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SCHOLARLY COMMUNICATION TRANSFORMATION IN GHANA: STRATEGIC OPPORTUNITIES OF OPEN JOURNAL SYSTEMS IN UNIVERSITY RESEARCH ECOSYSTEM

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ABSTRACT

This paper explores the adoption, usage, and issues of the use of Open Journal System (OJS) in the Ghanaian higher education institutions, especially in the field of higher education where it has the potential to revolutionise scholarly communication within a university research setting. The study used a quantitative research methodology and a descriptive survey design with the aim of surveying a population of 104 people directly engaged in the management of institutional journals under the OJS on four purposively chosen public universities. These were the editorial board, librarians and IT support personnel. A total of 80 valid responses out of this population was received and analysed. A structured questionnaire was then used to collect data and descriptive statistical tools were employed to analyse data in SPSS. The results show that users tend to consider OJS a helpful and trustworthy tool in scholarly publishing and rated the system and information quality high. Nevertheless, issues connected with the system navigability, support services, and infrastructure especially the slow speed of internet connection were also reported. This paper finds that although OJS has great potential to improve scholarly communication in Ghana, the extent to which it will do so is determined by its solution of the usability issues and the enhancement of user support systems. It proposes specific training, infrastructure investments, and institutional cooperation to use OJS to its full advantage as a strategic instrument to build the concept of open access and enhance the quality, visibility, and control of academic journals. This research is unique in that it empirically examines the adoption of OJS in several public universities in Ghana by incorporating the editorial board staff, librarians, and IT personnel. It provides the evidence-based information particular to a region whose scholarly communication infrastructure is yet to be developed thus creating an imperative vacuum in open access publishing literature golbally.

Keywords: Scholarly Communication, Online Journal Systems, Open journal system, Ghanaian Universities, Ghana.

INTRODUCTION

Generally defined as the process of research creation, review, dissemination, and archiving of academic knowledge, Scholarly communication is still considered to be one of the pillars of higher education worldwide (Hailu, 2021; FlemingMay, 2023). Indeed, the concept of scholarly communication promotes the exchange of ideas, facilitates evidence-based decision-making, and leads to innovation and socioeconomic growth (Codina *et al*., 2023). Nevertheless, the Western scholarly communication models have long suppressed Western publishing models at the expense of Global South input. In turn, the international academic community is undergoing the change that has been affected by digital technologies, open access (OA) movements, and the need to democratise the process of producing and sharing knowledge.

The advent of open-source publishing platforms such as the Open Journal Systems (OJS) has in large part enabled this digital transformation. OJS is an end-to-end journal management application developed by the Public Knowledge Project (PKP) and allows submission, peer review, editorial workflow, publication, indexing, and archiving (Tabatadze, 2024). Allowing institutions to publish and publish their journals, OJS helps to avoid relying on and spending lots of money on proprietary tools and increase the dissemination of local knowledge, particularly in developing settings (Alagha *et al*., 2024; Mwambari, 2022).

It increases the presence, exposure, and influence of scholarly works, which is in accordance with the overall objectives of the open science movement (Tennant *et al*., 2020; Bwalya and Akakandelwa, 2021). Regardless of such benefits, there are still issues related to the design, usability and sustainability of OJS. These are problems with navigation through the user interface, technical configuration, and accessibility to users with impairments, as well as the lack of proper training of editorial teams (AriasFlores *et al*., 2020). Institutional support structures, user skills, and long-term policy commitment are therefore the other issues that determine the effectiveness of OJS not in terms of the technical capability, but also in terms of the institutional capability.

The academic communication environment in Africa is still struggling with structural issues that have been in existence. Despite the continent being the world's home to more than 15 percent of the world population and intellectual capital, it contributes less than 2 percent of research around the globe (World Bank, 2021; Raju *et al*., 2020). The lack of research funding, inadequate infrastructures, overdependence on external publishing sources, and lack of cohesive academic communities has confined African continent to establishing a scholar agenda (Aldirdiri, 2024).

Also, numerous African universities have difficulties in sustaining peer-reviewed, sustainable institutional journals because of the lack of proper systems, irregularities in the issue of the journals, and insufficient global indexing (Ezechukwu *et al*., 2024). These problems highlight the necessity of context-sensitive, economical digital solutions such as OJS, which could assist African institutions in raising their research profiles, supporting academic autonomy, and creating more resilient academic publishing infrastructures. Nonetheless, although a number of African universities, such as Ghana have started to embrace digital repositories and open access platforms, the adoption and use of OJS is under marketing in the literature.

