



Awareness and Adoption of Digital Research Support Tools among Postgraduate Students in Ahmadu Bello University, Zaria Kaduna State, Nigeria

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Abstract

This study examined the awareness and adoption of research support tools (RSTs) among postgraduate students at Ahmadu Bello University (ABU), Zaria. The objectives were to: find out the level of awareness of research support tools by postgraduate students in Ahmadu Bello University Zaria, identify the research support tools adopted by postgraduate students for theses and dissertations writing, and ascertain the extent to which postgraduate students of Ahmadu Bello University Zaria adopt the research support tools for theses and dissertations writing. A quantitative methodology and cross-sectional survey design was employed, targeting a population of 3,717 postgraduate students from the 2021/2022 academic session. A sample of 370 students (10%) was selected, and data were collected using a structured questionnaire. Findings revealed uneven tool awareness, with high recognition of ChatGPT, Grammarly, and Mendeley, contrasted by low awareness of Zotero, QuillBot, PaperPal, and EditGPT. Adoption patterns mirrored this trend: ChatGPT recorded the highest adoption rate, followed by Mendeley and Grammarly while other tools showed minimal usage. The results further indicated that awareness did not directly translate into adoption. The study concludes that while some tools, particularly AI-based and widely accessible platforms, are gaining popularity among postgraduate students, overall adoption of research support tools remains low. The study recommends structured awareness programmes, integration of RSTs into postgraduate research curricula, institutional endorsement of selected tools, and policy frameworks to promote responsible use, especially concerning AI-powered applications.

Keywords: Research support tools; awareness; adoption; postgraduate students

Introduction

Research support tools streamline literature management, citation formatting, paraphrasing, and language editing. These tools provide a complete set that enables the researcher to focus on delivering cohesive and fully furnished research writing. As such, it is important to find the best research support tools to ensure that no feature is overlooked (Bouchrika, 2023). Research support tools offer functionalities that increase efficiency which facilitates collaboration among researchers. Others can even integrate with social media platforms (Sabitu 2024). Research support tools are grouped into two (2): Reference manager and writing assistants. The reference managers in this paper consisted of Mendeley and Zotero while the writing assistance comprised of Quillbot, ChatGpt, Grammarly, PaperPal and EditGpt. Some of the tools are generic while others are specific. ChatGpt is a generic, Mendeley and Zotero are reference Managers, PaperPal and Quillot were research assistant while Grammarly and editGpt are language enhancers. Some of these tools are also completely free base like Zotero and Mendeley while others are combination of free and fee base. Despite their benefits, postgraduate theses/dissertations at ABU Zaria often exhibit citation inconsistencies and language errors. This study investigates whether students are sufficiently aware of and adopt these tools, guided by the Technology Acceptance Model (TAM).

Objectives of the study

The objectives were to:

1. Find out the level of awareness of research support tools by postgraduate students in Ahmadu Bello University Zaria.
2. Identify the research support tools adopted by postgraduate students for theses and dissertations writing.
3. Ascertain the extent to which postgraduate students of Ahmadu Bello University Zaria adopt the research support tools for theses and dissertations writing.



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Literature Review

Literature was reviewed based on digital research support tools that include reference managers (Mendeley, Zotero) and writing assistants (Grammarly, ChatGPT, QuillBot, Paperpal, EditGPT).

Concept of Research Support Tools

Digital Research support tools are digital applications and platforms that assist researchers at different stages of the research process, including literature searching, referencing, writing, collaboration, and data management. These tools include reference management software such as Mendeley, Zotero, and EndNote; academic search engines like Google Scholar; writing and language enhancement tools such as Grammarly, QuillBot, and PaperPal; and artificial intelligence-based tools such as ChatGPT and EditGPT. The use of these tools improves research efficiency, accuracy, and scholarly productivity (Fenner et al., 2014). In university environments, Digital Research support tools are commonly promoted through academic libraries and postgraduate schools. According to Francese (2013), these tools are essential for effective citation management and scholarly writing, especially for postgraduate students engaged in thesis and dissertation writing.

