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Youth continuance intention in digital communication: examining the role of cybersecurity in online dating applications

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The rise of online dating has changed the face of individuals' romance relationship in modern societies. Relationships can be initiated, continued, and ended easily and simply. Young generations are encouraged to find partners without fear of accepting any relational commitment more than ever before. This study aims to understand the cybersecurity concerns among young online dating application users and their continued use intention. For this purpose, the UTAUT2 framework was employed and extended by cybersecurity factors (perceived cybersecurity trust, perceived cybersecurity privacy, and perceived cybersecurity risk). The proposed model was tested using quantitative data collected from 416 young online dating applications users (Gen. Z) through a purposive sampling technique and analyzed using PLS-SEM in the R programming environment. The results demonstrated that effort expectancy, perceived cybersecurity risk, perceived cybersecurity privacy, and perceived cybersecurity trust significantly influence users' intention to continue using application. On the other hand, the effects of performance expectancy, social influence, hedonic motivation, price value, and habit were not significant. These results suggest that ease of use remains a crucial determinant of online dating application adoption and cybersecurity concerns have become influential in users' decision-making processes among young users. This study contributes to the literature of online dating behavioral intentions and suggests practical insights for improving user retention and engagement.

KEYWORDS
behavioral intention, cybersecurity, Generation Z, online dating application, technology adoption, UTAUT2

1 Introduction

Online dating platforms have become popular ways to extend friendships in modern social life. Since the launch of commercial dating sites such as Match.com in the 1990s, online dating platforms, serving billions of people around the world, have remarkably facilitated individuals' meeting and developing relationships (Celdir et al., 2024). Mobile dating applications have become the dominant platforms across diverse demographics (Chan, 2017; Coduto & Fox, 2024) which have reshaped, transformed, and accelerated

friendship formations. Such applications have been introduced as computer-mediated matchmaking and expanded into a widely used global service, and have experienced drastic and continuous growth in user adoption worldwide (Wu and Trottier, 2022). This expansion reflects more than an increase in platform membership; it signals a broader transformation in how individuals initiate and sustain intimate relationships through digital mediation (Thomas et al., 2025; Slotta, 2025). These platforms are now widely accepted, adopted, and replacing traditional face-to-face interactions with algorithm-driven matching systems that enhance efficiency and accessibility (Moslehpour et al., 2024; Wu & Trottier, 2022; Paul & Ahmed, 2024).

The global expansion of online dating applications represents both a technological and socio-economic phenomenon. The increasing accessibility of smartphones and internet connectivity has significantly contributed to the widespread adoption of these platforms (Chan, 2017; De Ridder, 2022). Even if the digital environment expands the offer of new opportunities and easy access to use, many older adults still lack the skills, confidence, or the opportunities to learn about how to use dating applications as new technology, which consequently, increase the population of adults that exclude the dating applications in their life (Zanchetta et al., 2022). In line with this, research indicates that online dating continues to grow across various age groups, including older adults, demonstrating its integration into mainstream social practices (Sumter & Vandenbosch, 2019; Blanc, 2024). Among generations, the significant use of dating application in Generation Z, who do not know the world without the internet and are the most educated and connected users among all generations (Chaney et al., 2017), was highlighted (Rita et al., 2021). Generation Z is a target group of people born after 1995 (Kitchen and Proctor, 2015). This generation is more social media savvy and has high levels of swapping online information and conversation (Rita et al., 2021). In a comparative study, it has been recently highlighted that Gen Z has different expectations from online platform services compared to other generations (Sahay et al., 2025).

The growth in use of online dating applications reflects broader societal changes, including increased mobility, limited time, and the normalization of digital communication (Wu and Trottier, 2022). These platforms expand individuals' access to a large and diverse pool of potential partners by overcoming geographical and social barriers associated with traditional meeting contexts (Rosenfeld et al., 2019). Dating applications also enhance efficiency and user control by allowing individuals to filter matches based on personal preferences, thereby increasing the likelihood of compatibility (Finkel et al., 2012). In addition, online dating applications enable users to establish initial connections at their own pace, which can significantly reduce social anxiety and support more intentional self-presentation (Sharabi and Caughlin, 2017). Furthermore, due to the limited time and opportunity to in-person interaction in modern lifestyles, the convenience, accessibility, and flexibility of dating applications make them particularly attractive in general (Yodovich et al., 2026). Features such as algorithmic matching and swipe-based interfaces for partner selection accelerate the process of partner finding and increase the user engagement (Paul and Ahmed, 2024). All these benefits contribute to the growing acceptance and widespread adoption of online dating technologies as a practical and effective means of forming romantic relationships.

Despite the benefits of online dating applications, significant concerns have emerged regarding privacy, fraud, and cybersecurity risks (Shetty et al., 2017; Phan et al., 2021). These platforms collect extensive amounts of personal data, including sensitive information such as location, preferences, and identity-related details, increasing the risk of data misuse, breaches, and serious crime (Phan et al., 2021; Choi et al., 2018; Anderson et al., 2020). Furthermore, romance fraud has become one of the most prevalent threats within the online dating ecosystem. Studies show that millions of users are affected annually, with financial losses reaching billions of dollars globally (Wiederhold, 2024). In addition, deceptive practices such as catfishing and identity fraud continue to undermine trust in online dating platforms, so that victims of such fraud experience not only financial loss but also significant psychological distress (Snyder & Golladay, 2026; Golladay & Snyder, 2025). Moreover, the design of dating applications can unintentionally facilitate malicious activities, including fake profiles and disinformation, further increasing the user vulnerability (Newman & Schwarz, 2024; Ghai et al., 2024). All these factors and concerns highlighted the role of user perception of security during the decision-making regarding the use of online platform and acceptance of use (Hanif and Lallie, 2021).

In an era characterized by growing concerns regarding digital safety, cybersecurity has evolved from a technical necessity into a critical competitive advantage for online dating service providers (Hu et al., 2020). Therefore, although the role of factors such as privacy risk has been investigated in online dating applications toward acceptance of the technology in limited studies, no significant research has addressed the wide sides of security dimensions among users, especially among the most involved users. Therefore, this study aims to deeply understand the user perception of security towards accepting and using online dating apps. For this purpose, we employ, develop, and examine the UTAUT2 model (The Extended Unified Theory of Acceptance and Use of Technology) by adding Perceived Cyber Security (including security risk, security privacy, and security trust) using data collected from Gen. Z as the most engaged users in recent. The facilitation condition construct has been excluded from the model following Sha et al. (2025) and Huwae et al. (2022)'s argument that technological and organizational support is less relevant in the online dating app context, where most users are digitally savvy Gen Z individuals. Furthermore, facilitating conditions were excluded because the technology examined in this study is widely accessible through users' personal digital devices and does not require substantial organizational or technical support (Sha et al., 2025).

