi, 2018).

This study integrates other marketing constructs in predicting customers' acceptance attitudes and behaviour in online booking applications; it also considers its generational effect, specifically on Generation Z. In the marketing

4.0 era, Kotler et al. (2016) noted that three segments were regarded as the most profitable: youth, women, and netizens. According to Törőcsik et al. (2014), attitudes and behaviour across generations are different based on age, experiences, and environmental influences. Hence, specific research is needed to focus on a single generation in the context of personal innovativeness and perceived transaction risk.

This study focuses on Generation Z, an age group considered digital natives with their perceptions of transaction risk and value in online transaction applications. Furthermore, Generation Z is believed to play a pivotal role as the last distinguishable generation of the information age and the first generation of hyper-connectivity, where internet access is perceived as a human right, connectivity is a necessity, and uncertainty as predictable. Although Generation Z may face problems similar to the previous generations, their technical opportunities provide new perspectives, which make their behaviour incomprehensible to previous generations. For example, the number of Indonesian Generation Z, which accounts for 16% of the total population, will positively impact the economy and the development of e-commerce in Indonesia. Thus, there is a need to investigate the decision-making model of Generation Z in adopting e-commerce applications with the integration of personal innovativeness and perceived transaction risk (Chaney et al., 2017).

In January 2022, 204.7 million of 265.4 million Indonesians actively use the internet for to surf social media, communicate with others, access entertainment, access banking services, and do online shopping. This information reflects the growth of the e-commerce market in Indonesia as a medium for selling and marketing digital products and services. The e-commerce industry is predicted to reach 30–40 billion USD in 2020. Furthermore, revenue in e-commerce market is projected to reach US$52.93bn in 2023; and is expected to show an annual growth rate (CAGR 2023-2027) of 10.42% (Statista, 2023).

Furthermore, in 2018, Singapore and Indonesia were predicted to compete to become the e-commerce centre in Southeast Asia, with 350 million internet users in the region. In the tourism industry, the rising number of online booking applications by tourism agencies is a way to remain competitive. The internet user data in Indonesia and other Southeast Asian countries imply that the rapid growth of internet users forces companies to build click-and-mortar-based portals in addition to existing brick-and-mortar outlets (Anggara, 2019). Regarding Online Travel Agencies (OTA), up to 2022, there are more than 10 OTAs in Indonesia, and by 2026, online sales will generate 73% of revenue in the travel & tourism sector (Katadata, 2022).

Apart from the huge number of internet users in Indonesia, online booking applications in the tourism industry are considerably low; the contribution of online bookings and travel transactions was only 14% in 2016

(Paul et al., 2016; Dutot, 2015). Thus, a study focusing on Indonesian e-commerce users' behaviour is required. This study aims to explore the role of perceived usefulness, perceived ease of use, attitude, personal innovativeness and perceived risk on OTA customers' loyalty. This study is projected to contribute in the literature by providing a clearer understanding about how to enhance OTA customers' loyalty through the integration of personal innovativeness variable and providing a comprehensive model that focusing on the Generation Z.

Literature review

Technological acceptance model (TAM)

TAM is an emerging model which attempts to explain that user perceptions of a system will influence their attitudes. The former theory of individual behaviour is known as the Theory of Reasoned. TAM exhibits the ease of use and usability perceptions in new technology. The acceptance factor is determined by both the user and the technology. While the user trait consists of cognitive characteristics, individual character, personality, and individual concerns about the impact of technology, the technology trait consists of the network and the state of the technology itself. The fundamental purpose of the TAM is to identify the determinants of technology acceptance and user attitude by conceptualising the interaction between users and new technology. It originated from a psychological approach to explain the users' expectations, attitudes, interests, and behaviours. TAM is concise and practical in predicting the acceptance factor of technology Action (Fishbein, 1975; Ajzen & Fishbein, 1980; Davis, 1989).

Generational theory

The latest discovery on generations interprets each categorised feature and attribute of a generation based on characteristics, such as reading, media usage, accessing information, knowledge, perspective, and attitude. Defining the most recent generation may also be challenging; fully distinguishing the gap between generations is still a popular topic among researchers (Törőcsik et al., 2014). To define Generation Z, Priporas et al. (2017) profiled them as young adults born in 1995 or later who are highly educated, technologically savvy, innovative, and creative.

Based on Hungarian lifestyle outcomes, young people can be divided into three large groups, each with different motivations: 17% are prestige-oriented, strive for outstanding knowledge, and believe in the importance of having a university degree and significant career; 33%, known as the experience seekers, who mostly meet the minimum educational expectations, while sometimes being willing to acquire knowledge differently; 43%, or the level-

headed, who live in difficult circumstances because of poor self-management and life planning, resulting in a frugal lifestyle (Törőcsik et al., 2014).

