

Demographic variables, service quality and web search skills as determinants of IRs utilization in universities in Kwara State

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ABSTRACT

Background: Institutional Repositories (IRs) are an initiative by librarians to protect and make the intellectual content of lecturers easier to access. **Purpose:** This study examines demographic variables, service quality and web-search skills as determinants of IRs utilization in universities in Kwara State. **Method:** This study adopted a descriptive survey method. The study population comprised university lecturers in Kwara State. This study adopted a simple random sampling technique. This sampling technique ensured that all respondents had an equal chance of being selected for the study. The study used the Roasoft sample size calculator to determine the sample size for a population of 2,144 at the 0.05 significance level, yielding a sample size of 326. The study used a questionnaire as an instrument for data collection and descriptive statistics, including frequencies, tables and percentages, were used for data analysis. **Results:** The study found that promptness, skills, competencies, responsiveness and empathy as service quality factors influenced lecturers' utilization of institutional repositories in universities in Kwara State. **Conclusion:** The study finds that robust information search skills, improved internet-based services, timely data-based information, organized information search services and processed information services, such as web search skills, positively influence IR utilization among lecturers at Universities in Kwara State. **Implication:** The study recommends engaging lecturers in activities that will help them make greater use of IR.

Keywords: Demographics; Institutional repositories; Lecturers; Services quality; Web search skills

INTRODUCTION

The university is the bedrock of human knowledge in society, tasked with the responsibility of teaching/learning, research, and community development while research is perceived to be one of the key functions of lecturers in higher institutions, aside from teaching and

community services. However, to measure the quality of a research output, both quality and quantity, is required. Therefore, knowledge in universities is one of the most genuine, reliable, and dependable. This is because lecturers and researchers in universities largely depend on the use of different sources of information that are

available from verifiable sources. These sources include institutional repositories (IRs), databases, and open shelves.

The use of IRs, among other sources, by university lecturer plays an important role in academic communication, teaching and knowledge dissemination. Meanwhile, IRs are described as digital archives that process, organise, preserve, disseminate and communicate university operations and activities to a larger society. For instance, Ladipo *et al.* (2022) noted that IRs are electronic stores of web-based scholarly digital documents or information about theses, journals, books and reference materials of the university. Similarly, Bharathkumar (2024) stated that IRs are central location for the storage, preservation, and distribution of academic publications produced by an institution or university. Supporting this view, Saulus (2018) observed that IRs capture, organise and preserve the university's intellectual output, which finally contributes to an institution's visibility. Likewise, Bamigbola (2018) described IRs as a repository for the collection of intellectual output of universities, presented in a form that can be preserved, exploited and communicated in digital formats.

The IRs is created by university libraries to communicate intellectual content to the world within and beyond the institution. In supporting this view, Alic and Airen (2020) observed that, to break down publishing cost and permissions challenges, IR is a commercial tool that attracts high-quality staff, students and funding, as it helps to maximise the availability, accessibility, discovery, and functionality of scholarly research outputs at no cost to use. Saulus

(2018) noted that IRs have been important in collecting, organising, and improving access to a variety of materials that are previously scattered and not available for academics. Furthermore, Ibrahim (2019) posited that IRs is crucial for preserving authors' vast intellectual resources, which frequently disappear into several dispersed external storage devices.

IRs are an initiative by librarians to protect and make intellectual contents of lecturers easier to access. It is centered on improving access, preservation and storage of all forms of institutional contents, including unpublished books, instructional aid and other institutional documents. Corroborating this assertion, Alice and Airen (2018) affirmed that information sources for searching material and archives to store research outputs are the major elements of IRs. In the same vein, Fasaie, *et al* (2017) stated that a repository offers services to academics and researchers who wish to preserve historical documents.

Furthermore, Saliu, *et al* (2022) noted that a database used by academic institutions to preserve their own information is known as an IR. Materials such as test questions, research articles, working papers, and inaugural speeches produced in higher education institutions are examples of indigenous contents. Mohammed (2013) observed IRs as a means of overcoming the digital gap and empowering researchers to gain recognition and successfully share their research findings with the world. Anene, *et al.* (2020) noted that theses, dissertations, projects, course notes, seminar papers, conference proceedings, administrative records, learning objects, and other types of grey literature from the institution may be found in IRs. They

posited that it will be very difficult to evaluate university output if the entirety of the research output coming from a given university cannot be determined. This could also make it more difficult to compile and distribute research that can benefit various societal segments to the relevant parties.

Akparobore and Daniel (2020) noted that IR is a service that universities provide to their community members for the management and sharing of digital content produced by the university and its members. Andrew (2018) stated that all academic institutions have IRs in place with the goal of preserving the university community's collective intellectual content and improving research impact. However, the IR could be influenced by demographic variables, service-quality and web-search skills. Demographic variables have been described as major factors that may influence or predict the use of IRs (Aramide, *et al.* 2015). However, these demographic variables include age, gender, socio-economic status, level of education, job status and years of experience. Aside from demographic variables-service quality could also to have influence on IR.

Service quality can be described as the extent to which the service received aligns with the lecturers' expectations (Eko, *et al.* 2023). This implies that service quality is generally referred to as the output of service delivery system, which is linked to users' satisfaction, perceptions, and opinions that are formed based on various contributing factors and references. Nicholas *et al* (2022) posited that service quality has five dimensions such as reliability, responsiveness, promptness; empathy and tangibility are observed to have influence on IRs usage.

Similarly, web search skills are also perceived to influence IRs. Therefore, web search skill is described as the ability to combine and apply relevant attributes to particular tasks in a particular context, which includes knowledge, values, personal disposition, sensitivities and capabilities as well as the ability to put those combinations into practice in appropriate ways (Danner & Pessu, 2019). Eromosele (2019) noted that web-search skills are important phenomenon that lecturers in universities need to possess for better use of IRs. These skills include searching skills on the Internet, downloading online (e-resources), and knowledge of file formats, ability to evaluating the content of online materials, good knowledge of web browser, integrating, creating, and management skills.

Studies by Esse, & Haliso; 2024; Emmytone. *et. al.*, (2018) established that information and communication technology (ICT) such as information search, browsing and sourcing are important predictors to institutional repositories use among students. Against this background, this study examines demographic variables, service-quality and web-search-skills as determinants of IRs utilisation in universities, Kwara State.