Awareness of Digital Research support tools among Postgraduate Students

Awareness refers to the extent to which postgraduate students are informed about the existence, purpose, and benefits of Digital Research support tools. Studies have shown that awareness is a critical factor influencing the adoption and effective use of research technologies (Madhuri & Harilakshmi, 2021). Empirical evidence from various universities indicates that while many postgraduate students are aware of general tools such as Google Scholar and Microsoft Word, awareness of specialized Digital Research support tools remains irregular. Francese (2013) reported that although EndNote was widely known among university scholars, other tools such as Zotero and Mendeley recorded significantly lower awareness levels. In the African context, Mhokole and Kimaryo (2022) found that postgraduate students at the University of Dar es Salaam had varying levels of awareness of reference management software, with Mendeley being the most recognized. Similarly, studies conducted in Nigeria reveal that awareness of Digital Research support tools among postgraduate students is often influenced by library orientation programmes, research methodology courses, and peer recommendations (Adeyemi et al., 2020). At Ahmadu Bello University, Zaria, the reviewed thesis indicates that awareness of Digital Research support tools exists but is not comprehensive. Many postgraduate students become aware of these tools informally rather than through structured institutional programmes, limiting the depth of their understanding and usage.

Adoption of Digital Research support tools by Postgraduate Students

Adoption refers to the acceptance and actual use of Digital Research support tools for academic activities such as thesis and dissertation writing. According to the Technology Acceptance Model (TAM), adoption is influenced by perceived usefulness and perceived ease of use (Davis, 1989). Several studies have reported low to moderate adoption of Digital Research support tools despite reasonable levels of awareness. Mellese and Unsworth (2015) observed that postgraduate students in humanities and social sciences were aware of reference management software but demonstrated low usage, particularly at the master's level. Similarly, Speare (2018) found that many graduate students avoided reference management software due to perceived complexity and time investment required to learn the tools. In Nigeria, Adeyemi et al. (2020) reported that faculty members were more likely to adopt reference management software than postgraduate students, largely due to differences in experience and training. The thesis further reveals that at Ahmadu Bello University, Zaria, postgraduate students tend to adopt tools that are easy to use, freely accessible, and directly relevant to their research needs.

Factors Influencing Awareness and Adoption of Digital Research support tools

The literature identifies several factors that influence awareness and adoption of Digital Research support tools. These include:

1. **ICT Competence:** Students with strong computer and information literacy skills are more likely to adopt research tools (Madhuri & Harilakshmi, 2021).
2. **Training and Institutional Support:** Regular workshops and library-led training programmes significantly enhance awareness and adoption (Francese, 2013).
3. **Perceived Usefulness and Ease of Use:** Tools perceived as beneficial and user-friendly are more readily adopted (Davis, 1989).
4. **Infrastructure:** Poor internet connectivity and unreliable power supply negatively affect adoption, particularly in developing countries (Bouchrika, 2023).



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5. Supervisor Influence: Supervisors who recommend or require the use of specific tools positively influence students' adoption behaviour (Mellese & Unsworth, 2015).

The reviewed thesis emphasizes that inadequate training and limited technical support remain major barriers to effective adoption among postgraduate students at Ahmadu Bello University, Zaria.

Methodology

The study adopted quantitative cross-sectional survey design. The population of the study consisted of 3,717 postgraduate students (2021/2022 intake). The Sample size was 370 (10%). Structured questionnaire validated by experts was used as Instrument; Data was analyzed using frequency, percentage, mean and standard deviation.

Presentation of Results

The table below presented the level of awareness of PG students in Ahmadu Bello University, Zaria on Digital Research support tools.