Despite these divisions, Generation Z is portrayed as the first generation that has grown up experiencing highly similar cultures, lifestyles, and communication worldwide; they are affected and formed by the same impacts as a result of inter-connectivity on the internet and social networks (Törőcsik et al., 2014). As Koulopoulos & Keldsen (2016) stated, Generation Z will play a pivotal role as the last distinguishable generation of the information age and the first generation of hyper-connectivity, which perceives internet access as a human right, connectivity as a necessity, and uncertainty as predictable. Although Generation Z faces problems similar to previous generations, their technical opportunities provide new perspectives, making their behaviour incomprehensible to the previous generations. For instance, Generation Y is less concerned about being monitored by big corporations, but baby boomers may find this precarious. The younger generations feel that corporate monitoring is an acceptable and normal practice that helps to provide better and more customised products. In economics, each generation has distinct expectations, experiences, generational history, lifestyles, values, and demographics that influence consumer decisions. Generation Z is known for innovation and change and is considered the future marketing challenge (Williams & Page, 2011). Wood (2013) suggests that four trends are likely to characterise Generation Z as consumers: their interest in new technologies, their insistence on ease of use, their desire to feel safe, and their desire to temporarily escape the realities they face. They have experienced a lot in their brief lifetime and have encountered political, social, technological, and economic changes. Advanced technologies have a significant influence on Generation Z's consumer experiences. Moreover, they expect various new devices and electronic processes to be widely available, becoming essential in dealing with the ease and speed of transactions, information provision, and convenience (Priporas et al., 2017).

Attitude and online customer loyalty

According to Cheung & To (2017), developing consumer attitudes demonstrates the relationship between trust, attitude, and behaviour. For instance, a product attribute is a characteristic in which the consumers display their confidence. Consumer trust is represented by how well a consumer knows about a product and its attributes and benefits. Moreover, the degree of trust differs among consumers. Kotler & Keller (2016) define attitude as evaluating what objects or ideas one may like or dislike. Accordingly, attitude is a psychological state representing a person's thoughts, feelings, or acts differently concerning an object.

The concept of brand loyalty has been widely discussed in various marketing literature. Customer loyalty is the customers' profound commitment to consistently repurchase or use a preferred product or service. Even though the concept of online loyalty is similar to the concept of traditional loyalty, there are unique aspects in the field of marketing and internet-based buyer behaviour (Ram & Wu, 2016; Kasiri et al., 2017).

Customer loyalty represents the relationship between customers and their preferred brand. It predicts whether a customer will switch to another brand if the preferred brand changes in price or other attributes. Generally, a loyal customer will continue to purchase a product despite many alternatives. On the contrary, less loyal consumers will purchase a product based merely on product quality, price, and convenience, and will switch to other brands with better quality (Bergel & Brock, 2019; Kondasani & Panda, 2015). Accordingly, loyalty is related to customer preferences, actual purchases, and a strong commitment to repurchase a product in the foreseeable future, despite marketing efforts by competitors and situations that lead to switching brands (Wolter et al., 2017; Hapsari et al., 2020).

Previous studies found that the more positive the customers' attitudes toward a brand, the higher intention to repurchase. Thus, a positive attitude toward brands is a predictor of customer loyalty (Yeo et al., 2017; Choe & Kim, 2018). The following relationship is hypothesised.

H1: Attitude has a positive and significant effect on behavioural intention.

Perceived usefulness and perceived ease of use

Usability is the degree to which a person believes using a particular system enhances their job performance. For example, in an online booking application, users believe that the application will improve productivity. Furthermore, the perception of usability forms a belief that shapes opinions about technology. Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort. Ease refers to freedom from difficulty or great effort, where effort is a limited resource possessed by a person, allocated to various activities as a responsibility. In other words, technology perceived as easy to use is more likely to be accepted by users (Davis, 1989). A previous study noted that perceived ease of use could predict customers' perception of the online application's usefulness (Alalwan et al., 2016). Furthermore, when customers perceive an application as useful and easy to operate, their positive attitude toward the application will increase (Im & Hancer, 2016; Sarkar & Khare, 2017). Thus, the following relationships are hypothesised.

H2: There is a positive and significant effect of perceived usefulness on attitude.

Perceived ease of use has been widely used in predicting technology users' perceived usefulness. The relationship between perceived ease of use and perceived usefulness is regarded as the core concept of Technological Acceptance Model (Davis (1989). The TAM concept then being used by other researchers in various industry such as Caffaro et al. (2020) in farming industry, Chaveesuk et al. (2022) in mobile payment industry, and Girish et al. (2022) in education industry. Thus, the next hypothesis is formulated as follow.

H3: There is a positive and significant effect of perceived ease of use on perceived usefulness.

The perceived usefulness of the technology or applications should be perceived positively by the technology users. The perceived usefulness of technology, can be regarded as a robust predictors of behavioural intention, as previous study have found that the more customers perceived a good functionality of the technology, it will enhance customer possibility to keep using the technology (Goel et al., 2022; Juntongjin, 2022; Imlawi & Jaradat, 2022). Thus the following hypothesis is formulated as:

H4: Perceived usefulness has a positive and significant effect on behavioural intention.

