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An Analysis Of Postgraduate Student's Demographics And Digital Literacy In The Use Of Online Databases Across Six Selected University Libraries In Southwestern Nigeria.

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Abstract- In the digital era, postgraduate students' ability to effectively access and utilize online databases is critical to their academic success. This study investigates the relationship between demographic characteristics and digital literacy skills among postgraduate students across six selected university libraries in Southwestern Nigeria. Grounded in the Theory of Planned Behaviour Ajzen, (1991), the research explores how factors such as gender, age, academic year, educational level, and state of origin influence students' digital resource usage. Quantitative research design was employed, utilizing a stratified random sampling technique to gather data from 358 respondents. Data collection was carried out using a structured questionnaire segmented into five key demographic areas. The results revealed that the majority of participants were male (56.7%), within the age range of 25–54 (89%), predominantly masters degree holders (69.0%), and primarily in their first or second year of study (70.4%). Osun State had the highest state-level representation (37.4%). The findings indicate significant demographic influences on digital literacy, echoing theoretical assumptions that personal and contextual variables shape behavioral intentions and actual use of digital technologies. Consistent with studies by Okafor & Ajibola (2020), Adebayo & Hassan (2022), and Smith & Nwankwo (2017), early-year students and middle-aged learners were more active users of digital resources, highlighting the need for targeted support strategies. Based on the analysis, the study recommends improved digital literacy programs tailored to underrepresented groups, more balanced sampling in future research, and enhanced institutional efforts to bridge demographic gaps in access and competence. Overall, the research underscores the importance of integrating demographic insights into library services and educational planning to foster inclusive and effective digital learning environments in higher education.

Keywords: Postgraduate students, Digital literacy, Online databases, University libraries, Demographic factors, Southwestern Nigeria, Academic year, Educational level, Gender, Theory of Planned Behaviour.

I. INTRODUCTION

In today's digital age, the ability to effectively access, evaluate, and utilize online information has become essential, particularly within academic environments. University libraries have evolved into hybrid information centers, providing both physical and digital resources to meet the growing demands of research and scholarly activities Adindu, (2024) . Among these digital resources, online databases play a critical role in supporting the academic work of postgraduate students, who rely heavily on timely and credible information for their theses, dissertations, and other scholarly endeavors Godswill et al., (2024). Despite the widespread availability of online databases, the effectiveness of their use is largely influenced by the digital literacy skills of the users. Digital literacy defined as the ability to locate, evaluate, and use digital information effectively is especially important for postgraduate students, who must navigate complex digital platforms to conduct research efficiently Adindu, (2024). However, digital literacy levels can vary significantly depending on a range of demographic factors such as age, gender, academic discipline, level of study, and prior exposure to technology(Yusuf & Balogun, 2011) . This study aims to analyze the relationship between the demographic characteristics of postgraduate students and their digital literacy skills in utilizing online databases in six selected university libraries in Southwestern Nigeria. By exploring these dynamics, the research seeks to uncover potential gaps in digital competencies and provide insights that can inform targeted training and resource allocation within academic libraries. The findings will be instrumental in enhancing the digital resource environment for postgraduate education and fostering a more inclusive and effective academic research culture Abazie, (2021) Southwestern Nigeria, comprising states such as Lagos, Oyo, Ogun, Ondo, Osun, and Ekiti, is widely regarded as the educational and economic hub of the country. The region is home to some of Nigeria's oldest and most prestigious universities, and it enjoys relatively higher rates of urbanization, internet connectivity, and technological adoption compared to other regions (Okiki & Ireko, 2022). Nevertheless, significant disparities still exist within the population in terms of access to digital infrastructure and the skills required to utilize them effectively. These disparities are often influenced by socio-economic conditions, institutional support, and individual backgrounds. Economically, Nigeria remains a developing country with a growing digital economy, but challenges such as poverty, uneven distribution of resources, and inconsistent educational policies affect the digital readiness of many citizens. In the education sector, although universities have made strides in integrating technology into teaching and research, there are still gaps in digital literacy training, particularly among postgraduate students who are expected to engage with a wide range of online academic resources Abazie, (2021) This study, therefore, seeks to analyse the relationship between the demographic characteristics of postgraduate students and their digital literacy skills in utilizing online databases in six selected university libraries in Southwestern Nigeria. By exploring these dynamics, the research aims to uncover gaps in digital competencies and provide insights that can inform policy, training, and resource allocation within academic libraries. Ultimately, the findings are expected to contribute to a more inclusive and effective digital learning environment in Nigerian higher education.