Within the Ghanaian setting, although the world is becoming more digitally inclined in scholarly publishing and open access, the adoption of the Open Journal Systems (OJS) into the university research systems is still a less explored area. Despite anecdotal reports of other universities moving towards the use of OJS in order to increase the visibility of their

research and editorial independence, very little empirical research has been conducted on the extent of such implementation, its efficacy, and its sustainability. The broader literature on scholarly communication in Ghana has primarily focused on institutional repositories and open access advocacy (e.g. Imoro & Saurombe, 2024; Asadi *et al*., 2019; Osei-Kofi & Boateng, 2021), leaving a gap in understanding how tools like OJS are being used to transform the actual process of journal publishing.

This is an important gap to be addressed in order to enhance the scholarly communication infrastructure of Ghana. The reason is that, the strategic application of OJS is capable of assisting universities in moving past obstacles to publication, assisting quality assurance in the form of organised editorial procedures, and enhancing international visibility via integration with indexing databases. This paper thus examines how Open Journal Systems (OJS) is adopted and the challenges in Open Journal Systems (OJS) adoption in the selected Ghanaian universities. It seeks to identify the facilitators and obstacles of successful utilisation and sustainability of OJS platforms. In particular, it discusses how the members of editorial boards of different journals making use of OJS, academic librarians, and IT professionals perceive the quality of the system, the ease of use, the support provided by the institutions, and the user experience.

Research Objectives

Determine the key features and functions of OJS that support journal publishing in selected universities in Ghana.

- Find out the quality and use of information generated and managed through OJS platforms in selected universities in Ghana.
- Discuss the experiences and perceptions of stakeholders regarding the operational effectiveness of OJS.
- Identify the obstacles and institutional issues that influence the implementation and the maintenance of OJS in the selected universities in Ghana.

Literature Review

Digital publishing technologies have not only broadened the access to scholarly material but have also changed the structure of the work of academic journal productions in terms of their operational infrastructure (Bwalya and Akakandelwa, 2021). The Open Journal Systems (OJS) is one of these innovations that have developed since a technical resource into an institutional knowledge dissemination instrument and research presence tool (Tabatadze, 2024). In addition to being a cheaper alternative to commercial publishing platforms, OJS allows universities to maintain editorial control, academic quality, and control the entire publishing cycle (Alagha *et al*., 2024). In situations such as the Global South, where limits to mass scholarly communication are still prevalent, OJS is a move toward more equal and sustainable forms of knowledge production. It is emphasised by Mwambari (2022) to make local journals more visible without using expensive Western infrastructures.

Nevertheless, the literature regarding the adoption of OJS is still very scarce, particularly in Africa. Borchard *et al*. (2015) explained this by the fact that the libraryled publishing and institutional repositories are new. As of 2023, the Public Knowledge Project lists that OJS installations are common in Asia (18,240), Latin America (6,178), and Europe (5,934), but Africa has experienced a relatively small uptake of 1330 installations (PKP, 2023). It means that the adoption rate is increasing but with a low even distribution, and research should focus on contextual issues and institutional preparedness in Africa. OJS has had an increased adoption in Africa but it still experiences significant challenges. In fact, institutions employing OJS are present

only in 22 out of 55 African countries with installations being concentrated in South Africa, Nigeria, and Kenya (PKP, 2023). This is reflective of the wider trend of institutional repository implementation and indicates the systemic problems, including inefficient technical skills, insufficient internet connectivity, and institutional predisposition (Aldirdiri, 2024). Efforts to improve adoption and implementation of OJS in Africa are increasing. UNESCO and the African Network of Scientific and Technological Institutions have supported OJS hosting for African journals, while the Journal Publishing Practices and Standards (JPPS) initiative by INASP and AJOL seeks to strengthen journal quality and visibility (Ndungu, 2020).

In Ghana, the Consortium of Academic and Research Libraries in Ghana (CARLIGH), with EIFL support, organised training workshops in 2021–2022 for over 240 stakeholders, enhancing capacity for journal hosting and management using OJS (EIFL, 2023). In 2024 a comparable project was done in Kenya through partnership between the Kenyan Libraries and Information Services Consortium (KLISC), the University of Nairobi and EIFL (EIFL, 2024). Although these initiatives are a step in the right direction, there is still lack of empirical studies that would have evaluated the performance of OJS in African universities regarding the quality of the system, its usability, service delivery and sustainability in the long run.

The literature review emphasises those general open access initiatives or institutional repositories (Asadi *et al*., 2019; Osei-Kofi and Boateng, 2021) instead of discussing the experiences and issues related to digital journal management systems such as OJS. This literature gap highlights the importance of conducting specific research that would investigate the adoption, system features, service support and implementation issues of OJS in the Ghanaian academic environment. These understandings are essential to the national policy of scholarly publishing, institutional adoption of systems and the increased local presence of African scholarship.

Study Setting

The universities that will be selected for this study include Kwame Nkrumah University of science and technology (KNUST), University of Cape Coast (UCC), University development studies (UDS), and the University of Ghana (UG) which have had a history of at least four (4) years using OJS and have shown great adoption, integration, and usage of the tool in managing and publishing of journals. The reason behind the choice of these universities is based on their years of utilisation, continuity of utilisation, and the scope of utilisation.