Technology users' positive evaluation towards the usefulness of the technology is not only affecting their behavioural intention, but also affecting their attitudes. The more the users feel that the technology can make their life easier, the more they perceived a positive attitude towards the technology (Majumder et al., 2022). The relationship between perceived usefulness and attitude has been found by previous study in various industry, such as study done by Arghashi & Yuksel (2022) in online retail industry, Hussein et al. (2022) in social media usage, and Majumder et al. (2022) in e-commerce industry. Thus, the next hypothesis as follows.

H5: There is a positive and significant effect of perceived ease of use on attitude.

Perceived transaction risks

Consumers need to be more cautious about using online transactions, which affects their behaviour toward online booking applications (Ariffin et al., 2018). Risk implies uncertainty consumers face when they cannot predict the consequences of a buying decision (Schiffman et al., 2010). Ariffin et al. (2018) explained that consumers hesitate to choose online transactions when the risk is higher than that in conventional transactions. Kotler & Keller (2016) introduce several kinds of risks perceived by consumers: functional risk, where the product does not work as expected; physical risk, where the product jeopardises the physical health of the user or other people; financial risk, where the price paid is grossly overpriced compared to the product quality; social risk,

where the society does not approve of the value of the product; psychological risk, where the product negatively affects the psychological state of the user; and time risk, where the product defect causes an opportunity cost to find another product. Yang et al. (2015) indicate there are three types of risks in online transactions: product risk, where the products do not meet the expectation; financial risks that relate to fraud causing financial loss; privacy risks that relate to security and privacy violations during the transaction leading to the abuse of personal information by irresponsible parties. Thus, the following relationships are hypothesised.

H6: There is a negative and significant effect of perceived transaction risk-on attitude.

In addition to the effect of perceived transaction risk on the customers' attitude, risk in doing online transaction also regarded to be the negative antecedents of behavioural intention. Previous research found that higher risk perceived by consumers will lessen their positive behavioural intention toward the brand as noted by Choi et al. (2013), Tzavlopoulos et al. (2019), and Mulia et.al (2021). Thus, the following relationships are hypothesised.

H7: Perceived transaction risk has a negative and significant effect on behavioural intention.

Personal innovativeness

Personal innovativeness refers to the ability of an individual to adapt and embrace changes and the willingness to try out any innovation and technology in a certain domain (Siu & Chang, 2015; Turan et al., 2015). Innovation is the degree to which the adoption of change and new information is compared to the other social system members. In other words, personal innovativeness is measurable. Individuals with high personal innovativeness are willing to take more risks and cope with higher levels of uncertainty than their peers (Lu et al., 2005). In terms of individual customers, there are two dimensions of personal innovativeness: product-specific innovativeness, where customers centralise their innovativeness in product variety and category, and life innovativeness, where the socio-psychological perspective is perceived as cognitive, sensory traits, or an innate ability of an individual to be innovative (Amoroso & Lim, 2015).

Highly innovative people enjoy the challenge of new frontiers. Despite the higher levels of uncertainty and risk, the internet may offer advantages and benefits regarding purchasing goods and services, such as lower prices, convenience, and wider selections. The importance of personal innovativeness in online purchase intention has shown that it is difficult to practice and identify people who enjoy experiences necessarily stimulated by technology (Thakur & Srivastava, 2015; Purani et al., 2019).

Regarding online banking and e-commerce, Siu & Chang (2015) support the idea that when consumers' innovativeness is high, the positive impact of service quality on the intention to use internet banking is low, and the negative impact of perceived risk is also low. E-commerce users need help assessing the quality of products or services in the purchasing process, which is perceived as an unavoidable risk and uncertainty. However, this perceived risk does not stop customers with high personal innovativeness from accepting any form of e-commerce as better than others (Jianlin & Qi, 2010). Thus, the following relationships are hypothesised.

H8: Personal innovativeness has a positive and significant effect on perceived ease of use.

Individuals with high personal innovativeness are more receptive to adopting emerging changes and technology. They are also willing to take risks, respond positively to technological innovations, and embrace new technology-based products. This behaviour is known as technological innovativeness (Thakur et al., 2016; Lin & Filieri, 2015). Turan et al. (2015) explained that although highly innovative people can adapt well to innovations, such results can only be achieved with the right structure, design, and functionality. Lu et al. (2005) support the idea that personal innovativeness needs to be considered in determining consumer acceptance, while usefulness and perceived ease of use are significant variables in consumer willingness to adopt technology (Amoroso & Lim, 2015). More innovative people will enhance the perceived usefulness as noted by Lui et.al, (2021), Chen at.al (2019), and Shanmugavel (2022). Thus, the following relationships are hypothesised.