II. THEORETICAL LITERATURE

The following diagram represents the theory of planned behaviour (TPB), a psychological model introduced by Ajzen (1991) to help explain and forecast human actions. TPB suggests that a person's intention to perform a behaviour shaped by their attitude toward the behaviour, perceived social pressures (subjective norms), and sense of control over the behaviour is the strongest predictor of whether they will actually carry it out. Attitude refers to the individuals positive or negative evaluation of performing the behavior. For instance, a student who believes that using a digital learning platform will enhance their academic performance is likely to have a favorable attitude toward its use. Recent studies have shown that positive attitudes significantly enhance the

intention to use educational technologies (Ajzen, 2019a). Subjective norms describe the social influence individuals perceive when deciding whether to engage in a behaviour. This influence can come from peers, instructors, or prevailing societal standards. In educational environments, students may be more motivated to use new technologies if they sense that influential people in their lives support and encourage such use (Fishbein & Ajzen, 2010). Perceived Behavioral Control (PBC) pertains to the individual's perception of their ability to perform the behavior, considering factors like resources, skills, and opportunities. PBC is closely related to self-efficacy, a concept introduced by Bandura (1986), which emphasizes the belief in one's capabilities to execute actions required to manage prospective situations. High PBC has been linked to increased intentions to engage in various behaviors, including technology adoption (Canova & Manganelli, 2020). These three components collectively shape the behavioral intention, which, in turn, predicts the actual behavior. The transition from intention to behavior is contingent upon the individual's actual control over the behavior, aligning with the concept of PBC. The diagram also integrates demographic variables such as age, gender, educational level, and region as background factors that indirectly influence behavior by shaping the foundational beliefs underlying attitude, subjective norms, and perceived behavioral control. While TPB does not explicitly include demographics as direct components, they are recognized as influential in moderating or mediating the core relationships within the model Ajzen, (2019b). For example, age can affect familiarity and comfort with technology, influencing both attitude and PBC. Gender may moderate perceptions of ease of use and usefulness in technology adoption contexts (Venkatesh & Morris, 2000). Educational level and year of education can impact digital literacy, shaping one's self-efficacy and perceived ease of use. Regional differences may reflect variations in infrastructure and cultural attitudes toward innovation, influencing both social norms and perceived control. Recent empirical studies support the integration of demographic variables into the TPB framework. Venkatesh et al. (2012) extended TPB with the unified theory of acceptance and use of technology (UTAUT2), incorporating factors like age, gender, and experience as moderators. Their research demonstrated that these factors significantly shape the strength and direction of the relationships among the core constructs. Similarly, Mat Yusoff et al. (2024) investigated Malaysian secondary school teachers use of ICT during teaching and learning sessions, finding that demographic factors influenced attitudes and perceived behavioral control, thereby affecting behavioral intentions. In conclusion, the extended TPB model presented in the diagram offers a comprehensive framework for understanding how psychological and demographic factors collectively influence behavioral outcomes. Recognizing the role of demographic variables enhances the models explanatory power, allowing for more nuanced insights into individual and group differences. This is particularly valuable in fields such as educational technology, healthcare, and organizational behavior, where behavioral decisions are deeply embedded in social and demographic contexts.

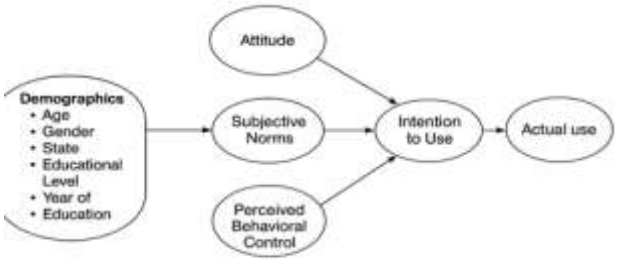


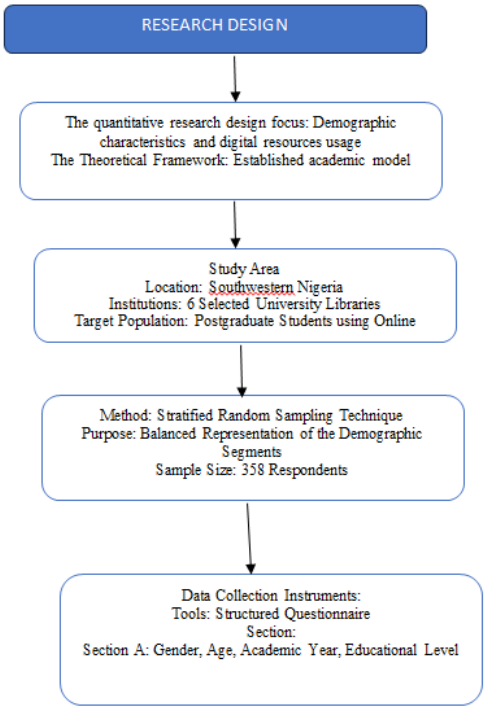
Figure 1: Theoretical framework

III. METHODOLOGY

Research Design

This study employs a quantitative research design, which is appropriate for analyzing the demographic characteristics of the respondents in relation to established theoretical frameworks. The research was conducted across six selected university libraries located in the southwestern region, focusing on postgraduate students who actively utilize digital resources available through online databases. A stratified random sampling method

