

Determinants of Online Dating Application Among Millennials

Norlelawati Jamaludin¹, *Nuryusmawati Mohd Yusof¹, Faizah Maishahadi¹, Faizah Sohidi¹, Syed Asherene Omar¹,
Mohd Fikri Ishak¹, Syed Mustaqim Syed Yusof², Janiffa Saidon¹

¹Faculty of Business Management, University Teknologi Mara, Selangor, Malaysia

²IX Telecom, BIT Group Sdn Bhd, Cyberjaya, Selangor, Malaysia

norlelawati0019@uitm.edu.my, *nuryusmawati@uitm.edu.my, faizahmaishahadi@uitm.edu.my,
faiza746@uitm.edu.my, asherene@uitm.edu.my, fikriishak@uitm.edu.my, syedmustaqim@gmail.com,
janiffa@uitm.edu.my

Corresponding Author: Nuryusmawati Mohd Yusof

Abstract: Online dating has become increasingly popular in recent years, offering individuals the opportunity to connect with potential romantic partners through digital platforms. These platforms provide a convenient and accessible way to meet new people, especially for those who may have busy lifestyles or limited social circles. Studies on the use of dating applications among men and women highlight how these technologies shape communication practices and social relationships. For this study, the Unified Theory of Acceptance and Use of Technology (UTAUT) was applied to discover the determinants of online dating apps' adoption intention among millennials in Malaysia. Possible determinants that might affect the intention to adopt online dating apps are sought and critically reviewed. The variables proposed in this research include performance expectancy, effort expectancy, social influence, facilitating conditions, and an additional variable – trust. Five hypotheses were constructed, questionnaires were distributed and responses were collected to determine the adoption intention of young millennials in Malaysia. The test results indicated that trust, performance expectancy and social influence influenced the adoption intention of online dating applications. Based on the results, for performance expectancy, it was revealed that users expressed concerns about the utility of dating applications in facilitating beneficial functions, such as broadening social networks, enhancing dating opportunities, and meeting dating needs. For social influence, it revealed that individuals, especially peers, who hold significance in their lives, influence their decision to engage with online dating apps. These influential individuals impact the users' intentions by communicating the benefits of online dating apps and recommending their use. And lastly, trust. As trust improves, millennials are less reluctant to adopt online dating apps, contributing to an increase in the user base for such applications.

Keywords: *Online Dating, Application, Adoption Intention, Theory of Acceptance, Use of Technology*

1. Introduction and Background

Dating originated in the early 20th century, preceding which young individuals were prohibited from dating before marriage. In the 1900s, dating was considered a potential felony, akin to prostitution in the eyes of authorities (Brown, 2016). By the mid-1920s, dating had completely replaced the traditional courtship system, with a fundamental difference lying in the level of freedom. Relationships transitioned from being stringent to becoming more personal (Markarian, 2017). Recognizing the desire for a romantic relationship often brings awareness to the challenges of finding an ideal partner (Finkel et al., 2012).

Technological advancements have led people to turn to online platforms for dating and forming romantic connections. The inception of online dating traces back to 1965 with the creation of the first computer-based matchmaking service, Operation Match, by Harvard undergraduates in the United States, paving the way for future developments in online dating (Lee, 2016). Studies on online dating have delved into various aspects of this modern phenomenon, including the impact of different platforms, the behavior of users, and the overall success rates of online matches. Much research has explored the psychological and sociological effects of online dating, shedding light on the dynamics of virtual relationships and the implications for real-life interactions.

The evolution of online dating sites is categorized into three stages: (1) online personal advertisement sites, (2) algorithm-based matching sites, and (3) mobile dating apps. The origin of web-based personal advertisement sites can be traced back to Match.com in 1995, functioning as a search engine for online personal advertisements. Algorithm-based matching sites, such as eHarmony, PerfectMatch, and Chemistry, emerged in the early 2000s, providing matches based on user-provided data. The third generation of online dating,

smartphone-based dating apps, gained momentum after the launch of the App Store in 2008, incorporating location-based features and gaining widespread popularity (Finkel et al., 2012).

