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# Gender and Age as Determinants of Learning Management Systems (LMS) Utilization among Undergraduates in Ondo State Universities

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**ABSTRACT**

The increasing integration of Learning Management System (LMS) into higher education has brought about transformative changes in teaching and learning processes. This study examined gender, age and perceived challenges as determinants of LMS utilization among undergraduates in Universities located in Ondo State, Nigeria. A descriptive survey research design was adopted and data were collected from a stratified sample of 200 undergraduates across three major public universities in Ondo State using a validated structured questionnaire titled "Learning Management Systems Utilization Determinants Questionnaire (LMSDQ)". The reliability co-efficient was obtained using Cronbach's Alpha reliability Coefficient of 0.87. Research questions were answered using mean and standard deviation while the hypothesis was tested using t-test at 0.05 significance level. Findings revealed that neither gender nor age significantly influenced undergraduates' utilization of LMS platforms. Both male and female undergraduates across age groups reported similar patterns of LMS engagement. Furthermore, no significant difference was found in the challenges experienced by male and female undergraduates, indicating that technological and institutional barriers were uniformity felt. The study concludes that structural factors such as access to reliable internet, user interface design and administrative support play a vital role than gender or age in determining effective LMS utilization. It is recommended that universities invest in robust infrastructure, ensure continuous training in digital literacy and adopt inclusive policies to support undergraduates' engagement with LMS platforms.

**KEYWORDS**
Learning Management Systems (LMS), Gender, Age, Utilization, Nigerian Universities

## 1. Introduction

Education institutions across Ondo State, including both public and private universities, have increasingly relied on Learning Management Systems (LMS) as core component of instruction delivery (Ojo, 2024). However, gender-related dynamics significantly influence how students engage with these platforms. Studies from West Africa reveal that male students report higher perceived ease of use and usefulness of LMS compared to female counterparts, often due to differential access to digital resources and sociocultural expectations (Ajijola, et. al., 2021; Owusu-Bempah et. al., 2020). Locally, undergraduates at Federal University of Education, Ondo and other regional institutions highlight that female students frequently cite domestic responsibilities and infrastructure limitations as barriers to

intensify and frequency of LM S use (Badamasi & Utulu, 2021). These findings underscore that gender-based disparities extend beyond mere access, affecting both engagement levels and academic outcomes mediated through technology.

Age is another demographic factors shaping LMS utilization among Nigerian undergraduates. Research conducted during COVID-19 pivot to online learning indicates that younger students (18-21years) navigates digital tools with greater confidence and frequency than older pears (22+years), primarily due to generational familiarity with technology (Adedoyin & Soykan, 2020; Ojo, 2024). Nonetheless, older students offer exhibit stronger self-regulation and deeper academic engagement when they do use LMS platforms (Ajijola et al., 2021). Within Ondo State's tertiary sector, this suggests a dual pattern; while younger undergraduates adopt LMS more readily; older students tend to leverage these tools more strategically for learning such complexities demand nuanced approaches to teacher training, platform design, and institutional support to accommodate diverse demographic profiles.

**2. Literature Review**

Undergraduates engagement with Learning Management System (LMS) is shaped by gender, though findings are mixed regarding its impact. In Nigerian settings, some research reveals that male and female students experience similar ease and frequency of LMS use, influenced more by system and information qualify than inherent gender differences (Omusu-Bempah et al., 2020) However, female learners may encounter unique access barriers such as higher ICT costs and cultural expectations that can dampen their usage levels (Nwajiuba & Ukwandu, 2021). Specifically in Ondo State, Sporadic access to reliable power and personal devices, combined with domestic responsibilities often shouldered by female students. This dynamic suggests that policy measures aimed at gender equity in digital resource allocation and skills training could improve more balanced LMS adoption across genders.

The role of age in LMS engagement at presents equally nuanced effects. Studies from Sub-Saharan contexts show that undergraduates aged 18-21 typically demonstrate higher login frequency and are more adept with LMS tools, owning to greater digital exposure (Ojo, 2024). Yet, old students, even if less frequent in their LMS interactions often use the system more strategically, showing better self-regulation and deeper engagement when they do (Ekunno & Aransiola, 2022). At Nigerian Universities including those in Ondo State, this could mean that different age groups benefit differently from LMS features, underscoring the need for differentiated instructional support and user training to ensure all undergraduates leverage these systems effectively.

