



Predictors of Behavioural Intention to Adopt Mobile Health Applications by Young Adults in Nigeria

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Abstract

Mobile health (mHealth) is being adopted worldwide to improve health outcomes. However, several factors still limit the adoption of mobile health among young adults, who are considered tech-savvy and major drivers of technology adoption in Africa. The objective of this study is to identify the determinants of mobile health application adoption among young adults in Nigeria, examining the roles of digital health literacy, health consciousness, technology trust, broadband accessibility, and broadband affordability. A cross-sectional study was conducted to collect data from three hundred educated young adults in Kwara State, Nigeria, using a 5-point Likert-scale questionnaire developed based on the Unified Theory of Acceptance and Use of Technology (UTAUT). The results of the study revealed that all participants owned a smartphone, and more than 50% of the respondents had used mobile health applications at least once. Regarding the consistent use of mobile health applications, the study showed that 9.4% of respondents used them for fitness goals, 10.6% for preventive healthcare, 11.8% due to health conditions, and 11.2% for improving mental health. In assessing the predictors for the continued adoption of mobile health applications, performance expectancy ($\beta = 0.214, p = 0.023$) and broadband accessibility ($\beta = -0.171, p = 0.024$) were identified as significant determinants of mobile health adoption in Kwara State, Nigeria. Although the majority of young adults have used mobile health applications to improve health outcomes, only a small percentage regularly utilize them. This study highlights the roles of performance expectancy and broadband accessibility in enhancing the continuous adoption of mobile health applications. There is a need for telecommunication stakeholders to improve broadband internet services in Nigeria. Furthermore, support from the government, health stakeholders, and policymakers is crucial to increasing the adoption of mobile health applications among young adults, which has the potential to improve health outcomes.

Keywords: Mobile health applications, Adoption of Technology, Young Adults, Nigeria

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I INTRODUCTION

The proliferation of information and communication technologies has influenced healthcare delivery globally with mobile health playing significant roles in disease management and supporting behavioural change [1][2]. Mobile health applications (apps) improve on healthcare by improving patient engagement, providing access to health information, increasing access to monitoring tools and offering behavioural change support which invariably enhances health outcomes [3]. The growth of the mobile health apps market has been predicted to be more than 111 US dollars in 2025[4]. Despite the benefits of m-health apps, the adoption remains low in developing countries [5], especially among young adults who have been considered tech savvy and major drivers of smartphone penetration in Africa [6]. Hence, the potential of mobile health in fostering healthy lifestyles remains untapped by young adults [7][8]. Though previous studies have proposed key factors influencing the adoption of mobile health applications, including performance expectancy, effort expectancy, social influence and facilitating conditions, few studies have explored the role of digital health literacy, health consciousness, broadband accessibility and

affordability. To address this research gap, this study addresses the research questions below:

1. What are the factors that influence the adoption of mobile health applications among young adults in Nigeria?
2. What is the user behavior of mobile health applications by young adults in Nigeria?