Objectives of the Study

The main objective of this study is to: (1) examine demographic variables, service-quality and examine the influence of service- quality on the IRs utilisation by lecturers in universities Kwara State; (2) assess the influence of web-search skills on IRs' utilization by lecturers in universities Kwara State; (3) identify the purpose of IRs' utilisation by lecturers in universities Kwara State; (4) determine

the influence of age on IRs utilisation by lecturers in universities Kwara State; and (5) examine the influence of gender on IRs utilisation by lecturers in universities Kwara State.

Review of Related Literature. Tsenga (2023) examined adopting SERVQUAL model in improving digital institutional. The study used mixed-methods approach. The study found out that effective service provision at the institutional repositories section requires promptness for its utilisation. Anhwere (2020) examined service quality delivery and students' satisfaction in Higher Institutions. The study used quantitative research and employed descriptive survey. The study found out that, students were moderately satisfied with the quality of services delivery in terms of non-academic aspects among business education students. The study also revealed that there is a direct relationship between academic satisfaction and non-academic satisfaction in relation to quality of services delivery.

Kalimashe, (2023) investigated the user experience of Open UCT from the postgraduate (PG) students' perspective. The study used a qualitative research method to achieve the research objective. The study revealed that navigability, the usability of the OpenUCT user interface, findability, and accessibility of its content are achieved through promptness. Similarly, Okeji, *et. al.* (2020) investigated the digital literacy skills possessed by librarians working in university libraries in Nigeria. Survey research design was adopted. The study revealed the digital literacy skills that the librarians rated as very high and those that they rated as moderate and low. The study also revealed the knowledge and technical

competencies in the use of institutional repository are higher. Okojiet *al.* (2019) examined digital literacy skills possessed by librarians working in university libraries in Nigeria. The study employed survey monkey design. The study found out that skills competencies and technical abilities are essential for developing and managing institutional repositories utilisation.

In a study by, Tere, *et al.* (2020) examined variables affecting e-learning services quality in Indonesian higher education: students' perspectives. The study used quantitative research approach. The study found out that responsiveness, have a significant influence on the quality of e-learning based on the students' perceptions. Yusuf (2021) investigated level of digital literacy skills among library professionals from South-South Nigeria. The survey research design was used to conduct the study. The result of the study found that responsiveness determines digital literacy skills for delivery of library services in the 21st century.

Theresiawati *et al.* (2020) examined variables affecting e-learning services quality in Indonesian higher education: Students' perspectives. The study employed quantitative methods. The study found out that content quality, teacher quality (empathy, responsiveness, reliability, and assurance), and LMS quality (usability and in formativeness) have a significant influence on the quality of e-learning based on the students' perceptions.

Influence of Web-search Skills on Institutional Repositories' Utilisation. Tapfuma and Hoskins (2019) investigated usage of institutional repositories in Zimbabwe's public universities. A mixed

methods approach was used. The study found out that most of the repositories are searchable on the Internet. Okon *et. al* (2023) examined Internet based services and their impact on postgraduate students' patronage of University Library. The study adopted descriptive survey research design. The study revealed that there is significant influence of internet-based services such as information search service, data-based service, and web-based reference service on post graduate students' patronage of university of Uyo library.

Nwabueze, *et al.* (2022) focused on information search skills as predictors of Library and Information Science students' use of online information resources in University of Benin, Edo State, Nigeria. A correlation research design was adopted for the study. The study found out that information search skills of LIS undergraduates increased on the use of online information resources increase. This implies that information searching skill significantly influence online information resources.

Osisanwo and Josephs (2020) investigated web search skills and use of online information resources by library and information science undergraduates in a Nigerian university of education. Descriptive research design of survey type was adopted for the study. The findings show that the level of web search skills possessed by the undergraduates surveyed was high. The findings also show that there is significant relationship between web search skills and the use of online information resources by undergraduates.

Similarly, Ayodele and Arilesere (2020) assessed the web searching behaviour of University of Ibadan

distance learners. A descriptive survey research design of the correlational type was adopted for e seeking behaviour of final year students of Babcock University, Ilishan, Nigeria. The findings showed that the Final year students of the University relied significantly on information sources available on the Internet for the enhancement of their academic activities, such as term paper and project development among others.

Purposes of Institutional Repositories' Utilisation by University Lecturers'. Akingbade (2022) examined lecturers' awareness, perception and utilisation of institutional repositories in two universities in Nigeria. The study adopted descriptive research design. The study revealed that lecturers slightly utilized the IRs in depositing and accessing scholarly materials and the most deposited and most accessed scholarly materials by the lecturers include articles, conference papers and lecture notes. According to Farida *et al.* (2015) stated that institutional repositories usage focuses on the academic output generated by the researchers of the university, offering better visibility of its scientific, educational, social, and economic contributions, thereby adding prestige to staff and the institution. Furthermore, Dlamini and Snyman (2017) noted that institutional repositories communicate the capability and value of an institution by highlighting faculty and student research as well as other academic activities. The authors further emphasised that the role of libraries, academics, and researchers in establishing functional institutional repositories is critical.

Ladipo *et al.* (2022) examined the influence of use of institutional

repositories on research productivity of lecturers in federal universities in Nigeria. The survey research design was adopted for the study. The finding of the study revealed that photographs, notebooks, seminar papers, inaugural lectures and illustrations and drawings as the most common types of information resources in the institutional repositories of federal universities in Nigeria. The study revealed that the major purpose for which lecturers in federal universities in Nigeria use institutional repositories are preparation of seminar/lecture notes, writing papers/proposals, seminars presentations, and research works which revolve around teaching and research as the core mandate of the lecturers.

Influence of Age on Institutional Repositories' Utilisation. Age has been observed to correlate with use of computers and consequently electronic resources. Corroborating this assertion Okiki (2011) stated that the younger generations is largely exposed to computers from an early age. Similarly, Diyaolu, et al. (2012) opined that most users of digital resources are younger students. In further support of this view, Hurum (2024) studied users' opinion, satisfaction levels, and challenges towards institutional repositories. The result indicated that age has a significant relationship with library facilities ($p=.001$), retrieval ($p=.000$), searching and browsing facilities ($p=.001$), usability ($p=.012$), and copyright issue ($p=.002$).