H9: Personal innovativeness has a positive and significant effect on perceived usefulness.

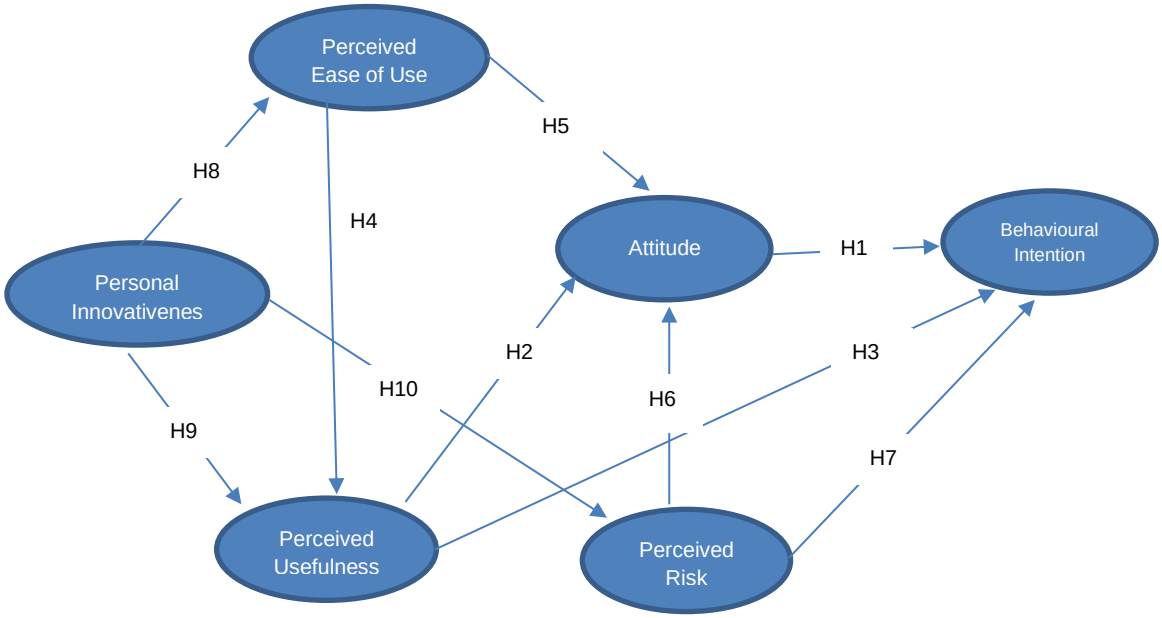
Consumers' personal innovativeness is regarded as a variable that give negative effect on perceived risk. The more innovative the consumer, it will lead to the lower risk perception owned by the consumers. This concept is supported by previous study (Chauhan et.al., 2019; Senali et.al., 2022; Matthew et.al., 2021). Thus, the following relationships are hypothesised.

H10: Personal innovativeness has a positive and significant effect on perceived risk.

Figure 1 shows the conceptual model which integrate all variables in this study which are personal innovativeness, perceived ease of use, perceived usefulness, attitude, perceived risk, and behavioural intention.

Figure 1.

Conceptual Model



Research method

Additionally, a pilot study of 30 Indonesian respondents was carried out to enhance the results' reliability by ensuring the survey questionnaire's content validity before the main survey was administered. The data were analysed by using Partial Least Square (PLS). Outer and inner model are evaluated before the hypothesis testing conducted. In outer model evaluation, the convergent validity, discriminant validity, and reliability were evaluated. Each indicator must have an outer loading value greater than 0.7, indicating that it is valid and trustworthy. However, if the AVE value is greater than 0.5, with outer loading between 0.4 and 0.7 is still permissible In addition, a test of discriminant validity was performed by comparing the square root of AVE to the correlation score between variables. To guarantee the reliability of the utilised measurement, a reliability test was conducted. Evaluation of the conducted reliability refers to the composite reliability value. The expected composite reliability value is greater than 0.70 (Hair et al., 2016).

Data collection and respondent profiles

The respondents of this study were users of online booking applications, and a total of 350 questionnaires were distributed to Indonesian e-commerce customers. Of these, 293 completed questionnaires were usable, yielding a response rate of 83.7%, meeting the minimum sample size requirement. The sample size was calculated by multiplying the largest number of formative

indicators/items by 10. Thus, the minimum sample for this study was 4 items ×10, or 40 respondents (Chin & Newsted, 1999). The minimal sample size required by statistical analysis is 40 respondents to ensure that the number of respondents was enough to conclude the impact of the antecedents' variable on behavioural intention; however, this research administered 300 questionnaires, a number recommended by Hair (2016) as sufficient for more than 3 variables.

This study used a structured questionnaire that consisted of two sections to obtain information from respondents: the first section captured the respondents' demographic characteristics, while the second section asked about respondents' attitudes and evaluation of personal innovativeness, perceived ease of use, perceived usefulness, attitude, perceived risk, and behavioural intention toward the usage of online booking application.