In the 2020s, the proliferation of online dating sites and apps has been rapid. Examples include Tinder, Bumble, OkCupid, Match.com, Facebook Dating, Paktor, and Tantan, among others (Corpuz, 2021; GMO Research, 2021). The user base of online dating apps has experienced substantial growth, with a 46% increase worldwide, from 185 million users in 2015 to 270 million in 2020, as reported by Curry (2021). Additionally, global revenue from dating apps reached USD 3.08 billion in 2020, marking a 50% increase over the past four years, with projections exceeding USD 8.4 billion in the next four years (GMO Research, 2021).

According to GMO Research (2021), 32.4% out of 1000 Malaysians have used an online dating app before, and 47.8% out of 32.4% of Malaysians are currently using an online dating app. Based on Müller's (2022) studies, the adoption rate of online dating apps among young adults in Malaysia is higher when compared to other age categories. Approximately 41% aged 16-24 and 43% aged 24-34 stated that they had used online dating apps. Besides, Tinder has arisen as the most popular online dating app in Malaysia, followed by Dating.com, Tantan, OkCupid, Grindr, Coffee Meets Bagel, Paktor and Bumble (Müller, 2021). People are using online dating apps as a mechanism to find virtual connections for friendship and emotional support for coping with loneliness. There must be an upward trend in relationships starting online. As online dating becomes mainstream, it may lead to more genuine relationships and even marriages (GMO Research, 2021). Lastly, research on digital intimate publics reveals the interconnectedness between social and sexual communication practices, suggesting that friendships can play a significant role in navigating safety and risk in the online dating world (Wu & Ward, 2018).

The use of social media in romantic relationships has its own set of challenges (Hand et al., 2013). For instance, while online social networks like Facebook have gained immense popularity, they may also impact relationship satisfaction and intimacy. Intimacy has been found to mediate the relationship between online social network usage and overall relationship satisfaction. Moreover, research examining the construction of romantic relationships on social media platforms highlights the role of affordances in shaping these connections. In conclusion, online dating, and the use of digital platforms for romantic relationships have become prominent today. These technologies have reshaped communication practices, highlighted the interconnectedness between social and sexual spheres, posed challenges to relationship satisfaction and intimacy, and underscored the importance of friendships in navigating the online dating world. Additionally, certain studies have also investigated the prevalence of deceptive practices in online dating profiles and the strategies employed to enhance one's desirability in a digital context.

Although the potential value of online dating is still apparent, there is growing evidence that users are at risk. People may forge some or all dating information to attract each other or hide negative personal aspects. In addition, criminals are misusing online dating apps to target victims. Romance scams on online dating sites have been rising recently, and they can occasionally lead to major criminality. Some unethical operators may even hire fake daters to recommend it to their users to charge unreasonably high membership fees. Online dating sites are frequently used for suspected fraud and other illicit activities. Those risks may lead to trust issues in online dating apps (Chen et al., 2020).

There are many reasons why many millennials are skeptical about the safety of online dating. One of the reasons is the potential user may be concerned about security breaches, privacy, and the authenticity of profiles that hackers can access the information. Those who use dating services are twice as likely to be victims of a cybersecurity breach as those who do not. This is because criminals may use the applications to obtain unauthorized access to their devices or infect them with viruses. This might result in someone accessing or tampering with sensitive, personal information kept within, such as obtaining bank data or the home address via a smartphone (Natashia, 2020).

Next, the changing technology world presents new usability and accessibility designs. Thus, online dating app users can check out their matches from anywhere because of the accessibility of any dating app either on a phone or laptop. In addition, online dating apps save time effort, energy and money has driven up the popularity of online dating. Users do not have to leave their houses to connect with individuals all around the world. Also,

users may assess people based on their appearance, traits, and other aspects, and then contact them via email (Natasha, 2022). The user interface, ease of navigation, and overall user experience all have a big influence on adoption intention.

