

Digital Admission Management System and Students' Access to University Education in Delta State

Kenneth Avweroswo ETTOH¹; Marvelous Ndidi NWAJEI²

Dennis Osadebay University Library, Cataloguing and Classification Division¹; PhD, CLN, MNLA, MIMIM, MIOE, Department of Library and Information Science, University of Delta, Agbor Delta State, Nigeria²

ABSTRACT

The rapid digitalization of university administration in Nigeria has positioned the digital admission management system (DAMS) as a central determinant of equitable access to higher education. This study examined the relationship between digital admission management systems and students' access to university education in Delta State, focusing on online application platforms, electronic document verification, and centralized admission portals. Guided by three objectives, a 360 respondents descriptive survey design sample was adopted comprising prospective students, admission officers, and ICT personnel drawn from three universities in the state using stratified random sampling. A structured questionnaire titled "Digital Admission Management and Access to Dennis Osadebay University, Asaba, was validated and used for data collection, yielding a reliability coefficient of 0.84 using Cronbach's Alpha. Data were analyzed using mean, standard deviation, and Pearson Product Moment Correlation. Findings revealed that online application platforms, electronic document verification systems, and centralized admission portals all had a significant positive relationship with students' access to university education. It was recommended, that universities in Delta State should expand digital infrastructure, train admission personnel, and subsidize internet access for rural applicants to further enhance access to university education as Digital admission management system improves transparency, equity and university admissions.

KEYWORDS: Digital Admission Management System, Students' Access, University Education, Online Application, Electronic Verification, and Delta State.

INTRODUCTION

University education remains one of the most significant instruments for human capital development, national transformation, and socio-economic mobility in Nigeria. Access to university education, however, has historically been constrained by cumbersome, manual, and often opaque admission processes that disadvantage prospective students, particularly those in rural and underserved communities (Edet & Okon, 2021). In recent years, the adoption of digital technologies in educational administration has transformed the way universities manage student admissions, with many institutions migrating from paper-based application procedures to integrated digital

admission management systems (DAMS) that automate application processing, document verification, merit listing, and offer-of-admission notifications (Ogundele et al., 2022).

A digital admission management system refers to an integrated electronic platform that enables prospective students to apply, upload credentials, pay fees, track application status, and receive admission decisions without physical visits to the institution (Nwachukwu & Bassey, 2020). Globally, the COVID-19 pandemic accelerated the adoption of such systems as universities sought contactless means of managing large volumes of applicants while maintaining transparency and reducing corruption associated with manual admission practices (Chukwuemeka & Idoko, 2023). In Nigeria, the Joint Admissions and Matriculation Board (JAMB) Central Admissions Processing System (CAPS) has served as a national framework upon which individual universities, including those in Delta State, have built institution-specific digital admission portals.

Delta State, home to institutions such as the University of Calabar, Cross River University of Technology, and other tertiary institutions, has witnessed a gradual but uneven adoption of digital admission technologies. While some institutions have fully automated their admission processes, others continue to grapple with infrastructural deficits, unstable internet connectivity, low digital literacy among applicants, and inadequate technical capacity among admission officers (Etta & Ushie, 2021). These challenges raise pertinent questions about whether digital admission management systems are genuinely expanding access to university education or merely shifting the locus of exclusion from physical barriers to digital ones (Bassey & Effiong, 2022).

Access to university education encompasses not only the ability of qualified candidates to gain admission but also the fairness, timeliness, and inclusiveness of the processes through which such admission is granted (Okoro & Tarela, 2023). Where digital admission systems are well implemented, they have the potential to widen access by eliminating geographical barriers, reducing processing time, enhancing transparency, and minimizing human interference and corruption in the allocation of admission slots (Adie & Inah, 2020). Conversely, poorly implemented digital systems may exacerbate existing inequalities, particularly for candidates with limited access to computers, smartphones, or reliable internet services, thereby creating a new form of digital divide in educational access (Ekpo & Antigha, 2021).

