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THE USE OF MOBILE APPLICATION TO IMPROVE ADMISSION OF STUDENTS IN AKANU IBIAM FEDERAL POLYTECHNIC UNWANA, EBONYI STATE

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ABSTRACT

The admission process in many Nigerian tertiary institutions has changed significantly due to the advancement of Information and Communication Technology (ICT). Mobile applications have become important tools for improving communication, data management, and online services in educational institutions. This study examined the use of mobile applications to improve student admission in Akanu Ibiam Federal Polytechnic Unwana. This study focused on how mobile applications can simplify admission processes, improve communication between applicants and the institution, reduce stress, and increase efficiency. The study adopted descriptive and inferential statistics, and SPSS V20 and ChatGPT5.5 were used for analysis. Data were collected using questionnaires distributed to students, admission officers, and ICT staff of the Polytechnic. Data were collected using questionnaires distributed to students, admission officers, and ICT staff of the Polytechnic. The findings showed that mobile applications help students to access admission information quickly, apply online, monitor admission status, and receive instant updates. The mean response score for the effectiveness of mobile applications was 2.50, indicating a positive perception among respondents. Furthermore, the correlation between mobile application usage and admission process efficiency was found to be significant at $p < 0.05$, confirming a statistically significant relationship. The study also discovered that poor internet connectivity, lack of ICT facilities, and limited technical knowledge affect the effective implementation of mobile admission systems. The study recommended improved ICT infrastructure, development of user-friendly admission applications, and proper training of staff and students.

Keywords: Mobile Application, Admission System, ICT, Nigerian Polytechnic, Digital Admission, Educational Technology.

1 INTRODUCTION

According to the Oxford Advanced Learner's Dictionary (10th edition). Admission is the act of accepting someone into an institution or organization. The admission process is a system used by educational institutions in selecting suitable candidates into the various available courses for that academic session. Different institutions operate different types of

admission systems. According to Helms (2008), admission is a very important activity of any educational institution; Helms defines it as a specific activity undertaken to admit students into tertiary institutions. The process of admission of students into university is a very important activity in every educational system. Admission starts when a potential student develops interest in higher education and continues until enrolment in a particular institution (Harman, 1994). As the admission process is an administrative role of an institution, it requires record keeping, calls for the introduction of information technology to drive the system.

Technology has transformed educational administration across the world (Condori-Obregon, Huallpa-Juarez & Palomino-Vidal, 2025). In recent years, mobile applications have become important tools used by schools, universities, and polytechnics for communication, registration, payment processing, and admission management (Mwandosya, 2019). Mobile applications provide students with easy access to institutional services through smartphones and tablets (Ali, Abdulah, & Mohamed, 2020). Akanu Ibiam Federal Polytechnic Unwana, is one of the leading federal polytechnics in Nigeria that has adopted ICT systems in several administrative operations. The institution operates online admission and screening systems through its ICT Directorate and admission portal. (https://polyunwana.edu.ng)

Traditionally, admission processes in many Nigerian polytechnics involved manual submission of forms, physical verification of documents, and long queues during registration. These methods often resulted in delays, loss of documents, poor communication, and stress for applicants. The introduction of mobile applications has provided a better and faster means of managing admission processes (Noruwa, Mustapha, Okorie, & Ogunbiyi, 2024).

Mobile applications can help applicants to:

i. Apply for admission online
ii. Upload credentials
iii. Check admission status
iv. Receive notifications
v. Pay fees electronically
vi. Access admission guidelines remotely

The ICT Directorate of Akanu Ibiam Federal Polytechnic Unwana, currently, manages online registration portals and admission-related digital services. This study therefore investigates how mobile applications can further improve student admission processes in the institution.

Statement of the Problem

Admission processes in Nigerian tertiary institutions still face several challenges such as delays in processing applications, poor communication, network failures, and excessive paperwork. Many applicants travel long distances to obtain information about admission status and screening procedures. Although Akanu Ibiam Federal Polytechnic Unwana has online admission platforms, there is still a need to improve accessibility and efficiency through dedicated mobile applications. Some applicants experience difficulty navigating web portals using mobile devices, while others encounter delayed responses during admission processing.

Objectives of the Study

The objectives of this study are to:

i. Examine the role of mobile applications in improving student admission.
ii. Determine the benefits of mobile applications in admission management.
iii. Identify the challenges affecting the implementation of mobile admission systems.
iv. Suggest solutions for improving mobile admission systems in the Polytechnic.

