

## **Influence of Accessibility on the Utilization of Online Databases for Research by Academics in Polytechnics in Katsina State, Nigeria**

**<sup>1</sup>HINDATU SALISU ABUBAKAR, <sup>2</sup>HAUWA SANI AHMAD, & <sup>3</sup>USMAN ABDULKADIR UMAR**

<sup>1&2</sup>Katsina State Institute of Technology and Management Central Library, Katsina State, Nigeria. Email: [hindatu81@yahoo.com](mailto:hindatu81@yahoo.com)

<sup>3</sup>Department of Library and Information Sciences, Bayero University Kano, Kano State, Nigeria. Email:

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### **Abstract**

The paper carried out a study on the influence of accessibility on the utilization of online databases for research by academics in polytechnics in Katsina state, Nigeria. The study is set to test the following two hypotheses: H01: accessibility does not significantly influence utilization of online databases by academic for research purposes in Polytechnics in Katsina state and H02: challenges does not significantly affect the access to and utilization of online databases by academic for research purposes in the study area. Cross sectional survey research design was adopted to the study and population of the study comprised a total number of six hundred and fifty-nine (659) academics from three (3) Katsina state Polytechnics including Federal Polytechnic Daura (FPD) located in Daura local Government in Katsina State, Hassan Usman Katsina Polytechnic (HUK) located in Batagarawa Local Government in Katsina state and Katsina State Institute of Technology and Management, located in Katsina, Katsina State. Total enumeration sampling technique was employed to select the entire respondents. Questionnaire using closed ended questions was the instrument used for data collection and inter-item reliability test was used to ensure the consistency of the research instrument and result was tested using Cronbach alpha formulae and was .919. The Instrument was personally distributed by researchers and the data were analyzed using ordinal regression analysis at 0.05 level of significance, suitable for the ordinal data collected. One of the notable finding of the study on H01, stating that accessibility does not significantly influence the utilization of online databases, was rejected. The P-value of 0.000 indicates a significant influence, while the R<sup>2</sup> value of 0.176 shows a moderate influence, explaining 17.6% of the variance in utilization. As such the study recommended that polytechnic institutions should invest in improving internet infrastructure, providing adequate access to a wider range of databases, and ensuring consistent availability of resources. This could involve increasing the number of subscriptions to essential databases, enhancing Wi-Fi connectivity, and integrating user-friendly platforms that facilitate seamless access for academic staff and students and among others

**Keywords:** Influence, Accessibility, Utilization, Online Databases, Research Purposes, Polytechnics

## **Introduction**

The development of online databases has significantly changed the landscape of many academic libraries including the polytechnic libraries where the academic staff access, retrieve and utilize its relevant contents for their academic pursuits. The online database was introduced in the 1960s, marking the beginning of a new era in information management (Okpara & Dodd, 2022). Initially, online databases were primarily used by researchers and professionals, but with advancements in information and communication technology and the widespread availability of the Internet, electronic databases have become accessible to a wider and broader audience, including undergraduate students. In the early days, online databases were primarily text-based and offered limited search capabilities. However, with the advent of the World Wide Web, online databases evolved to include multimedia contents and advanced search features (Singh & Law, 2023) Today, Online databases often contain journal articles, or references to such articles, e-books, reference sources, conference papers and reports among others. There are various types of these databases such as bibliographic, full-text, directory, numeric and multimedia. Online databases are widely available and can be easily accessed by many users at the same time and it is therefore convenient to use (Nyemez, 2021). Online databases cover a wide range of subjects, including academic journals, articles, books, and multimedia resources, making them valuable tools for researchers in their academic pursuits (Imoniwe, 2018).

The introduction of online databases has opened up immense opportunities for researchers, offering easy access to timely, accurate, and up-to-date information. As Abubakar and Akor (2017) assert, online databases are large, regularly updated collections of digitized information on specific subjects, structured for easy and rapid search and retrieval. These resources are managed through specialized database management systems, ensuring that information can be accessed efficiently. The accessibility of these databases directly influences how frequently and effectively they are used by researchers. In academic settings, access to such databases can enhance the quality of research by providing a wide array of resources, ranging from journal articles to specialized databases that are vital for the completion of scholarly work. As such, the way in which access is facilitated whether through infrastructure, internet connectivity, or institutional support can significantly impact the utilization of these databases for academic purposes.