Lastly, catfishing can affect the adoption intention of online dating apps where users can hide behind the fake virtual image which the image can use a filter and can be edited. Almost 60% of people who use online dating apps admit to lying in their profile. The advance of technology allows anyone to create a profile and say whatever they want about themselves like adding a few inches to their height, to lying about their marital status, name, or even who they are altogether (Natashia, 2020).

This study investigated the aspects that influence millennials to use online dating apps using the UTAUT model, which comprises Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitation Condition (FC), and Trust (TR). Furthermore, this study would be advantageous for online dating app companies since the study of Trust (TR) is included in the research and might fill the gap in previous research and provide a fresh viewpoint to online dating app developers and marketers.

2. Literature Review

Performance expectancy measures a user's view of how effective a technology would be in enabling them to achieve their objectives. Hence, performance expectancy reflects the perceived functionality and usefulness associated with using online dating apps. Online dating offers flexibility and convenience and scans through a dozen profiles to connect users with a compatible match. Further, algorithms can generate suggestions for people within your preferred location, age limit or other factors depending on your filter options. Therefore, if the app fulfills or exceeds these expectations, it will improve user adoption and retention.

H1: Performance expectancy (PE) significantly influences the adoption intention towards online dating apps among millennials

Technology adoption is closely related to performance expectancy (Alghatrifi & Khalid, 2019). According to Chopdar et al. (2018), apps that perform a variety of helpful tasks will significantly improve the willingness to use mobile apps. Arora et al. (2020) also stated that the cumulative benefits provided by mobile applications will influence performance expectancy and increase people's incentive to use mobile apps. As a result, when the benefits provided by the applications were great, the adoption of mobile apps was significant. Users are more likely to embrace mobile apps that are useful in their daily lives (Hew et al., 2015). Individuals are expected to utilize online dating apps if they recognize the benefits and use of the apps.

Effort expectancy is concerned with the user's perception of how simple or difficult it is to use a technology. Online dating apps offer simple interfaces that allow users to swipe right to show interest or left to reject potential partners based on profile criteria. Signing up for and creating a profile is a straightforward guided procedure in which users provide basic information, add photos, and write a bio (Tze et al., 2023). Users of online dating services are notified of new matches, messages, and profile activity, which eases the pairing process.

H2: Effort expectancy (EE) significantly influences the adoption intention towards online dating apps among millennials

Individuals are more likely to adopt mobile technology if they believe it is user-friendly and the interface interaction is simple and easy to understand (Giovanis et al., 2018). According to Malik et al. (2017), if an app is easy to use, it will elicit pleasant sentiments and lead to pleasure. Users are more likely to adopt a mobile app that is less complicated and easy to use. Online dating applications must be well-designed to be easy to use and comprehend. According to Duan and Deng (2002), the less effort required to access an app, the more likely users are to adopt it. Individuals are more likely to utilize online dating apps if they believe the apps need less effort to work.

Social influences are the big factors impacting individuals' attitudes, behaviors, or decision-making processes. For example, the opinions and behavior of peers usually can easily influence an individual's choice or decisions. This can have an impact on a variety of aspects such as purchasing decisions, and lifestyle choices including the

adoption of online dating applications. Although modern society increasingly accepts online dating, online dating still receives critique from some societal members. In this regard, online dating app users are vulnerable to the sentiments and critiques of societal members which influence the continuous adoption of online dating applications.

H3: Effort expectancy (EE) significantly influences the adoption intention towards online dating apps among millennials

As social effect shapes the mindsets of potential users, it directly affects intention behavior. When there is appropriate social support available to aid in the adoption of technology, people are more inclined to do so (Saprikis et al., 2021). Considerable people, including friends, family, coworkers, and other well-known figures, have a considerable impact on the adoption of contact tracking apps, according to Duan and Deng (2021).

A person is more inclined to use the applications of those people's opinions the more significant their influence is. Arora et al. (2020) studied the social impact on how people were exposed to the newest apps and found that peer influence was important in predicting app uptake. Furthermore, as indicated by Malik et al. (2017), individuals' social networks have a considerable impact on the adoption of mobile apps. As a result, it is projected that social influence will influence millennials' intentions towards online dating apps.