Research Questions

i. How do mobile applications improve admission processes in the Polytechnic?
ii. What are the benefits of using mobile applications for admission?
iii. What challenges affect the use of mobile admission systems?
iv. What measures can improve mobile application usage in admission management?

2 LITERATURE REVIEW

Mobile applications are software programs developed for mobile devices such as smartphones and tablets. Educational institutions now use mobile applications for teaching, communication, student management, and admission processing

(Odumabo, Okuboyo, & Ogedegbe, 2014). Studies have shown that mobile technology improves administrative efficiency in higher institutions. Research on mobile enrollment systems in Nigeria revealed that mobile applications make admission processes faster and more accessible to applicants (Crompton & Burke, 2018). The ICT Directorate of Akanu Ibiam Federal Polytechnic Unwana, was established to promote digital technologies and improve institutional services. The Directorate manages admission portals, e-registration systems, and online databases for students and applicants. The Polytechnic also operates online admission screening systems where candidates upload credentials and monitor admission processes digitally.

Currently, researchers have identified several advantages of mobile applications in education which include: Faster communication, reduced paperwork, improved transparency, Easy access to information, Better record management, and reduced cost of transportation (Crompton & Burke, 2020; Al-Emran et al., 2020). Furthermore, some studies also identified challenges such as: poor internet connectivity, Lack of ICT infrastructure, Cybersecurity risks, and Limited digital literacy among users

Moreover, recent studies have demonstrated that the integration of the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) provides a comprehensive framework for explaining users' acceptance and utilization of mobile technologies in higher education. A systematic review conducted by Xue, Rashid, and Ouyang (2024) revealed that TAM is the theoretical model most frequently combined with UTAUT in studies on technology adoption within higher education settings. The review further established that mobile learning and mobile-based services are among the most extensively investigated technologies, with **performance expectancy** emerging as the strongest predictor of users' behavioural intention to adopt technological innovations (Xue et al., 2024). UTAUT extends TAM by incorporating additional constructs, namely **performance expectancy**, **effort expectancy**, **social influence**, and **facilitating conditions**. Performance expectancy corresponds to TAM's perceived usefulness and describes the extent to which applicants believe that the mobile application will improve the effectiveness and speed of completing admission-related activities. Effort expectancy aligns with perceived ease of use and emphasizes the simplicity associated with operating the application. Social influence recognizes that applicants' decisions to use the admission application may be shaped by recommendations from parents, peers, and institutional personnel, while facilitating conditions encompass the availability of smartphones, internet connectivity, technical support, and digital literacy skills necessary for effective utilization of the application (Permana et al., 2024).

2.1 Theoretical Framework

This study is anchored on the integration of the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology to explain the acceptance and utilization of mobile applications in the admission process at Akanu Ibiam Federal Polytechnic, Unwana, Ebonyi State. The Technology Acceptance Model (TAM), developed by Davis (1989), posits that an individual's intention to adopt a technological system is primarily influenced by two factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU**)**. In the context of this study, perceived usefulness refers to the extent to which prospective students believe that a mobile application can enhance the efficiency, speed, transparency, and convenience of admission-related activities such as application submission, status tracking, document verification, and communication with the institution. Perceived ease of use relates to the degree to which students perceive the mobile application as user-friendly, easy to navigate, and requiring minimal effort to operate (**Davis, 1989**). When students perceive the admission mobile application as useful and easy to use, they are more likely to develop a positive attitude toward its adoption and continued usage.

Complementing TAM, the Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh et al. (2003) provides a broader perspective on technology adoption by incorporating four key determinants: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. Performance expectancy aligns with TAM's perceived usefulness and describes the extent to which prospective students believe that using the mobile application will improve their chances of completing admission procedures effectively (Davis, 1989; Venkatesh et al., 2003). Effort expectancy corresponds to perceived ease of use and reflects the simplicity associated with operating the application. Social influence considers the impact of recommendations from peers, parents, admission officers, and other stakeholders on students' willingness to use the application. Facilitating conditions refer to the availability of resources such as smartphones, internet connectivity, technical support, and digital literacy necessary for effective utilization of the admission application. (Venkatesh et al. (2003)). The integration of TAM and UTAUT provides a comprehensive framework for examining both individual perceptions and environmental factors influencing the adoption of mobile applications for admission processing (Venkatesh et al., 2003). The combined model suggests that the successful implementation of a mobile admission application in Akanu Ibiam Federal Polytechnic Unwana depends on students and staff perceiving the system as beneficial, easy to use, socially acceptable, and adequately supported by institutional and technological infrastructures. Therefore, this theoretical framework is considered appropriate for examining how mobile applications can improve the admission process by enhancing accessibility, reducing delays, increasing communication efficiency, and promoting a more transparent admission system.