The rest of the paper is a literature review and hypotheses development, methodology (data collection and data analysis techniques), results, and finally a discussion section.

2 Literature review

2.1 Extension of technology acceptance model

Technology acceptance theories have undergone many changes over the past decades to understand users' adoption

and ongoing use of digital technologies. The Technology Acceptance Model (TAM) (Davis, 1989), is one of the first and most influential models, suggesting that perceived usefulness and perceived ease of use are the main factors in the behavioral intention of users towards technology. Perceived usefulness is defined as users' beliefs that technology will positively enhance their performance, and perceived ease of use is defined as how easy the technology is to use. TAM demonstrated a significant explanatory power, but researchers criticized the model's limited capacity to explain social, psychological, and contextual issues that may affect technology adoption behavior (e.g., Shachak et al., 2019; Lee et al., 2003). As a result, there were a number of enhancements to TAM, such as TAM2 (Venkatesh and Davis, 2000) and TAM3 (Venkatesh and Bala, 2008) that increased the predictive likelihood of TAM. But researchers persisted in their efforts to test the TAM models to fine more reliable model that could incorporate the best aspects of the previous technology acceptance models (e.g., Rondan-Cataluña et al., 2015).

To overcome these limitations, Venkatesh et al. (2003) developed a new unified technology adoption theory called Unified Theory of Acceptance and Use of Technology (UTAUT). This model has been proposed by combining eight major technology adoption theories [e.g., TAM, the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and Social Cognitive Theory (SCT)]. UTAUT model identified four factors that influence behavioral intention and technology use behavior, namely, performance expectancy, effort expectancy, social influence, and facilitating conditions. The original UTAUT model was found to be a significant improvement in the explanatory potential of technology acceptance studies and was adopted in various technological fields, including e-learning, e-government, mobile banking, e-healthcare, and e-commerce services (Khechine et al., 2016; Alalwan et al., 2017; Harini et al., 2025).

As consumer technologies and mobile applications gained more and more prevalence, though, researchers identified the need for a framework more aligned with the consumers' perspective that would address hedonic and behavioral aspects of technology use. Recognizing that these constructs were crucial for understanding the adoption of mobile apps, Venkatesh et al. (2012) added three more to the original UTAUT model and created Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). Tamilmani et al. (2021) noted that UTAUT2 is one of the most extensive and well-established models to explain consumer technology adoption and usage. The model showed sufficient predictive power compared to other previous models (Tamilmani et al., 2021; Xue et al., 2025). In recent years, UTAUT2 has been increasingly used to analyze users' behavioral intention in mobile applications, online platforms, digital banking, financial technologies, and smart systems (Gupta et al., 2022; Farooq et al., 2017; Ramírez-Correa et al., 2019). Liew et al. (2023) also pointed out that UTAUT2 is much more appropriate for the study of continuous use intention since it encompasses functional, social, emotional, and behavioral aspects of technology acceptance.

While the traditional technology acceptance determinants are still relevant in digital environments, cybersecurity issues are also gaining significant importance as threats within the cyber realm and vulnerabilities online increase in speed (Elsotouhy et al., 2024). Hanif and Lallie (2021) emphasized that cybersecurity is a key factor in influencing users' trust, perceptions of their privacy, and intentions regarding digital technologies. The increasing prevalence of cyberattacks, phishing, identity theft, malware, unauthorized access, and data breaches has heightened users' concerns regarding the security of digital systems. Hanif and Lallie (2021) also stated that perceptions of security and trustworthiness are becoming a part of the technology acceptance models as users are increasingly looking at security and trustworthiness as well as usefulness and ease of use while considering technology adoption. Likewise, Kasilingam (2020) also noted a strong influence of privacy and security issues on users' intention to use mobile technologies and online services. Hanif and Lallie (2021) found several prominent cybersecurity issues in digital applications, such as insecure communication, insecure authentication, insecure data storage, inadequate cryptography, and code tampering.

These vulnerabilities have negative consequences on users' confidence in digital systems and can impact the intention and actual behavior of the users. Additionally, the significance of cybersecurity trust in digital contexts has received attention in research. Schomakers et al. (2022) cited that cybersafety measures by organizations to prevent sensitive data from being shared, exposed, or compromised with the outside world influence users' willingness to use new technology. Similarly, Chen et al. (2023) and Bonilla-Zorita et al. (2021) revealed that privacy leakage concerns, unauthorized tracking and data misuse have a significant impact on users' willingness to use online platforms and digital services. Hence, the extension of UTAUT2 with cybersecurity constructs offers a more holistic theoretical framework for understanding behavior for the adoption of technologies in contemporary digital environments. The current study uses UTAUT2 as the main theoretical framework and expands it with the addition of perceived cybersecurity trust, perceived cybersecurity privacy, and perceived cybersecurity risk (Hanif and Lallie, 2021) to better explain the behavioral intention and cybersecurity use behavior of users in the context of online dating applications.

2.2 Prior studies and hypotheses development

2.2.1 Performance expectancy

Performance expectancy is the extent to which one thinks that a technology will be useful to them and will enhance task performance. Venkatesh et al. (2016) suggest that, in various technological contexts, performance expectancy is one of the most powerful factors that can influence the behavioral intention. According to Liew et al., (2023) users will be more inclined to keep using the dating application if they believe these platforms helps them to achieve their goals and perform their tasks more effectively. Online dating services compared to traditional face-to-face interactions, provide users with flexible and convenient access to a broader pool of potential partners, thereby enhancing the chances of finding compatible matches (Finkel et al., 2012). Therefore, performance expectancy can be positively linked to online daters' beliefs that the app can facilitate interaction within a dating relationship, help form a

relationship with a user, and improve the efficiency of communicating with others (Chan et al., 2023; Liew et al., 2023). However, in online dating application studies, no sign of positive effect of performance expectancy on continued use intention was reported (Liew et al., 2023).

H1: Performance expectancy has a positive impact on continued use intention.

2.2.2 Effort expectancy

Effort expectancy is the level of expectation that technology will be easy to use and will take little mental or physical effort (Khechine et al., 2016). Usability and simplicity are significant factors impacting the adoption of technology, since most users would prefer a system that is easy to use, accessible, and convenient (Blut et al., 2016). Users' perception towards digital platform is often positive when the digital platforms that provide user-friendly interfaces, efficient navigation, and clear processes for interaction (Davis, 1989). Past studies have shown that the ease of use has a positive impact on users' acceptance of online applications, as simpler systems will cause less frustration and learning difficulties (Khechine et al., 2016; Tao et al., 2023). In dating applications, ease of use is crucial, as intuitive interfaces, straightforward navigation, matching features, and streamlined interactions significantly boost users' experiences and satisfaction (Liew et al., 2023); however the research did not support the positive influence of effort expectancy. Based on previous studies, one can deduce that effort expectancy has a positive influence on users' continued use intention in different technological environments (Abdullah and Ward, 2016). Accordingly, the following hypothesis is proposed:

H2: Effort expectancy has a positive impact on continued use intention.