MATERIALS AND METHODS (METHODOLOGY)

Study Design/Approach

This paper adopted a quantitative research design, through a descriptive survey study to examine the adoption, usability and challenges regarding the use of the Open journal system (OJS) in selected Ghanaian universities. A survey design was selected because it is the most suitable design in gathering standardised information about a specific population with the aim of seeking the trends, attitudes and practices on managing scholarly journals. The analysis was done on four state-owned universities in Ghana that had institutional journals on the OJS site. The selection of these universities was done intentionally due to the fact that they were cited as having been using OJS to manage scholarly publications.

Study Population/Sampling

As illustrated in table 1, the intuitions selected recorded a total number of 30 journals on OJS. The participants were individuals directly involved in the management and operation of these OJS-hosted journals. Hence, as presented in table 1, the total

study population comprised 104 individuals, including: 91 editorial board members who were the core managers of the platforms, 9 Librarians assigned to journal or OJS support, and 4 heads of Information Technology (IT) Units. These individuals represent the core teams responsible for editorial, technical, and administrative tasks related to the use and maintenance of OJS in the respective institutions. Given the relatively manageable population size and the specialised nature of the target group, the study adopted a census sampling technique, involving all 104 individuals in the population as respondents.

Table 1: Population Distribution

University	Number of Journals	Editorial Team	Librarians	ICT staff	Total
KNUST	1	3	2	1	6
UCC	16	48	3	1	52
UDS	1	4	2	1	7
UG	12	36	2	1	39
TOTAL	30	**91**	**9**	4	104

Source: Field data (2024)

Data Collection Instrument

Questionnaires served as the data collection instrument. The questionnaire was developed based on key themes identified in the literature relative to the study objectives. The questionnaire was divided into five sections namely: Section A- Respondents Demographics, Section B – System Quality, Section C - Information Quality, Section D – Service Quality –and Section E – Challenges. The questionnaire included both closed-ended and Likert-scale items.

Questions on the Likert scale were self-rated on a five-point scale where 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree. To determine the validity and applicability of the study instrument, the questionnaire was pre-tested among editorial team members, IT personnel, and librarians who provide support in the management of OJS platforms in a university that shares nearly the same attributes as the universities that were selected for this study, namely the University of Education, Winneba. After the pre texting exercise, it was discovered from that some elements in the questionnaire were unclear to the respondents, and hence revised.

Data Collection Procedures

Prior to data collection, formal permission was obtained from the selected universities to conduct the study. The administration of questionnaires was carried out using a dual approach: self-administration and electronic distribution. For library and ICT staff, questionnaires were administered in person with the assistance of designated library staff at the respective institutions. In the case of journal editorial team members, email addresses were retrieved from their respective journal websites or platforms, and electronic copies of the questionnaire were sent to them via email.

Each questionnaire whether printed or electronic was accompanied by detailed information about the purpose of the study, a copy of the university's permission letter, the ethical clearance letter from the Ethics Committee for the Humanities at the University of Ghana, and a consent form to be signed by the respondents. Participants were encouraged to complete and return the questionnaires within one week of receipt. There was a reminder message sent

after the first one-week period to those who had not responded. In instances where hardcopy respondents had misplaced their questionnaire, replacements were provided. Overall, the whole process of data collection took six weeks, which included follow-ups and made sure that there were a sufficient number of responses completed to analyse.

Data Analysis

The data were collected using the questionnaires, which was analysed using the Statistical Package for the Social Sciences (SPSS) version 23.0. The descriptive and inferential statistical methods were used in the analysis and results were presented using the help of tables. Frequencies, percentages, means and standard deviations were used as descriptive statistics.

Ethical Considerations

The study received ethically approval from the Ethics Committee of the Humanities (ECH) at the University of Ghana with an approval number ECH 052/23-24. All the ethical guidelines were followed. The research was conducted with full understanding of the nature of the study by the participants who were clearly informed on the nature of the study and the participants were free to participate. They were guaranteed that they can drop out of the study without facing any consequences. All the participants remained anonymous and confidential during the research process.

RESULTS

Number of Completed Responses

A total of one hundred and four (104) questionnaires were distributed to the journal representatives, librarians and ICT staff in the four chosen universities as shown in Table 2. Among them eighty (80) questionnaires were returned and a response of 76.9 was achieved. Table 2 also describes the number of responses obtained per university.

Table 2: Number of Completed Responses

Respondents' categories	**Targeted respondents**	**Completed responses**
Editorial team	91	70
IT/MIS	4	4
Librarian	9	6
Institutional response		
KNUST	6	6
UCC	52	42
UDS	7	7
UG	39	25

Source: Field Survey, 2024

Respondents' Demographic Characteristics

The demographic data of the respondents was gathered to give an understanding of the background and quality of people who among the participants. Table 3 contains the details that were involved in the study. Although this information including gender, age, educational levels, was not actively analysed in comparison with the roles at the moment of the research, and with the study results, it provides valuable years of experience. background knowledge about the professional profiles of the respondents. Details shown in table 3 include gender, age, education qualifications, their present positions in journal management and years of experience.