Data analysis and result

Table 1 displays the profiles of the surveyed respondents. The demographic statistic in Table 1 shows that 61.84% of the respondents are female, and 38.16% are male. All respondents were well-educated: 80.92% completed high school education, and the rest held a bachelor's or a diploma. Most respondents used online booking applications around 1–5 times a year (80.28%), while 19.07% used the application about 6–10 times a year, and only 0.65% used the application more than 10 times a year.

Table 1.

The demographic characteristics of surveyed respondents (in percentage)

Characteristics	Category	Frequency	Percentage
Gender	Male	112	38.16%
	Female	181	61.84%
Age	17–20 years old	218	91.44%
	21–24 years old	75	8.56%
Education	High school	193	80.92%
	Diploma	95	17.10%
	S1	5	1.98%
Income	< Rp 1.500.000	112	38.15%
	Rp 1.500.001 - Rp 3.000.000	152	51.97%
	Rp 3.000.001 - Rp 4.500.000	25	8.55%
	> Rp 4.500.000	4	1.33%
Frequency using online booking applications in the last 12 months	1–5 times	235	80.28%
	6–10 times	56	19.07%
	>10 times	2	0.65%

Outer model evaluation

An outer model evaluation was conducted to ensure the measures' robustness. The psychometric properties were assessed using three evaluations: convergent validity, discriminant validity, and uni-dimensionality. The following section discusses the findings of the outer model evaluation.

Convergent validity was conducted to evaluate the rigorousness of the items used. A variable with robust items must have an Average Variance Extracted (AVE) larger than 0.5 and the outer loading for each item larger than 0.7 (Hair, 2016). For this study, the AVE score varied between 0.596 and 0.773, and the outer loadings were between 0.677 and 0.915. Although one item had an outer loading below 0.7, it was not deleted since the AVE score exceeded the required value. Thus, convergent validity problems were not found.

Discriminant validity was examined by evaluating the heterotrait-monotriat ratio of correlations (HTMT) score; the variables' HTMT score must be less than 0.90 to avoid the discriminant validity problem. For this study, the HTMT scores (Appendix 1) were less than 0.90 for each item; thus, there were no discriminant validity problems.

A uni-dimensionality test was performed to ensure that the variables used had one dimension, as proposed by the researchers. A uni-dimension variable must have composite reliability of more than 0.7 scores. For this study, the composite reliability score varied between 0.877 and 0.911, confirming that all variables used in this study were uni-dimensional. Appendix 2 summarises the outer loading scores, AVE, and composite reliability.

Inner model evaluation

The inner model evaluation was conducted based on three indicators, namely the coefficient of determination (R-squared), predictive relevance (Q-squared), and the Goodness of Fit (GoF) index. The sections next explain the findings of the inner model evaluation. The coefficient determination (R-squared) explains the percentage of endogenous variability, as the exogenous variables explain that the higher the coefficient determination, the better the model fit. The coefficient determination in this study varies between 0.033 and 0.546. While there is no particular cut-off value for R-squared, suggested that predictive relevance (Q-squared) must be more significant than zero (Q-squared > 0) (Chin, 2010). For this study, all endogenous variables had a predictive relevance score larger than zero. Appendix 3 summarises the score of coefficient determination and predictive relevance.

The GoF score is 0.10, which considered low, while 0.25 and 0.36 are considered medium and high, respectively. In this study, the GoF score was 0.466, meaning that the GoF value was considered high. Upon completing the inner model evaluation, the model was confirmed to be robust enough to explain the relationship among variables. The next section discusses the hypotheses testing.

Hypothesis test

Table 2 summarizes the hypotheses tests result. Table 2 shows that the statistical estimation showed that attitude significantly positively affects

behavioural intention ($\beta = 0.596; t = 12.637$). H1 is supported. Perceived usefulness significantly positively affected attitude ($\beta = 0.478; t = 7.048$). H2 is supported. Perceived usefulness significantly affects behavioural intention ($\beta = 0168.; t = 3.453$). H3 is supported. The estimation result indicated that perceived ease of use significantly positively affected perceived usefulness ($\beta = 0.492; t = 12.898$) and attitude ($\beta = 0.428; t = 8.637$). H4 and H5 are supported. The statistical estimation showed that perceived transaction risk significantly negatively affected attitude ($\beta = -0.198;\ t = 5.453$). H6 is supported. However, perceived transaction risk had a significant negative effect on attitude but did not show a significant effect of perceived transaction risk on behavioural intention ($\beta = 0.053; t = 1.300$). H7 is not supported. Personal innovativeness positively affected both perceived ease of use ($\beta = 0.331; t = 5.461$) and perceived usefulness($\beta = 0.248; t = 5.960$). H8 and H9 are supported. Personal innovativeness significantly negatively affected perceived transaction risk, which the results confirmed ($\beta = -0.150; t = 2.359$). H10 is supported.