Similarly, Ebijuwa and Mabawonku (2019) examined demographic variables (age, gender) and academic discipline as determinants of undergraduates' use of electronic library resources in federal universities in South-west, Nigeria. A descriptive survey research design was

used for this study. The study revealed that age influenced the use of electronic library resources by undergraduates in federal universities in South-west, Nigeria. Gor (2017) examine the influence of demographic and institutional factors on utilisation of online library services by distance learners of the University of Nairobi. The study was anchored on the positivist research paradigm. Descriptive survey and correlation research designs were adopted for this study. The study revealed a significant positive linear correlation between age and the utilisation of online library services ($r = 0.366$, $R^2 = 0.134$, $n=259$, $p<0.05$). The study concluded that demographic and institutional factors influence utilisation of online library services.

Influence of Gender on institutional repositories' utilisation. A study by Rahman, Mahmud and Jamaludin (2013) on age, gender and race differences in the use of digital library among Malaysian postgraduate learners in Malaysia further revealed that men use information and communication technology slightly more than women, who are characterised with rare usage and non-use of Online Public Access Catalogue (OPAC). The study showed that there were few female respondents who could apply the use of digital library as revealed by mean score distribution between male and female respondents. The male gender frequently used digital library services when compared with the female gender.

Nunda and Elia (2019) investigated the association between gender and institutional repository usage by postgraduate students in selected Tanzanian higher learning institutions and revealed that female respondents were using institutional repositories more

than their male counterparts. However, this is contrary to the result of the Eiriemiokhale (2019) who investigated the influence of gender on the utilization of electronic databases by university lecturers in the South-west, Nigeria and found that no significant difference existed between the mean rating of the male and female lecturers in the usage of electronic databases. This implied that the male and female lecturers did not differ in their usage of electronic databases. The study also showed that gender was not a predictor of electronic database usage.

In addition to Zhu (2017) in a study on who supports open-access publishing, investigated gender differences in the use of open access (QA) publishing and showed that there were significant gender differences in its' use. In general, men were more likely than women to have experience using both Gold and Green OA publishing. Likewise, Gor (2017) examined the influence of gender on the utilization of online digital repositories by distance learners at the University of Nairobi, Kenya, and reported a significant

relationship between learner's gender and the use of online digital repositories.

In contrast, Pembee (2014) examined the influence of demographic characteristics of staff and students on use of library information system at Kabarak University. The study showed that there was no significant difference between males and females in their usage of digital information systems. Similarly, Oyeniyi (2013) investigated gender differences in information retrieval skills and use of electronic resources and found that there was no statistically significant difference in the use of e-resources on the basis of gender.

RESEARCH METHODS

This study adopted descriptive research design. Descriptive research design helps to find out and interpret events the way they are without any external manipulation (Daramola, 2011). The target population for this study comprised lecturers at the University of Ilorin, Ilorin, Kwara State University, malete and Al-Hikmah University, Ilorin.

Table 1
Population of the Study

No.	Name of University	Population of Lecturers
1	University of Ilorin, Ilorin	1489
2	Kwara State University, Malete	498
3	Al-Hikmah University, Ilorin	157
Total		2144

Source: Author' Fieldwork, 2026

The sample size for this study comprises of 326 respondents. This study adopted a simple random sampling technique. This type of sampling technique was adopted to give all respondents equal

chance of being selected for the study. The study used Raosoft sample size calculator to determine sample size for the study at 0.05 level of significance for a population of 2,144.

Table 2
Sample size

S/N	Name of University	Population of Lecturers	Sample size
1	University of Ilorin, Ilorin	1489	1489*326/2144=226
2	Kwara State University, Malete	498	498*326/2144=76
3	Al-Hikmah University, Ilorin	157	157*326/2144=24
	Total	2144	326

Source: Author' Field work, 2026

The study used questionnaire as the instrument for data collection. The questionnaire was grouped into two sections: Sections A and B. Section A comprises questions on the demographic information of the respondents, while Section B contained items relating to the objectives of the study. Objective 1-5 contained 5 items each. However, section B responses was based on 4-point Likert rating scale ranging from 4= Strongly Agree to 1= Strongly Disagree. The collected data were coded and analysed using IBM-SPSS version 21.0. Descriptive statistics of frequency count and simple percentage were used to answer the research question.

RESULTS AND DISCUSSION

This chapter presents the results of the data obtained in this study. The results are presented based on the variables focused on in the research objectives/questions tested for the study. The instrument used in collecting data for the study was a questionnaire. Three hundred and twenty-six (326) copies of the questionnaire were distributed, and 306 were returned, representing 97% return rate and were found usable for the study. Demographic Distribution of Respondents

Table 3
Distribution of Respondents by Demographic

Variables	Frequency	Percentage
Gender		
Male	198	64.7%
Female	108	35.3%
Total	306	100
Age	Frequency	Percentage
21- 40 years	117	38.2%
41-60 years	172	56.2%
60 year and above	17	5.5%
Total	306	100
Year of Experience	Frequency	Percentage
1-5 years	81	26.5%
6- 10 years	93	30.1%
11 -15 years	80	26.1%
16 year and Above	53	17.3%
Total	306	100

Source: Author' Field work, 2026

Table 3 shows the demographic information of lecturers in Universities in Kwara State. It revealed that larger number of the respondent were male 198 (64.7%) while the remaining 108 (35.3%) were female. The table also shows the distribution of the respondents by age. A total of 117 (38.2%) of the respondent were between the age range of 21-40 years, 172 (56.2%) were between 41-60 years while 17 (5.5%) of the respondents were the age range 60 years and above.

Regarding working experience, 81 (26.5%) of the respondents had 1-5 years working experience, 92 (30.1%) of the respondents have 6- 10 years working experience while 80 (26.1%) of the respondents have 11- 15 working experience and 53 (17.3%) of the respondents have 16 years and above.

Analysis of Research Questions

RQ1: What is the Influence of service-quality on the utilisation of institutional repositories?