Table 3: Respondents Demographics

Gender	Frequency	Percentage
Male	64	80
Female	16	20
Age		
<29yrs	4	5
30-39yrs	25	31.3
40-49 yrs	38	47.5
50-59 yrs	11	13.8
60 years and above	2	2.5
Educational Qualification		
Doctoral Degree	42	52.5
MPhil Degree	30	37.5
Masters' Degree	4	5.0
Bachelor's Degree	4	5.0
Role in Journal Management		
Editor in Chief/Chief Editor	18	22.5
Assistant Editor	24	30
Journal Administrator	28	35
Technical Support	4	5
Librarian	6	7.5
Years of Service		
Below 5 years	26	32.5
6 - 10 years	46	57.5
16 - 20 years	8	10

Source: Field Survey, 2024

System Quality of OJS: Perceptions from the Selected Universities

The first objective of the study was to determine the major system quality features of the OJS which are essential in efficient journal management in the sampled universities. The quality of the system in this regard is the technical performance, usability, reliability, and ease of interaction with the OJS platform. To achieve this, respondents were requested to provide answers to five statements about the system quality of OJS using a five-point Likert scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Mean and Standard deviation of every statement was calculated and compared among the four universities involved. Table 4 illustrates the results.

Table 4: Responses on System Quality of OJS Use

Measurement Statements	KNUST m (SD)	UCC m (SD)	UDS m (SD)	UG m (SD)
OJS system is easy to use.	4.333 (0.816)	4.143 (0.690)	4.024 (0.715)	3.960 (0.789)
The OJS system is useful for managing, customising, and publishing journals.	4.667 (0.516)	4.429 (0.534)	4.119 (0.739)	4.280 (0.541)
OJS system facilitates easy publication of journal issues.	4.167 (0.752)	4.571 (0.534)	4.143 (0.751)	4.120 (0.665)
The OJS system is easy to learn and navigate.	3.333 (1.211)	4.143 (0.690)	3.952 (0.854)	3.110 (0.725)
I can easily retrieve information I need from the OJS.	3.833 (0.408)	4.286 (0.488)	4.095 (0.759)	3.960 (0.789)

Source: Field Survey, 2024; Note; M=Mean; SD=Standard deviation

As shown in Table 4, the respondents in all four universities were generally in agreement or strongly agreed with the statements, which points to a positive attitude regarding the quality of the system of OJS. The mean scores were between 3.333 and 4.667 with standard deviations between 0.408 and 1.211 which are low and moderate variation in response.

KNUST had the highest mean score of the statement that the OJS system is useful in managing, customising and publishing journals (M = 4.667) and then UCC with an average of 4.571 in the statement that OJS system facilitates easy publication of journal issues. This is indicative that the respondent of these institutions had found OJS to be a very useful and effective journal management tool.

Nevertheless, the statement The OJS system is easy to learn and navigate was scored lower especially by KNUST (M = 3.333) and UG (M = 3.110) indicating that there are those users within these institutions who can have difficulties mastering the system. This underscores the possibility of having more training or technical assistance. The largest standard deviation (SD = 1.211) was registered at KNUST of the same statement and is yet another indication of varied opinions in the respondents regarding the ease of navigation through the system. Conversely, the lowest standard deviation was registered by the statement I can easily retrieve information I need in OJS in KNUST (SD =<|human|>On the other hand, the statement that I can easily retrieve information I need in the OJS has a lowest standard deviation at the KNUST (SD =).UCC (SD = 0.488) and 0.408), which means that there is more agreement about this quality of the system.

Comparatively, UCC was the highest in the overall mean perception of system quality (M = 4.314), then KNUST (M = 4.267), UDS (M = 4.067) and UG (M = 4.040). The respondents of UCC had the least variability (SD = 0.587) as well, which could indicate that there is a common and unified understanding of quality of the OJS systems among the respondents of this university. All in all, the findings indicate that OJS is widely regarded as a credible and helpful system to publish journals by the sampled institutions.

However, specific capacity-building interventions especially in user orientation and training could improve usability especially in institutions where the respondents indicated

that they found system navigation more challenging.

Information Quality Provided by OJS in Selected Universities in Ghana

The second objective of this study was to determine how good the information on the Open Journal Systems (OJS) platform was according to the perceptions of the users in the sampled public universities in Ghana. The information quality in this context is the relevance, accuracy, understandability and format of information availed by the system to aid the scholarly publishing processes. The respondents were requested to decide on the four statements concerned with the quality of information of OJS on a Likert scale of five points, where 1 (Strongly Disagree) to 5 (Strongly Agree). The four universities were compared in terms of the mean scores and standard deviations of each item. Table 5 displays the results.