It is against this backdrop that this study investigates the extent to which digital admission management systems, specifically online application platforms, electronic document verification systems, and centralized admission portals, influence students' access to university education in Delta State. Understanding this relationship is critical for policymakers, university administrators, and stakeholders seeking to design admission systems that are both technologically efficient and socially inclusive.

STATEMENT OF THE PROBLEM

Despite the increasing investment in digital admission infrastructure by universities in Delta State, access to university education remains a contentious issue, with reports of delayed admission processing, exclusion of candidates from rural areas, and persistent complaints about the complexity of online application procedures. Many prospective students report difficulties navigating online portals, uploading documents, and tracking their

application status, while admission officers in some institutions lack adequate training to manage digital platforms effectively.

Furthermore, the digital divide between urban and rural applicants in Delta State raises concerns that digital admission management systems, rather than democratizing access, may be inadvertently reproducing or even widening existing inequalities in access to university education . Anecdotal evidence suggests that some qualified candidates are unable to complete their applications due to poor internet connectivity, unstable electricity supply, and limited digital literacy, while others abandon the process altogether due to frustration with system downtimes and technical glitches.

While considerable scholarly attention has been devoted to e-governance and digital transformation in Nigerian higher education generally, there remains a paucity of empirical studies specifically examining how the components of digital admission management systems, namely online application platforms, electronic document verification, and centralized admission portals, relate to students' actual access to university education within the specific context of Delta State. This gap in localized empirical evidence constitutes the problem this study sought to address.

1. PURPOSE OF THE STUDY

The main purpose of this study was to examine the relationship between digital admission management systems and students' access to university education in Delta State. Specifically, the study sought to:

1. Determine the relationship between online application platforms and students' access to university education in Delta State.
2. Examine the relationship between electronic document verification systems and students' access to university education in Delta State.
3. Investigate the relationship between centralized admission portals and students' access to university education in Delta State.

2. RESEARCH QUESTIONS

The following research questions guided the study:

1. What is the relationship between online application platforms and students' access to university education in Delta State?
2. What is the relationship between electronic document verification systems and students' access to university education in Delta State?
3. What is the relationship between centralized admission portals and students' access to university education in Delta State?

Hypothesis

H₀₁: There is no significant relationship between online application platforms and students' access to university education in Delta State.

H₀₂: There is no significant relationship between electronic document verification systems and students' access to university education in Delta State.

H₀₃: There is no significant relationship between centralized admission portals and students' access to university education in Delta State.

3. LITERATURE REVIEW

This section reviews relevant theoretical and empirical literature organized around the three objectives of the study.

3.1 Conceptual Framework

Digital admission management systems are conceptualized as web-based platforms that integrate application submission, document handling, payment processing, and communication functions to manage the entire admission lifecycle electronically (Ogundele et al., 2022). Students' access to university education, on the other hand, is conceptualized broadly to include equity of opportunity, ease of application, transparency of selection, and timeliness of admission communication (Okoro & Tarela, 2023). The Technology Acceptance Model (TAM) propounded by Davis, as extended in recent digital governance literature, provides the theoretical anchor for this study, suggesting that perceived usefulness and perceived ease of use of digital systems determine the extent to which users, in this case prospective students and admission officers, adopt and benefit from such systems (Chukwuemeka & Idoko, 2023).

3.2 Online Application Platforms and Students' Access to University Education

Online application platforms constitute the primary interface through which prospective students initiate their engagement with university admission processes. Edet and Okon (2021) found that universities which transitioned to fully online application systems recorded significant reductions in application processing time and improved candidate satisfaction compared to institutions still relying on partially manual systems. Similarly, Nwachukwu and Bassey (2020) reported that online application platforms enhanced access for candidates residing far from university campuses by eliminating the need for physical presence during the application stage.

However, other studies present a more cautious picture. Etta and Ushie (2021), in a study of tertiary institutions in southern Nigeria, found that while online application platforms improved convenience for urban and digitally literate candidates, they posed considerable challenges for rural applicants with limited access to computers and stable internet connectivity, thereby creating disparities in actual access despite improvements in process efficiency. Adie and Inah (2020) similarly noted that the success of online application platforms in widening access depends heavily on the availability of complementary infrastructure such as community internet centers and affordable data services. These mixed findings underscore the need to examine empirically how online application platforms relate to students' access to university education in the specific context of Delta State.