Table 4

Influence of service-quality on the utilisation of institutional repositories

Statements	SA %	A%	N%	D %	SD%
Promptness in providing service to lecturers influence IR usage	109 (35.6%)	152 (49.7%)	16 (5.2.0%)	9 (2.9%)	20 (6.5%)
Skills of librarians influence the use of IR by lecturers	78 (25.5%)	152 (49.7%)	23 (7.5)	31 (10.1%)	22 (7.2%)
Competencies of librarians promote the use of IR by lecturers	86 (28.1%)	122 (39.9%)	37 (12.1%)	55 (18.0%)	6 (2.0%)
Responsiveness on the part of librarians influence the use of IR by lecturers	75 (24.5%)	137 (44.8%)	38 (12.4%)	53 (17.3%)	3 (1.0%)
Empathy on the part of librarians influences the use of IR by lecturers.	90 (29.4%)	157 (51.3%)	22 (7.2%)	28 (9.2%)	9 (2.9%)

Source: Author' Field work, 2026

Table 4 shows respondents' views on the influence of service-quality on the utilisation of institutional repositories. A total of 109 (35.6%) of the respondents strongly agreed that promptness influence IR usage, 152 (49.7%) agreed, 9 (2.9%) of respondent were disagreed, 16 (5.2%) of respondent revealed neutral and 20 (6.5%) of respondent strongly disagreed. Respondent 78 (25.5%) strongly agreed that skills of librarians influence the use of IR by lecturers, 152 (49.7%) of respondents agreed, 31 (10.1%) of respondents disagree, 23 (7.5%) of respondents were neutral, and 22 (7.2%) of respondents

strongly disagree. Respondent 86 (28.1%) of respondent strongly agreed that competencies of librarians promote the use of IR by lecturers, 122 (39.9%) of respondents agreed, 55 (18.0%) of respondents were disagree, 37 (12.1%) of respondents revealed neutral while 6 (2.0%) of respondents were strongly disagreed.

However, 75 (24.5%) of the respondents strongly agreed that responsiveness on the part of librarians influence the use of IR by lecturers, 137 (44.8%) agreed, more so, 53 (17.3%) of respondents disagree, 38 (12.4%) of

respondents indicated neutral while 3 (1.0%) of respondents strongly disagreed. In addition, 90 (29.4%) of respondents strongly agreed that empathy on the part of librarians influences the use of IR by lecturers 157 (51.3%) agreed 28 (9.2%) of respondents disagree, 22 (7.2%) of respondents indicated neutral while 9 (2.9%) of respondents were strongly

disagreed. This implies that promptness, skills, competencies, responsiveness and empathy as dimensions of service quality have an influence on lecturers' institutional repositories utilisation in universities, Kwara State.

RQ2: What is Influence of web-search skills on institutional repositories' utilisation by lecturers?

Table 5

Influence of web-search skills on institutional repositories' utilisation

Statements	SA %	A%	N%	D %	SD%
Robust information search skill influence IR utilisation	123 (40.0%)	165 (53.9%)	3 (1.0%)	12 (3.9%)	31 (1.0%)
Improved internet-based services provision influences IR utilisation	84 (27.5%)	176 (56.9%)	10 (3.3%)	17 (5.6%)	21 (6.9%)
Timely data-based information influence IR utilisation	101 (33.0%)	148 (48.4%)	12 (3.9%)	22 (7.2%)	23 (7.5%)
Organised information search service enables IR utilisation	62 (20.3%)	157 (51.3%)	32 (10.5%)	34 (11.1%)	21 (6.9%)
Processed information service influence IR Utilisation	80 (26.1%)	153 (50.0%)	33 (10.8%)	20 (6.5%)	20 (6.5%)

Source: Author' Field work, 2026

Table 5 shows response on the influence of web-search skills on institutional repositories' utilisation by lecturers with 123 (40.0%) of respondents were strongly agreed that robust information search skill influence IR utilisation, 165 (53.9%) of respondents were agreed, 12 (3.9%) of respondent were disagreed, 3 (1.0%) of respondent revealed neutral and 3 (1.0%) of respondent were strongly disagreed. Respondent 84 (27.5%) strongly agreed that improved internet-based services provision influences IR utilisation, 174 (56.9%) of respondents agreed, 17 (5.6%) of respondents disagree, 10 (3.3%) of respondents indicated neutral, and 21 (6.9%) of respondents strongly disagree. 101 (33.0%) of respondent strongly agreed that timely data-based information influence IR utilisation, 148

(48.4%) of respondents agreed, 22 (7.2%) of respondents were disagree, 12 (3.9%) of respondents revealed neutral while 23 (7.5%) of respondents were strongly disagreed.

However, 62 (20.3%) of respondents strongly agreed that organised information search service enables IR utilisation, 157 (51.3%) of respondents agreed, more so, 34 (11.1%) of respondents disagree, 32 (10.5%) of respondents indicated neutral while 21 (6.9%) of respondents were strongly disagreed. Respondents 80 (26.1%) strongly agreed that processed information service influence IR Utilisation while 153 (50.0%) of respondents agreed 20 (6.5%) of respondents disagree, 33 (10.8%) of respondents indicated neutral while 20 (6.5%) of respondents were strongly disagreed. The implication of this table to

the study is that majority of respondents are of opinion that robust information search skills, improved internet-based service, timely data-based information, organised information search service and processed information service as web-search skills

have positive influence on IR utilisation among lecturers in universities, Kwara State.

RQ 3: What is the purpose of institutional repositories' utilisation by lecturers?

Table 6

Purpose of institutional repositories' utilisation by lecturers

ITEMS	SA %	A%	N%	D %	SD%
Preparation of seminar/lecture notes	104 (34.0%)	90 (29.4%)	7 (25.8%)	79 (25.8%)	26 (8.5%)
Writing papers/proposals	96 (31.4%)	105 (34.3%)	12 (3.9%)	75 (24.5%)	18 (5.9%)
Seminars presentations	107 (35.0%)	93 (30.4%)	14 (4.6%)	79 (25.8%)	13 (4.2%)
Research works	116 (37.9%)	135 (44.1%)	8 (2.6%)	45 (14.7%)	2 (0.7%)
Teaching	83 (27.1%)	99 (32.4%)	27 (8.8%)	83 (27.1%)	14 (4.6%)

Source: Author' Field work, 2026

Table 6 shows response on the purpose of institutional repositories' utilisation by lecturers with 104 (34.0%) of respondents strongly agreed with preparation of seminar/lecture notes as purpose of IR utilisation, 90 (29.4%) of respondents were agreed, 79 (25.8%) of respondent were disagreed, 7 (25.8%) of respondent revealed neutral and 3 (1.0%) of respondent were strongly disagreed. Respondent 96 (31.4%) strongly agreed with writing papers/proposals, 105 (34.3%) of respondents agreed, 75 (24.5%) of respondents disagree, 12 (3.9%) of respondents indicated neutral, and 18 (5.9%) of respondents strongly disagree.