was adopted to ensure balanced representation across various demographic segments. A total of 358 respondents were selected, a sample size considered sufficient to achieve meaningful statistical analysis. Data collection was carried out using a structured questionnaire, organized into five sections: demographic information including age, gender, academic year, educational level, and state of origin.



DEMOGRAPHIC PROFILES

This section outlines the demographic characteristics of the respondents, including gender, age, academic year, educational level, and state of origin. The analysis and discussion are organized into five distinct sections

Findings and Discussion

- **Gender**

The data analysis of the gender distribution of the respondents. Out of a total of 358 participants, 203 (56.7%) identified as male, while 155 (43.3%) identified as female. This reveals that male respondents were more prevalent, accounting for over half of the study population. This gender disparity may reflect broader trends within the educational or social setting being studied. For instance, studies such as those by Ogunleye (2019) and Adeyemi and Osunde (2021) have observed similar gender patterns in student populations, noting that male students often show higher levels of participation in survey-based research. Additionally, Ajayi (2020) highlights that cultural and institutional factors in some regions may contribute to varying degrees of accessibility and willingness to participate in academic research between genders. Understanding gender distribution is vital, as gender can significantly influence perceptions, behavior, and responses in academic and social research UNESCO, (2018). Consequently, the gender imbalance in this study should be taken into consideration when interpreting the results. If the research outcomes are found to be gender-sensitive, future studies may need to implement stratified sampling or targeted recruitment to ensure more balanced representation. The bar chart below illustrates the gender distribution of the respondents.

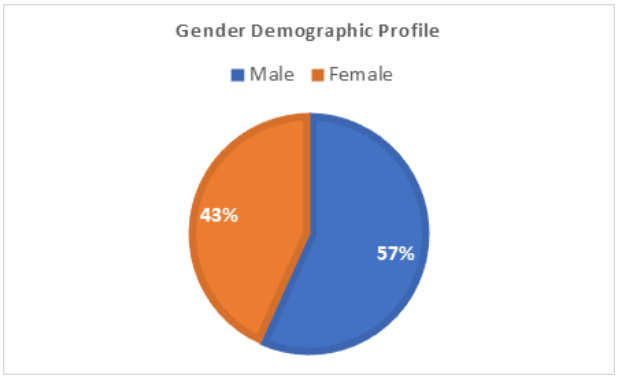


Figure 2: Gender

- **Age**

The age distribution of the 358 respondents shows that the majority (89%) are between 25 and 54 years old, with the largest group being those aged 35–44. Younger (15–24) and older (55+) age groups are underrepresented, possibly due to lower interest, accessibility, or involvement in research-related activities. This pattern corresponds with the observations of Smith and Nwankwo (2017), who reported that individuals in the mid-adult age range

are typically more active in academic and community participation. Similarly, Johnson (2016) and World Bank (2018) emphasize that younger and older populations often face barriers such as limited engagement with institutional processes or restricted access to digital platforms. These demographic patterns should be considered when interpreting research outcomes that may be influenced by age-related factors.