Utilization, in this context, refers to how academics engage with and incorporate online databases into their research activities. It encompasses the extent to which these resources are accessed, the frequency of their use, and the manner in which they are integrated into academic work. When access to online databases is seamless and efficient, academics are more likely to incorporate these resources into their daily research activities, leading to increased productivity and enriched academic output. Conversely, if access is limited or difficult, even high-quality databases may not be fully utilized, reducing their potential impact on research outcomes (Mohammed, Hamza & Idris, 2017). Therefore, understanding how accessibility affects utilization helps identify strategies for enhancing access and encouraging more frequent and effective use of these digital resources.

The rationale for researching the influence of accessibility on the utilization of online databases for research by academics in Katsina Polytechnics, Nigeria, lies in the need to assess how access to these databases affects academic research practices and outcomes. Katsina Polytechnics, like many institutions in Nigeria, may face unique challenges related to infrastructure, internet connectivity, and resource availability. By studying how these factors influence the utilization of online databases, this research aims to uncover ways to improve access and, by extension, the overall research environment. Ensuring better access to online databases could empower academics, increase their research productivity, and contribute to the enhancement of scholarly work at the institution. This study will therefore, provide valuable insights into how improving accessibility to online databases can foster better academic practices, thereby advancing the institution's research capabilities and contributing to national development.

Polytechnic libraries play a crucial role in providing access to various online databases, which are increasingly important for research. To better understand their use, it is essential to examine the types of online databases available in these libraries. A study by Ofua (2021) found that libraries subscribed to seven databases, including Agora, Proquest, Hinari, Oare, Ajor, Science-Direct, and Ebscohost. However, despite the availability of interdisciplinary databases, the study noted that there was limited subscription to databases, particularly in the sciences. Similarly, Ivwighreghweta and Eireyi-Fidelis (2022) found that databases such as JSTOR, Elsevier, DOAI, ProQuest, ScienceDirect, and LexisNexis were heavily used, while others like NUC Virtual Library, Hinari, Research4Life, Agora, and Ebscohost

were used less frequently. These findings highlight the need for a comprehensive review to improve access to and utilization of a broader range of online databases in polytechnic libraries.

Accessibility is a key factor in the utilization of information resources which according to Aguolu and Aguolu (2006), even when resources are available in a library and identified as relevant to a user's subject, they may still be difficult to access. Users may find citations in indexes but lack access to the physical resources containing the relevant information. Therefore, the easier and more accessible information resources are, the more likely they are to be used. A study by Tenenge (2019) found that the accessibility of electronic information resources for students was low. Similarly, Khan and Haridasan (2015) noted that most users access online databases primarily for teaching and research purposes. These studies emphasize that better access to online databases is crucial for enhancing research and academic development in polytechnics.

Utilization deals with the ability of academics to effectively use the available online databases for research Smith and Laster (2021) explained that users have very confused understanding of various databases and its concept. More so, many researchers are not yet involved with various databases. The authors showed that the utilization of the various databases by undergraduate in many university libraries is very low. When databases are effectively utilized among users, the extent of information retrieval for teaching and research will be high thus improving the quality of their academic output. Abubakar and Akor (2017) for example, indicated that usage of electronic databases in developed countries is more than in developing countries basically because of poor ICT infrastructure and huge cost of such resource, and Iwighreghweta and Eireyi-Fidelis (2022) point out that where users have no access to online databases and they tend to use general search engines to meet their information needs. More so, Imoniwe (2018) reported access to as one of the influential factor to utilization of online databases for research where the author indicated male tend to utilize online databases more frequently compared to their counterparts, who do not regularly visit the library.