Moreover, respondent 107 (35.0%) of the respondents strongly agreed with seminars presentations, 93 (30.4%) agreed, 79(25.8%) disagree, 14 (4.6%) of respondents revealed neutral while 13 (4.2%) of respondents strongly disagreed.

It is also in table 4 that 116 (37.9%) of respondents strongly agreed with research work, 135 (44.1%) of respondents agreed, 45 (14.7%) of respondents disagree, 8 (2.6%) of respondents indicated neutral while 2 (0.7%) of respondents were strongly disagreed. Respondents 83 (27.1%) strongly agreed with teaching as the purpose, 99 (32.4%) of respondents agreed 83 (27.1%) of respondents disagree, 27 (8.8%) of respondents indicated neutral while 14 (4.6%) of respondents were strongly disagreed.

The implication of this is that preparation of seminar/lecture notes, writing papers/proposals, seminars presentations, research works and teaching are the major purposes of using IR by lecturers in universities, Kwara State.

RQ4: What is Influence of age on institutional repositories' utilisation by lecturers'?

Table 7

Influence of age on institutional repositories' utilisation by lecturers'

Statements	SA %	A%	N%	D %	SD%
My age influences the use of electronic article	119 (38.9%)	155 (50.7%)	6 (2.0%)	18 (5.9%)	8 (2.6%)
My age influences the use of electronic terms paper	126 (41.2%)	155 (50.7%)	10 (3.3%)	10 (3.3%)	5 (1.6%)
My age affects the use of electronic research paper	122 (39.9%)	144 (47.1%)	11 (3.6%)	22 (7.2%)	7 (2.3%)
My age influences the use of grey literature	118 (38.6%)	144 (47.1%)	12 (3.9%)	21 (6.9%)	11 (3.6%)
My age affects the use of conference proceeding	129 (42.2%)	136 (44.4%)	18 (5.9%)	14 (4.6%)	9 (2.9%)

Source: Author' Field work, 2026

Table 7 shows respondents' view on the influence of age on institutional repositories' utilisation. A total of 119 (38.9%) of the respondents strongly agreed that lecturers age influences the use of electronic article, 155 (50.7%) agreed, 18 (5.9%) of respondent disagreed, 6 (2.0%) of respondent revealed neutral and 8 (2.6%) of respondent strongly disagreed. Respondent 126 (41.2%) strongly agreed that lecturers age influences the use of electronic terms paper, 155 (50.7%) respondents agreed, 10 (3.3%) of respondents disagree, 10 (3.3%) of respondents indicated neutral, and 5 (1.6%) of respondents strongly disagree. Respondents 122 (39.9%) strongly agreed that lecturers age affect the use of electronic research paper, 144 (47.1%) respondents agreed, 22 (7.2%) respondents disagree, 11 (3.6%) of respondents revealed neutral while 7 (2.3%) respondents strongly disagreed.

However, 118 (38.6%) respondents strongly agreed that lecturers age influence the use of grey literature, 144 (47.1%) respondents agreed, more so, 21 (6.9%) of respondents disagree, 12 (3.9%) respondents indicated neutral while 11 (3.6%) respondents were strongly disagreed. Respondents 129 (42.2%) strongly agreed that age affect the use of conference preceding while 136 (44.4%) of respondents agreed 14 (4.6%) of respondents disagree, 18 (5.9%) respondents indicated neutral while 9 (2.9%) of respondents were strongly disagreed. The implication of this is that the majority of respondents affirmed that age of lecturers influence IR utilisation in term of electronic article use, terms papers use, grey literature use and conference proceeding use by lecturers.

RQ5: What is the Influence of gender on institutional repositories' utilisation by lecturers'?

Table 8

Influence of gender on institutional repositories' utilisation by lecturers'

Statements	SA %	A%	N%	D %	SD%
My gender influence the use of electronic article	127 (41.5%)	137 (44.8%)	17 (5.6%)	19 (6.2%)	6 (2.0%)
My gender influence the use of electronic terms paper	100 (32.7%)	143 (46.7%)	19 (6.2%)	23 (7.5%)	21 (6.9%)
My gender affect the use of electronic research paper	114 (37.3%)	141 (46.0%)	13 (4.2%)	28 (9.2%)	10 (3.3%)
My gender influence the use of grey literature	96 (31.4%)	105 (34.3%)	12 (3.9%)	75 (24.5%)	18 (5.9%)
My gender affect the use of conference preceding	84 (27.5%)	176 (56.9%)	10 (3.3%)	17 (5.6%)	21 (6.9%)

Source: Author' Field work, 2026

Table 8 shows response on the influence of gender on institutional repositories' utilisation. A total of 127 (41.5%) of the respondents strongly agreed that lecturers gender influences the use of electronic article, 137 (44.8%) of respondents agreed, 17 (5.6%) of respondent disagreed, 19 (6.2%) of respondents revealed neutral and 6 (2.0%) of respondent strongly disagreed. Respondents 100 (32.7%) strongly agreed that lecturers gender influence the use of electronic terms paper, 143 (46.7%) respondents agreed, 19 (6.2%) of respondents disagree, 23 (7.5%) respondents indicated neutral and 21 (6.9%) respondents strongly disagree. Furthermore, 114 (37.3%) of the respondent strongly agreed that lecturers gender affect the use of electronic research paper, 141 (46.0%) of respondents agreed, 13 (4.2%) of respondents were disagree, 28 (9.2%) of respondents revealed neutral while 10 (3.3%) of respondents strongly disagreed.

In addition, 96 (31.4%) of the respondents strongly agreed that lecturers influence the use of grey literature, 105 (34.3%) of respondents agreed, more so, 12 (3.9%) of respondents disagree, 75

(24.5%) of respondents indicated neutral while 18 (5.9%) of respondents were strongly disagreed. Respondents 84 (27.5%) strongly agreed that gender affect the use of conference preceding while 176 (56.9%) of respondents agreed 10 (3.3%) of respondents disagree, 17 (5.6%) of respondents indicated neutral while 21 (6.9%) of respondents were strongly disagreed. The implication of this table to the study is that majority of respondent noted that gender of lecturers influence the IR utilisation in term of electronic article use, terms papers use, grey literature use and conference preceding use by lecturers.

