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Abstract

This study assessed the extent to which scholars in the field of Psychology are aware and utilise the PsyarXiv preprint server for the communication of research materials before eventual publication. The study was guided by three specific research questions. The descriptive survey research design was employed by the researcher. Considering the manageable number of participants in the population, a census was conducted. Data were collected using a questionnaire designed by the researcher and titled "Awareness and Utilisation of PsyarXiv Questionnaire (AUPQ). The instrument was tested for reliability using Cronbach alpha and the test yielded acceptable values for an internally consistent instrument. Mean, standard deviation and simple linear regression analysis were used in the analysis of data. Findings showed that there was generally a low extent in the level of awareness and utilisation of PsyarXiv preprint server amongst psychology scholars in universities. The study also found a weak positive and significant relationship between staff awareness and the utilisation of PsyarXiv for the dissemination of research preprints. A 10% increase in staff level of awareness was responsible for a 3.31% increase in staff utilisation of the PsyarXiv preprint server. Based on these findings and conclusions, practical and research implications were discussed. It was suggested that future scholars expand the scope of their studies for a more representative generalisation.

Keyword: Awareness, Preprints, PsyarXiv, Psychology, Research dissemination, Scholars, Utilisation,

Introduction

Research is a very important activity that involves a systematic procedure to collect and analyse information for a better understanding of man's environment and problem-solving. Effective research addresses a real-life problem, does not challenge existing knowledge, uses proper instrumentation, provides clear evidence of data using proper storage and retrieval systems, provides mechanisms for sharing and distribution of results, has a zero per cent plagiarism rate, is a product of a field survey, and, where applicable, uses appropriate statistical techniques (Bassey & Owan, 2018, 2019; Odigwe et al., 2020). The need for the immediate

dissemination of information for problem-solving is an important scholarly and scientific practice. For this reason, research papers should be made available and promptly for those that may find them useful or relevant (Owan & Bassey, 2019). This can be achieved through the visibility of scholarly materials to readers and researchers trying to address similar issues. Since peer-reviewed journals have a specific time and duration for publishing articles, drafted papers undergo serious reviews and critique (to determine the fate of the paper) which may usually end in either acceptance, revisions or rejection (Bassey & Owan, 2019). Some reviewers take some time before giving feedback to the researcher(s) about the draft (Bourne et al., 2017) resulting in a delay in the dissemination of the information enacted in the article. This is because a majority of the peer-reviewed journals would want to receive the opinions of the reviewers as pertain to the articles; thus, requiring some time.

Some journals publish monthly, quarterly, tri-annually, bi-annually and annually as the case may be. Some may even take longer to complete peer review and publish papers, which can be a frustrating experience to authors in cases where articles are eventually rejected after a long wait. In which case, the results of studies are delayed and may no longer make the needed impact as they ought to at the initial state if competing or similar projects are eventually published before them (Owan & Owan, 2021). In trying to address these problems, preprint repositories were developed as an innovation. Preprints have been defined by many scholars (Chung, 2020; Kirkham et al., 2020; da Silva, 2017). In the view of Chung (2020), preprints are early drafts of research papers that are yet to undergo peer-review but are typically published on publicly available websites by researchers either before or during peer review. To da Silva (2017), a preprint is a version of a manuscript (scientific article, project summary, or other) that has not yet been peer-reviewed but may contain material that is close to the final published version if corrected and submitted to an academic journal for peer review. Furthermore, Kirkham et al (2020) documented that a preprint is a non-peer-reviewed scientific

manuscript that writers can submit to a public preprint website and make available almost instantly without going through the traditional peer-review process.