2.2.3 Social influence

Social influence is the degree to which users are influenced by other users' opinions, recommendations and expectations in their decision to use a specific technology (Venkatesh et al., 2003). The attitudes and perceptions of users towards digital platforms are often influenced by their family members, friends, colleagues, peers, influencers, and online communities (Alalwan et al., 2017; Dwivedi et al., 2019). People depend on social interaction and experiences with peers for assessing technologies, especially those with high levels of interaction, such as dating applications. Users have a sense of trustworthiness, attractiveness, and reliability towards socially accepted platforms, which can positively affect their behavioral intention and subsequent usage (Chao, 2019; Kuen et al., 2023). However, Huwae et al., (2022) found that social influence did not predict online dating application use among young users. Therefore, the following hypothesis is proposed:

H3: Social influence has a positive impact on continued use intention.

2.2.4 Hedonic motivation

Hedonic motivation is the satisfaction, pleasure, and fun that users get from using digital technologies, which has an important role in the online context (Scarpi et al., 2014). In an online context, technologies that can deliver entertaining, engaging, and enjoyable experiences are more likely to facilitate the adoption and ongoing use behavior (Al-Azawei and Alowayr, 2020). The incorporation of interactive components, appealing interfaces, emotional responses, and enjoyable communication experiences can greatly reinforce the attitudes of users using technology (Gharaibeh et al., 2018; Tamilmani et al., 2019). Online dating activities are frequently motivated by individuals' desire for excitement, enjoyment, and novel experiences (Sumter et al., 2017; Bryant & Sheldon, 2017). Therefore, online dating applications incorporate a variety of features designed to convey hedonic cues (e.g., swiping options visually-arousing profile pictures and biodata, virtual gifts, and flirty and emotive messages) with the purpose of increasing the users' willingness to use. The negative (Liew et al., 2023) and positive relationship between hedonic motivation and the intention to use dating applications has been confirmed in many studies (e.g., Alam et al., 2018; Chakraborty, 2019 Huwae et al., 2022;; Respati & Amalia, 2021). Therefore,

H4: Hedonic motivation has a positive impact on continued use intention.

2.2.5 Price value

Price value is the judgment that users make about the ratio of benefits they receive from the use of a technology to the monetary expenses involved in using it (Venkatesh et al., 2003). When making subscription decisions, users tend to weigh the utility of the digital technology against subscription fees, premium services, transaction costs, and other monetary costs (Palau-Saumell et al., 2019; Hsu & Lin, 2015). In online platforms and mobile apps, users are more likely to continue to use technologies where they see a high value for money and value that is felt in the service they provide (Palau-Saumell et al., 2019; Khan et al., 2025).

Opinions about product prices have been shown to be positively related to behavioral intention and ongoing use behavior of the consumers (Kim et al., 2007; Hsu & Lin, 2015). When it comes to dating apps, users can determine if paying for extended membership or better communication services (online chatting, advanced matching, daily profile liking limits, and send personal message option) is worth the price (Castro and Barrada, 2020). Platforms which are seen as providing useful benefits at a reasonable cost level are likely to promote ongoing use patterns (Bouhlel & Mzoughi, 2024; Palau-Saumell et al., 2019). Although the negative effect of price value on continued use intention has been reported in the research of Liew et al. (2023), it is an important factor to continued use intention in previous studies on consumer technologies and digital services (Tamilmani et al., 2021). Therefore, the following hypothesis is proposed:

H5: Price value has a positive impact on continued use intention.

2.2.6 Habit

Habit is defined as the tendency to repeat a behavior as a result of previous learning and repeated experience (Verplanken et al., 1997; Khalifa & Liu, 2007). For digital technologies, the development of a habit can be defined as a tendency to engage

in a certain system over time to the point that using it becomes automatic and requires little or no conscious effort (Zhu et al., 2024). In the mobile application or online platforms, behavioral data plays a crucial role due to the high frequency of interactions between users and these technologies in their daily lives (Jo and Baek, 2023). The high-frequency use of digital platforms has been shown to increase users' dependence, familiarity and comfort with technology systems. With the familiarity of a particular application, users are more likely to use it without a lot of cognitive assessment (Tamilmani et al., 2019).

The habits have been found to have a strong correlation with user retention, ongoing engagement, and longer-term adoption intentions (Banca et al., 2020). For online dating platforms, people have to repeat a similar range of pursuits, for instance, checking out profiles, swiping, sending messages and monitoring interactions (Liew et al., 2023; Huwae et al., 2022). Each of these actions makes it a habit, leading to ongoing use. More critically, as it was highlighted by Liew et al. (2023), Online dating activities can stimulate the brain's reward system. This leads to release of dopamine which is neurotransmitter associated with feelings of pleasure and satisfaction. This process creates a reward-oriented cycle of instant gratification, which consequently encourages frequent engagement and contributes to the development of habitual patterns of use of online dating applications (Narr, 2021; Waters 2021),. Research about online dating platforms and consumer technologies indicated that habit plays a considerable role in behavioral intention and continuous use behavior as users habitually incorporate such technologies into their daily lives (Liew et al., 2023). Therefore, the following hypothesis is proposed:

H6: Habit has a positive impact on continued use intention.

2.2.7 Perceived cyber security risk

Perceived cybersecurity risk refers to users' perceptions of potential losses, threats, or negative consequences associated with using digital technologies (Hanif and Lallie, 2021). Cybersecurity risks may include hacking, malware attacks, identity theft, phishing, unauthorized access, financial fraud, and information leakage (Li and Liu, 2021). Perceived risk has consistently been identified as a major barrier to technology adoption in online environments (van Schaik et al., 2017). Users who perceive high levels of cyber risk are more likely to experience fear, uncertainty, and anxiety regarding technology usage (Qian et al., 2012; Wallace et al., 2020). Consequently, they may avoid engaging with digital platforms perceived as insecure or vulnerable.

