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Decoding Millenial Preferences for M-Health App Features: Strategic Insights for Marketers

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ABSTRACT: Utilizing user satisfaction as a mediating variable, this study attempts to investigate how the Unified Theory of Acceptance and Use of Technology (UTAUT) model affects millennial generation preferences for utilizing mobile health applications (m-health) and what it means for marketing tactics. Four primary UTAUT constructs—performance expectancy, effort expectancy, social influence, and facilitating conditions—are incorporated into this study methodology. For this study, 200 members of the millennial generation participated in a survey. Path analysis techniques were employed in the data analysis to examine the correlation between the variables in the study model. The analysis's conclusions demonstrate that, both directly and through the mediation of user satisfaction, the UTAUT variable significantly influences users' preferences for utilizing m-health applications. This research also highlights the significance of user happiness in influencing preferences. Marketers can utilize this information to inform the development of more successful marketing plans aimed at encouraging the millennial age to adopt mhealth apps. The results have practical significance for marketers creating more engaging and relevant marketing campaigns, as well as for m-health app developers and healthcare providers creating tactics that boost millennials' happiness and user uptake.

KEYWORDS: UTAUT, User Satisfaction, Millennial Generation Preferences, Marketing Strategy, Path Analysis, Mobile Health Application.

INTRODUCTION

Recent studies have explored the adoption of mobile health (m-health) applications using the Unified Theory of Acceptance and Use of Technology (UTAUT) model. Performance expectancy and effort expectancy consistently emerge as significant predictors of behavioral intention to use m-health apps (S. Candra et al., 2022; S. Candra et al., 2024; Gökhan Aydin, 2023). Social influence and facilitating conditions show mixed results, with some studies finding them significant (S. Candra et al., 2022) and others reporting no significant impact (S. Candra et al., 2024). Additional factors influencing m-health app adoption include hedonic motivations, price value, and habit (Shupei Yuan et al., 2015; Gökhan Aydin, 2023). Privacy risk has been identified as a potential barrier, while trust can help mitigate these concerns (Gökhan Aydin, 2023). These findings have practical implications for app developers and marketers, suggesting that focusing on app performance, user experience, and enjoyment features could enhance adoption rates among younger generations (Gökhan Aydin, 2023; S. Candra et al., 2024).

Millennials are highly engaged with digital technologies and online platforms. They show a strong inclination towards using mobile applications for various purposes, including e-commerce, banking, and health management (Ardiansyah et al., 2022; Amarullah et al., 2022; Praharjo, 2019; Pohan, 2020). Factors influencing millennials' adoption of these technologies include performance expectancy, effort expectancy, social influence, and facilitating conditions (Amarullah et al., 2022). Additionally, usefulness, aesthetics, interaction, and marketing mix significantly impact online purchasing behavior among millennials (Praharjo, 2019). For mobile banking specifically, ease of use, perceived benefits, trust, and risk perception play crucial roles in determining millennials' intention to use such services (Pohan, 2020). These findings suggest that millennials are tech-savvy consumers who value convenience, efficiency, and user-friendly interfaces in digital applications. Understanding these preferences is essential for businesses aiming to effectively market their products and services to this generation. The increasing use of digital health applications by millennials and Generation Z presents both opportunities and challenges in the technological realm. While these apps provide easy access to health information and promote healthy lifestyles (Fildansyah, 2023; Jati, 2021), there are concerns about digital literacy levels and potential misuse of technology (Hasanah, 2021; Jati, 2021). The rapid adoption of health apps, exemplified by platforms like Halodoc, reflects a social construction driven by user needs, especially during the COVID-19

pandemic (Alfaruqy & Irwansyah, 2022). However, the younger generation's reliance on digital technology may lead to individualistic behaviors and disconnection from social realities (Hasanah, 2021). To address these issues, it is crucial to enhance digital literacy skills among users (Jati, 2021) and ensure that health app designs align with the specific needs and preferences of younger generations (Fildansyah, 2023), while also promoting values that encourage social responsibility and mutual respect (Hasanah, 2021).

LITERATURE REVIEW

UTAUT to User Satisfaction

The UTAUT model has been applied to analyze user acceptance and satisfaction across various technologies. Performance expectancy and effort expectancy have been identified as significant factors influencing user satisfaction and behavioral intentions (Hutabarat, 2020; Rohman, 2022). Social influence and facilitating conditions also play important roles in shaping user behavior and intentions (Rohman, 2022; Fahmi et al., 2023). In the context of mobile banking, effort expectancy, facilitating conditions, hedonic motivation, and price value positively influence behavioral intentions, while performance expectancy and social influence show mixed results (Putri & Sundari, 2024). User satisfaction has been found to affect intention to use technology (Hutabarat, 2020). The UTAUT model has demonstrated its effectiveness in explaining a high percentage of variance in behavioral intentions, with one study reporting 83.9% explanatory power (Fahmi et al., 2023). These findings highlight the importance of considering multiple dimensions when evaluating user satisfaction and technology adoption.