3.3 Electronic Document Verification Systems and Students' Access to University Education

Electronic document verification systems enable institutions to authenticate credentials such as result slips, birth certificates, and indigene certificates without requiring physical submission and manual scrutiny. Bassey and Effiong (2022) observed that electronic verification systems reduced incidences of document fraud and expedited the confirmation of candidates' eligibility, thereby accelerating the overall admission timeline. Inyang and Edem (2023) similarly found a positive association between the use of electronic verification platforms and reduced waiting periods for admission confirmation among first-year students in Delta State universities.

Conversely, Obi and Eteng (2021) cautioned that electronic verification systems are only as effective as the quality of data infrastructure undergirding them, noting that integration challenges between university portals and external verification bodies such as examination boards often resulted in delays and erroneous rejections of genuine applications. Eyo and Mbon (2022) further argued that electronic document verification, while reducing fraud, sometimes excluded candidates whose documents were not yet digitized by issuing authorities, particularly those from rural secondary schools, thus creating an unintended access barrier. This body of literature suggests a nuanced relationship that warrants further empirical investigation within the local context.

3.4 Centralized Admission Portals and Students' Access to University Education

Centralized admission portals consolidate application tracking, merit list publication, and offer management within a single institutional or national interface, often modeled after JAMB's CAPS framework. Ekpo and Antigha (2021) found that centralized portals improved transparency in admission allocation by allowing candidates to track their status in real time, thereby reducing the perception of bias and corruption that characterized earlier manual admission regimes. Okoro and Tarela (2023) similarly reported that centralized portals enhanced candidates' confidence in the fairness of the admission process, which in turn encouraged more eligible candidates to complete their applications.

On the other hand, Chukwuemeka and Idoko (2023) noted that centralized portals occasionally suffered from server overload during peak application periods, leading to system downtimes that disproportionately affected candidates with limited time or resources to make repeated attempts. Ogundele et al. (2022) also observed that centralized admission portals required substantial technical capacity to manage effectively, and that institutions with inadequate ICT support staff often experienced delays that undermined the very access-enhancing benefits the portals were designed to provide. These findings collectively justify the need for a localized empirical assessment of the relationship between centralized admission portals and students' access to university education in Delta State.

3.5 Summary of Literature Reviewed

The reviewed literature indicates a generally positive but contextually mediated relationship between digital admission management systems and students' access to university education. While online application platforms, electronic document verification systems, and centralized admission portals have demonstrated potential to enhance transparency, efficiency, and convenience, their actual impact on access is shaped by infrastructural, technical, and socio-economic factors that vary across institutions and regions. None of the reviewed studies focused specifically on the combined effect of these three components within Delta State, thereby establishing the gap which the present study addresses.

4. Methodology

This study adopted a descriptive survey research design, which was considered appropriate for eliciting the opinions and perceptions of respondents on the relationship between digital admission management systems and students' access to university education in Delta State. The design enabled the collection of quantifiable data from a representative sample without manipulation of variables.

The population of the study comprised prospective and newly admitted students, admission officers, and ICT personnel in three public universities in Delta State, namely the University of Delta , Agbor, Southern Delta University, Ozoro and the University of Delta State. From this population, a sample of 360 respondents was drawn using a stratified random sampling technique to ensure proportionate representation of students, admission officers, and ICT staff across the three institutions. Stratification was based on institutional affiliation, after which simple random sampling was used to select respondents within each stratum.

The instrument for data collection was a structured questionnaire titled "Digital Admission Management and Access to Dennis Osadebay University, Asaba," developed by the researchers based on the study's objectives. The instrument was divided into four sections: Section A elicited demographic information, while Sections B, C, and D contained items corresponding to online application platforms, electronic document verification systems, and centralized admission portals respectively, alongside corresponding items on students' access to university education. Items were structured on a four-point modified Likert scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1).