### **Theoretical Framework**

A theoretical framework provides a structured foundation for research, offering a lens through which variables can be examined and analyzed. This study adopts Andersen's Behavioral Model of Health

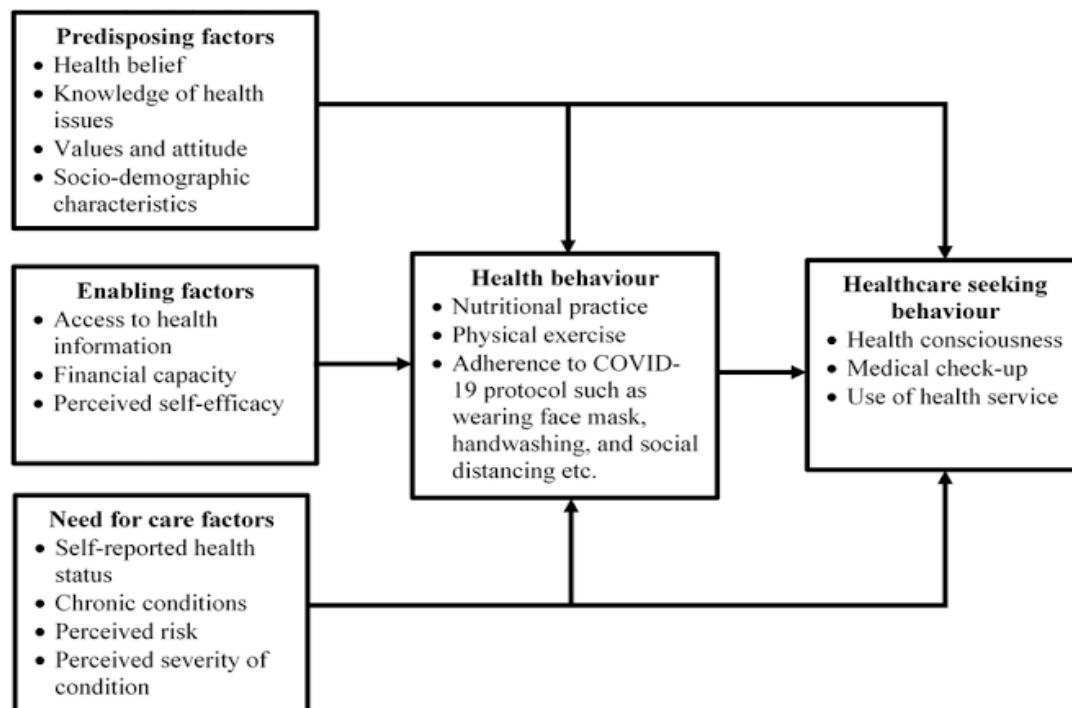
Services Utilization, a framework introduced in 1968 by Ronald M. Andersen to explain and predict how academics access influence utilization of online databases for research purposes. The model is designed to explain and predict how individuals access health services. Developed in 1968 by Ronald M. Andersen, a professor of health services at UCLA, the model posits that three main factors influence health service utilization (Andersen & Newman, 1973). It identifies three primary factors influencing service utilization:

1. Predisposing Factors: Characteristics such as age, gender, race, and health beliefs that shape an individual's tendency to seek services.
2. Enabling Factors: Resources and conditions, like health insurance, family support, and infrastructure that facilitate access.
3. Need Factors: The perceived or actual necessity for care, driven by health conditions or illnesses.

Over time, the model has evolved to include elements like health behaviors, outcomes, and feedback loops, making it a valuable tool in health services research. It has been widely applied across disciplines, helping to analyze disparities in service utilization and informing policy development. Researchers such as McManus (2016), Kim and Lee (2016), and Alkhawaldeh (2017) have utilized the model to explore various aspects of health service usage, from emergency department visits to university health services. These studies validate the model's relevance in guiding research on access and utilization of information services.