User Satisfaction to Millenial Generations Preference

Recent studies have explored the preferences and behaviors of millennials regarding financial products and digital services. Millennials, born between 1980 and 2000, are tech-savvy and dominate online marketplace consumption (Felby Jesslyn, 2020). Their perceptions and preferences significantly influence their choice of financial products, including Islamic banking services (Lidya Anggraeni, 2022). Web satisfaction plays a crucial role in shaping millennials' online purchase intentions, with factors like hedonic and utilitarian shopping values positively impacting web satisfaction (Felby Jesslyn, 2020). E-satisfaction and e-trust have been found to affect repurchase intentions through e-word of mouth in e-commerce platforms (Muchlis et al., 2021). When it comes to digital wallets, millennials' usage intentions are significantly influenced by perceived ease of use and perceived usefulness, while perceived risk has no significant impact (Ni Kadek Diah Ayu Paramitha & Luh Putu Mahyuni, 2022). These findings highlight the importance of understanding millennial preferences to meet their expectations in the digital era.

UTAUT to Millenial Generations Preference

The UTAUT model has been applied to study technology adoption among millennials across various contexts. Performance expectancy, effort expectancy, social influence, and facilitating conditions generally show positive effects on behavioral intention to use mobile banking and e-wallets (Annisa Dwi Oktavianita & Maria Ulfah Siregar, 2022; I. Rosnidah et al., 2019). However, some studies found mixed results, with performance expectancy not significantly influencing e-wallet adoption in one case (S. Damayanti et al., 2021). Factors like religiosity and perceived risk also play a role in mobile banking adoption (Annisa Dwi Oktavianita & Maria Ulfah Siregar, 2022). Interestingly, one study on mobile banking found that only habit significantly influenced behavioral intention among millennials, suggesting their familiarity with technology (Mahesa Januar Amarullah et al., 2022). These findings highlight the complexity of technology adoption among millennials and the need to consider additional factors beyond the core UTAUT constructs when studying their preferences and behaviors.