Table 5: Responses on Information Quality of OJS Use

Statement	KNUST m (SD)	UCC m (SD)	UDS m (SD)	UG m (SD)
The information provided by the OJS system is relevant to my professional work.	4.167 (0.408)	4.143 (0.690)	4.071 (0.639)	4.000 (0.500)
The information I get from the OJS system is accurate.	4.167 (0.408)	4.000 (0.577)	4.024 (0.562)	4.120 (0.600)
It is easy to understand the information presented by the OJS system.	3.833 (0.752)	4.143 (0.378)	4.000 (0.662)	4.240 (0.597)
The information from the OJS is presented in a useful format.	3.833 (0.408)	4.143 (0.378)	4.095 (0.576)	3.960 (0.789)

Source: Field Survey, 2024; Note; M=Mean; SD=Standard deviation

The results in Table 5 indicate that the respondents tend to believe that the information contained by OJS is of good quality. The mean scores of every item in all institutions were higher than 3.8 with a big number being over 4.0 implying a high level of agreement with the statements made concerning the quality of information. The University of Ghana (UG) had the highest mean score to the statement of it being easy to understand the information presented by the OJS system (M = 4.240) indicating

that there is high degree of clarity in the presentation of information. Likewise, the respondents of KNUST were quite agreeable with the relevance of information available in the system and accuracy of information given, with a mean score of 4.167. At KNUST, the lowest mean scores were obtained in the domain of understandability and format of the information (both M = 3.833), which indicates that the issues of the user interface design or content organisation may be a matter of concern. The respondents of the UCC too demonstrated a little lower level of satisfaction with the accuracy of the information (M = 4.000), which is also a signal of a rather positive attitude. The level of variation in the responses was low to moderate and the standard deviations were between 0.378 and 0.789. UCC had the lowest standard deviation on the statements It is easy to understand the information presented by the OJS system and the information from the OJS is presented in a useful format (both SD= 0.378) and hence a high degree of agreement among the respondents. On the other hand, the

largest difference was at UG when it comes to the format of the information (SD = 0.789), implying that there were more different opinions on this topic.

An overall comparison of the four institutions indicates that UG scored highest in terms of the overall mean of information quality (M = 4.080), UCC (M = 4.107), UDS (M = 4.048), and KNUST (M = 4.000). Though the discrepancies in the perception are not significant, they give valuable information about localised user experiences and expectations. Also, the overall standard deviation (SD = 0.621) of UG was highest, indicating more variation in perception of the user. On the contrary, the overall standard deviation (SD = 0.506) of UCC was the lowest, which means that the responses and satisfaction with the quality of the information provided in OJS were more uniform. These results indicate that there is a high level of satisfaction of the users with the quality of information provided by OJS in the chosen Ghanaian universities. However, variations in the means scores and standard deviations indicate the possibility of specific future enhancements, especially in improving the levels of clarity and format in some institutional settings.

Perceptions on Service Quality of OJS in Selected Universities in Ghana

The third objective of this research was to evaluate the quality of services provided to the users by the Open Journal Systems (OJS) in the management of academic journals in the selected public universities in Ghana. In this regard, service quality can be seen as the effectiveness of support services with regards to the utilisation of OJS, which are their reliability, their personal approach towards users, their usefulness of materials and training they undergo. The respondents were requested to evaluate their level of agreement with four statements about the service quality of OJS using a five-point Likert scale and 1 (Strongly Disagree) to 5 (Strongly Agree). The means and the standard deviations of the items were computed and contrasted in the four universities. Table 6 summarises its results.

Table 6 shows that the overall perceptions of the quality of the service of OJS are generally positive in all four universities with a mean of between 2.667 and 4.000. The majority of answers had a point of over 3.0, which means that the point of moderate to strong agreement was achieved. Nevertheless, certain differences were observed in the perception of specific aspects of the service. KNUST has the best mean score in the statement that the support services available in the use of OJS are dependable (M = 4.000) and this indicates a high level of confidence of reliability in the support services provided. Another statement, on which UDS respondents showed a high level of agreement, is the statement The content on OJS gives me the knowledge necessary to perform my editorial tasks (M = 3.857), which implies that the resources available on it can be helpful.