H4: Facilitating conditions (FC) significantly influence the adoption intention towards online dating apps among millennials.

According to Venkatesh et al. (2016), the facilitating condition reflects individuals' judgments of the resources available to aid adoption, covering external and internal characteristics that influence individuals' adoption intentions. A user who has access to a desirable set of enabling needs will be more likely to adopt a technology. Users plan to use mobile apps if they have the necessary resources and support, such as online assistance, mobile devices, internet access, and so on (Hew et al., 2015).

Facilitating environments have a significant and favorable impact on the adoption behavior of social networking apps, as claimed by Puriwat and Tripopsakul (2021). Even though not every user has an endless mobile internet connection, the degree to which the functionality of mobile apps depends on constant online access may affect users' decision to download and utilize them (Vinnik, 2017). The facilitating condition is thought to have an impact on millennials' decision to use online dating applications.

In online dating apps, trust is crucial for interactions on the platform. Users need to have faith in the security, reliability and privacy of the technology, software, or platforms they use. Technology trust impacts adoption, usage, and long-term engagement. In addition, user's trust experiences affect their decision to adopt online dating apps in general. Thus, building and maintaining trust have been identified as crucial components for online dating apps to attract and retain users.

H5: Trust (TR) significantly influences the adoption intention towards online dating apps among millennials

According to Chao (2019), trust plays a crucial role in influencing people's intention to use internet technology. As the level of risk increases, individuals become less inclined to trust Internet technologies, as noted by Arfi et al. (2021). Additionally, trust is a key factor in determining subsequent actions between parties and establishing interpersonal and commercial relationships, as emphasized by Waseem et al. (2018).

The theory of perceived similarity, proposed by Liu & Xiong (2016), suggests that people with shared values and objectives tend to view each other favorably. In the context of internet use, users who perceive other internet users as like themselves are more likely to trust them, particularly in social apps. The lack of trust is anticipated to have adverse consequences on the user experience, leading to a reduction in consumers' willingness to adopt the apps.

3. Research Methodology

A precise analysis is conducted through the application of a quantitative research approach. This method involves the collection and evaluation of measurable, organized data, with the interpreted results being represented statistically (Goertzen, 2017). According to Goertzen (2017), a key objective is to provide both

accurate and reliable measurements for subsequent statistical analysis. Given its capacity to yield results from a larger sample size, the quantitative approach is deemed suitable for the present research context. This study uses a non-probability sampling method, known as the judgmental sampling method, to collect data. Researchers have been using a judgmental sampling method to study adoption intention using the UTAUT model (Daka & Phiri, 2019; Mahardika & Giantari, 2020; Rosnidah et al., 2018). Judgmental sampling design means that the samples are selected according to the judgment of the researcher (Etikan & Bala, 2017). Furthermore, judgmental sampling is cheap, easy, time-saving, and ideal for quantitative research design (Taherdoost, 2016). The researchers selected samples with a certain understanding of online dating apps in this research. The selected samples are aged from 18 years old to 30 years old, have at least heard about online dating apps before and never used or currently not using online dating apps. Furthermore, the respondents are expected to read and understand English as the questionnaire is conducted in English. The questionnaire is distributed to the respondents who meet the requirements. This sampling method allows researchers to reach the right audience.

4. Results

This section presents sets of results relating to the profile of respondents' experiences towards online dating applications, the characteristics of the total sample, and the comparison of participants regarding their experience based on demographic and geographic characteristics (gender, age, level of education, and region).

Profile of Respondents: Table 1 displays a summary of the characteristics of the total sample of respondents who participated in the study.