3 METHODOLOGY

This study adopts a descriptive and inferential statistics approach, which includes: Mean Score ($\bar{X}$), Standard Deviation (SD), Cronbach's Alpha Reliability Test (α), and Pearson Product Moment Correlation (PPMC). The population consisted of: students, Admission officers, and ICT staff from Akanu Ibiam Federal Polytechnic Unwana. A sample size of 150 respondents was selected randomly. Data were collected using a structured questionnaire titled "The Use of Mobile Application to Improve Admission of Students in AIFPU". It has four sections: admission process improvement, benefits of mobile applications, challenges, and improvement measures. These methods were used because it helps to describe the basic features of the dataset, while inferential statistics were used to test hypotheses and draw conclusions on the perceived usefulness of mobile applications in admission processes. The mean score was used because the questionnaire items were measured using a four-point Likert scale (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1). It also provides a summary measure of respondents' opinions and helps determine the extent of agreement or disagreement on each questionnaire item. The mean is widely used in educational and social science research because it simplifies the interpretation of large data sets and facilitates decision-making based on a predetermined criterion mean of 2.50 (Okechukwu & Madu, 2022). Standard deviation was also used to determine the degree of variability or dispersion in respondents' opinions. Cronbach's Alpha was also used to determine the reliability and internal consistency of the research instrument. Testing for the relationship between mobile application usage and admission management effectiveness was done using Pearson Product Moment Correlation (PPMC). (Cronbach, 1951).

For the Mean Score computation, the formula below was used

$$\bar{X} = \frac{\sum fx}{N}$$

Where:

i. $\bar{X}$= Mean
ii. f= Frequency
iii. x= Likert weight
iv. N= Total respondents

The Decision Rule:

Criterion Mean

$$\frac{4+3+2+1}{4} = 2.50$$

So the mean ≥ 2.50 is accepted.

For the Standard Deviation the formular below was used

$$SD = \sqrt{\frac{\sum f(x-\bar{X})^2}{N-1}}$$

The standard deviation measures the extent to which respondents differ in their opinions.

The Decision drawn follows:

i. If Standard Deviation (SD) < 1.00: it means High agreement.
ii. If Standard Deviation (SD) > 1.00: it means that Opinions are dispersed.

Cronbach's Alpha Reliability Test**:** The internal consistency of the questionnaire was determined using Cronbach's Alpha.

$$\alpha = \frac{k}{k-1}\left(1-\frac{\sum\sigma_i^2}{\sigma_t^2}\right)$$

Where:

i. α = Reliability coefficient
ii. k = Number of items

iii. σ_i^2 = Variance of individual items
iv. σ_t^2 = Total variance

The pilot test conducted with 20 respondents yielded

Table 1: Reliability Test using 20 questionnaires

Variable	No. of Items	Cronbach's Alpha
Admission Process Improvement	6	0.84
Benefits of Mobile Applications	5	0.87
Challenges	3	0.81
Improvement Measures	3	0.79
Overall Instrument	15	0.83

The overall Cronbach's Alpha coefficient of **0.83** indicates that the questionnaire possesses high internal consistency and is reliable for the study.

3.1 Method of Data Analysis

To analyse the data, the researcher used SPSS V20 for data presentation and analysis, and OpenAI ChatGPT-5.5 to interpret the results. The analyses were carried out at a 0.05 significance level.

4 RESULTS

4.1 Research Question One

Table 2: How do mobile applications improve admission processes in the Polytechnic?

Item	Mean	SD	Decision
Mobile apps make admission processing faster	3.27	0.84	Accepted
Mobile apps improve communication	3.17	0.88	Accepted
Mobile apps improve transparency	3.20	0.86	Accepted
Mobile apps reduce admission errors	3.10	0.91	Accepted
Mobile apps help students track admission status	3.30	0.81	Accepted
Mobile apps improve data management	3.19	0.85	Accepted

Grand Mean	Grand SD
3.21	0.86

The grand mean (3.21) exceeds the criterion mean (2.50); the respondents agreed that mobile applications significantly improve admission processes.

4.1.1 Research Question Two

Table 3: What are the benefits of using mobile applications for admission?

Item	Mean	SD	Decision
Mobile apps reduce stress	3.21	0.83	Accepted
Mobile apps reduce paperwork	3.25	0.79	Accepted
Students prefer mobile admission	3.17	0.89	Accepted
Mobile applications should be fully adopted	3.33	0.76	Accepted
Mobile systems save time and cost	3.31	0.78	Accepted

Grand Mean	Grand SD
3.25	0.81

The low SD values indicate strong consensus among respondents regarding the benefits of mobile admission systems.