The instrument was validated by three experts in educational administration and measurement and evaluation, who assessed its face and content validity. Their observations were used to refine the instrument before administration. A pilot test was conducted with 30 respondents outside the main sample, and the data obtained were subjected to Cronbach's Alpha reliability analysis, yielding a coefficient of 0.84, which was considered sufficiently reliable for the study.

Data were collected through direct administration of the questionnaire with the assistance of trained research assistants, achieving a 95% retrieval rate (342 out of 360 copies returned and usable). Data analysis was conducted using mean and standard deviation to answer the research questions, with a criterion mean of 2.50 used as the benchmark for acceptance or rejection of items. Pearson Product Moment Correlation Coefficient was used to determine the strength and direction of the relationship between each independent variable and students' access to university education, using the Statistical Package for Social Sciences (SPSS) version 26.

5. DATA ANALYSIS AND RESULTS

Results are presented according to the three research questions and corresponding objectives of the study.

5.1 Research Question One: Online Application Platforms and Students' Access to University Education

What is the relationship between online application platforms and students' access to university education in Delta State?

Variables	N	Mean	Std. Deviation	Interpretation	Correlation (r)	r² (Effect Size)
Online Application Platforms	342	0.71	0.71	High Positive	0.68	0.462
Students' Access to University Education	342	—	—	—	—	—

Interpretation for RQ1: There is a strong, positive, and practically significant relationship between online application platforms and students' access to university education in Delta State. The higher the functionality and accessibility of these platforms, the greater the students' chances of gaining admission.

Hypothesis 1 analysis

Variables	N	r-value	Decision
Online Application Platforms	342	0.71	High Positive
Students' Access to University Education	342	—	—

Table 1 shows a Pearson correlation coefficient (r) of 0.71 between online application platforms and students' access to university education, indicating a high positive relationship between the two variables. This suggests that as the functionality and availability of online application platforms improve, students' access to university education correspondingly increases.

5.2 Research Question Two: Electronic Document Verification Systems and Students' Access to University Education

What is the relationship between electronic document verification systems and students' access to university education in Delta State?

Variables	N	Mean	Std. Deviation	Interpretation	Correlation (r)	r^2 (Effect Size)
Electronic Document Verification Systems	342	0.64	0.72	High Positive	0.58	0.336
Students' Access to University Education	342	—	—	—	—	—

Interpretation for RQ2: There is a moderate-to-strong, positive, and statistically meaningful relationship between electronic document verification systems and students' access to university education in Delta State. While important, this factor is slightly less influential than online application platforms, likely because document verification is a later-stage process that only affects students who have already applied.

Hypothesis 2 Analysis

Variables	N	r-value	Decision
Electronic Document Verification Systems	342	0.64	Moderate Positive
Students' Access to University Education	342	—	—

Table 2 reveals a Pearson correlation coefficient of 0.64 between electronic document verification systems and students' access to university education, representing a moderate positive relationship. This implies that improvements in the efficiency and reliability of electronic document verification are associated with corresponding improvements in students' access to university education, although the relationship is somewhat weaker than that observed for online application platforms.

5.3 Research Question Three: Centralized Admission Portals and Students' Access to University Education

What is the relationship between centralized admission portals and students' access to university education in Delta State?

Variables	N	Mean	Std. Deviation	Interpretation	Correlation (r)	r ² (Effect Size)
Centralized Admission Portals	342	0.68	0.73	High Positive	0.58	0.384
Students' Access to University Education	342	—	—	—	—	—

Interpretation for RQ3: There is a strong, positive, and practically significant relationship between centralized admission portals and students' access to university education in Delta State. This portal serves as the final gateway, so its effectiveness directly determines whether students successfully complete their admission process.

Hypothesis 3 Analysis

Variables	N	r-value	Decision
Centralized Admission Portals	342	0.68	High Positive
Students' Access to University Education	342	—	—

Table 3 shows a Pearson correlation coefficient of 0.68 between centralized admission portals and students' access to university education, indicating a high positive relationship. This suggests that the consolidation of application tracking, merit listing, and offer management within a single accessible portal contributes meaningfully to enhanced student access.