Prior research found that cybersecurity risks negatively affect users' behavioral intention toward mobile applications, and online services (Featherman & Pavlou, 2003; Cele & Kwenda, 2025). Similarly, Bonilla-Zorita et al. (2021) reported that concerns regarding cyber threats and digital vulnerabilities significantly reduce users' willingness to participate in online platforms such as dating applications. Within dating applications, perceived cybersecurity risks may become even more pronounced because users frequently interact with unknown individuals and share private information (Phan et al., 2021). Concerns regarding fake profiles, cyber harassment, scams, identity theft, and unauthorized data access may discourage continuous usage behavior. Therefore, the following hypothesis is proposed:

H7: Perceived cybersecurity risk has a negative impact on continued use intention.

2.2.8 Perceived cyber security privacy

Perceived cybersecurity privacy concerns focus users' concerns about the collection, storage, access, and use of personal information in digital systems (Barth et al., 2022). Users are concerned about privacy issues when they think that their confidential information will be exposed, leaked, tracked, misused, or shared without permission (Hanif and Lallie, 2021). In the modern digital landscape, privacy is one of the most important concerns impacting the adoption of technology (Harborth & Pape, 2020; Wottrich et al., 2018). Information in mobile apps and online services is often very sensitive, such as personal identifying data, location data, behavioral data, messages, financial data, and photos (Wang & Lin, 2017; Zarifis & Fu, 2023). For this reason, users tend to consider how well platforms can secure data privacy and confidentiality before implementation. Research has found privacy concerns to have a significant influence on users' trust and behavioral intention towards digital systems (Choi et al., 2023). When it comes to dating apps, privacy issues are magnified as users are disclosing intimate and highly personal information. Lutz and Ranzini (2017) discovered that concerns over information disclosure and unauthorized data use have a negative impact on users' willingness to interact with online platforms such as dating applications. Individuals who believe that they are at a higher risk of privacy issues might be reluctant to use dating sites continuously as a result of their concern that they may be discovered, embarrassed, or their personal information could be misused. Likewise, Liew et al. (2023) found that users' concerns about data leakage and surveillance negatively impact their trust in dating applications and online services. Therefore, the following hypothesis is proposed:

H8: Perceived cybersecurity privacy has a negative impact on continued use intention.

2.2.9 Perceived cyber security trust

Perceived cybersecurity trust is defined as users' perception of the cybersecurity functions of digital platforms or service providers and their commitment to protecting users' personal data against cyber threats in a responsible way (Hanif & Lallie, 2021). Trust is a key factor in the adoption of technology because users tend to use and interact with systems that they feel are secure, reliable, and dependable (Capestro et al., 2024). When using online platforms, users may not be able to see the technical security measures the platform has in place (Kuen et al., 2023). As a result, users will trust their perceptions about whether a platform is able to provide adequate security for information and to ensure secure operation. Trust minimizes uncertainty and feeling vulnerable in an online context (Lankton et al., 2015).

Previous studies showed that cybersecurity trust positively influences the behavioral intention to use digital services and online systems. Schomakers et al. (2022) noted that the users'

willingness to use technologies is more inclined when they think that the organization takes good care of security and ethical data handling. Similarly, previous studies highlighted that trust increases people's confidence in online systems and has a positive effect on their behavior of using technology (e.g., Gefen et al., 2008; McKnight et al., 2020). Trust is particularly significant in dating sites, as users share private details, connect with strangers, and reveal their identities. Potentially, greater levels of cybersecurity trust can thus boost users' confidence and motivate them to continue using dating apps (Panjaitan and Guntur Utomo, 2023). Therefore, the following hypothesis is proposed:

H9: Perceived cybersecurity trust has a positive impact on continued use intention.

The developed hypotheses are shown in Figure 1.

3 Methodology

3.1 Sampling and data collection

This study collected primary data from Generation Z international students enrolled at the largest universities in North Cyprus. The target population consisted of students aged between 18 and 29 years, representing the Gen. Z cohort. International students represent an appropriate population for investigating the use of dating applications and related behavioral patterns among Generation Z users. To test the model, a self-administered questionnaire was used to collect the primary quantitative data in April and May, 2026. A non-probability purposive sampling technique was employed in this study, in which participants are selected based on the researcher's judgment (Campbell et al., 2020). The questionnaire, designed using Microsoft Forms, was distributed via social media channels and student communication networks to maximize participation.

At the first step, a sample of 30 participants was chosen to run a pilot test to check the validity and reliability of the research instruments. The results led to several corrections, such as refining the format, length, rephrasing, readability, and clarity of the instruments. Then 500 questionnaires were distributed and 416 completed questionnaires were received as valid responses to test the model (respondent rate 83.2%). The final sample of 416 respondents met the minimum sample-size requirement calculated using Cochran's (1977) formula with the confidence level of 95% and ±5 margin of error.

3.2 Questionnaire and measures

The first part of the questionnaire consisted of demographic questions. The demographic data are presented in Table 1.

The results showed almost equal numbers of respondents in terms of gender (50.05% female). Most participants (69.05%) were between 26 and 29 years of age. Regarding education, majority of students were in bachelor programs (59.06%). In terms of marital status, the largest proportion of respondents was single (49%). Employment data revealed that 70% of the participants were unemployed. Additionally, the primary purpose for using the platform was dating, as reported by 48.8% of respondents. The result shows 34.1% of the users spend 3–5 times a week to use the dating applications. Regarding subscription status, the overwhelming majority of respondents (81.25%, $n = 338$) reported using only the free basic versions of online dating applications, while a minority (18.75%, $n = 78$) reported paying for premium subscriptions, features, or virtual gifts.