4.1.2 Research Question Three

Table 4: What challenges affect the use of mobile admission systems?

Item	Mean	SD	Decision
Internet problems affect admission	3.33	0.77	Accepted
ICT facilities are adequate	2.30	0.95	Rejected
Power supply affects admission	3.30	0.80	Accepted

The respondents strongly agreed that lack of internet connectivity and unstable electricity supply constitute major barriers to effective mobile admission implementation.

4.1.3 Research Question Four

Table 5: What measures can improve mobile application usage in admission management?

Item	Mean	SD	Decision
Staff are properly trained	2.53	0.98	Accepted
Mobile applications should be fully adopted	3.33	0.76	Accepted
ICT facilities are adequate	2.30	0.95	Rejected

Grand Mean	Grand SD
2.72	0.90

The findings revealed that respondents agreed that **proper training of staff** and the **full adoption of mobile applications** are important measures for improving mobile application usage in admission management, as both items had mean scores above the criterion mean of 2.50. However, respondents disagreed that **ICT facilities are adequate**, indicating that inadequate ICT infrastructure remains a major challenge. Overall, a grand mean of **2.72** showed a general agreement that staff training and full adoption of mobile applications can enhance admission management, while improvements in ICT facilities are still needed.

4.2 Pearson Product Moment Correlation Analysis

To determine the extent of alignment, Pearson Product Moment Correlation Analysis was used to examine the relationship between mobile application adoption and admission management effectiveness.

4.2.1 Hypothesis

i. **H0:** There is no significant relationship between mobile application usage and admission management effectiveness.
ii. **H1:** There is a significant relationship between mobile application usage and admission management effectiveness.

The Pearson correlation coefficient was computed using:

$$r = \frac{N\sum XY - \sum X\sum Y}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Table 6: Pearson Correlation Matrix

Variables	Mobile App Usage	Admission Efficiency	Transparency	Data Management
Mobile App Usage	1.000	.812	.785	.761
Admission Efficiency	.812	1.000	.738	.724
Transparency	.785	.738	1.000	.701
Data Management	.761	.724	.701	1.000

The Correlation is significant at $p < 0.05$. The Pearson correlation coefficient ($r = 0.812$) indicates a very strong positive relationship between mobile application usage and admission management effectiveness. This implies that increased adoption of mobile applications leads to significant improvements in admission efficiency. From the table, the p-value is less than 0.05; the null hypothesis is rejected.

5 DISCUSSION OF FINDINGS

The analysis demonstrates that the respondents have a strong positive perception of the use of mobile applications in admission management. This aligns with the Technology Acceptance Model, that, the Perceived Ease of use is important and influences the use of technology. The grand mean for all four research questions exceeded the benchmark value of 2.50, indicating general acceptance. The reliability analysis produced an overall Cronbach's Alpha coefficient of 0.83, confirming that the research instrument was internally consistent and suitable for measuring the study variables.

Furthermore, the Pearson Product Moment Correlation revealed a strong positive relationship ($r = 0.812$, $p < 0.05$) between mobile application usage and admission management effectiveness. This finding empirically supports the proposition that wider deployment of mobile technologies enhances admission speed, transparency, communication, and record management. The relatively low standard deviation values (0.76–0.98) across the items indicate substantial agreement among respondents, suggesting that the opinions expressed are stable and consistent. The findings also revealed significant implementation challenges, particularly poor internet connectivity, inadequate ICT infrastructure, unstable power supply, and insufficient staff training. Addressing these constraints would further improve the effectiveness of mobile admission systems.

Finally, the combination of descriptive statistics (Mean and SD), reliability analysis (Cronbach's Alpha), and inferential analysis (Pearson Correlation) provides strong empirical evidence that mobile applications significantly improve admission management in Akanu Ibiam Federal Polytechnic Unwana.

6 CONCLUSION

The study concluded that mobile applications can significantly improve admission processes in Akanu Ibiam Federal Polytechnic Unwana. Mobile applications enhance communication, improve accessibility, reduce paperwork, and provide faster processing of admission activities.

Recommendations

The study recommends that:

- The Polytechnic should develop a dedicated mobile admission application.
- ICT infrastructure should be improved.
- Students and staff should receive regular ICT training.
- Strong cybersecurity systems should be implemented.

- Internet facilities within the institution should be upgraded.
- Admission systems should be integrated with mobile payment platforms.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

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