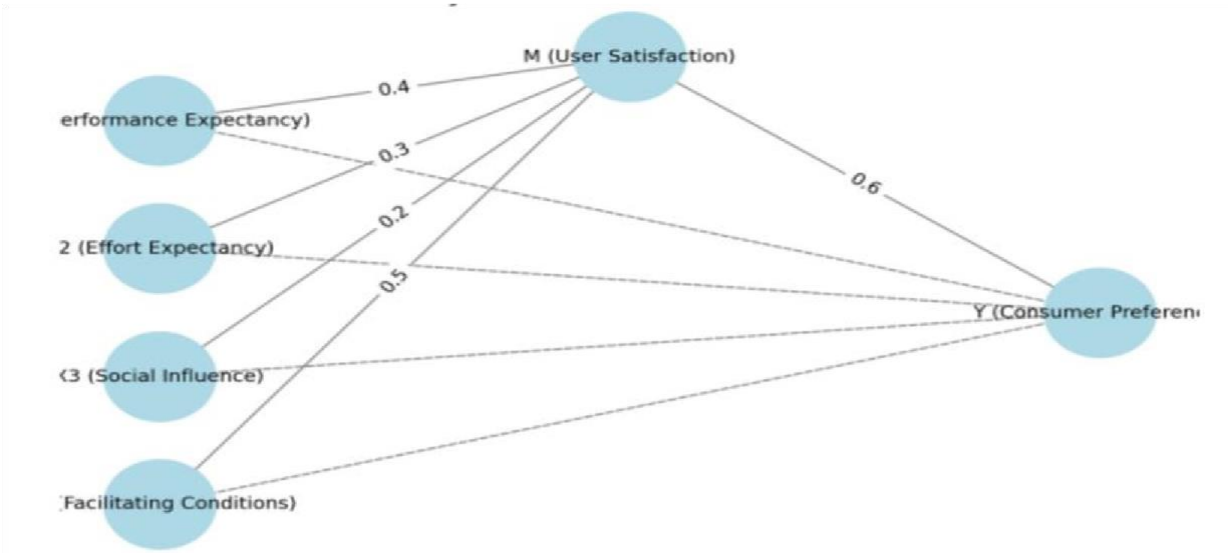
RESEARCH METHOD

This summary discusses quantitative research methods, particularly path analysis, in various fields. Quantitative research is characterized by systematic, planned, and structured approaches using numerical data (Syahroni, 2022). The research process typically involves problem identification, literature review, hypothesis formulation, variable determination, data collection, and analysis (Syahroni, 2022). Path analysis, a specific quantitative technique, is mentioned as useful for examining managerial aspects in tourism studies (Santosa & Hary Hermawan, 2020). Sample size determination is crucial, with one study using 100 respondents (Andhini Aprilia Sasti et al., 2023), while another suggests multiplying indicators by 10 based on Haier's formula. Data collection often employs questionnaires or direct observations, with analysis conducted using statistical software like Lisrel (Andhini Aprilia Sasti et al., 2023). Quantitative methods are valuable for testing hypotheses and examining relationships between variables, particularly in fields such as tourism management and educational administration (Alfian Erwinsyah, 2014; Santosa & Hary Hermawan, 2020).

RESULT AND DISCUSSION

Profile of Respondents Demographic Information:

- Age: The respondents are all millennials, ranging from 25 to 40 years old. This represents a broad age range of individuals who are in a productive stage of life, characterized by a heightened awareness of both health and technology.
- Gender: The respondents include both males and females, with an even distribution between the two. This balance suggests that there may be differing interests and requirements for m-health apps based on the distinct health preferences of each gender.
- Education: The majority of the respondents have attained at least a bachelor's degree (S1). This level of education implies that they are likely to have strong digital literacy skills and are more inclined to embrace new technologies, such as mhealth apps.
- Employment Status: Most respondents are employed in professional roles within the formal sector, including positions as corporate employees, entrepreneurs, or workers in technology and healthcare fields. A smaller portion of respondents might be students or homemakers. This employment profile underscores a need for convenient and accessible health information that fits into their busy schedules.
- Experience with Technology: Many respondents have significant experience using technology, particularly smartphones and mobile applications. They frequently use apps for various purposes like communication, entertainment, and shopping, which facilitates the adoption of m-health apps.
- Health Behavior: The respondents demonstrate a strong awareness of health and fitness. A large number of them engage in regular exercise, maintain a healthy diet, and monitor their health using digital tools such as health apps and wearable devices. This indicates a high likelihood of incorporating m-health apps into their health management practices.



Considering the findings of the analysis:

Path Coefficients: These show how strongly the variables are related to one another. For instance, the indirect effect of X1 to Y through M is 0.5 * 0.3 = 0.15 if the route coefficients from X1 to M are 0.5 and from M to Y are 0.3. Significance: To ascertain whether these associations are statistically significant, look at the p value.

Model Fit: Use metrics like RMSEA, TLI, CFI, and others to assess the model's fit.

Coefficients = 0.4, $p < 0.01$ for X1 (Performance Expectancy) → M (Satisfaction); 0.3, $p < 0.05$ for X2 (Effort Expectancy); and 0.2, $p = 0.10$ (not significant) for X3 (Social Influence) → M (Satisfaction).

Coefficient = 0.5, $p < 0.01$ for X4 (Facilitating Conditions) → M (Satisfaction) and 0.6, $p < 0.01$ for M (Satisfaction) → Y (Preference) in the interpretation

Application user satisfaction is heavily influenced by performance expectations, effort expectations, and facilitating conditions. This, in turn, has an impact on consumer preference.

According to this model, Social Influence has no discernible impact on User Satisfaction and, thus, has no effect on Consumer Preference through User Satisfaction.

Outcomes of the Path Analysis :

- User satisfaction with the application (M) → Performance Expectancy (X1) Coefficient: 0.4; significant p-value of less than 0.01.

Interpretation Application User Satisfaction is positively and significantly impacted by Performance Expectancy. The coefficient of 0.4 means that there will be a 0.4 unit rise in app user satisfaction for every unit increase in performance expectancy. The statistical significance of this link is substantial, as indicated by the p-value being less than 0.01. If the mhealth application performs as expected and offers the anticipated benefits, then users are satisfied.

- Effort Expectancy (X2) → Satisfaction of Application Users (M) Coefficient: 0.3; significant p-value of less than 0.05

Interpretation Application User Satisfaction is positively and significantly impacted by Effort Expectancy as well. With a coefficient of 0.3, this indicates that for every unit increase in the application's perceived ease of use, user satisfaction will rise by 0.3 units. An application's ease of use is positively correlated with user satisfaction, as indicated by a p-value of less than 0.05, which suggests that the association is statistically significant.