From the view of these scholars, it can be inferred that uploading an article on a preprint server would enhance visibility and citation which is sometimes used in the evaluation of research(ers). Some of the preprint repositories include the AAS Open Research, AgriRXiv, AfricAriv, ChemRxiv, MedRiArXiv, MetaArXiv, Research Square, PsyArXiv, and the list continues. Some of the servers are multidisciplinary focused (e.g., AAS Open Research, MetaArXiv) while others focus either on a region (ChinaXiv and AfricArXiv) or on a specific discipline (e.g., MedRiArXiv, AgriRXiv, PsyArXiv etc). Studies have shown that uploaded papers in preprint servers received more citations compared to those only published in peer reviewed journals (Feldman et al., 2018; Serghiou & Ioannidis, 2018). In other words, the chances of disseminating information/knowledge via the articles are higher in those in preprint compared to those only in peer-reviewed journals. This might be so because, if the preprint paper is later published in a peer-reviewed journal, it would then be found in two servers hence gaining some level of popularity.

In time past, literature search was a very serious task since it requires a visit to libraries/documentaries (Owan et al., 2021). It was also difficult to access new research papers at distance especially those from other continents due to the poor distribution of the papers across states, countries and continents. Researchers were confined to the materials (mostly books) in only accessible libraries. This was almost resolved when the system of searching the literature improved due to an advancement in the digital epoch, where a majority of the articles became published by online journals. Even at that, some level of barriers still exists such that the majority of the peer reviewed journals takes quality time before publishing the findings of a study.

Today, preprint repositories appear to curtail that long time barrier; as a paper can now be uploaded within a week of completion before a submission is made to a journal or while undergoing peer review. As earlier stated, many preprint servers exist, however, the interest of this study is on the awareness and utilization of the Psychology Archive (hereafter, PsyArXiv) among scholars in the field of psychology.

PsyArXiv is a free preprint repository service for psychological sciences developed in 2016 by the Society for the Improvement of Psychological Science and Powered by the Open Science Framework (OSF) Preprints. This server was index by Google scholar in 2017. The essence of this repository server was to aid the easy dissemination of research in the discipline of psychology; thus, it focuses on the dissemination of psychology-related research papers. An analysis of the preprints indexed in the PsyArXiv indicated that more than 16,000 manuscripts have been uploaded worldwide to the pre-print server. Despite this huge number of posts globally, only about 18 preprint papers have been posted by Nigerian scholars to the PsyArXiv platform, representing a very low rate. This short analysis justifies the research of Owan et al. (2021) which documented among other findings that the use of pre-prints servers by African universities scholars was generally low, even though their intention to use was high.

The need to understand why there are few Nigerian preprints on PsyArXiv in the midst of so many gave rise to this study. The aim is to determine the level of awareness and utilization of PsyArxiv by psychology scholars in universities. This study is important because the awareness and utilization of PsyArXiv may help in promoting the ways researches in the field of psychology are disseminated, especially those published in offline Nigerian-based journals. Generally, researchers who are knowledgeable on scientific social networking sites gain new competence which also contributes to the productivity of their research (Corvello et al., 2020). In this regard, Odiachi and Obinyan (2020) observed that all the respondents in their study were aware of the existence of open access resources. The researchers also open that majority

of the participants became aware of open access resources through conversation with library personnel.

Similarly, Yebowaah and Plockey (2017) reported a high and low level of awareness and utilization of e-resources respectively. This was also similar to the findings of the study by Chiarelli et al., (2019) which added that participants were aware of preprints' growing popularity, and their most enticing characteristic was their early and rapid distribution. Another study revealed also showed utilization of open access publication by lecturers (Bozimo & Obuh, 2012). It was also revealed in the study of Bozimo and Obuh that the use of open access publication is explained by its awareness. However, the level of awareness of some researchers about open access is very low as Munikwa (2018) reported that not all researchers are of the open-access resources at their disposal and that some who are aware lacked the willingness of utilizing it. Furthermore, Msagati (2014) discovered that the level at which members of academic staff uses electronic journals in search for literature was low acknowledging Google search engine as their major means for literature exploration.