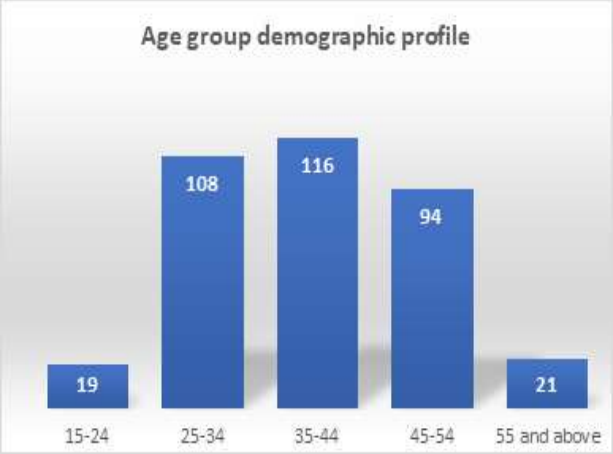


Figure 3: Age Group

- **State of Origin**

Respondents based on their state of origin. Among the 358 respondents, the highest representation is from Osun State with 134 respondents (37.4%), followed by Ogun State with 77 (21.5%) and Lagos State with 57 (15.9%). The remaining respondents are from Oyo State (10.1%), Ekiti State (9.8%), and Ondo State (5.3%). The dominance of respondents from Osun State may be due to the proximity of the research location or the presence of institutions and facilities that increase accessibility and participation among residents. This pattern aligns with the findings of Alabi and Olayemi (2019), who noted that geographic proximity and the presence of educational infrastructure significantly influence participation in regional studies. The relatively high representation from Ogun and Lagos States may also reflect their higher population density, urbanization, and socio-economic activity, factors which often correlate with increased research responsiveness (Eze & Adesina, 2020). In contrast, the lower figures from Ondo and Ekiti States could be attributed to limited outreach, lower population density, or reduced connectivity, as suggested by Ibrahim (2018) in his study on regional participation disparities. Understanding the geographic distribution of respondents is essential in interpreting the study's findings. It provides insight into the socio-cultural and regional contexts that may shape respondents' perspectives. When responses are heavily skewed toward locations as is the case here with Osun State it is important to acknowledge potential biases and consider how state-specific factors may influence generalizability.

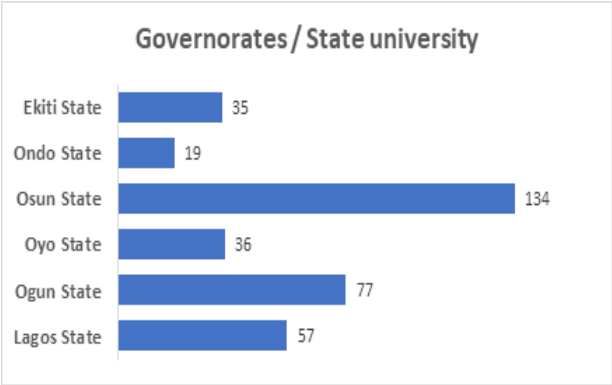


Figure 4: State of Origin

- **Educational Level**

The educational profile of the 358 respondents reveals that a significant majority hold a master degrees (69.0%), followed by PhD holders (27.9%). Only a small portion reported a Postgraduate Diploma (2.8%) or post-doctorate qualification (0.3%). This distribution suggests a highly educated sample, predominantly composed of individuals engaged in advanced academic or professional fields. This trend aligns with findings by Okafor and Ajibola (2020), who noted that masters degrees are the most common qualification among postgraduate students and academic staff in Nigeria. Similarly, the notable presence of PhD holders supports Yakubu and Musa (2019) observation of increasing doctoral engagement in Nigerian higher education. The limited number of post doctorate respondents reflects the specialized nature of that qualification (Nwankwo, 2018).

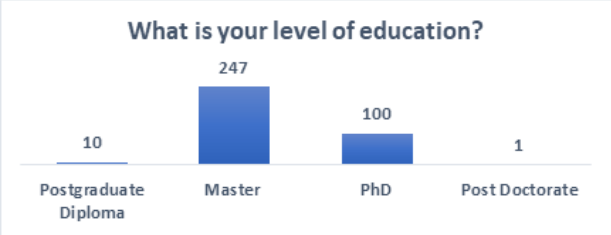


Figure 5: Level of Education

- **Academic Year**

This presents the distribution of respondents based on their current year of education. The largest group is in their first year, accounting for 147 respondents (41.1%), followed by second-year students at 29.3% (105 respondents). Smaller proportions are in their third year (8.1%), fourth year (7.3%), and fifth year and above (14.2%). This distribution suggests that the sample is heavily weighted toward students in the early stages of their academic programs, particularly those in their first and second years, who together comprise over 70% of the total respondents. This trend is consistent with findings by Adebayo and Hassan (2022), who observed that early-year students are often more responsive to institutional surveys and outreach efforts, possibly due to higher engagement and enthusiasm during the initial phases of their academic journey. Conversely, the lower representation of upper-year students may be explained by increasing academic demands and reduced availability for non-curricular activities, as highlighted by Obasi and Okon (2021). Students in later years may also develop more specific academic interests or disengage from general surveys not directly aligned with their specialization. The notable proportion of respondents in the "fifth year and above" category (14.2%) could indicate participation from students in extended programs such as professional degrees (e.g., medicine, engineering) or those completing postgraduate studies. According to Nwogu and Eze (2023), such students often continue beyond the traditional four-year track and may provide unique insights based on their prolonged exposure to academic systems. This year level distribution is significant in interpreting the study's findings, as an academic year can influence knowledge levels, maturity, and experience with institutional processes. Studies should account for these differences, especially when analyzing trends in attitudes, learning outcomes, or engagement patterns