Table 6: Responses on Service Quality of OJS Use

Statement	KNUST m (SD)	UCC m (SD)	UDS m (SD)	UG m (SD)
The support services offered in the use of OJS are dependable.	4.000 (0.632)	3.714 (0.488)	3.786 (0.812)	3.440 (1.193)
The support services to use OJS give me individual attention.	3.333 (0.516)	3.286 (0.755)	3.429 (0.830)	2.680 (1.029)
The content on OJS provides me with the knowledge to accomplish my editorial duties.	3.833 (0.408)	4.000 (0.816)	3.857 (0.813)	3.600 (0.957)

I was trained to use OJS when I started working with my institution-affiliated journal.	2.667 (1.032)	3.429 (1.397)	3.429 (1.364)	3.680 (1.069)

Source: Field Survey, 2024; Note; M=Mean; SD=Standard deviation

On the other hand, the least mean was at KNUST on the statement that I was trained to use OJS when I first began working with my institution-affiliated journal (M = 2.667) which is indicative of a perceived absence of orientation. Another weak score in UG was the statement The support services to use OJS provide me with individual attention (M = 2.680), which is rather an expression of dissatisfaction with individual support.

Regarding the variability in the responses, the maximum standard deviation was obtained at UCC in the statement on training (SD = 1.397), then the SD of UG (SD = 1.069). This implies that there are varied experiences amongst the respondents as far as the training offered towards OJS is concerned. KNUST had the lowest standard deviation in the statement of content usefulness (SD = 0.408), and UCC in the dependability of support services (SD = 0.488) meaning that there was greater consistency in these domains.

The overall mean score of service quality at UDS was the highest and closely followed by UCC (M = 3.607), KNUST (M = 3.458) and UG (M = 3.350). These findings indicate that UDS was most favorable on the perception of the quality of its service to OJS, whereas UG was least favorable. The mean differences between institutions were however not very different hence sharing a general positive perception. Regarding variation, UG had the greatest total SD (SG = 1.062), which indicated a more varied user experience. The lowest standard deviation and consequently homogeneous responses was recorded at KNUST (SD =0.647). Their differences can be explained by the parameter of institutional support, staff training, and familiarity with the platform.

In most cases, the results indicate that the overall perception of the service quality of OJS is mostly positive throughout the institutions, however, there are specific areas especially training and personalised support, where the service can be improved to improve the users experience and satisfaction.

Challenges with Using OJS in Selected Universities in Ghana

The final objective of this study was to determine the pitfalls when utilising the Open Journal Systems (OJS) in some of the public universities in Ghana. Respondents were requested to provide their response based on their agreement to seven statements which described some of the usual problems encountered in the use of OJS. These were issues of performance of the system, access to the IT infrastructure, sufficiency of training, IT competency of the users and access to technical support. The answers were received in the five-point Likert scale format, with strongly disagree (1) as one end and strongly agree (5) as the other end. Standard deviations and mean scores of each item were computed and measured against the four institutions that were involved; Kwame Nkrumah University of science and technology (KNUST), University of Cape Coast (UCC), University of development studies (UDS) and University of Ghana (UG). Table 7 provides the results.

Table 7: Challenges Encountered in Using OJS

Statement	KNUST M(SD)	UCC M(SD)	UDS M(SD)	UG M(SD)
OJS experiences regular system downtime or failure.	2.83 (1.17)	2.71 (1.11)	2.52 (0.92)	1.88 (0.73)
OJS is usually slow.	2.50 (1.05)	2.00 (0.58)	2.12 (0.55)	2.16 (0.85)
I do not have modern IT equipment to use OJS.	2.00 (1.26)	1.86 (1.07)	2.05 (0.99)	1.76 (1.13)
I received insufficient training on the use of the OJS.	2.50 (0.84)	2.57 (1.13)	2.36 (0.98)	2.40 (1.04)
I have inadequate IT skills and this hinders my efficient use of OJS.	1.50 (0.84)	2.71 (1.70)	2.24 (1.09)	1.76 (0.83)
Most editorial members have insufficient IT skills, hindering collaborative use of OJS.	2.00 (1.10)	2.14 (1.22)	2.45 (1.13)	2.44 (1.42)
There is insufficient qualified IT staff to provide support.	1.67 (0.82)	2.00 (1.15)	1.95 (0.88)	2.08 (1.08)

Source: Field Survey, 2024; Note; M=Mean; SD=Standard deviation

Data presented in Table 7 reveal that generally, respondents in all the four universities were not in agreement or strongly opposed with the presented challenges. This indicates that there were no serious challenges to users when using OJS. The average scores were between 1.50 and 2.83 with majority of the scores being below the average of 3.00 giving an indication of low average reported challenges. The standard deviation was between 0.55 and 1.70 which implies that there was different levels of agreement amongst the respondents.

The biggest challenge was cited at KNUST where the average score of the statement that OJS has frequent system downtime or failure was at 2.83. The same issue was also reported by UCC with a score of 2.71 as a relatively high score. These results indicate that system reliability and availability at KNUST and UCC were the most problematic to users. Conversely, the least mean score was obtained at KNUST in relation to the statement "I have insufficient IT skills and this is a barrier in my effective use of OJS with a mean score of 1.50 meaning that majority of the respondents were confident in their usage of the system. The same statement was also reported with a similar low score of 1.76 by the respondents at UG.