From the review, studies have documented that awareness and utilization yields productivity. There is a disparity in the findings of the studies cited. Some noting a high level of awareness and utilization of electronic sources while some reported a low extent. One of the cited studies perceived awareness without low utilization. Although researches have been conducted on preprints, the review revealed that there is a paucity of studies in the literature (particularly in the Nigerian context) that were aimed at acknowledging the awareness or/and utilization of preprints repositories. Specifically, studies have been conducted on some preprint servers. An example of such is the study of Fu and Hughey (2019) which was focused on BiorXiv. To the best of the researchers' knowledge, no study emphasized the PsyArXiv as a preprint site for Psychologists. Using the PsyAxiv search engine, with "Nigeria" as the keyword, it was discovered that only 18 Nigerian studies in more than 16,220 preprints have

been uploaded to the site. This indicates a low extent of utilisation of the preprint server at a time where the use of preprints has become the gold standard. This finding is important because it may enable researchers in the field of Psychology and beyond to understand the global trends in research dissemination practices through the use of preprints. The study may also improve the level of awareness and utilisation of PsyArXiv by Nigerians for global competitiveness. Based on this background, the present study was designed to assess:

i. the level of awareness of PsyArXiv pre-print server among psychology scholars in universities;

ii. the extent of the utilisation of PsyArXiv pre-print server by psychology scholars in universities;

iii. the relationship between the awareness and utilisation of PsyArXiv pre-print server by psychology scholars in universities

Research questions

The following research questions were posed to offer direction to the study:

i. What is the level of awareness of PsyArXiv pre-print server among psychology scholars in universities?

ii. To what extent is PsyArXiv as a pre-print server utilised by psychology scholars in universities?

iii. What is the relationship that exists between the awareness and utilisation of PsyArXiv pre-print server by psychology scholars in universities?

Methodology

This study was designed within the quantitative research method framework. The descriptive survey research design to investigate psychology scholars' level of awareness and use of PsyaXiv for the dissemination of their research preprints before submission to journals

or while awaiting review results. The population of this study includes a total number of 136 Psychology scholars distributed across all the public and private universities in Cross River State, Nigeria. The census approach was adopted by the researcher to study the entire population; hence, there was no sampling. The entire population was studied because the number of participants was small and manageable to the researcher. Data for this study were collected using a questionnaire that was designed by the researcher and tagged: "Awareness and Utilisation of PsyarXiv Questionnaire (AUPQ)." This questionnaire was structured into sections – A and B. Section A was dedicated to collecting personal information of respondents such as age, gender, and educational qualification; while section B comprised two domains. Both domains were composed of 8 items assessing Awareness and Utilisation of PsyarXiv respectively. The 4-point Likert scale, with response options ranging from Strongly Agree to Strongly Disagree, was used in both domains. The instrument was validated by five experts (three in the field of Educational Technology and two psychometrists) for clarity, relevance and adequacy. A trial test was carried out using 30 scholars in the field of Sociology of Education. These respondents were chosen because they share the same department as the population of this study. The Cronbach reliability method was employed in determining the internal consistency of the instrument. Reliability coefficients of .87 and .91 for awareness and utilisation respectively, confirmed that the instrument was suitable for data collection. Data were collected from the participants through the physical administration of the questionnaire copies. Collected data were analysed using descriptive statistics such as mean, standard deviation and variance. The result of the analysis is presented in the following section.

Results

Research question 1

What is the level of awareness of PsyArXiv pre-print server among psychology scholars in universities? The results of the analysis presented in Table 1 revealed generally that there is a low level of awareness of PsyarXiv as a pre-server among scholars in the field of psychology. Specifically, a high extent was recorded in respondents' awareness of the existence of a pre-print server called PsyarXiv and awareness that it can be useful in promoting the visibility of research materials. On the contrary, low levels were recorded in staff awareness that PsyarXiv can be used to upload articles on the internet before they are published; that using PsyarXiv to publish pre-prints does not reduce the chances of articles being published in journals; that posting pre-prints to PsyarXiv does not decrease the originality works; that it is ethical to use PsyarXiv to post pre-prints before articles are published; that publishing in PsyarXiv does not give room for other people to hijack works; that using PsyarXiv increases the impact of research through citations.