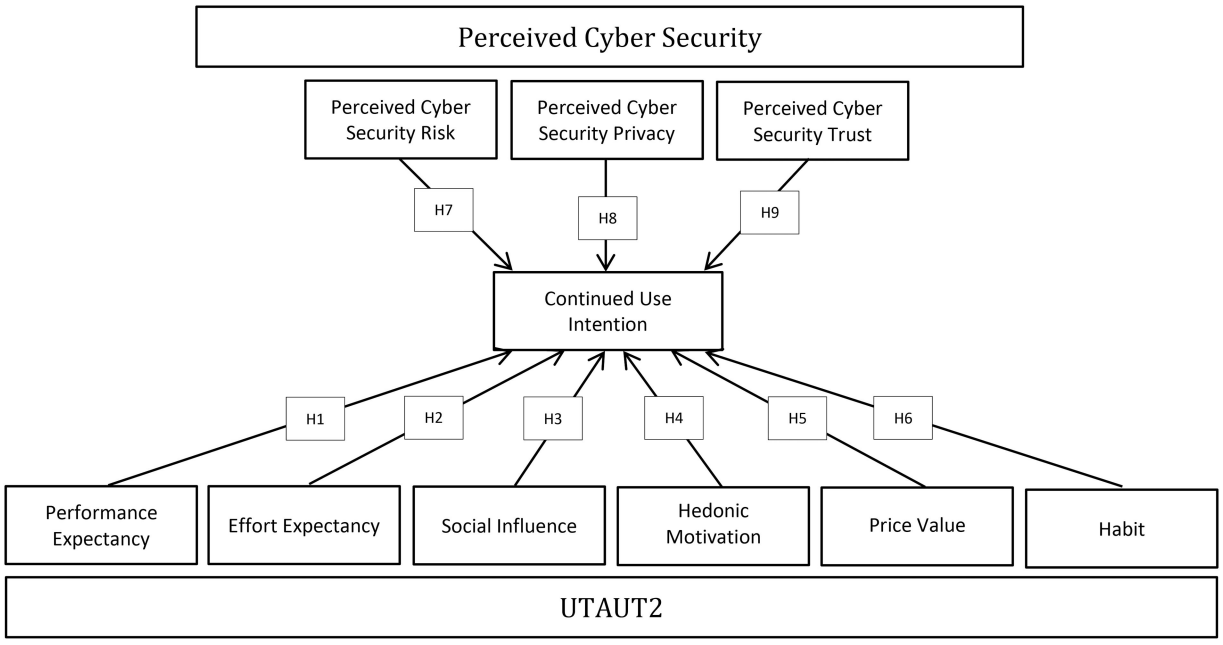

FIGURE 1
Theoretical framework.

10.3389/fhumd.2026.2008658

TABLE 1 Demographic profile.

Variable	Category	Frequency (*N* = 416)	Percentage (%)
Gender	Female	210	50.5
	Male	149	35.8
	Prefer not to say	57	13.7
Age group	18–21 years	14	3.4
	22–25 years	113	27.2
	26–29 years	289	69.5
Education	Associated Student	33	7.9
	Bachelor Students	248	59.6
	Master's degree or above	98	23.5
	Ph.D. students	37	9
Marital status	Single	204	49.0
	In a relationship	112	26.9
	Married	48	11.5
	Divorced/ Separated	52	12.5
Occupation	Employed (full-time)	36	8.7
	Unemployed	291	70.0
	Employed (part-time)	89	21.4
Purpose of use	Friendship	80	19.2
	Networking	33	7.9
	Relationships	69	16.6
	Hookups	9	2.2
	Chat	22	5.3
	Dates	203	48.8
Frequency of use	Less than once a month	30	7.2
	1–3 times a month	47	11.3
	1–2 times a week	82	19.7
	3–5 times a week	142	34.1
	Once a day	95	22.8
	Several times a day	20	4.8
Subscription status	Use free version	338	81.25
	Pay premium	78	18.75

In the second section of the survey, participants were asked to respond to all items associated with each construct based on their perception and experiences. To ensure content validity, all research constructs included in the questionnaire were adapted from the previous studies in the related literature. Minor modifications were made to the items to better suit the context of online applications. Each construct was assessed using a five-point Likert scale, where 1 represented "strongly disagree" and 5 represented "strongly agree".

The dimensions of Performance Expectancy (PE) were measured by 4 items adopted from Liew et al., (2023). In addition, 3 items employed to measure Effort Expectancy (EE) were adopted from Liew et al. (2023). Social Influence (SI) was evaluated adopting 3 items from Apau et al. (2025), while 3 items to measure Hedonic Motivation (HM) was adapted from Venkatesh et al. (2012). Perceived Value (PV) was measured by 4 items Habit (HA) by 4 items were evaluated adopting form Liew et al. (2023). Furthermore, items adapted from Apau et al., (2025), Hanif and Lallie (2021) and |Liew et al. (2023) were used to evaluate perceived cyber security [Perceived Cyber Security Risk (PR) 3 items, Perceived Cyber Security Privacy (PP) 6 items, Perceived Cyber Security Trust (PT) 3 items]. Finally, 3 items were adopted from Liew et al. (2023) to measure Continued Use Intention (CU), which measures continued intention to use the application. Constructs, items, and sources of the questionnaire are presented in Table 2.

3.3 Data analysis

This study employed a Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the measurement model and test the proposed hypotheses. PLS-SEM was selected as it enables the simultaneous evaluation of the construct reliability, validity, and structural relationships among latent variables (Kroonenberg and Lohmoller, 1990). Therefore, it was considered suitable for the present study. Data analysis was conducted using the R programming language and the PLSPM package to estimate the model parameters.

3.4 Common methods bias

Harman's single-factor test was used to check whether a single factor could account for the majority of the variance (Podsakoff et al., 2003). The results of conducted analysis on all constructs, showed that the first factor accounted for 36.47% of the total variance, which is below the maximum threshold of 50% recommended by Harman's single-factor test (Podsakoff et al., 2003; Fuller et al., 2016). Therefore, the findings suggest that common method bias is not a significant concern in the data.

4 Results

4.1 Reliability and validity of measures

All the standardized factor loadings (reported in Table 2) exceeded than the recommended threshold value of 0.7, except for the sixth item of Perceived Cybersecurity Privacy (0.651). The results indicate a high consistency among the measured items of each construct in the research model (Hair et al., 2010). Additionally, Cronbach's alpha values were all above 0.70 for all

10.3389/fhumd.2026.2008658

TABLE 2 Constructs reliability and validity results.