Table 2.
Summary of hypothesis test

Hypothesis	Remark
H1: Attitude → behavioural intention ($\beta = 0.596; t = 12.637$)	Supported
H2: Perceived usefulness → attitude ($\beta = 0.478; t = 7.048$).	Supported
H3: Perceived usefulness →behavioural intention ($\beta = 0168.; t = 3.453$).	Supported
H4: Perceived ease of use → perceived usefulness ($\beta = 0.492; t = 12.898$)	Supported
H5: Perceived ease of use → attitude ($\beta = 0.428; t = 8.637$	Supported
H6: Perceived transaction risk → attitude ($\beta = -0.198;\ t = 5.453$).	Supported
H7: Perceived transaction risk →behavioural intention ($\beta = 0.053; t = 1.300$).	Not supported
H8: Personal innovativeness → perceived ease of use ($\beta = 0.331; t = 5.461$)	Supported
H9: Personal innovativeness → perceived usefulness ($\beta = 0.248; t = 5.960$).	Supported
H10: Personal innovativeness → perceived transaction risk ($\beta = -0.150; t = 2.359$).	Supported

According to TAM, this study proposed the significant effect of perceived usefulness on attitude and behavioural intention, as posited in Hypotheses 2 and 3. The result showed that perceived usefulness significantly positively affected attitude ($\beta = 0.478; t = 7.048$). Similar to its effect on

attitude, this study found that perceived usefulness significantly affects behavioural intention with $\beta = 0168.; t = 3.453$ (hypothesis 3 accepted).

Apart from perceived usefulness, this study also tested the effect of perceived ease of use on perceived usefulness (hypothesis 4) and attitude (Hypothesis 5). The estimation result indicated that perceived ease of use significantly positively affected perceived usefulness ($\beta = 0.492; t = 12.898$) and attitude ($\beta = 0.428; t = 8.637$). Thus hypotheses 4 and 5 were accepted.

The statistical estimation showed that perceived transaction risk significantly negatively affected attitude ($\beta = -0.198;\ t = 5.453$). Thus, hypothesis 6 was accepted. However, perceived transaction risk had a significant negative effect on attitude but did not show a significant effect of perceived transaction risk on behavioural intention ($\beta = 0.053; t = 1.300$). Thus, hypothesis 7 was not supported.

Personal innovativeness is a new construct introduced in this study to strengthen the predictive power of TAM. Hypotheses 8 and 9 hypothesised that personal innovativeness had a significant positive effect on perceived ease of use and perceived usefulness, respectively. Similarly, the result showed that personal innovativeness positively affected both perceived ease of use ($\beta = 0.331; t = 5.461$) and perceived usefulness($\beta = 0.248; t = 5.960$). Hypothesis 10 hypothesised that personal innovativeness significantly negatively affected perceived transaction risk, which the results confirmed ($\beta = -0.150; t = 2.359$). Thus, hypothesis 10 was supported.

Attitude on behavioural intention

Hypothesis 1 is supported. This study found that the attitude of Generation Z toward online booking applications was a significant determinant of their behavioural intention in re-patronising a service, meaning that when they felt happy and attracted to use the application, their loyalty to reuse the application was enhanced. This finding is supported by previous research that found that consumers' positive attitudes will lead to higher loyalty (Prentice & Handsjuk, 2016). This result supports previous research done by Yeo et. al (2017) and Levitt et.al (2019) in online food delivery and tourism industry. Thus, management has to ensure the application's attractiveness and confirm that the users are happy using it.

Perceived usefulness on attitude

Hypothesis 2 is supported. This study found that perceived usefulness influence Generation Z attitude toward online booking applications. This finding supports previous study done by Grover at.al (2019) and Manda & Salim (2021). This finding implies that online travel agent should ensure that their customers experienced good performance of the application. Using online

travel agent application can speed up the booking process and increase customers' productivity. By perceived the usefulness of the application, customers will tend to have a positive attitude towards the online travel agent application.

Perceived ease of use on perceived usefulness

Hypothesis 3 is supported by evidence. This study discovered that perceived usefulness has a significant effect on behavioural intention, which is consistent with its effect on attitude and lends support to To & Trinh (2021) and Mailizar et al. (2021) research. This finding suggests that the service provider should make the application easy to use and understand in order to increase the perceived usefulness of the application. When it comes to providing assistance to customers, exceptional user-friendliness can significantly cut down on the amount of resources that are required. If a customer is able to make quick and easy use of a product, service, or application, they will have less need for the company's customer service department, which will save the company both time and money.