UCC had the highest standard deviation (1.70) of the item on inadequate IT skills, which implies that there was a considerable range in perceptions of respondents. This means that there were users at UCC who experienced difficulties with IT skills whereas others did not. In UG, the degree of variation in the response to the statement about the IT skills of editorial members was also high, and the standard deviation of 1.42 showed that there are mixed experiences on that matter. Conversely, the lowest standard deviation is at UDS regarding the statement "OJS is normally slow" with the value being 0.55 indicating a more homogeneous attitude towards that particular challenge.

When the overall means are compared a comparative analysis reveals that UG had the lowest mean level of challenge in all statements with a mean of 2.00. This was then topped by UDS (2.23), KNUST (2.29), and UCC (2.43) meaning that UG users had the least challenges, whereas UCC users had the greatest. Nonetheless, there was not much difference between the universities implying that overall OJS was fairly user-friendly across the establishments. Regarding variation, UG, as overall standard deviation (1.00) was the highest, meaning that the range of user experience was greater, whereas in UDS, the overall standard deviation (0.91) was the lowest, which implied that perceptions were more consistent among the respondents.

Therefore, although users of the identified universities did not mention any major impediments to the usage of OJS, certain aspects still need to be addressed. These are the system reliability, pace of performance, availability of latest IT equipment and constant training and technical support. These issues will be improved by responding to them and assist in the overall objective of increasing the effectiveness and utility of the usage and support of the OJS in Ghanaian universities.

DISCUSSION

The results of this research show that the users of the Online Journal Systems (OJS) in the chosen Ghanaian universities have a fairly positive attitude toward the quality of this system. The average scores of the system quality characteristics were between 3.900 and 4.237 that was above the mid-point of the scale, hence presenting a positive evaluation. The standard deviations (between 0.6607 and 0.8359) are also relatively small, which is the additional indicator of high level of consistency and agreement among the respondents.

The system was user-friendly and convenient as perceived by users and notes that in most cases, users did not need much effort or technical know-how to use the system. Such results are consistent with the past research, including that by Alhoori *et al*. (2021), who stressed that properly developed academic publishing platforms not only improve user satisfaction and productivity but also facilitate work organisation and streamlined workflows.

Although the survey was generally positive, it was noted that there was a question of the learnability and navigability of some features of the OJS platform. This can be explained by the inability to familiarise with it, lack of educational resources, or the technical complexity of certain functions. The same has been pointed out by Yang and Li (2020), who stated that open-source platforms that are in widespread use might be difficult to use without appropriate user onboarding and training.

Thus, the training interventions and the user documentation should also be effective in order to enhance the process of onboarding and the overall user experience. This paper also confirms that OJS offers quality information, and its users expressed that the system has reliable, accurate, and relevant information of high quality that passes the scholarly standards test. These results are in line with those provided by Morrison (2018), who highlighted the potential of OJS to maintain a high editorial and content quality, especially with the help of strong editorial processes and peer review systems. The credibility of the content of the platform increases its usefulness as an academic communication tool and its approval by institutional stakeholders.

Remarkably, the research proves that there is a distinct correlation between the perceived quality of the system and the quality of the scholarly communication. Users valued how OJS helped them to run journal business, smooth editorial processes and disseminate knowledge. This confirms previous reports

by Edgar and Willinsky (2010) who have found OJS to be an important instrument in enhancing transparency, efficiency and access in scholarly publishing. The use of the platform in Ghanaian universities not only helps to democratise knowledge but also promotes academic publishing in local countries.

However, OJS implementation depends on addressing the challenges that are persistent to ensure that the implementation is sustainable. Problems like troubles in navigation of the system, poor training, and poor technical support were reported by the respondents. Raju and Adam (2021) also identified similar barriers and reported that the institutional investment in user capacity building and the technical infrastructure is the determinant of the success of digital scholarly platforms in African institutions. Some technical and infrastructural issues including poor internet connectivity, old hardware and poor staffing in IT infrastructure were also noticed. These obstacles will result in the lack of user interaction and the editorial performance. This is in line with the findings of Owusu-Acheaw and Larson (2022), who highlighted the importance of having a solid infrastructure and enabling mechanisms that would facilitate the successful operations of open access in sub-Saharan Africa.

The need to correct these limitations in Ghana by ensuring that institutions invest in the technical infrastructure on a long-term basis, undergo continuous training and adaptive user support is advisable to unlock the full potential of OJS in Ghana. Maximising the benefits of open-source publishing platforms is only possible with the help of institutional commitment and capacity development as implied by Chan and Costa (2019). Increased system performance and competencies of users will not only increase scholarly output but also increase the global presence and influence of Ghanaian research.