Table 1: Demographic and Geographic Information About Adoption of Dating Application

VARIABLE	FREQUENCY	PERCENTAGE
GENDER		
Males	34	30%
Females	79	70%
Total	113	100%
AGE		
19-30	113	100%
Total	113	100%
EDUCATION		
Certificate/Diploma/Degree	113	100%
Post-graduate qualification		
Total	113	100%
DATING APPLICATION USER		
Yes	78	70%
No	35	30%
Total	113	100%
FREQUENCY USE		
1-3 times	94	83%
4-6 times	15	13%
7-9 times	1	1%
More than 10 times	3	3%
Total	113	100%
DATING APPLICATION BRANDS		
Tinder	100	88.5%
Bumble	4	3.5%
Facebook Dating	4	3.5%
Others	5	4.5%
Total	113	100%

Descriptive Statistics: Tables 2, Table 3 and Table 4 display analyses of the significance of performance expectancy, effort expectancy, social influence, facilitating condition, trust, and adoption intention of online dating applications. Multiple Regression analysis is used as it involves more than one variable to explain variance in the dependent variable (Sekaran and Bougie, 2013). In this study, multiple regression analysis was used to determine the factors influencing online dating adoption intention. The independent variables tested were performance expectancy, effort expectancy, social influences, facilitating conditions, and trust. The R-Square value represents the amount of variance explained in the dependent variable (adoption intention) by the predictors.

Table 2: Regression Analysis – Model Summary

Multiple Regression Analysis

R-Square Analysis

	R	R-Square	Adjusted R Square	Std. Error of the Estimate
1	0.818 ^a	.669	.653	3.01819

Note. a. Predictors (Constant), Performance Expectancy, Effort Expectancy, Social Influences, Facilitating Conditions, Trust.

b. Dependent Variable: Adoption Intention

The table in this study shows that 66.9% of the dependent variable adoption intention can be explained by the independent variables (performance expectancy, effort expectancy, social influences, facilitating conditions, and trust), while 33.1% can be explained by other factors. The level of significance of the data collected was less than .001, indicating that the data was valid and could be accepted. The exhaustive number of questions per variable being tested could be a reason for the significance of the data.

Table 3: ANOVA Result

ANOVA

		Sum of Square	df	Mean Square	F	Sig
1	Regression	1965.815	5	393.163	43.160	<.001b
	Residual	974.716	107	9.109		
	Total	294.513	112			

Note. a. Dependent variable: Adoption Intention

B. Predictors (Constant), Performance Expectancy, Effort Expectancy, Social Influences, Facilitating Conditions, and Trus

Table 4: Coefficient Table

Coefficient table

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std.Error	Beta		
1	(Constant)	1.710	1.253		1.365	.175
	Performance Expectancy	.359	.120	.319	3.000	0.03
	Effort Expectancy	-.300	.124	-.252	-2.428	.017
	Social Influences	.329	.085	.315	3.844	<0.01
	Facilitating Conditions	.070	.130	0.57	.541	.590
	Trust	.445	.092	.438	4.858	<0.01

Note. a. Dependent Variable: Adoption Intention

(*p<0.05; **p<0.001)

Based on the results from the study, only two independent variables, social influences, and trust, significantly contributed to online dating adoption intention with both having significant values of less than 0.01. The standardized coefficients (beta) showed that trust was the strongest variable that contributed to the dependent variable with a beta value of 0.445, followed by performance expectancy with a beta value of 0.359 and lastly social influences with a beta value of 0.329.

Table 5: Hypothesis Testing

NO HYPOTHESIS	β	SIG.	DECISION
H1 Performance expectancy (PE) significantly influences the adoption intention of online dating apps among millennials.	.319	0.03	Accepted
H2 Effort expectancy (EE) significantly influences the adoption intention of online dating apps among millennials.	-.252	.017	Not Accepted
H3 Social influence (SI) significantly influences the adoption intention of online dating apps among millennials.	.315	<0.01	Accepted
H4 Facilitating conditions (FC) significantly influence the adoption intention of online dating apps among millennials.	0.57	.590	Not Accepted
H5 Trust (TR) significantly influences the adoption intention towards online dating apps among millennials.	.438	<0.01	Accepted

Discussion

The results indicate that hypothesis 1 (H1) has a significant impact on Performance Expectancy (PE) on the adoption intention of online dating apps among millennials. The study reveals that users express concerns about the utility of dating apps in facilitating beneficial functions, such as broadening social networks, enhancing dating opportunities, and meeting dating needs. These findings align with previous research. Drawing from Saprikis et al. 's (2021) previous research, it has been found that users' inclination to engage with mobile apps is significantly impacted by their performance expectations, especially when they believe that using these apps will lead to favorable results.