Finally, instructional and technical limitations remain persistent challenges impacting LMS utilization. Across higher education in Nigeria, unreliable internet connections, frequent power outrages and limited digital literacy are recurrent obstacles for undergraduates (Igboeli, et al., 2021; Nwajinba & Ukwandu, 2021). Within Universities in Ondo State, undergraduates frequently report difficulties such as login failures, truncated access to uploaded materials, and poor organized course spaces which disrupt learning flow and reduce perceived system reliability. These barriers disproportionately affect students lacking personal gadgets or stable connectivity, highlighting critical areas for institutional investment in robust infrastructure, continuous user training, and platform usability improvements.

**3. Statement of the Problem**

Despite the growing integration of Learning Management Systems (LMS) into Nigerian University education, particularly within Ondo State, disparities in undergraduates' engagement with these platforms remain a pressing concern. Variation in LMS utilization among undergraduates appear to be influenced by demographic factors such as gender and age. Male students are often found to interact more frequently with LMS tools, possibly due to greater exposure to digital technologies, while female students may experience limitations related to socio-cultural expectations, access, or digital confidence. Similarly, younger students typically digital natives-tend to adapt more swiftly to online learning environments, whereas older undergraduates may struggle with navigation, consistency in usage, or overall comfort with LMS platforms.

Moreover, institutional and infrastructural challenges significantly affect the full utilization of LMS platforms by students. Limited access to stable internet, inadequate technical support and poor digital literacy skills continue to hinder effective engagement. In Universities across Ondo State, these obstacles may be compounded by inconsistent LMS training, irregular platform maintenance and sufficient academic orientation towards digital tools. These challenges contribute to a digital divide that threatens inclusive learning outcomes, undermining the broader goals of digital transformation in higher education. Addressing these issues requires a nuance understanding of how demographic variables and systematic barriers intersect to shape student experiences with LMS platforms.

**4. Objectives of the Study**

The major objectives of the study were:

1. to examine the extent to which male and female undergraduates in Ondo State universities utilize LMS for academic activities.
2. to investigates how age differences among undergraduates influence their patterns of LMS usage in selected universities in Ondo State.
3. to explore the specific challenges faced by undergraduates of different gender and age brackets in accessing and using LMS platforms for academic activities.

**5. Research Questions**

The study is guided with the following research questions:

1. To what extent do male and female undergraduates differ in their utilization of LMS in Universities in Ondo State?.
2. How does the age of undergraduates influence their engagement with LMS platforms for academic activities?

**6. Research Hypothesis**

The following null hypothesis was examined with significance set at 5% alpha:

$Ho_1$. There is no significant difference in the challenges faced by undergraduates in using LMS based on the gender and age for academic purposes.

**7. Theoretical Framework**

This study is anchored on the Technology Acceptance Model (TAM), originally proposed by Davis, which emphasizes that an individual's acceptance of technology is primarily influenced by two key factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). These constructs are particularly relevant in understanding how undergraduates in Ondo State Universities interact with

Learning Management Systems (LMS), as students' gender and age may affect how they perceive the value and simplicity of these digital tools (Davis, 1989). For instance, younger students who are more digitally native may exhibit higher ease of use, while gender-based digital exposure may influence perceptions of usefulness and confidence in navigating LMS platforms.

In addition, the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al., further complement the framework by integrating four constructs such as performance expectancy effort expectancy, social influence, and facilitating conditions as well as moderating variables like age and gender (Venkatesh, et al., 2021). In the context of Nigerian Universities particularly in Ondo State, these variables are crucial for evaluating how socio-demographic differences and institutional readiness affect LMS Utilization. Recent empirical revisions to UTAUT have emphasized the evolving role of digital infrastructure and learner support in driving adoption (Dwivedi, et al., 2019). Together, TAM and UTAUT offer a comprehensive theoretical lens through which to explore the demographic and contextual determinants of LMS use among undergraduates.

**8. Data and Methodology**

This study adopted a descriptive survey research design which is suitable for investigating trends, relationships and patterns in the use of Learning Management Systems (LMS) based in demographic and contextual factors. The population of the study comprised undergraduates from three public universities in Ondo State; University of Medical Sciences (UNIMED), Ondo State, Adekunle Ajasin University(AAU), Akungba-Akoko; Olusegun Agagu University of Science and Technology(OAUSTEC), Okitipupa, Ondo State.