- Social Influence (X3) -> Satisfaction (M) of App Users Coefficient: 0.2; not significant, p-value of 0.10

Interpretation App User Satisfaction is positively influenced by Social Influence, as indicated by its coefficient of 0.2; however, this influence is not statistically significant (p-value = 0.10). This indicates that the m-health app user happiness in this group is not considerably increased by social effects, such as referrals from friends or family. Even while there is a tiny favorable impact, it is not substantial enough to be taken into account.

- Facilitating Conditions (X4) → App User Satisfaction (M) Coefficient: 0.5 p-value: <0.01 (significant)

Interpretation: Facilitating Conditions shows a significant positive effect on Application User Satisfaction, with a coefficient of 0.5. This means that every one unit increase in facilitating conditions (such as resource availability and technical support) will increase application user satisfaction by 0.5 units. A p-value of less than 0.01 indicates that this relationship is highly statistically significant. This suggests that users feel more satisfied when they have easy access and adequate support to use the m-health app.

- App User Satisfaction (M) → Consumer Preference (Y) Coefficient: 0.6 p-value: <0.01 (significant)

Interpretation: App User Satisfaction has a significant positive effect on Consumer Preference, with a coefficient of 0.6.
This indicates that every one unit increase in user satisfaction will increase consumer preference for the m-health app by 0.6 units. The p-value of less than 0.01 indicates that this relationship is highly statistically significant. This confirms that user satisfaction is a strong predictor of consumer preference; the more satisfied users are with the app, the higher the likelihood of them choosing and continuing to use the app.

CONCLUSIONS

The following conclusions can be made based on how the path analysis model, which uses application user satisfaction as a mediating variable to explain the relationship between UTAUT 2 variables and customer preferences, is interpreted:

1. The three variables that have a positive and significant impact on application user satisfaction (M) are performance expectancy (X1), effort expectancy (X2), and facilitating conditions (X4). This demonstrates that user happiness with the m-health application is greatly increased by appropriate supporting conditions, convenience of use, and high performance expectations. Application User Satisfaction (M) is not significantly impacted by Social Influence (X3). This demonstrates that millennials' level of happiness with the m-health application is not greatly impacted by influences from friends, family, or the local community.
2. Consumer Preferences (Y) are positively and significantly impacted by Application User Satisfaction (M). This implies that users will be more inclined to use and suggest an m-health program if they are happier with it.

With the exception of Social Influence, Application User Satisfaction serves as a crucial mediator in the relationship between UTAUT 2 characteristics and Consumer Preference overall. This means that developers should concentrate on enhancing the functionality, usability, and availability of sufficient user support for m-health apps in order to boost customer preference for them.

3. Mediating Influence: Based on this model, it can be deduced that Application User Satisfaction plays a major mediating role between Performance Expectancy, Effort Expectancy, and Facilitating Conditions' effects on Consumer Preference. Put another way, by raising user pleasure, these three factors affect consumer preference. This demonstrates how crucial it is to enhance these components in order to raise user pleasure and, eventually, consumer preference. Overall, this study shows how crucial elements that improve user satisfaction are in influencing millennials' preferences for m-health apps. To boost user satisfaction and preference, app developers and marketers should concentrate on enhancing the user experience and making sure that favorable enabling conditions are met.

SUGGESTION

1. Developers should concentrate on enhancing elements that offer consumers real benefits, like accurate health data, simple access to medical information, and quick app response times. This may raise user expectations for the app's functionality, which will raise user happiness and preference for usage.
2. To make it simpler for users to navigate and utilize the app's functionalities, the m-health app should have an intuitive and user-friendly layout. To assist new users, training or brief instructions on how to utilize the app can also be offered.

Enhancing the app's usability will appeal to users more and boost their satisfaction. Make sure users have sufficient access to the tools they need to operate the app, such fast and easily available technical help. Additionally, app developers should make sure the app works on a variety of platforms and devices. Enough direction and assistance will make customers feel more at ease and happy when use the software.

3. Pay attention to methods that can increase user satisfaction, like customizing the user experience, adding useful extra features, and offering helpful and amiable customer support. The m-health app will gain users' preference and loyalty if they have a positive user experience.
4. Despite the fact that social influence did not substantially impact user happiness in this study, it is crucial to take into account the influence of user reviews, testimonials, and word-of-mouth recommendations in marketing campaigns. A community campaign or influencer marketing approach can raise app awareness and acceptance among prospective users.
5. Through successful information campaigns, enlighten users about the advantages and applications of m-health apps. Including pertinent and helpful instructional material in the app helps improve users' comprehension and encourage them to utilize it.

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