A contradictory result emerges, indicating that Effort Expectancy (EE) for hypothesis 2 (H2) yields a significant influence on the adoption intention of online dating apps among millennials. This finding contradicts an earlier

study suggesting that effort expectancy could impact the intention to adopt technology (Abrahão, Moriguchi & Andrade, 2016). However, this research aligns with a prior study conducted by Alowayr (2022), which also found that EE did not exert a substantial impact on mobile technology adoption intentions. This is attributed to users generally being indifferent to the effort and time required to utilize technology. Consequently, it can be inferred that, despite the initial learning curve for millennials mastering the features of online dating apps, they are willing to adopt them due to the overall advantages these apps offer in enhancing their user experience.

As per the findings, hypothesis 3 (H3) plays a significant role in shaping the adoption intention of online dating apps among millennials in Social Influence (SI). The study reveals that individuals, especially peers, who hold significance in their lives, influence their decision to engage with online dating apps. These influential individuals impact the users' intentions by communicating the benefits of online dating apps and recommending their use. This observation is corroborated by the work of Peng and Cao (2017), emphasizing that social influence, particularly peer influence, becomes a more direct and influential factor in individuals becoming adopters of online dating apps.

The findings lead to the rejection of hypothesis 4 (H4), as there is no significant influence of Facilitating Conditions (FC) on the adoption intention of online dating apps among millennials. In contrast, a previous study by Puriwat and Tripopsakul (2021) demonstrated that facilitating conditions do impact user adoption behavior. The inconsistency in the results between this research and the earlier study may be attributed to the users' familiarity with mobile technology operations. With a reduced need for technological infrastructure and user support in adopting mobile technology, these factors are not primary concerns for most users, as highlighted in the study by Alowayr (2022).

Based on the results, hypothesis 5 (H5) has significantly impacted Trust (TR) for the adoption intention of online dating apps among millennials. This outcome aligns with a previous study conducted by Almaiah et al. (2020). The findings suggest that a lack of trust leads to greater hesitation in deciding to adopt mobile services. Consequently, as trust improves, young adults are less reluctant to adopt online dating apps, contributing to an increase in the user base for such applications.

5. Managerial Implications and Recommendations

Based on the insightful findings from our study among millennials, there are several key recommendations for dating app organizations to enhance their platforms and improve user adoption based on the identified factors of influence.

Firstly, recognizing the substantial impact of Performance Expectancy (PE) on the adoption intention of online dating apps, dating app organizations must highlight and emphasize the positive outcomes and advantages of their platforms. Users express concerns about the utility of dating apps, particularly in broadening social networks, enhancing dating opportunities, and meeting dating needs. Drawing from Saprikis et al.'s (2021) research, the organization should focus on communicating how the use of their app can lead to favorable results, aligning with users' performance expectations. Massive promotional activities such as online and offline campaigns can be done to attract the public to get interested in and use the application.

Secondly, in contrast to Effort Expectancy (EE) being a less influential factor, dating app organizations should still prioritize efforts to make their platforms user-friendly and minimize any potential learning curves. While users may generally be indifferent to the effort and time required for technology adoption, optimizing the user experience by simplifying app features and providing clear guidance can contribute to a more seamless adoption process. This is true with the application of Tinder, in which it surpassed its competitors such as OkCupid by maximizing the mobile platform when it was introduced. According to the digital learning solution company, Moloko, in one of its blogs in 2021, with the growth of mobile marketing, combined with local strategies, Tinder has reaped the benefits of targeted promotions to different users with different needs and different learning curves.