Perceived usefulness on behavioural intention

Hypothesis 4 is supported. This study found that perceived usefulness influence Generation Z behavioural intention toward online booking applications. These findings supported the study done by Chen & Aklikokou (2021) and Taufik & Hanafiah (2019). This study also supports previous studies which found that the degree of technology acceptance was positively affected by customers' perceptions of the usefulness of technology and ease of use (Munoz-Leiva et al., 2017; Hsu, 2016). Perceived usefulness and ease of use positively affect customers' attitudes toward the technology and enhance customer intention to reuse an application. This individual trait recognise that some individuals have a greater propensity for risk taking behaviour and that this capability can enable them to deal more readily with the higher levels of uncertainty that can be involved with adopting new innovations (Rogers, 2003).

Perceived ease of use on attitude

Hypothesis 5 is supported. This study found that perceived ease of use influence Generation Z attitude toward online booking applications. Perceived ease of use are basic constructs in the TAM that constitute a significant effect on attitude toward technology use, which in turn affects the behavioural intention to use technology (Davis et al., 1989). This study supports the previous study of Cho & Agrusa (2006) found that perceived ease of use and usefulness affected consumer's attitude toward online travel agencies, which in turn affected consumers' satisfaction or intention to use. The previous research about hotel reservation websites adoption found that perceived

usefulness, ease of use, and playfulness had an impact on attitudes toward using hotel reservation websites Morosan & Jeong (2008). Moreover, attitudes and perceived playfulness had an impact on users' intentions to use hotel reservation websites. These findings supported the study done by Chen & Aklikokou (2021) and Taufik & Hanafiah (2019). Similar to the effect of perceived usefulness on the behavioural intention, this study also found that perceived ease of use will enhance customers' behavioural intention. It implies that the more customers found that the application is easy to operate, flexible and easy to learn, then it will enhance customers' possibility to keep using the application.

Perceived transaction risk-on attitude

Hypothesis 6 is supported. Perceived transaction risk affect attitude because there are some transaction risks associated with technology. Perceived transaction risk was thought to have essential effects on both an individual's attitude and their behavioural intention. This finding is also consistent with the findings of prior research carried out by Chao (2019) and Yu et al. (2021). According to this finding, in order to boost online travel agent customers' generally positive attitude toward the application, it is necessary for customers to have a lower perceived level of transaction risk. The risk that online travel agent customers believe they are exposed to, which may include product risk, financial risk, or privacy risk. Therefore, in order to reduce the risk that the customers feel they are exposed to and to raise the positive attitude of the customers, online travel agent should work to increase the trust that customers have toward online travel agent and the transaction process.

Perceived transaction risk on behavioural intention

Hypothesis 7 is supported. The incorporation of an individual's self-perceived innovativeness as well as their perceived level of transactional risk produced some fascinating findings. It revealed that members of Generation Z are aware of the potential downsides to embracing digital technology, despite the common perception that members of this generation are born into the digital age and cannot function without it. Even though the customers' perception of the risk associated with the transaction does not significantly affect their intention to continue using the application, customers will develop a negative attitude toward the application if the perceived risk is increased. This finding is supported by the findings of previous research, which show that this negative relation is caused by high consumers' trust in provider, particularly with regard to data protection management (Beldad et al., 2012; Namahoot & Laohavichien, 2018). It suggests that the provider should be concerned with data protection management in order to maintain a positive consumer behavioural intention.

Personal innovativeness on perceived ease of use

Hypothesis 8 is supported. This study found that personal innovativeness influence Generation Z perceived ease of use toward online booking applications. This finding in line with previous study done by Chauhan et. al (2019); Patil et. al (2020) and Sigh et. al (2020). Perceptions of technological transaction risks could be reduced through high personal innovativeness, thus, lowering customers' perceived transaction risk in using technology. People with high personal innovativeness would be motivated to try new technology and set aside their perceptions of transaction risks, so online travel agent should create marketing communication which target to high personal innovativeness audience.

Personal innovativeness on perceived usefulness

Hypothesis 9 is supported. The hypothesis testing reveals that personal innovativeness positively affects perceived usefulness. It means that customers that have high personal innovativeness will have positive perception about the usefulness of the application. This finding supported by the previous study done by Twum et. al (2022), Wang & Lin (2021), and Shanmugavel & Michael (2022) which show the effect of personal innovativeness toward perceived usefulness. This finding implies that online travel agent should target the customers that have high personal innovativeness. Consumer with high personal innovativeness take more risks and cope with higher levels of uncertainty.

Personal innovativeness on perceived risk

Hypothesis 10 is supported. This finding shows that the more innovative individual will tend to perceived less transaction risk when using online travel agent application. This finding support previous study that has been done by Chauhan et. al. (2019), Senali et. al. (2022), and Kim & Chang (2020). These findings supported the technological acceptance model and proved that the model is also applied to the Generation Z. Although the Generation Z is regarded as the digital natives, they still consider the perceived ease of use and usefulness of the web or application to shape their behavioural intention to continue using the application as proposed by the technological acceptance model. These findings show that the technological acceptance model can be applied across generations. This finding supports previous study done by Grover et. al. (2019) and Manda & Salim (2021).