Table: Awareness of Digital Research support tools

S/NO	Digital Research Support Tools	Mean Awareness
1.	Mendeley	3.13
2.	Zotero	2.2
3.	Grammarly	3.29
4.	ChatGPT	3.56
5.	QuillBot	2.24
6.	Paperpal	1.95
7.	EditGPT	2.73

Source: field survey, 2024

The findings of this study indicate that awareness of Digital Research support tools among postgraduate students at Ahmadu Bello University, Zaria is uneven and tool-specific. High awareness was recorded for ChatGPT, Mendeley, and Grammarly, while tools such as Zotero, QuillBot, PaperPal, and EditGPT exhibited low awareness levels. This pattern suggests that awareness is driven more by popularity, ease of access, and informal peer exposure than by structured institutional initiatives. The prominence of ChatGPT in awareness rankings reflects the growing visibility of artificial intelligence-based tools in academic spaces. Its widespread discussion on social media platforms, ease of access, and perceived versatility may explain its dominance. Similarly, Mendeley and Grammarly have long enjoyed visibility due to their frequent recommendation by peers and supervisors, as well as their integration into common research workflows. However, the low awareness of other digital research support tools indicates a gap in institutional dissemination strategies. Despite the availability of multiple tools that support referencing, language editing, and research organization, many postgraduate students remain unaware of them. This supports earlier observations in the literature that lack of awareness is a major barrier to effective utilization of research technologies in universities, particularly in developing countries.

Adoption of Digital Research support tools

The table below presented the rates of adoption of Digital Research support tools by PG students in Ahmadu Bello University, Zaria for thesis and dissertations writing,

Table: Adoption Rates of Digital Research support tools

S/NO	Tool	Adoption Rate (%)
1.	Mendeley	51%
2.	Zotero	18%
3.	Grammarly	44%
4.	ChatGPT	78%
5.	QuillBot	13%
6.	Paperpal	9%
7.	EditGPT	10%

Source: field survey, 2024

The study further revealed that adoption of Digital Research support tools among postgraduate students at ABU Zaria is selective and limited. ChatGPT emerged as the most adopted tool, followed by Mendeley and Grammarly, while Zotero, QuillBot, PaperPal, and EditGPT were rarely adopted. The high adoption of ChatGPT suggests a shift in postgraduate research practices toward AI-assisted academic writing and idea development. Students appear to value tools that offer



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immediate support in drafting, paraphrasing, and organizing research ideas. Similarly, the moderate adoption of Mendeley and Grammarly aligns with their direct relevance to citation management and language improvement—core requirements of thesis and dissertation writing. Conversely, the low adoption of other tools, despite their documented usefulness, points to the influence of familiarity and perceived complexity. Tools that require additional learning effort or structured training are less likely to be adopted, even when awareness exists. This finding reinforces the argument that adoption is influenced not only by awareness but also by perceived ease of use and perceived effort required to master the tool. An important outcome of the study is the finding that awareness does not necessarily translate into adoption. Statistical analysis showed no significant difference among the types of Digital Research support tools that postgraduate students were aware of, indicating that mere awareness is insufficient to guarantee usage. This finding suggests that while awareness is a necessary condition for adoption, it is not a sufficient determinant. Adoption decisions appear to be shaped by additional factors such as ease of use, relevance to immediate academic tasks, and the availability of informal support networks. This outcome aligns with technology adoption theories, which emphasize that users adopt technologies they perceive as practical and convenient rather than merely known.

Conclusion

The study concludes that postgraduate students at ABU Zaria show high awareness and adoption in ChatGPT, Mendeley, and Grammarly for their research while other tools remain under-utilized for the thesis and dissertations writing. Coordinated strategies awareness, training, provisioning, and infrastructure can enhance adoption and improve research quality.

Recommendations

Based on the findings of awareness and adoption of Digital Research support tools, the following recommendations were made:

1. The University library and postgraduate college should implement structured and continuous awareness programmes that go beyond popular tools and expose students to a wider range of Digital Research support tools and the Digital Research support tools should be formally integrated into postgraduate research methodology courses to ensure early exposure and sustained awareness.
2. The University library and postgraduate college should officially endorse and recommend selected Digital Research support tools to enhance credibility and encourage broader adoption.
3. Policies should support targeted promotion of underutilized but relevant tools such as Zotero, PaperPal, and EditGPT to balance adoption patterns. Given the high adoption of ChatGPT, institutional policies should guide its responsible and ethical use in academic research to ensure integrity and originality.

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