For this study, the Andersen model is adapted to examine the accessibility, and utilization of online databases by academic staff in polytechnics in Katsina State, Nigeria. The framework allows an exploration of predisposing factors (e.g., familiarity with databases), enabling factors (e.g., infrastructure, institutional support, and training), and need factors (e.g., research and teaching demands). The model's emphasis on policy development aligns with the study's objectives, particularly in evaluating how institutional and governmental policies influence access to digital resources. For instance, policies on funding, technical support, and training are critical to ensuring the effective use of online databases. Moreover, the feedback loop within the model will help assess how database utilization impacts academic productivity and informs future policy

and resource allocation. The study identified a key limitation of Andersen's Behavioral Model in its exclusive focus on health information services, with no consideration for digital resources such as online databases or other conventional services. This narrow scope highlights the need to adapt the model for broader applications, particularly in examining the provision, accessibility, and utilization of digital academic resources in educational contexts. See figure 1



**Figure 1:** Andersen's Behavioral Model of Health Services Utilization of 1968

### Statement of the Problem

Online databases are the collection of information resources, providing easy access to a vast array of global resources. These databases are vital for academic research, teaching, and learning, and are widely subscribed by tertiary institutions around the world, including those in Nigeria (Mohammed et. al., 2017). Polytechnics allocate substantial financial resources to maintain subscriptions to these databases, aiming to enhance research capabilities. Despite these investments, the actual utilization of these resources for research purposes by academics in Nigerian polytechnics, including those in Katsina State, remains notably low. This underuse of online databases highlights a critical gap, indicating that the potential of these resources is not being fully realized, which calls for a closer investigation into the factors influencing this underutilization.

The core issue lies in understanding how accessibility factors such as internet connectivity, library infrastructure, and user training affect the way academics engage with online databases. While the resources are readily available, their effective use for research may be hindered by accessibility challenges. This research aims to explore how access to be the determinant factor to influence the utilization of online databases among academics in Katsina Polytechnics. By identifying the barriers to effective access and utilization, the study will offer insights into how these challenges can be addressed to improve the use of digital resources for academic purposes.

This study seeks to fill the gap in existing research on online database utilization in Katsina Polytechnics. It aims to provide a detailed description on whether access to these databases influences their utilization by academics and enhancing academic research and productivity in Katsina State.

### **Hypotheses**

The study is set to test the following null hypotheses formulated to guide the study:

H01: Accessibility does not significantly influence utilization of online databases by academic for research purposes in Polytechnics in Katsina state

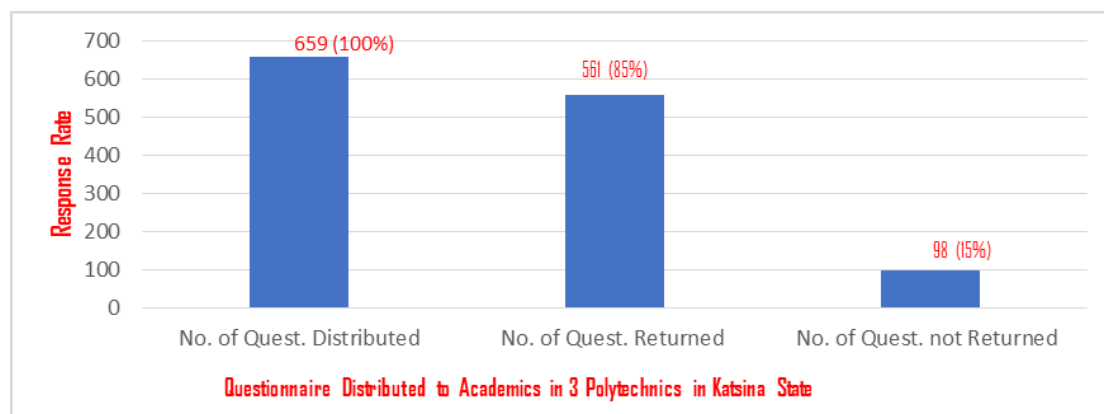
H02: Challenges does not significantly affect the access to and utilization of online databases by academic for research purposes in the study area.