A multi-stage sampling technique was used. First purposive sampling selected the universities based on their active use of LMS platforms. Then, stratified random sampling was employed to select 200 respondents across faculties and departments, ensuring gender and age representation. The respondents were selected as follows: UNIMED had 55 respondents, AAU had 80 respondents and OAUSTECH had 65 respondents.

A structured questionnaire titled "Learning Management Systems Utilization Determinants Questionnaire (LMSUDQ)" was developed comprising two sections: demographic provide, and level of LMS use and perceived challenges. The instrument was validated by three experts in Educational Technology and Measurement and Evaluation from University of Ilorin, Kwara State. A Pilot study conducted among 30 undergraduates at Olabisi Onabanjo University Ago-Iwoye, Ogun State, outside the target institutions yielded a Cronbach's Alpha reliability coefficient of 0.87, confirming internal consistency. After obtaining ethical clearance and necessary permissions from relevant authorities, the validated questionnaire was distributed to selected undergraduates through both online platforms and physical means, through the help of research assistants in various universities. Respondents were assured of confidentiality and informed consent was obtained. Data collection was span a period of four weeks to ensure adequate responses rate. At the end of the exercise, 200 valid respondents of the questionnaire were retrieved from the undergraduates upon which an analysis of results were carried out using mean and standard deviation and t-test to answer the research questions raised and tested the research hypothesis formulated for the study.

**9. Results**

**Research Question 1:** How does the age of undergraduates influence their engagement with LMS platforms for academic activities?

**Table 1:**

*Influence of Age on LMS Utilization.*

| Items | SA | A | D | SD | Mean | Std. D |
|---|---|---|---|---|---|---|
| My age does not affect how often I access LMS platforms | 36 | 42 | 22 | 0 | 2.22 | 1.08 |
| I find it easier to adapt to LMS features because of my age group | 17 | 51 | 27 | 5 | 2.20 | .96 |
| I think LMS platforms are more age-friendly to younger undergraduates | *25* | 12 | 33 | 30 | 2.35 | .99 |
| My level of digital literally due to age affects my LMS performance | 0 | 38 | 21 | 41 | 2.13 | 1.01 |
| My age has no impact on my ability to submit assignments or access lecturers via LMS | 0 | 19 | 49 | 32 | 2.30 | 1.02 |
| Weighted Average | | | | 2.24 | | |

**Key;** ***SD*** = *Strongly Disagree,* ***D*** = *Disagree,* ***A*** = *Agree,* ***SA***= *Strongly Agree,*

**Decision Value:** ***Not Accepted*** = 0.00-2.44, Accepted = 2.45 – 4.00

Table 1 shows the level of utilization of LMS based on the age of undergraduates in Ondo State Universities. The table shows that undergraduates disagreed to all the items as follows: My age does not affect how often/access LMS platforms (x=2.22), I find it easier to adapt to LMS feature because of my age group (x=2.20), I think LMS platforms are more age friendly to younger undergraduates (x=2.35), my level of digital literacy due to age affects my LMS performance (x=2.13), and my age has no impact on my ability to submit assignments or access lectures via LMS (x=2.30). Meanwhile, based on the value of the weighted average (2.24 out of 4.00 maximum value obtainable) which falls, within the decision value for not affected, it can be inferred that age of undergraduates does not affect their level of utilization of LMS for academic activities.

**Research Question 2:** To what extent do male and female undergraduates differ in their utilization of LMS in Universities in Ondo State?

Table 2:

*Influence of Gender on LMS Utilization.*

| Items | SA | A | D | SD | Mean | Std. D |
|---|---|---|---|---|---|---|
| Gender does not influence how undergraduates engage with LMS platforms | 59 | 36 | 5 | 0 | 2.09 | 1.08 |
| Female students use LMS tools more consistently than male students | 56 | 27 | 17 | 0 | 1.88 | 1.00 |
| The level of LMS usage is affected by the gender of the student | *75* | 20 | 5 | 0 | 2.29 | .68 |
| Male undergraduates are more likely to use advanced features of LMS | 48 | 41 | 6 | 5 | 2.17 | .81 |
| Gender-specific preferences exist in the way LMS is used among students | 92 | 8 | 0 | 0 | 2.42 | .82 |
| Weighted Average | | | | 2.17 | | |