Constructs and measurement statements	Factor loading	Cronbach's α	CR	AVE
Performance Expectancy (PE)— Liew et al., (2023)		0.843	0.895	0.682
PE1: Online dating applications are useful for finding potential dating partners.	0.759			
PE2: Using online dating applications improves my chances of successfully finding suitable dating partners.	0.886			
PE3: Online dating applications enable me to find dating partners more efficiently.	0.836			
PE4: Using online dating applications helps me save time when searching for dating partners.	0.822			
Effort Expectancy (EE)— Liew et al., (2023)		0.838	0.903	0.756
EE1: It is easy for me to learn how to use online dating applications.	0.858			
EE2: I find the features and functions of online dating applications clear and understandable.	0.886			
EE3: Using online dating applications requires little effort from me.	0.864			
Social Influence (SI)— Apau et al. (2025)		0.841	0.904	0.758
SI1: People who are important to me think I should use online dating applications.	0.872			
SI2: People who influence my behaviour think that I should use online dating applications.	0.845			
SI3: People whose opinions that I value prefer that I use of online dating applications.	0.894			
Hedonic Motivation (HM)— Venkatesh et al. (2012)		0.843	0.905	0.761
HM1: I find using online dating applications to be fun.	0.882			
HM2: Using online dating applications gives me enjoyment.	0.869			
HM3: I find online dating applications entertaining to use.	0.867			
Price Value (PV)— Liew et al. (2023)		0.766	0.851	0.589
PV1: I consider the cost of subscriptions, premium features, or virtual gifts in online dating applications to be acceptable.	0.684			
PV2: The prices charged for subscriptions, premium features, or virtual gifts in online dating applications are reasonable.	0.820			
PV3: The cost of using paid features in online dating applications is not too high for me.	0.824			
PV4: Overall, I am satisfied with the amount of money spent on subscriptions, premium features, or virtual gifts in online dating applications.	0.601			
Habit (HA)— Liew et al. (2023)		0.795	0.880	0.710
HA1: Using online dating applications has become a routine part of my daily activities.	0.857			
HA2: I feel a strong tendency to use online dating applications regularly.	0.832			
HA3: Using online dating applications has become something I do automatically.	0.839			
Perceived Cyber Security Risk (PR)— Hanif & Lallie (2021)		0.718	0.819	0.602
PR1: Using online dating applications involves a certain level of risk.	0.809			
PR2: I feel concerned about using online dating applications because unauthorized individuals may misuse my account or personal information.	0.738			
PR3: I believe there is a high risk of negative consequences when using online dating applications.	0.779			
Perceived Cyber Security Privacy (PP)— Hanif & Lallie (2021)		0.834	0.878	0.547
PP1: I am concerned that online dating applications collect too much personal information about me.	0.744			
PP2: I am concerned that online dating applications may use my personal information for purposes beyond what I have authorized.	0.788			
PP3: I am concerned that online dating applications may share my personal information with third parties without my permission.	0.802			
PP4: I am concerned that unauthorized individuals (e.g., hackers) could gain access to my personal information.	0.710			
PP5: I am concerned about the privacy of my personal information when conducting transactions within online dating applications.	0.734			
PP6: I am concerned that online dating applications may sell my personal information without my consent.	0.651			

(*Continued*)

TABLE 2 Continued

Constructs and measurement statements	Factor loading	Cronbach's α	CR	AVE
Perceived Cyber Security Trust (PT)— Hanif & Lallie (2021)		0.727	0.846	0.647
PT1: I believe that online dating applications are trustworthy.	0.825			
PT2: I believe that online dating applications are reliable to use.	0.799			
PT3: I feel confident that online dating applications have adequate legal and technological measures to protect my personal information.	0.789			
Continued Use Intention (CU)— Liew et al. (2023)		0.701	0.815	0.595
CU1: I intend to continue using online dating apps in the future.	0.779			
CU2: I will always try to use online dating apps in my daily life.	0.727			
CU3: I plan to continue to use online dating apps frequently.	0.806			

CR, Composite Reliability; AVE, Average Variance Extracted.

constructs and ranged between 0.701 and 0.843, confirming the constructs' reliability, as suggested by previous researchers (Fornell and Larcker, 1981). Internal consistency was assessed using composite reliability (CR) and all values for all constructs were above 0.85. These results suggest sufficient internal consistency according to the suggestion of previous (Henseler et al., 2015). Furthermore, the average variances extracted (AVE) values for all scales exceeded 0.5, demonstrating the adequate condition for convergent validity given the threshold value suggested in prior studies (Bagozzi and Yi, 1988).

A multicollinearity test was conducted using the Variance Inflation Factor (VIF) and tolerance values. The results showed that VIF values ranged from 1.839 to 3.347, while tolerance values ranged from 0.299 to 0.544. All VIF values were below the recommended threshold of 5.0 and all tolerance values exceeded 0.20, indicating no multicollinearity among the constructs (Hair et al., 2021). Thus, the variables were considered suitable for inclusion in the regression analysis without significant of high correlations (Table 3).

To evaluate discriminant validity, the Heterotrait–Monotrait ratio (HTMT) was employed as a more robust and reliable method than traditional approaches under a variety of research conditions; suggested by previous researchers (Hair et al., 2021; Tian et al., 2022). The results indicated that all HTMT values were below the recommended threshold of 0.90, thereby confirming the establishment of discriminant validity among the constructs (Henseler et al., 2015) (Table 3).

4.2 Structural model estimation and hypothesis testing

The hypothesized model was assessed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The structural model was evaluated using the coefficients of determination (R^2) and predictive relevance (Q^2). The research model was evaluated using the bootstrapping technique. Parameter estimates were obtained based on 5,000 bootstrap resamples. The estimated path coefficients and the squared multiple correlations (R^2) for the endogenous variables are reported in Table 4.

The structural model assessment reveals that the proposed determinants explain satisfactory level of the variance ($R^2 = 0.47$) in continued use intention (Hair et al., 2021). The results also indicate that the Q^2 values are greater than zero ($Q^2 = 0.57$), confirming the model's predictive adequate relevance (Hair et al., 2010). The path coefficients of the respective constructs, the levels of significance, and variances (R^2) are shown in Figure 2.

The results showed that users continued use intention was significantly influenced by effort expectancy, perceived cybersecurity risk, perceived cybersecurity privacy, and perceived cybersecurity trust. In contrast, performance expectancy, social influence, hedonic motivation, price value, and habit were found to have no significant effect on users' continued use intention. Overall, the findings provide empirical support for H2, H7, H8 and H9, while H1, H3, H4, H5, and H6 were not supported.

5 Discussion

This study aimed to understand continued use intention (continued use) toward using online dating applications among Generation Z users by extending the UTAUT2 model.

Effort expectancy exhibited a significant association with continued use intention ($\beta = 0.168$, $p < 0.05$). The findings indicate that when the adults perceive the online dating application as easy to use, navigate, operate, and understand, they are more likely to continue logging in to use. This finding is consistent with previous studies that identified ease of use as a key determinant of technology adoption in digital environments (Abdullah & Ward, 2016; Khechine et al., 2016; Tao et al., 2023).

Contrary to expectations, performance expectancy has shown no significant influence on continued use intention ($\beta = 0.087$, $p = 0.468$). This finding is consistent with previous studies that reported a negative relationship between perceived usefulness and online dating adoption (Liew et al., 2023). Therefore, perceptions regarding usefulness may no longer serve as a differentiating factor influencing their intention to use such platforms.

Similarly, social influence did not significantly affect users' intention to continue using the application ($\beta = 0.069$, $p = 0.494$). This finding aligns with the previous studies, which reported that social influence was not a significant determinant of online

TABLE 3 Heterotrait–monotrait ratio (HTMT) and VIF results.