Discussion of findings. Based on research questions one, the findings of the study revealed that promptness, skills, competencies, responsiveness and empathy as dimension of service quality have a influence on lecturers' institutional repositories utilisation in universities, Kwara State. The finding of this study concurs with the study by Okojiet *al.* (2019) that skills competencies and technical abilities are essential for developing and managing institutional repositories utilisation among lecturers. It is also in line with study by Yusuf (2021) who found that

responsiveness determines digital literacy skills for delivery of IR services.

On the research question two, the study found that robust information search skills, improved internet-based service, timely data-based information, organised information search service and processed information service as web-search skills have positive influence on IR utilisation among lecturers in Kwara State University. The finding of this study is supported by Okon *et. al* (2023) that there is significant influence of internet-based services such as information search service, data-based service, and web-based reference service on post graduate students' patronage of Institutional repository.

On the research question three, the study also revealed that preparation of seminar/lecture notes, writing papers/proposals, seminars presentations, research works and teaching are the purposes of using IR by lecturers in Kwara State University. The finding of this study is in line with Ladipo *et al.* (2022) who identified that photographs, notebooks, seminar papers, inaugural lectures and illustrations and drawings as the most common types of information resources in the institutional repositories of federal universities in Nigeria which are main purposes of IR utilisation by lecturers.

On the research question four, the study showed that age of lecturers influences the IR utilisation in terms of electronic article use, term papers use, grey literature use and conference proceedings use by lecturers. The finding agrees with Gor (2017) who reported a significant positive linear correlation between age and utilisation of Institutional repository ($r = 0.366$, $R^2 = 0.134$, $n=259$, $p<0.05$).

Based on the research question five, it is revealed that gender of lecturers influences IR utilisation in term of electronic article use, terms papers use, grey literature use and conference proceeding use by lecturers. The finding affirms the finding Nunda and Elia (2019) who reported that female respondents used institutional repositories more than their male counterparts. This is contrary to the result of the investigation by Eiriemiokhale (2019) on the influence of gender on the utilization of electronic databases by university lecturers in the South-west, Nigeria in which no significant difference existed between the mean rating of the male and female lecturers in the usage of electronic databases. The study also showed that gender was not a predictor of electronic database usage.

CONCLUSION

Based on the findings of this study, the following conclusions were drawn. The study focussed from the outcomes of the study. The study focuses on demographic variables, service-quality and web-search-skills as determinants of institutional repositories utilization by universities lecturers in Kwara State. The study provides insight into the importance of demographic variables, service quality and web search-skills on IR utilisation and it established in the study that both demographic variables, service quality and web search-skills determines lecturers' utilisation of institutional repositories in universities in Kwara State. The study concluded that the concluded that utilisation of institutional repositories is influenced by all the independent variables examined in this study. The following recommendations are suggested

based on the findings of the study: (1) In order to create awareness, there is need to engage distance learners in activities that give them practice and require them to demonstrate their competence in evaluating the quality of the information they use, (2) In order to increase the IR usage, there is need to engage lecturers in activities that will improve them in high usage of IR, (3) Library through librarians should provide instruction to lecturers in term of orientation for an improved IR utilization, (4) Seminar and workshop should be organised for lecturers on better use of web search tools in order to have an improved IR utilization, (5) Lecturers in respect of their gender should be encouraged to use IR provided by the University for an improved IR utilization, and (6) Management of the university should formulate policies that would enhance and encourage lecturers on IR utilization.

REFERENCES

- Akingbade, L. (2022). Lecturers' Awareness, perception and utilisation of institutional repositories in two universities in Nigeria. *Library Philosophy and Practice (e-journal)*. 7552. <https://digitalcommons.unl.edu/libphilprac/7552>
- Akinola, S. A; Olagoke, D. P.; & Opawale, O. F. (2022). A Synopsis of Institutional Repositories in Nigerian University System: Advantages and Challenges". *Library Philosophy and Practice (e-journal)*. 7528. <https://digitalcommons.unl.edu/libphilprac/7528>.
- Akparobore, D. O., & Omosekejimi, A. F. (2020). Faculty members awareness and attitude towards the use of institutional repositories (IRs) in Federal Universities in South Nigeria. *Library Progress (International)*, 40, (2), 154-165. <https://.10.5958/2320-317X.2020.00018.5>.
- Alice, A. B. & Airen, E. A. (2018). Evaluating use of institutional repositories by lecturers in Nigeria Universities. *Information Impact: Journal of Information and Knowledge Management*, 8 (3), 83 -102. <https://ajol.info/index.php/ijikm/article/view/167185>.
- Alice, A. B., & Airen E. A. (2020) Assessing determinants of perceived ease of use of institutional repositories by lecturers in Nigerian universities. *International Information & Library Review*, 52 (2), 95-107. <https://10.1080/10572317.2019.1662261>.
- Andrew, T. (2018). Awareness and attitudes of faculty members towards developing institutional repository in Federal University, Kashere, Gombe State, Nigeria. In *Information and Knowledge Management*, 8 (2), 1-7. <https://www.iiste.org/Journals/index.php/IKM/article/view/41072>
- Anene, I. A., Ozor, S., & Baro, E.E. (2020). Institutional repository development in Nigerian universities: Benefits and challenges. *Niger Delta Journal of Library and Information Science*, 1 (1)1-8. <https://ndjlis.fuotuke.edu.ng/index.php/ndjlis/article/view/1/1>
- Anhwere, D. K. (2020). Service quality delivery and students' satisfaction

in higher institutions: perspectives of business education students, UCC. Dissertation submitted to the Department of Management of the School of Business, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for award of Master of Business Administration Degree in Management.