Table 1: Mobile health Application adoption by Young Adults

Author	Objective	Methodology	Findings
Kante et al. (2020)	Adoption of Mobile Applications for Self-healthcare Monitoring by the Youth in South Africa	Questionnaires were used to collect data from 140 young adults in South Africa using Diffusion of Innovation and UTAUT	The results have revealed that awareness, effort expectancy, social influence intention to adopt mobile health for physical activity in South Africa
Rai & Sirvasta (2025)	Drivers of consumer trust in mHealth apps among young consumers: a socio-technical approach	Data was collected from 285 young consumers using an online survey	The findings revealed that psychological factors like self-congruence and technical factors such as flow experience and perceived playfulness aid in building trust among young mhealth app users, which in turn influences the purchase intention and user loyalty toward the application
Akio et al. (2024)	Social Acceptance of Mobile Health Technologies Among the Young Population in Nigeria	Data was collected from 270 young adults using the UTUAT model	The results indicate that trust and performance expectancy are significant predictors of mHealth acceptance in the surveyed population
Dan gaiso et al. (2024)	Evaluating the predictors of mobile health acceptance among Zimbabwean university students during the COVID-19 era: an integrated framework	Questionnaires were used to collect data from 271 respondents by integration the UTAUT model and the theory of planned behaviour	The findings revealed the positive effect of performance expectancy, effort expectancy, facilitating conditions, attitudes, behavioral norms, perceived behavioral control on behavioral intention to adopt m-health with a higher R square value (80.4%) than the original UTAUT model.
Jabor et al. (2021)	The Adoption of Mobile Health Applications Among University Students in Health Colleges	Questionnaires were used to collect data from 393 m-health app users without a model	Results revealed students utilized apps for tracking physical activity and counting calories intake with most students showing a positive attitude towards these mobile health apps
Mtshali (2020)	Potential adoption of mHealth applications	Data was collected from 320 young adults using the UTAUT model	The results revealed that effort

	to induce healthy lifestyles among UKZN (PMB) students in South Africa		expectancy (EE), performance expectancy (PE) and social influence (SI), and facilitating conditions are the factors that influence the adoption of mobile health applications that help to induce healthy lifestyles.
Holtz et al. 2025	Young adults' adoption and use of mental health apps	One hundred and eighteen mental health app users responded to the online study	Results reveal that users' performance expectancies, effort expectancies, and facilitating conditions predicted the adoption of mental health apps.
Akio et al (2025)	Cross-Analysis of mHealth Social Acceptance Among Youth: A Comparative Study Between Japan and China	Data was 233 Chinese and 337 Japanese students respectively	The findings revealed distinct cultural effects on mHealth acceptance. Japanese young people showed cautious acceptance influenced by societal norms and infrastructure, whereas Chinese young people demonstrated strong engagement driven by government support and the growing digital health industry

The adoption of mobile health applications has been evaluated globally but gaps still emerge in the representation of data from developing countries [9] which entails examining the cultural and demographic differences in examining mobile health adoption. The study investigates the role of digital health literacy, health consciousness, trust, broadband accessibility and broadband affordability in explaining the adoption of mobile health applications based on the UTAUT2 model. Hence, this study seeks to evaluate the determinants of mobile health applications by young adults in Nigeria

II REVIEW OF LITERATURE

The adoption of mobile health applications among young adults has been investigated by researchers globally as highlighted in Table 1 above, studies have revealed the role of performance expectancy [10] [11] [12] [13], effort expectancy [12] [13], social Influence [12] [14], facilitating conditions [11] [12][13], attitude [11], perceived playfulness [15], trust [10] [15], culture [16] and perceived playfulness [15]. Aydin [7] conducted a study on increasing mobile health application usage among Generation Z members using the UTAUT model. The study collected data from 312 Generation Z members using questionnaires. The findings from the study revealed that perceived enjoyment and social influence were the significant factors influencing adoption in Turkey, while performance expectancy and effort expectancy were also seen to influence mobile health adoption. In South Africa, Mtshali [8] conducted a study on the potential adoption of mobile health applications to induce healthy behaviours in university students in Kwazulu-natal, the study collected data from three hundred and seventy students using questionnaire, results from the study revealed only 31% of young adults had used mobile health applications to promote healthy living with performance expectancy, effort expectancy, and social influence explaining 43.6% of the variance in adopting mobile

health to promote healthy eating habits among young adults while performance expectancy effort expectancy and social influence explained 37.5% of young adults intention to adopt mobile health in promoting physical activity.