5.4 Summary of Mean Ratings of Respondents

Item Cluster	Mean ($\bar{x}$)	SD	Remark
Online application platforms ease access	3.21	0.62	Agreed
Electronic verification reduces delays	2.96	0.71	Agreed
Centralized portals improve transparency	3.14	0.58	Agreed
Rural candidates face connectivity challenges	3.35	0.54	Agreed

The summary table indicates that respondents generally agreed that the components of digital admission management systems positively influence students' access to university education, with all cluster means above the criterion mean of 2.50. Notably, respondents also strongly agreed that rural candidates continue to face connectivity-related challenges despite the digitalization of admission processes.

DISCUSSION OF FINDINGS

The finding on the first objective revealed a high positive relationship between online application platforms and students' access to university education. This finding aligns with the assertions of Edet and Okon (2021) and

Nwachukwu and Bassey (2020), who similarly found that online platforms enhance access by reducing geographical and procedural barriers associated with manual application systems. However, the study also corroborates the concerns raised by Etta and Ushie (2021) regarding the persistence of digital divide challenges for rural candidates, as evidenced by respondents' strong agreement that connectivity issues remain a barrier despite platform availability. Regarding the second objective, the moderate positive relationship found between electronic document verification systems and students' access to university education supports the position of Bassey and Effiong (2022) and Inyang and Edem (2023), who reported that electronic verification reduces fraud and accelerates admission confirmation. The relatively weaker correlation compared to online application platforms, however, lends credence to the observations of Obi and Eteng (2021) and Eyo and Mbon (2022) regarding integration challenges and the exclusion of candidates whose credentials have not been fully digitized by issuing institutions, particularly secondary schools in remote areas of the state.

With respect to the third objective, the high positive relationship between centralized admission portals and students' access to university education reflects the findings of Ekpo and Antigha (2021) and Okoro and Tarela (2023), who emphasized the transparency and confidence-enhancing effects of consolidated tracking systems. Nonetheless, in line with Chukwuemeka and Idoko (2023) and Ogundele et al. (2022), the study acknowledges that the benefits of centralized portals can be undermined by server overload and inadequate technical capacity, particularly during peak application periods, which may disproportionately disadvantage less resourced candidates.

Overall, the findings affirm that digital admission management systems play a substantial role in shaping students' access to university education in Delta State, while simultaneously highlighting that the realization of this potential is contingent upon addressing infrastructural and digital literacy disparities, consistent with the Technology Acceptance Model's emphasis on perceived ease of use as a determinant of effective technology adoption.

CONCLUSION

Based on the findings of this study, it is concluded that digital admission management systems, comprising online application platforms, electronic document verification systems, and centralized admission portals, have a statistically significant and positive relationship with students' access to university education in Delta State. Online application platforms exerted the strongest influence, followed by centralized admission portals, while electronic document verification systems, although positively related, showed comparatively weaker influence due to infrastructural and integration challenges. While digitalization has demonstrably improved transparency, efficiency, and convenience in university admissions, persistent disparities in internet connectivity, digital literacy, and technical capacity continue to constrain the full realization of equitable access, particularly for candidates from rural and underserved communities within the state.

RECOMMENDATIONS

Based on the findings and conclusion of this study, the following recommendations are made:

1. University management in Delta State should expand digital infrastructure, including bandwidth capacity and server resilience, to reduce downtimes during peak application periods and ensure online application platforms remain consistently accessible to all candidates.

2. Universities, in collaboration with secondary education authorities, should accelerate the digitization of academic and administrative records to improve the efficiency and inclusiveness of electronic document verification systems and minimize the exclusion of candidates with non-digitized credentials.
3. Admission officers and ICT personnel should be provided with continuous professional training on the management and troubleshooting of centralized admission portals to sustain transparency and minimize technical disruptions.
4. State and institutional authorities should establish or strengthen community-based internet access centers and subsidized data schemes to bridge the digital divide affecting rural applicants' access to university education.
5. Universities should institute simplified, mobile-friendly application interfaces and provide multilingual or simplified guidance materials to enhance usability for first-generation and digitally inexperienced applicants.

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