### **Research Design**

A cross-sectional survey research design was used for this study, which targeted a population of 659 academics across three polytechnics in Katsina State. These included the Federal Polytechnic Daura (FPD) in Daura Local Government, Hassan Usman Katsina Polytechnic (HUK) in Batagarawa Local Government, and the Katsina State Institute of Technology and Management in Katsina. A total enumeration sampling technique was applied to select the entire respondents. The data was collected using a questionnaire with closed-ended questions, and the reliability of the instrument was tested using an inter-item reliability test, using a Cronbach's alpha value of .919. The questionnaire was distributed by the researchers,

and the data were analyzed using ordinal regression analysis, suitable for the ordinal data collected.

### Response Rate



**Figure 2:** Response Rate of Questionnaire Distributed to respondents

Figure 2 shows that 659 questionnaires were distributed to respondents in the study. Of these, 561 (85%) were completed and returned. The high response rate was attributed to the diligent follow-up efforts by the researcher and research assistants.

**Table 1:** H01 - Accessibility does not significantly influence utilization of online databases by academic for research purposes in the study area.

Variables	N	Mean	S.D.	R	R <sup>2</sup>	P-value	Remark	Decision
Accessibility		1.2698	.30975			.000	Significant	H0 <sub>1</sub> :
Utilization	651	1.8043	.28224	.419 <sup>a</sup>	.176		Influence	Rejected

Based on the results provided, the hypothesis H01: Accessibility does not significantly influence utilization of online databases by academics for research purposes in the study area is rejected. This conclusion is drawn because the P-value is less than the significance level (0.05), specifically  $P = 0.000$ , indicating that accessibility does significantly influence the utilization of online databases. Furthermore, the  $R^2$  value of 0.176 suggests a moderate level of influence, with approximately 17.6% of the variance in utilization being explained by accessibility. The correlation coefficient ( $R = 0.419$ ) also indicates a positive relationship between accessibility and utilization. Thus, improved accessibility to online databases is likely to lead to greater utilization for academic research purposes.

**Table 2:** H02 - Challenges does not significantly affect the access to and utilization of online databases by academic for research purposes in the study area

Variables	N	Mean	S.D.	R	R <sup>2</sup>	P-value	Remark	Decision
Challenges		3.6805	.33242	.294 <sup>a</sup>	.087	.000	Significant	H0 <sub>1</sub> :



Access to	561	1.2698	.30975				Rel.	Rejected
Utilization		1.8043	.28224	.417 <sup>a</sup>	.173	.001	Significant Rel.	H0 <sub>1</sub> : Rejected

Based on the results, the hypothesis H02: Challenges does not significantly affect the access to and utilization of online databases by academics for research purposes in the study area is rejected. The P-value is less than 0.05 ( $P = 0.000$ ), indicating that challenges significantly affect both access and utilization of online databases. The R value of 0.294 suggests a moderate relationship between challenges and access, while the  $R^2$  value of 0.087 indicates that challenges explain approximately 8.7% of the variance in access. For utilization, the correlation coefficient ( $R = 0.417$ ) and  $R^2$  value of 0.173 show a moderate positive relationship, meaning challenges have a significant effect on database usage. Therefore, addressing these challenges could improve access and utilization of online databases.

## Discussion

1. The hypothesis H01, stating that accessibility does not significantly influence the utilization of online databases, was rejected. The P-value of 0.000 indicates a significant influence, while the  $R^2$  value of 0.176 shows a moderate influence, explaining 17.6% of the variance in utilization. Additionally, the positive correlation coefficient ( $R = 0.419$ ) suggested that improved accessibility leads to higher utilization for academic research. The finding of this study align with previous researches in several ways. For instance, Aguolu and Aguolu (2006) and Khan and Haridasan (2015) found that better accessibility to online databases enhances their use for research purposes. The positive correlation coefficient ( $R = 0.419$ ) and moderate  $R^2$  value (0.176) in this study further affirm that improved access can lead to increased utilization, which is consistent with the findings of these scholars.
2. The hypothesis H02, stating that challenges do not significantly affect access to and utilization of online databases, was rejected, with a P-value of 0.000 indicating a significant effect. The moderate correlations ( $R = 0.294$  for access and  $R = 0.417$  for utilization) suggest that challenges significantly affect both access and utilization, explaining 8.7% and 17.3% of the variance, respectively. This is in line with Ofua (2021) and Ivwighreghweta and Eireyi-Fidelis (2022) indicated that the challenges in accessing and fully utilizing online databases,