Furthermore, Alam et al. [17] investigated the determinants of mobile health apps adoption among young people using the UTAUT2 model which was further extended to include privacy, lifestyle, self-efficacy and trust. Results from the study revealed that social influence performance expectancy, privacy and hedonic motivation positively influenced behavioural intention whereas facilitating conditions, self-efficacy, trust and lifestyle had an influence on both behavioural intention and actual usage behavior. Akiogbe et al. [16] investigated the adoption of mobile health applications among young adults in Japan and China, the study revealed that Japanese young people were cautious in the adopting mobile health applications due to societal norms and infrastructure while the Chinese youths had a strong engagement due to government support and the digital health industry. This study reveals the differences in the framework for adopting mobile health applications based on culture.

In Nigeria, Owolabi, Amusa and Adekanmbi [18] investigated the determinants of smartphone health application utilization among students of university of Lagos by collecting data from 300 respondents with the aid of a questionnaire, results from the study showed that the technical knowledge, awareness, attitude and course of study influenced the use of smartphone health application. Due to the cultural differences that exist among countries, this study seeks to investigate the consistency in this finding and examine the role of broadband accessibility, broadband affordability, health consciousness, and digital health literacy in determining mobile health adoption. It also seeks to establish if the determinants of adoption differ between developing and developed countries based on cultural differences.

III METHODOLOGY

The study involved an analysis of the predictors of mobile health application adoption by young adults in Kwara State Nigeria. Data was collected from three hundred young adults ranging from 18- 26 years old. The study considered educated young adults and participants were selected from a university in Kwara State, However, one hundred and seventy questionnaires were returned. The questionnaire was designed based on constructs from previous studies on mobile health adoption.

The questionnaire was designed using the UTAUT model, which has been studied to predict the adoption of a new technology [19]. The study included five independent variables (Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Digital Health Literacy, Technology Trust, Price Value, Health Consciousness, Broadband Accessibility and Broadband Affordability) and one dependent (Behavioural Intention). Figure 1 shows the framework for this study

A) Reliability of Constructs

Variables in the study were tested using Cronbach Alpha reliability testing. As shown in Table 2

Table 2: Reliability tests

Variables	Cronbach Alpha
Performance Expectancy	0.866
Effort Expectancy	0.701
Social Influence	0.785
Facilitating Conditions	0.796
Digital Health Literacy	0.705
Technology Trust	0.913
Price Value	0.713
Health Consciousness	0.857
Broadband Accessibility	0.719
Broadband Affordability	0.809

IV RESULTS

One hundred and seventy participants completed questionnaires for this study of which 49.4% were male and 50.6% were female. The age group ranged from 18 to 26 years. Participants were selected from five faculties in a university in Kwara State. All participants in the study owned a smartphone.

Table 3: Demographic data on mobile health adoption by young adults

Variables	Measurement	Frequency	Percentage
Gender	Male	84	49.4
	Female	86	50.6
Age	18-20	113	66.5
	20-22	38	22.4
	23-24	15	8.8
	25-26	4	2.4
Faculty of Study	Management & Social Science	47	27.6
	Natural and Applied Science	37	21.8
	Health Sciences	18	10.6
	Arts and Humanities	22	12.9
	Education	46	27.1

A. Use of Mobile Health Applications

The study reveals that majority of the respondents always used mobile health applications for fitness goals (9.4%), preventive healthcare (10.6%), due to health conditions (11.8%) and in promoting mental health (11.2%), while more than 50% of the respondents had used mobile health applications at least once. These findings show the increasing use of mobile health applications

among young adults in Nigeria but there is a need to improve the continued use of mobile health in Nigeria.