This study's results reveal some concepts that can be used to enhance the hospitality industry's performance. The hospitality industry, including accommodation and transportation, needs to ensure that in designing the marketing communication, the hospitality-based company must highlight the offerings' point-of-different. The differentiation offers by the hospitality-based

company via marketing communication can trigger Generation Z innovativeness and will positively shape Generation Z's attitude toward the company. Furthermore, this study shows that the online travel agent should ensure that they provide a good user interface (such as the ease of use of the website and application) and user experience to enhance positive customer attitude and strengthen customer loyalty.

Conclusion

Generation Z is a native digital generation with unique attitudes and behaviours toward new technology. Their positive perception of the ease of use and the usefulness of the technology should be improved to enhance Generation Z's positive behaviour toward their acceptance of new technologies. Furthermore, personal innovativeness is a crucial factor affecting Generation Z's perceived transaction risk, usefulness, and ease of use of the new technology. However, perceived risk does not affect Generation Z's behavioural intention due to youth characteristic which always interested in innovation. This study focuses only in the Generation Z which have different characteristics with other generation. Thus, the future research may conduct similar research to strengthen the findings by comparing two or more generations. Furthermore, future research should add more constructs related to consumers' acceptance of new technology and integrate other constructs such as customer hedonic motivation, gamification, and UI-UX aspect of application to enhance the model's predictive power.

Author contribution

Raditha Hapsari: Knowledge architect, concept, data curation, distributing of data, analysis, methodology, validation, visualisation, writing original draft, review & editing. **Ananda Sabil Hussein**: Conceptualisation, supervision, data curation, formal analysis, investigation, methodology, review & editing. **Christopher Gan**: Supervision, validation, review & editing.

Declaration of interest

The authors have revealed no possible conflicts of interest related to the research, writing, or publication of this paper. Everything given in this work has been unanimously agreed upon, and the authors guarantee the study results' originality.

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Appendix 1.

Heterotrait-monotriat ratio of correlations (HTMT) score

	Attitude	PEOU	PI	PR	PU	RI
Attitude						
PEOU	0.670					
PI	0.565	0.468				
PR	0.377	0.147	0.224			
PU	0.791	0.694	0.531	0.233		
CL	0.804	0.620	0.496	0.237	0.663	

Appendix 2.

Outer loadings, AVE, and composite reliability

Variable	Items	Outer Loadings	AVE	Composite Reliability
Attitude	Using an online booking application is something interesting.	0.829	0.773	0.911
	I love to use online booking applications to buy plane and hotel tickets.	0.891		
	Buying plane and hotel tickets through an online booking application would be good.	0.915		
Behavioural Intention	I recommend an online booking application to others.	0.874	0.765	0.907
	I will always use an online booking application	0.883		
	I will use an online booking application in the future.	0.867		
Ease of Use	Online booking applications are easy to learn.	0.707	0.628	0.910
	Online booking applications can be controlled based on the user's wishes.	0.862		
	Online booking applications are clear and easy to understand.	0.790		
	Online booking applications are flexible to use.	0.767		
	Online booking applications are easy for users to use.	0.846		
	Online booking applications are easy to use	0.773		
Personal Innovativeness	I enjoy the challenge of figuring out high-tech gadgets.	0.850	0.704	0.877
	I can find high-tech products and services without the help of others.	0.805		

Variable	Items	Outer Loadings	AVE	Composite Reliability
	I keep abreast of the latest technological developments in my area of interest.	0.860		
Perceived Transaction Risk	Online transactions on online booking applications involve more product risks (such as products not being as expected) when compared to conventional transactions.	0.867	0.731	0.891
	Online transactions on online booking applications will involve more financial risks (such as fraud) when compared to conventional transactions.	0.879		
	Online transactions on online booking applications will involve more privacy risks (such as misuse of personal information) than conventional transactions.	0.818		
Perceived Usefulness	Using an online booking application can speed up the purchase of aeroplanes and hotel tickets.	0.826	0.596	0.896
	Using an online booking application can improve my performance.	0.744		
	Using an online booking application can increase my productivity.	0.677		
	Using an online booking application makes searching for information and purchasing aeroplanes and hotel tickets more effective.	0.800		
	Using an online booking application makes purchasing aeroplane and hotel tickets easy.	0.762		
	An online booking application is very useful for purchasing aeroplanes and hotel tickets.	0.814		

Appendix 3.

Heterotrait-monotriat ratio of correlations (HTMT) score

	Attitude	PEOU	PI	PR	PU	RI
Attitude						
PEOU	0.670					
PI	0.565	0.468				
PR	0.377	0.147	0.224			
PU	0.791	0.694	0.531	0.233		
CL	0.804	0.620	0.496	0.237	0.663	