Additionally, given the significant role of Social Influence (SI) in shaping adoption intentions, dating app

organizations should actively encourage peer recommendations and endorsements. Leveraging the influence of individuals, especially peers, who hold significance in users' lives can positively impact their decision to engage with the app. Strategies may include referral programs, social sharing features, and testimonials from satisfied users, aligning with Peng and Cao's (2017) emphasis on the direct influence of social peers in driving app adoption. Social impact has a direct impact on intention behavior because it influences potential users' attitudes. Individuals' intentions to adopt technology are higher when there is reasonable social assistance for doing so (Saprikis et al., 2021). Dating app organizations should emphasize viral marketing such as using social influencers and traditional word-of-mouth communication to gain the interest of potential users.

Despite the rejection of Hypothesis 4 (H4) regarding the significant influence of Facilitating Conditions (FC), dating app organizations should not neglect the importance of providing a reliable and efficient technological infrastructure. While millennials may be familiar with mobile technology operations, ensuring a smooth and supportive user experience remains vital. The organization can focus on refining app functionalities, ensuring prompt customer support, and adapting to emerging technological trends. According to Bumble's chief executive, Lidiane Jones, the company would be revamping the app to appeal to more users, particularly younger ones, by adding "personalization and flexibility" to the experience (Moreno, 2024). This is done to make dating apps more interesting, easily accessible, and cheaper in subscription rates especially to the younger generations.

Lastly, recognizing the pivotal role of Trust (TR) in adoption intentions, dating app organizations should prioritize building and maintaining trust among users. Communication and transparency regarding data security, privacy policies, and overall reliability are essential. Learning from Almaiah et al.'s (2020) study, addressing concerns related to trust can reduce hesitation among young adults, ultimately contributing to the growth of the user base. According to Time Magazine, dating apps such as Bumble, Hinge, and Tinder offer background checks, especially for potential users who have criminal records. Further dating apps such as Bumble have encouraged users to do their background checks for potential matches (Burga, 2023). Data protection and privacy must be emphasized by the dating app organization and thorough security measures must be implemented to protect each data and information. Ashley Madison, one of the dating apps available in the market, learned the hard way in 2015 when the site was hacked and around 2500 users' data leaked online. This has led to USD500 million lawsuits and mental anguish among its users.

Conclusion

In summary, this discussion has highlighted the key findings based on the results of hypothesis testing. The presentation of theoretical and managerial implications aims to offer enhanced insights and recommendations for future practitioners and policymakers. Additionally, the study also addresses its limitations and provides recommendations, offering guidance for future researchers seeking to enhance the quality of their research. By emphasizing positive outcomes, optimizing user-friendliness, leveraging social influence, maintaining a reliable infrastructure, and prioritizing trust, dating app organizations can effectively enhance their platforms and foster increased adoption among millennials.

A significant challenge arose from the constrained time frame available for conducting the research, which hindered the depth and breadth of data collection and analysis. This constraint restricted the exploration of certain aspects of the research topic in greater detail, potentially impacting the comprehensiveness of the findings. Inadequate resources, insufficient financial resources, manpower, and access to specialized tools and technology posed additional limitations. Insufficient financial resources hindered extensive data collection efforts and the utilization of advanced analytical methods. Similarly, limitations in manpower may have slowed down data collection and analysis processes, potentially affecting the thoroughness of the research outcomes. Furthermore, limited access to resources such as specific databases, archives, or equipment constrained the scope of the study. Certain data sources or research methods may have been inaccessible due to these limitations, which could have influenced the comprehensiveness and robustness of the findings.

Despite these challenges, efforts were made to mitigate their impact through careful planning, prioritization, and adaptation of research methods. Strategies such as focusing on key research objectives, maximizing efficiency in data collection and analysis processes, and optimizing available resources were employed to address these limitations. However, it is important to acknowledge that these constraints may have influenced

the study's outcomes and should be considered when interpreting the findings. Future research endeavors in this area could benefit from allocating adequate time and resources to ensure a more comprehensive and rigorous investigation of the research topic.

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