Contributions to Knowledge

This paper contributes a lot to the online journal system (OJS) adoption and use in Ghanaian Universities. Since there is scarcity of research conducted on OJS and open-source scholarly publishing in Africa and Ghana especially, the present study provides new information on the opportunities as well as the challenges posed by these technologies with regards to scholarly communication.

It is also worth noting that this study used an explanatory sequential mixed-methodology, which is differentiated by most of the available literature, which tends to utilise only the quantitative or survey-based research methods. The study provides a subtle and comprehensive picture of the implementation and user experience of OJS in higher education institutions by integrating quantitative and qualitative data.

The results have given a viable roadmap towards enhancing the usage and effectiveness of OJS and other such sites in Ghana and other similar settings. The analysis shows that the main strengths of the study are the functionalities of the system, and the quality of information, the weaknesses that can be improved include the technical support, user training, and system accessibility. By so doing, it also gives a balanced perspective of both the advantages and the disadvantage of OJS as a digital scholarly communication method.

More to the point, the research has valuable policy and practice implications. These comprise the necessity of institutions investing in capacity-building projects, to create localised best practices in managing OJS, and create networks of joint OJS users and support specialists.

This would not only improve the performance of the system and user satisfaction, but also contribute to the overall purposes of open access, better journal quality, and increased research visibility at both regional and global levels.

CONCLUSION

This paper provides a detailed discussion of the application of Online Journal System (OJS) at Ghanaian higher institutions of learning with a focus on the opportunities and challenges that come with the use of this medium. The results shed light on the fact that despite the fact that OJS could greatly improve scholarly communication, the gaps in the area of its acceptance and efficient implementation remain substantial. These lapses are dangerous to the sustainability and development of research in Ghana. The research shows that online journals such as OJS are transformative in academia in terms of communication. They are not only useful in the dissemination of academic material but also in the collaboration and coordination of the stakeholders in the research ecosystem. Although these advantages exist, the study also outlines current issues associated with the functionality of the system, support of the services, and quality of information one can obtain using the platform.

One of the major obstacles to successful use of OJS is lack of proper training to the users which is aggravated by lack of proper infrastructures like fast internet connection especially during the peak hours. All these limitations negatively affect the quality of academic publishing assisted by the system and restrict its overall efficacy. The potential of OJS should be fully exploited by providing the users with the knowledge and the technical skills needed. The training gaps and enhancement of digital infrastructure are the important actions in order to improve the system performance and user experience. Besides, the paper emphasises the role of institutional support, collaboration between stakeholders, and specific reforms that would enhance the system of scholarly communication. Ghanaian universities will be capable of building a more inclusive and stronger platform of research and knowledge dissemination by actively responding to these challenges. The appropriate use of technological means like OJS will not only enhance the quality and presentation of academic productions but will also help the universities to become participants in the international academic discussion.

RECOMMENDATIONS/AREAS FOR FURTHER RESEARCH

In order to enhance the implementation and successful utilisation of Online Journal Systems (OJS) within the Ghanaian universities, this research proposes a multidimensional strategy, which focuses on the needs of the users, institutional back-up, and the active improvement of the system. The user experience is one of the aspects that should be considered. The administrators and system developers should work on the interface to ensure that it is more intuitive and easier to use. This incorporates the provision of detailed documentation and guidelines, the maintenance of an open responsive communication channel with the users, strong information security, and functionality of performance tracking to assist in informed decision-making. Individualised support systems are necessary in enhancing user interaction as well. They should also easily access personalised assistance and immediate help with technical support to make it easier to navigate the system. User involvement and satisfaction can be further enhanced by offering incentives to actively participate in the system and giving a chance to explore new and advanced features in the system.

Moreover, awareness and training programs have to be increased. Universities ought to spend on frequent workshops, seminars, tutorials, and awareness programs that are able to provide the users with the skills that they need to effectively utilise OJS. Additional elements that can support system familiarity include intuitive design and user-friendly tools especially when it comes to new users or those who have low digital skills. It is also necessary to continuously enhance the system by providing the technical support and maintenance. The issues should be resolved quickly, the new features that may be used to facilitate scholarly collaboration should be developed proactively, and the system should be tested and optimised on a regular basis to ensure that OJS platforms operate smoothly and reliably.

These will not only improve the performance of the system, but the trust and sustainability of the system in the long term of the user. In future studies, the researchers should widen their sample to cover the case of private universities in Ghana because this would offer a holistic picture on the adoption of OJS within the sphere of higher education. The study of the roles of librarians in facilitating the implementation and management of OJS would also provide useful information on the organisational support systems.

Furthermore, the comparative studies of the public and the private institutions might reveal the systematic variations in the OJS usage and efficiency. This global view may be attained with the help of a systematic review that will compare the trends of adoption and utilisation of OJS in developed and developing nations. These research works would improve the credibility, validity, and applicability of results, which would eventually lead to establishment of effective strategies of streamlining scholarly communication via OJS.

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