Construct	PE	EE	SI	HM	PV	HA	PP	PT	PR	CU	Tolerance	VIF
PE	-										0.399	2.508
EE	0.834	-									0.299	3.347
SI	0.800	0.707	-								0.302	3.314
HM	0.859	0.844	0.798	-							0.336	2.979
PV	0.596	0.528	0.572	0.659	-						0.476	2.103
HA	0.210	0.100	0.213	0.221	0.859	-					0.536	1.865
PP	0.110	0.092	0.189	0.065	0.384	0.521	-				0.502	1.993
PT	0.094	0.106	0.096	0.149	0.551	0.736	0.622	-			0.375	2.668
PR	0.132	0.148	0.109	0.099	0.363	0.576	0.656	0.777	-		0.544	1.839
CU	0.106	0.124	0.115	0.085	0.317	0.446	0.233	0.464	0.597	-	0.442	2.533

TABLE 4 Hypotheses testing.

Hypothesis	Path	β	t-value	Confidence interval bias corrected (BCI)		p-value	Result
				BCI-LL	BCI-UL		
H1	PE → CU	0.087	0.726	−0.112	0.244	0.468	Not supported
H2	EE → CU	0.168	1.734	0.122	0.358	0.045*	Supported
H3	SI → CU	0.069	0.684	−0.129	0.267	0.494	Not supported
H4	HM→ CU	0.017	0.193	−0.155	0.189	0.851	Not supported
H5	PV → CU	0.112	1.493	−0.035	0.259	0.512	Not supported
H6	HA → CU	0.066	1.008	−0.063	0.195	0.314	Not supported
H7	PR → CU	−0.302	−3.831	0.157	0.211	0.000***	Supported
H8	PP → CU	−0.191	−1.955	0.101	0.281	0.012**	Supported
H9	PT → CU	0.317	3.509	0.141	0.393	0.001***	Supported
$R^2 = 0.47$							
$Adj.R^2 = 0.45$							
$Q^2 = 0.57$							

*$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$.

dating application usage among younger users (Liew et al., 2023; Huwae et al., 2022). Prior studies have suggested that recommendations and opinions from family members, friends, and peers can shape technology adoption decisions (Alalwan et al., 2017; Dwivedi et al., 2019); according to the outcomes of this study, however, Gen. Z users may show greater independence while using the online platform.

The results further revealed that hedonic motivation did not significantly influence continued use intention ($\beta = 0.017$, $p = 0.851$). This finding contradicts previous research suggesting that enjoyment, entertainment, and excitement are important motivations for using dating applications (Alam et al., 2018; Huwae et al., 2022) but support the results of study by Liew et al. (2023). These results demonstrate that users perceive dating applications not only as entertainment-oriented platforms. Although enjoyable features may enhance user experience, they may not be sufficient to drive continued use intention significantly and independently.

Furthermore, price value was not a significant predictor of continued use intention ($\beta = 0.112$, $p = 0.512$). Descriptive data regarding user subscription status sheds light on this outcome: 81.25% of our respondents utilized free basic versions, whereas only 18.75% were paid/premium subscribers. Because the vast majority of Generation Z users interact with these applications without financial commitment, items evaluating monetary tradeoffs and subscription costs (PV1–PV4) lack practical relevance for most users. Consequently, cost-benefit judgments do not actively shape their decisions to continue using dating platforms. Most dating applications offer free basic services (e.g., Facebook, Tinder), which allow users to interact without financial requirements or barriers. Therefore, as it was highlighted in the study of Palau-Saumell et al. (2019), users may not evaluate platform adoption based on cost-benefit considerations.

Furthermore, the insignificant relationship between habit and continued use intention ($\beta = 0.066$, $p = 0.314$) contrasts with earlier findings that highlighted habitual behavior of young users

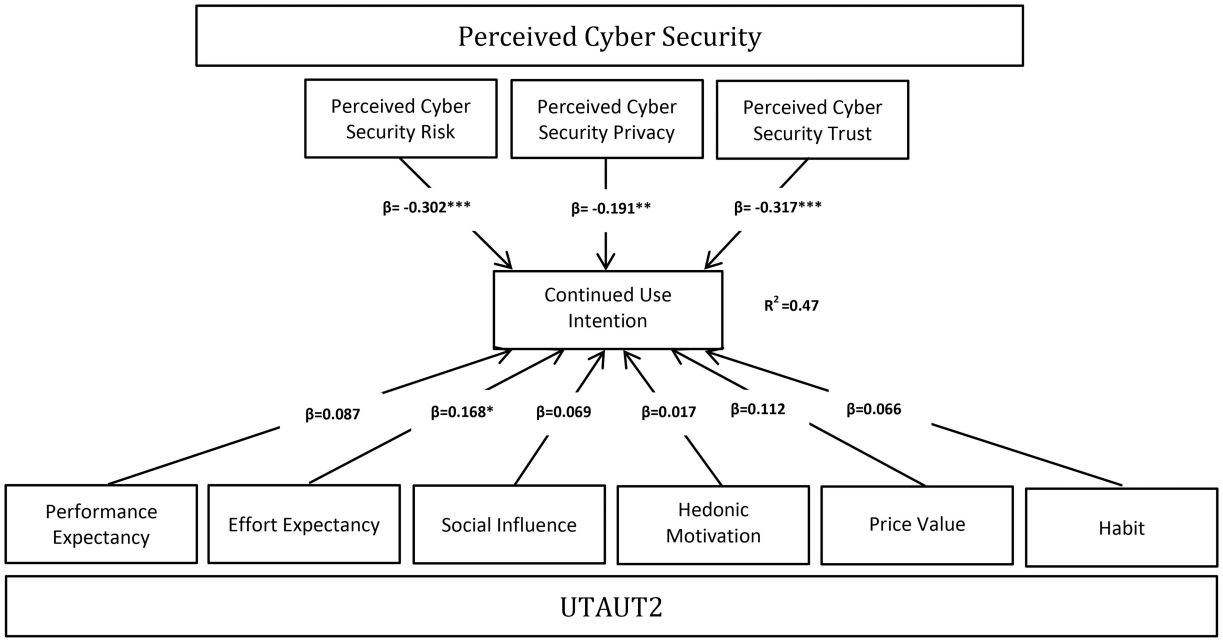

FIGURE 2
Results of relationships. *$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$.

as a strong factor of continuous use of dating applications (Liew et al., 2023). This result indicates that engaging with dating platforms does not lead to a habitual behavior formation among young users as they might use this platform mainly for relationship formation and not just as a routing activity.