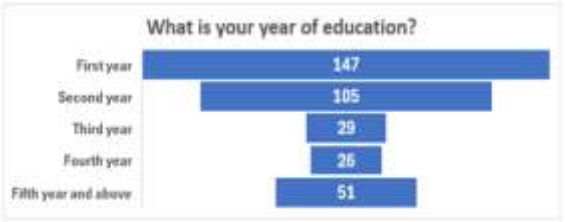


Figure 6: Academic Year

V. FINDINGS AND RESULTS

The demographic profile of the 358 respondents provides valuable context for understanding the broader patterns within the study:

- Gender: The sample includes 56.7% male and 43.3% female respondents, indicating a relatively balanced gender distribution. This variable is important because gender may influence perspectives, experiences, or access to opportunities, especially in educational or institutional contexts Aina, (2021).
- Age Group: A large majority (89%) of respondents fall within the 25–54 age range, with the highest representation from the 35–44 group (32.4%). Age is a crucial variable, as it can shape respondents' maturity, professional experience, and engagement with learning or institutional systems (Smith & Nwankwo, 2017).
- State of Origin: Respondents come from six states in Southwest Nigeria, with the majority from Osun State (37.4%). This variable captures regional diversity and helps to identify any geographic patterns that may influence responses due to cultural, institutional, or infrastructural differences (Eze & Adesina, 2020).
- Level of Education: Most respondents have a masters degree (69%), followed by PhDs (27.9%), suggesting a highly educated sample. Educational level directly relates to the respondents' academic knowledge, critical thinking capacity, and engagement with the subject of study (Okafor & Ajibola, 2020).

- Academic Year: The majority are in their first (41.1%) or second year (29.3%), indicating high participation from students early in their academic journey. Year of study is essential for understanding variations in learning exposure, institutional experience, and academic maturity (Adebayo & Hassan, 2022).
- Together, these five demographic variables provide a well-rounded profile of the respondents, offering important insight into how personal and contextual factors might influence perceptions, behaviours, and outcomes relevant to the study. Their inclusion enhances the validity, depth, and generalizability of the research findings.

VI. RECOMMENDATIONS

- Ensure balanced representation in future studies given the high concentration of respondents in certain demographic categories masters degree holders, first-year students, and Osun State residents, future research should adopt stratified or quota sampling methods to ensure more balanced participation across states, education levels, and academic years. This will enhance the representativeness and generalizability of findings.
- Target underrepresented groups special efforts should be made to engage older adults, post-doctorate participants, and students in advanced academic years who were underrepresented in this study. Outreach strategies could include tailored communication, incentives, and flexible participation options, as these groups often face unique barriers to research engagement.
- Contextualize analysis by demographics researchers should consider how demographic factors such as age, gender, and education level may shape responses and behaviours. Future studies could conduct subgroup analyses to explore potential differences in perceptions or outcomes among distinct demographic groups, enhancing the depth and applicability of the results.
- Utilize geographic diversity for comparative Studies the geographic distribution of respondents across six Southwest states presents an opportunity for comparative analysis. Future research could explore regional trends in greater detail or expand to other geopolitical zones in Nigeria to investigate broader national patterns.
- Leverage education level for deeper insight given the highly educated nature of the sample, future studies should consider leveraging participants' academic expertise through qualitative approaches, such as interviews or focus groups, to gather more nuanced insights that go beyond survey data.
- Institutional collaboration researchers should collaborate with higher education institutions to improve access to participants at different academic levels and facilitate long-term research engagement. Institutional backing can also help ensure ethical compliance, data quality, and higher response rates.

VII. CONCLUSION

This study provided a comprehensive analysis of the demographic characteristics of 358 respondents across five key variables: gender, age, state of origin, level of education, and year of education. The findings reveal a predominantly male and highly educated sample, with the majority holding masters degrees and falling within the 25–54 age range—an age group typically associated with professional and academic productivity.

Most participants were in their first or second year of study, and a significant proportion came from Osun, Ogun, and Lagos States. These demographic insights are crucial for contextualizing the study's broader findings. They highlight the influence of age, educational background, and regional factors on participation in academic research. The overrepresentation of specific groups, such as early-year students and respondents from a particular state, underscores the importance of ensuring balanced and inclusive sampling in future studies.

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