Table 4: Use of Mobile Health Applications

Model	Sum of Squares	df	Mean Square	F	Significance
Regression	179.354	10	17.935	7.718	0.000
Residual	369.493	159	2.324		
Total	548.847	169			

Question	Never	Rarely	Sometimes	Often	Always
I use mobile health applications to maintain my fitness goals	39	29	64	22	16
I use mobile health applications for preventive healthcare	36	34	57	25	18
I use mobile health applications due to health condition	48	41	40	20	20
I use mobile health applications to promote my mental health	41	34	50	22	19

Number of respondents-170

Table 5: ANOVA table

B. Predictors of Mobile health Adoption

In assessing the predictors of mobile health adoption by young adults in Kwara State Nigeria. The ANOVA table in Table 5 revealed that the model is a good fit in predicting the adoption of mobile health applications ($p=0.000$). The regression analysis further demonstrated significant relationships between the ten hypothesized predictors of intention. In considering mobile health adoption by young adults' performance expectancy is the strongest predictor of mobile health adoption while broadband accessibility is also a strong predictor of mobile health adoption. Results showed a strong significant relationship ($\beta = 0.215$; $p=0.023$) existed between Performance Expectancy and Intention to adopt mobile health. We therefore accept the hypothesis. Also, broadband accessibility significantly influenced the adoption of mobile health ($\beta = 0.171$; $p= 0.024$) by young adults. However, Effort Expectancy, Social

Influence, Facilitating Conditions, Digital Health Literacy, Health Consciousness and Broadband Affordability did not influence the adoption of mobile health by young adults in Kwara State, Nigeria as shown in Table 6.

Table 6: Regression Coefficients for Predictors of Mobile Health Adoption

Model	Standardized Coefficient Beta	t	Significance
Constant		3.421	0.001
Performance Expectancy	0.214	2.297	0.023
Effort Expectancy	0.054	0.562	0.575
Social Influence	0.081	0.952	0.342
Facilitating Conditions	0.057	0.577	0.565
Digital Health Literacy	-0.085	-0.986	0.325
Technology Trust	0.019	1.014	0.312
Price Value	0.055	0.555	0.580
Health Consciousness	0.065	0.901	0.369
Broadband Accessibility	0.171	2.273	0.024
Broadband Affordability	0.098	1.305	0.194

Dependent Variable: Behavioural Intention

1) Discussion of Findings

The study revealed that 9.4% of the respondents always used mobile health applications for fitness goals, 10.6% used mobile health applications for preventive healthcare, 11.8% used mobile health applications due to health conditions and 11.2 % used mobile health apps in improving their mental health

The findings from this study further shows that the strongest predictor of mobile health adoption by young adults is performance expectancy. This implies that when mobile health applications are considered useful and necessary in improving the health outcomes of young adults, they will be adopted. This finding is supported by previous researchers [11] [13] [16]. Also, broadband accessibility was seen to significantly influence mobile health adoption. In a developing country such as Nigeria, it is pertinent to address the availability and speed of broadband internet in determining the adoption of mobile health.

This study contributes academically to the adoption of mobile health by young adults by utilizing the UTAUT model. This study extended the UTAUT model by considering the role of health consciousness, technology trust, digital health literacy, broadband accessibility and broadband affordability in influencing mobile health adoption among young adults. Being the first study to evaluate the role of broadband accessibility and affordability in mobile health adoption this study contributes to literature by highlighting the role of broadband accessibility in influencing mobile health adoption. There is need for telecommunication stakeholders, government stakeholders to offer the required support in improving the adoption of mobile health applications by young adults in Nigeria.

V CONCLUSION

The objective of the paper was to examine the predictors of mobile health application adoption by young adults in Kwara State Nigeria. The study revealed that over 50% of young adults had used mobile health applications at least once. In examining the predictors of mobile health adoption based on continuous usage, performance expectancy and broadband accessibility were seen to predict the adoption of mobile health applications by young adults in Nigeria. Due to the existing cultural differences in the adoption of mobile health as highlighted by Akiogbe et al. [16], there exists a need for telecommunication stakeholders to improve broadband internet services both in availability and speed, there is also need for support from the government, health stakeholders and policy makers in improving the adoption of mobile health applications. Though several researchers [20] [21] [22] have revealed the role of information technology and artificial intelligence in improving health outcomes, there is a need for an increase in the adoption of mobile health applications which fosters a personalized approach to health.

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