Most importantly, the cybersecurity-related variables demonstrated significant effects on continued use intention. Perceived cybersecurity risk negatively influenced continued use intention ($\beta = -0.302$, $p < 0.001$) which supports the previous studies' investigations that identified cyber threats as major barriers to technology adoption (Featherman and Pavlou, 2003; Bonilla-Zorita et al., 2021). Concerns regarding scams, fake profiles, identity theft, cyber harassment, and data breaches may increase users' uncertainty and discourage engagement with online dating platforms. Likewise, perceived cybersecurity privacy exhibited a significant negative effect on continued use intention ($\beta = -0.191$, $p < 0.05$). This finding is consistent with studies of Lutz and Ranzini (2017) and Liew et al. (2023), reported that concerns regarding unauthorized data access, surveillance, and misuse of personal information reduce users' willingness to participate in online dating applications. As dating applications require users to provide and disclose highly personal information, privacy concerns become particularly prominent.

Conversely, according to the results, perceived cybersecurity trust positively influenced continued use intention ($\beta = 0.317$, $p < 0.001$), which is consistent with the findings of Hanif & Lallie (2021), McKnight et al. (2020), and Schomakers et al. (2022). These studies argued that trust enhances users' confidence in digital systems. The more users believe that dating platforms implement effective security protocols and responsibly manage personal information, the more they are willing to engage with and continue using such services. Collectively, these findings highlight that cybersecurity perceptions play a more critical role than many traditional UTAUT2 factors in shaping Gen. Z users' intentions toward online dating applications. As concerns regarding online fraud, privacy breaches, and digital vulnerabilities continue to grow, users increasingly prioritize security assurance over functional or hedonic benefits when evaluating online dating platforms.

5.1 Theoretical implication

This study contributes to the growing body of literature on online dating application adoption by extending the UTAUT2 framework with cybersecurity-related constructs. Unlike previous studies (Chan et al., 2023; Huwae et al., 2022; Liew et al., 2023), the current findings reveal that performance expectancy, hedonic motivation, habit, and social influence are not significant predictors of online dating adoption among Gen. Z users. This suggests that online dating applications possibly have reached a level of technological maturity where factors such as usefulness, enjoyment, social approval, and habitual use are no longer key factors influencing adoption decisions. Furthermore, the current study's results support the argument of Elsotouhy et al. (2024) and Hanif and Lallie (2021) that traditional technology acceptance factors solely may not be sufficient enough for explaining user behavior in contemporary digital platforms, as cybersecurity threats and privacy issues are considered as serious concerns for users. Consistent with the study of Bonilla-Zorita et al. (2021), Hanif and Lallie (2021), and Schomakers et al. (2022), the findings confirm that perceived cybersecurity risk, perceived cybersecurity privacy, and perceived cybersecurity trust significantly influence continued use intention.

5.2 Managerial implication

The findings of this study provide several practical implications for online dating service providers, platform developers, and cybersecurity practitioners. Based on the significant influence of effort expectancy on continued use intention, dating application providers should prioritize user-centered design principles that enhance simplicity, accessibility, and ease of navigation. Features such as sign-up processes, user-friendly interfaces, transparent privacy settings, and efficient matching mechanisms can reduce user effort and enhance overall engagement. As Generation Z users anticipate flawless digital experiences, complicated design or complex registration procedures may discourage adaptation of the platform (Sahay et al., 2025).

The results also emphasized the critical role of cybersecurity perceptions in shaping users' intentions to reuse the applications. As perceived cybersecurity risk negatively affects continued use intention, online dating platforms must take action to reduce users' perceptions of vulnerability. Service providers, therefore, should implement advanced security protocols, including multi-factor authentication, AI-powered fraud detection systems, identity verification mechanisms, and real-time monitoring of suspicious activities. These actions can minimize threats associated with fake profiles, romance scams, identity theft, and cyber harassment, which have become increasingly prevalent within online dating applications (Phan et al., 2021; Wiederhold, 2024).

Similarly, the significant effect of perceived cybersecurity privacy is a signal highlighting the importance of personal information collection explanation and protection as well. Dating application designers should implement transparent data retention policies that clearly explain user the way that information is collected, stored, and used. Providing users with greater control over profile visibility, location sharing, and data-sharing preferences could help ease privacy concerns and boosts users' confidence while using platform. Users' perceptions of privacy protection can be further enhanced through frequent privacy updates and aligned with international data protection standards (Sarabdeen & Moonesar, 2018; Škrinjarić et al., 2019).

Furthermore, positive influence of perceived cybersecurity trust suggests that online dating providers should prioritize initiatives with aim of building trust. Therefore, such service providers can enhance trust by obtaining security certifications, offering privacy assurances, transparently communicating cybersecurity practices, and responding promptly to security incidents. Young users' confidence may be reinforced, and a more secure digital environment for them may be developed through education campaigns focused on safe online dating practices (Bell et al., 2017; Mandania et al., 2025).

Finally, the non-significant influence of factors such as performance expectancy, social influence, hedonic motivation, price value, and habit are good indications for managers to avoid considering solely the entertainment features, pricing strategies, or social endorsement campaigns to attract users while designing the online applications (Hanif and Lallie, 2021). Instead, investments in cybersecurity infrastructure, privacy protection mechanisms, and trustworthy platform governance may generate greater returns in terms of user acquisition and retention.

5.3 Limitation and recommendations

Like any other research, this study also has a few limitations. For example, this study has only targeted the Generation Z, university students in Cyprus. Although this group represents one of the most active segments of online dating application users, the findings cannot be generalized to other age groups such as non-student population, or individuals from different cultural and geographical backgrounds. Another limitation of this study is employing the purposive sampling technique for data collection. While this sampling approach was appropriate for this study, it may cause selection bias and limit the representativeness of the sample. Therefore, future studies are encouraged to adopt probability sampling methods to address larger and more diverse samples to improve the external validity and generalizability of the results. Furthermore, while the proposed model accounts for a satisfactory level of variance in continued use intention ($R^2 = 0.47$), user retention in digital dating environments is inherently shaped by interpersonal and algorithmic dynamics. Future research would benefit from incorporating dimensions such as 'matching success,' 'algorithm accuracy,' or 'user base quality' into the extended UTAUT2 framework. Investigating how the precision of matching algorithms and the perceived quality of potential partners interact with cybersecurity and technology acceptance factors could capture a greater share of variance and provide deeper insights into the long-term engagement patterns of online dating app users. Finally, future research is recommended to investigate other relevant factors such as platform reputation, perceived authenticity of profiles, relationship success/failure experiences, and psychological characteristics on technology adoption to develop a more comprehensive understanding of online dating application adoption.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

AG: Conceptualization, Data curation, Funding acquisition, Resources, Validation, Visualization, Writing – original draft. NA: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Software, Supervision, Validation, Writing – review & editing. MK: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Software, Supervision, Validation, Writing – review & editing.

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The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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