**Key;** ***SD*** = *Strongly Disagree,* ***D*** = *Disagree,* ***A*** = *Agree,* ***SA***= *Strongly Agree,*

**Decision Value:** ***Not Accepted*** = 0.00-2.44, Accepted = 2.45 – 4.00

Table 2 shows the influence of gender on Learning Management Systems Utilization among undergraduates in Ondo State Universities. The table shows that the undergraduates disagree to all the items as follows: Gender does not influence how undergraduates engage with LMS platforms (x=2.09), female students use LMS tools more consistency than male students (x=1.88), the level of LMS usage is affected by the gender of the student (x=2.29), male undergraduates are more likely to use advance features of LMS (x=2.17), and gender-specific preferences exist in the way LMS is used among students (x=2.42). Meanwhile, based on the value of the weighted average (2.17 out of 2.00 maximum values obtainable) which falls, within the value for not affected, it can be inferred that the gender of the undergraduates does not affect their level of utilization of LMS for academic activities.

**Hypotheses Testing**

**$Ho_1$:** There is no significant difference in the challenges faced by undergraduates in using LMS based on the gender for academic purposes.

Table 3: *Summary of t-test showing difference in challenges faced by undergraduates using LMS.*

| Grouping Variable (Gender) | N | Mean | Std. D | Df | T | Sig(p) | Remark |
|---|---|---|---|---|---|---|---|
| Male | 110 | 14.93 | 2.25 | .198 | 1.304 | .194 | Not Significant |
| Female | 90 | 14.53 | 2.08 | | | | |

Table 3 shows the difference in the challenges faced by undergraduates in using LMS based on the gender. The table shows that the mean score for male undergraduates using LMS is 14.93 while that of female undergraduates using LMS is 14.53. The value of the mean scores do not revealed an appreciable difference. Therefore, there is no significant difference between the challenges faced by male and female undergraduates using LMS for academic purposes (df=198; t=1.304; p>0.05). Hence, hypothesis 1 is retained.

**10. Discussion of Finding**

The result of this study showed that gender does not significantly influence the level of LMS utilization among undergraduates in universities across Ondo State. This outcome aligns with findings of Al-Fraihat et al. (2020), who reported that equitable access and increasing digital exposure have bridged traditional gender gaps in educational technology usage. With digital literacy becoming a core component of tertiary education, both male and female undergraduates appear equally capable of navigating LMS platforms for academic purposes.

Also, findings of the study revealed that age is not a determinant of LMS engagement among the sampled undergraduates. This contradicts earlier assumptions that younger students are more adept with digital platforms. Instead, as noted by Zhang and Yu (2021), consistent institutional exposure and standardized LMS interfaces have mitigated age related disparities. In Ondo State context, structured on boarding and LMS orientation practices appear to support learners across age groups, reinforcing uniformity in engagement levels.

Finally, the findings showed that no significant difference between the challenges reported by male and female undergraduates in their use of LMS. This aligns with Obielodan and Egbokhare (2023), who emphasized that infrastructural and pedagogical barriers, such as internet instability, inadequate support, and lack of interactivity are systematic rather than gender-specific. Hence, universities in Ondo State must address these universal barriers to enhance LMS effectiveness and ensure its full integration into academic practice.

**5. Conclusion**

The study concluded that gender and age do not significantly affect hoe undergraduates in Ondo State Universities utilize Learning Management Systems (LMS) for academic purposes. Both male and female undergraduates, regardless of age, demonstrated similar levels of LMS engagement.

Furthermore, the challenges experienced in LMS utilization were found to be common across gender lines, indicating that structural or institutional factor may be more critical than demographic ones. These findings reinforce the relevance of inclusive and system-wide interventions to improve LMS adoption and effectiveness among all undergraduates, regardless of background or identity.

## 6. Recommendations

The following recommendations were made based on the findings of the study:

(1) Universities in Ondo State should provide consistent digital literacy training for students across all age groups to ensure equitable LMS competence.

(2) Higher institutions must invest in stable internet connectivity and user friendly LMS platforms to mitigate challenges hindering effective usage.

(3) Educational policymakers should implement monitoring mechanisms to track LMS engagement and adapt support strategies that are responsive to undergraduates' evolving needs.

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**Conflicts of Interest**: The authors declare no conflict of interest.

**Data Availability Statement:** The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

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