such as limited subscriptions or low usage of certain platforms. The moderate correlations found in this study ( $R = 0.294$  for access and  $R = 0.417$  for utilization) further suggest that challenges play a notable role in both access and usage, which resonates with findings from earlier studies on the impact of barriers like connectivity, technical issues, and limited training on database usage.

## **Conclusions**

Based on the finding of the study, can be concluded that both accessibility and challenges significantly influence the utilization of online databases for academic research in polytechnics. Accessibility was found to have a moderate but significant influence the utilization of online databases, with improved access leading to higher usage for research purposes. The study also confirmed that challenges such as infrastructure, training, and technical issues negatively affect both access and utilization, suggesting the need for focused efforts to address these barriers. These findings underscore the importance of enhancing accessibility and overcoming challenges to maximize the use of online databases, thereby improving academic research productivity in polytechnics.

## **Recommendations**

The study recommended the followings:

1. Polytechnic institutions should invest in improving internet infrastructure, providing adequate access to a wider range of databases, and ensuring consistent availability of resources. This could involve increasing the number of subscriptions to essential databases, enhancing Wi-Fi connectivity, and integrating user-friendly platforms that facilitate seamless access for academic staff and students.
2. Polytechnics should focus on overcoming existing barriers by offering regular training programs for academics and library staff on the effective use of online databases. Additionally, addressing technical challenges and ensuring reliable support services will help reduce frustration and improve the overall experience, leading to more frequent and effective use of online resources for research purposes.

## Reference

- Abubakar, M. S. & Akpor, P. U. (2017). Availability and utilization of electronic information databases for research by agricultural scientists in federal university libraries in North Central Nigeria. *Library Philosophy and Practice (e-journal)*. Retrieved from <http://digitalcommons.unl.edu> (accessed on 13th December, 2024)
- Chigbu, B.C. (2021). Access to Online Academic Databases to Improve the Quality of Academic Research among Postgraduate Students of Education in Nigerian Universities" (2021). *Library Philosophy and Practice (e-journal)*. 5726. <https://digitalcommons.unl.edu/libphilprac/5726> (accessed on 13th December, 2024)
- Iroaganachi, M. A. & Izuagbe, R (2018) Access to Online Databases: Predicate for Faculty Research Output.. *Library Philosophy and Practice (e-journal)*. 2133. <http://digitalcommons.unl.edu/libphilprac/2133> (accessed on 13th December, 2024)
- Ivwighrehweta, O. & Eireyi-Fidelis,S. (2022). The Usage of Electronic Academic Database Resources among Lecturers and Postgraduate Students in Western Delta University, Oghra, Delta State, Nigeria. *International Journal of Librarianship*, 7 (2) 106-112
- Mohammed, M.F., Hamza, U.M., & Idris, A.D. (2017) Assessment of Online Databases use by Academics of Faculty of Education, Ahmadu Bello University Zaria. 17 (1)
- Nyemezu, C. O. (2021). Empirical study of the awareness and utilization of internet search engine among undergraduate students of Nigerian universities for effective information retrieval on the web. *Library Philosophy and Practice (e-journal)*. 6501. <https://digitalcommons.unl.edu/libphilprac/6501> (accessed on 13th December, 2024)
- Okpara, U., & Dodd, J. (2022). An exploratory study of gender differences in information literacy among higher education students in the United Kingdom. *Library & Information Science Research*, 44(4), 101495. <https://doi.org/10.1016/j.lisr> (accessed on 13th December, 2024)