- Aramide, K. A., Ladipo, S. O. & Adebayo, I. (2015). Demographic variables and ICT access as predictors of information communication technologies' usage among science teachers in federal unity schools in Nigeria. *Library Philosophy and Practice* (e-journal). <http://digitalcommons.unl.edu/libphilprac/1217>.
- Bamigbola, A.A. (2018). Awareness, anchor and adjustment factors as determinant of perceived ease of use of institutional repositories by lecturers in Nigeria, universities: Ph.D Theses, LARIS, University of Ibadan
- Bharathkumar, V. (2024) Utilizing institutional repositories and content management systems for information preservation and dissemination: A focus on D-Space and Drupal. 277-281P. <https://www.researchgate.net/profile/Bharath-Kumar>.
- Creswell, J. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research (4th ed.)*. Upper Saddle River, NJ: Pearson Education.
- Cresswell, J. W. (2014). *Research Design; Qualitative, quantitative and mixed methods approach*. London: Sage Publications.
- Danner, R. B. & Pessu, C. O. A. (2019). "A Survey of ICT Competencies among Students in Teacher Preparation Programmes at the University of Benin, Nigeria." *Journal of Information Technology Education: Research*, 12 (1), 33-49. <https://doi.org/10.28945/1762>
- Diyaolu A. M, Okunlaya, R. O. A, Ibrahim, R.O. (2012). Influence of Demographic Factors on the Use of Digital Library by the Post Graduate Students in Private Universities: A Case Study of Babcock and Covenant University in Ogun State. *Information and Knowledge Management*, 2. 5-20. <https://www.iiste.org/Journals/index.php/IKM/article/view/2243>
- Dlamini, N. N., & Snyman, M. (2017). Institutional repositories in Africa: Obstacles and challenges. *Library Review*, 66 (6/7), 535-548. <https://doi.org/10.1108/LR-03-2017-0021>.
- Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information Systems Frontiers*, 21 (3), 719-734. <https://link.springer.com/article/10.1007/s10796-017-9774-y>
- Ebijuwa, A. S., & Mabawonku, I. (2019). Demographic Variables and Academic Discipline as Determinants of Undergraduates' Use of Electronic Library Resources in Federal universities in South-west, Nigeria. *Library Philosophy &*

- Practice*.
<http://digitalcommons.unl.edu/libphilprac/2683/>
- Eiriemiokhale, K. A. (2019). Influence of demographic variables on the utilization of electronic databases by university lecturers in South-West, Nigeria. *Library Philosophy and Practice (e-journal)* 2683 <http://digitalcommons.unl.edu/libphilprac/2683/>
- Eko, P., Purwanto, J. & Retno, W. (2023). Evaluating Parent Satisfaction: The Impact of Educational Service Quality at an Islamic Kindergarten in Colomadu, Karanganyar, Central Java. *Al-Ishlah: Jurnal Pendidikan*. 15 (4). 6172-6181. <https://doi.org/10.35445/alishlah.v15i4.4663>
- Emmytone, L. E., Khamadi, S. I. D., & Kimile, N. (2018). Adoption of Institution Repository in the Dissemination of Scholarly Information to Students, Lectures and Researchers at the Maasai Mara University Library Services. *The Cradle of Knowledge African Journal of Educational and Social Science Research*, 6 (1), 34-42. <https://serek.or.ke/wp-content/uploads/2018/08/Adoption-of-Institution-Repository-in-the-Dissemination-of-Scholarly-Information-to-Students-Lecturers-and-Researchers-Lumbasi-Khamad-Kimile.pdf>
- Endouwarem I. & Yusuf, G. (2021) Level of digital literacy skills among library professionals from South-South Nigeria. *World Journal of Innovative Research*, 10 (2), 1-8. https://www.wjir.org/download_data/WJIR1002014.pdf
- Esse, U. & Haliso, Y. (2024) "Facilitating conditions and institutional repository sustainability by librarians in public university libraries in Nigeria", *Digital Library Perspectives*, 40 (1), 4-22. <https://doi.org/10.1108/DLP-05-2023-0035>
- Farida, I., Tjakraatmadja, J. H., Firman, A., & Basuki, S. (2015). A conceptual model of open access institutional repository in Indonesia academic libraries: Viewed from knowledge management perspective. *Library Management*, 36 (1/2), 168-181. <https://doi.org/10.1108/LM-03-2014-0038>.
- Fasae, J. K., Esew, M., Alanyo, B., & Holmner, M. (2017). Institutional repositories and heritage materials in selected institutions within three African countries. *Library Philosophy and Practice*. <http://digitalcommons.unl.edu/libphilprac/1603>
- Gor, P. O. (2017). Demographic and Institutional Factors Influencing Utilisation of Online Library Services by Distance Learners in the University of Nairobi, Kenya. A thesis submitted in fulfilment of the requirement for the award of the Degree of Doctor of Philosophy in Distance Education of the University of Nairobi.
- Hurum, U., Mahawarand, K. L., & Shimray, S. R. (2024). Examining User Opinions, Satisfaction Levels, and Challenges Towards Institutional Repository: An Empirical Study. *DESIDOC Journal of Library & Information Technology*, 44 (5). 289-297.

- <https://doi.org/10.14429/djlit.44.5.19669>
- Ibrahim, A. K. (2019). Enhancing teaching, learning and research: assessment of the impact of the institutional repository of the university for development studies, Tamale. Thesis submitted to the University of Ghana, Legon in partial fulfillment of the requirement for the award of Master of Philosophy Information Studies Degree.
- Kalimashe, H. (2023). User experience of an institutional repository: A study of OpenUCT with a focus on postgraduate students. Faculty of Humanities of Knowledge and Information Stewardship. Retrieved from <http://hdl.handle.net/11427/39570>
- Jamuna, K., & Dhananjaya, M. (2021). Impact and Usage of E-Resources: A Literature Review. *Library Philosophy and Practice (e-journal)*. 6735. <https://digitalcommons.unl.edu/libphilprac/6735>
- Ladipo, S.O., Alegbeleye, G.O., Soyemi, O.D., & Ikonne, C.N. (2022). Institutional Repositories Utilisation and Research Productivity of Lecturers in Federal Universities in Nigeria Universities. *Inter. J. Acad. Lib. Info. Sci.* 10 (4), 178-193. <https://doi.org/10.14662/ijalis202120>.
- Mohammed, A. (2013). Institutional digital repository: An option for scholarly communication in Nigeria. *International Journal of Education and Research*, 1 (6), 1-10. <https://www.ijern.com/journal/June-2013/33.pdf>
- Nicholas Y., Mohammed M.I., Ufere, K. J. & Kuna A. I. (2022). Effect of facilities management services quality user satisfaction and institutional image. *International Journal of Real Estate Studies*. 16 (2), 86-95. <https://doi.org/10.11113/intrest.v16n2.206>
- Nunda, I. M. & Elia, E. F. (2019). Institutional repository adoption and use in selected Tanzanian higher learning institutions. *International Journal of Education and Development Using Information and Communication Technology*, 15 (1), 1-14. Retrieved from: files.eric.edu/fulltext/EJ12114269.pdf
- Nwabueze, N. O., Emuchay, B. N., & Ogaraku, D. N. (2022). Information search skills as predictors of library and information science students' use of online information resources in university of Benin, Edo State, Nigeria. *Journal of Applied Information Science and Technology*, 15 (2), 30-36. <https://www.jaistonline.org/15vo12/5.pdf>
- Okeji, C. C., Tralagba, E. C., & Obi, I. C. (2020). An investigation of the digital literacy skills and knowledge-based competencies among librarians working in university libraries in Nigeria. *Global Knowledge, Memory and Communication*, 69 (4/5), 311-330. <https://doi.org/10.1108/GKMC-05-2019-0054>
- Okiki, O.C & Asiru, S. M. (2011). Use of Electronic Information Sources by

- Postgraduate Students in Nigeria: Influencing Factors. *Library Philosophy and Practice*. 500. <https://ir.unilag.edu.ng/handle/123456789/502>
- Okon, G. U., Effiong, A. E., & Ezeibe, R. (2023). Internet Based Services and Their Impact on Postgraduate Students Patronage of University Library. *Information Horizons: American Journal of Library and Information Science Innovation* (2993-2777), 1 (6), 22-35. <https://grnjournal.us/index.php/AJLISI/article/view/67>.
- Omeluzor, S.U. (2014) Institutional Repository (IR) Awareness and Willingness of Faculty Staff to Deposit Research Work: A Study of Faculty Staff in Selected Public and Private University in Nigeria. *Open Access Library Journal*, 1, e1139. <http://dx.doi.org/10.4236/oalib.1101139>.
- Osisanwo, T., & Josephs, O. (2020). Web search skills and use of online information resources by library and information science undergraduates of a Nigerian University of Education. *Nigerian School Library Journal*, 19 (1), 24-39. <https://www.ajol.info/index.php/nslj/article/view/208661>
- Oyeniya, A. S. (2013). Gender differences in information retrieval skills and use of electronic resources among information professionals in South-western Nigeria. *International Journal of Library and Information Science*, 5 (7), 208 – 215. Retrieved from: <https://academicjournals.org/journal/IJLIS/article-full-text-pdf/66836435485>
- Pembee, P. K. (2014). Factors influencing the use of library information systems by staff and students in Karabak University (Master's Thesis, Karabak University). citeseer.ist.psu.edu/viewdoc/download?doi=10.1.1.911.6962&rep=rep1&type=pdf
- Poth, C., & Munce, S. E. P. (2020). Commentary – Preparing today's researchers for a yet unknown tomorrow: Promising practices for a synergistic and sustainable mentoring approach to mixed methods research learning. *International Journal of Multiple Research Approaches*, 12 (1), 56-64. doi:10.29034/ijmra.v12n1commentary.
- Rahman, A.A, Mahmud, Z. & Jamaludin, A. (2013) Age, gender and race differences in the usage of digital library among Malaysian postgraduate students. *Recent Researchers in Education*, 137-140. <http://wseas.us/e-library/conferences/2011/Penang/EDU/EDU-21.pdf>
- Tapfuma, M. M., & Hoskins, R. G. (2019). Usage of institutional repositories in Zimbabwe's public universities. *Journal of Economic and Financial Sciences*, 12 (1), 1-9. <https://doi.org/10.4102/sajim.v21i1.1039>
- Tashakkorri A. & Teddie, C. (2013) *Foundation of mixed methods research: integrating quantitative and qualitative approaches in the Social and Behavioural Science*. Los Angeles: Sage.
- Tere, T., Seta, H. B., Hidayanto, A. N., & Abidin, Z. (2020). Variables affecting E-learning services

- quality in Indonesian higher education: Students' perspectives. *Journal of Information Technology Education. Research*, 19, 259. <https://doi.org/10.28945/4489>
- Theresiawati, T., Seta, H. B., Hidayanto, A. N., & Abidin. Z. (2020). Variables affecting e-learning services quality in Indonesian higher education: Students' perspectives. *Journal of Information Technology Education: Research*, 19, 259-286. <https://doi.org/10.28945/4489>.
- Tomomowo-Ayodele, S. O., & Arilesere, J. I. (2020). Assessment of web searching behaviour of University of Ibadan distance learners. University of Ibadan Repository.
- Tsenga, S. M. (2023). Adopting SERVQUAL Model in Improving Digital Institutional Repository Information Services to Postgraduate Students at Universities in Meru County (Doctoral dissertation, KeMU).
- Saulus, N. R. (2018). Usability of the Institutional Repository by Faculty and Postgraduate Students at the University of Swaziland (Doctoral dissertation). <https://core.ac.uk/download/pdf/196551612.pdf>.
- Saliu, S. A., Ngozi, O. V., & Lawal, A. M. (2022). Challenges and Strategies to the use of institutional repository among academics staff in universities libraries in South-west, Nigeria, *Journal of Institutions*, 12 (1), 89-97. <https://www.ajol.info/index.php/abraka/article/view/242963>
- Shorten A., & Smith J. (2017). Mixed methods research: Expanding the evidence base. *Evid Based Nurs*, 20, 74-5. <http://dx.doi.org/10.1136/eb-2017-102699>.
- Soyemi, O. & Oshineye, M. (2015). Web information seeking behaviour of final year students of Babcock University, Nigeria. *Journal of Applied Information Science and Technology*, 8 (1), 81- 88. https://www.jaistonline.org/vol8_no1_Soyemi_Mojisola.pdf
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, 27 (3), 426-478. <https://www.jstor.org/stable/30036540>
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178. <https://doi.org/10.2307/41410412>
- Zhu, Y. (2017). Who supports open access publishing? Gender, discipline, seniority and other factors associated with academics open access practice. *Scientometrics* 111, 557 - 579. link.springer.com/content/pdf/10.1007%2Fs11192-017-2316-z.pdf.