Table 1: Mean rating and standard deviation of the level of awareness of PsyarXiv as a pre-print server

S/N	Items	Mean	SD	Remark
1	Awareness of a pre-print server called PsyarXiv	2.90	1.01	High
2	Awareness that PsyarXiv can be used to upload articles on the internet before they are published	2.38	1.14	Low
3	Awareness that using PsyarXiv to publish pre-prints does not reduce the chances of articles being published in journals	2.49	1.17	Low
4	Awareness that posting pre-prints to PsyarXiv does not decrease the originality works	2.36	1.13	Low
5	Awareness that PsyarXiv is useful in promoting the visibility of research materials	2.67	1.14	High
6	Awareness that it is ethical to use PsyarXiv to post pre-prints before articles are published	2.31	1.13	Low
7	Awareness that publishing in PsyarXiv does not give room for other people to hijack works	2.32	1.11	Low
8	Awareness that using PsyarXiv increases the impact of research through citations	2.41	1.13	Low
	Average	2.48	1.12	Low

Research question 2

To what extent is PsyArXiv as a pre-print server utilised by psychology scholars in universities? This research question was answered using the results of the mean and standard deviation of the responses to the various items assessing scholars' utilisation of PsyarXiv for the posting of pre-prints. The result of the analysis, presented in Table 5, revealed on a general note that there is a low extent in the utilisation of PsyarXiv among psychology scholars in universities in Cross River State. In a specific sense, the result revealed that a low extent in the use of PsyarXiv across all the items.

Table 2: Extent of psychology scholars' utilisation of PsyarXiv for the posting of pre-prints

S/N	Items	Mean	SD	Remark
1	I have never posted to PsyarXiv	1.61	0.50	Low
2	I make comments on other scholars' articles posted to PsyarXiv	1.53	0.50	Low
3	I use PsyarXiv very often in making my preprints visible	1.50	0.50	Low
4	I do not own a PsyarXiv account	1.52	0.50	Low
5	I only use PsyarXiv for searching for literature related to my research	1.51	0.50	Low
6	I do not cite sources posted on PsyarXiv	1.54	0.50	Low
7	I revise my posted works on PsyarXiv whenever there is an update	1.57	0.50	Low
8	I use PsyarXiv to share my preprints with other scholars for suggestions	1.54	0.50	Low
	Average	1.54	0.50	Low

Research question 3

What is the relationship that exists between the awareness and utilisation of PsyArXiv pre-print server by psychology scholars in universities? The relationship between awareness and utilisation of PsyArxiv for the sharing of pre-prints was examined using simple linear regression analysis. The results presented in Table 3 indicates that there is a weak positive relationship (R = .331) between psychology scholars' awareness and their utilisation of PsyarXiv for the sharing of pre-prints. The coefficient of determination indicates that 10.3% of the variance in the utilisation of PsyarXiv may be attributed to staff awareness of the pre-print

server; with the remaining 89.7% due to other factors not included in the model. The analysis of variance of the regression showed that there is a significant influence of awareness on staff utilisation of PsyarXiv pre-print server, $F_{(1, 134)} = 15.505$, $p < .05$). This implies that the observed R and adjusted R square values were not due to chance. The standardised regression weight (β) showed that a 10 per cent increase level of awareness will lead to a 3.31% increase in the utilisation of PsyarXiv in the dissemination of pre-print materials by scholars in the field of Psychology.

Table 3: Simple linear regression result summary of the relationship between awareness and utilisation of PsyarXiv among psychology scholars in universities

R	R Sq.	Adj. R Sq.	SE		
.331[a]	0.11	0.103	2.707		
Model	SS	Df	MS	F	Sig.
Regression	120.96	1	120.96	16.505	.000[b]
Residual	982.033	134	7.329		
Total	1102.993	135			
B = .293;	β = .331	t = 4.063, p < .05			

Discussion and Conclusion

This study documents that university scholars in the field of psychology are not aware of the benefits of PsyarXiv in the posting of pre-prints. The low level of awareness is not surprising and may be attributed to the poor perceptions of scholars about pre-prints. The reasons for this is not farfetched; many scholars are not aware that PsyarXiv can be used to upload articles on the internet before they are published. Many also think that using PsyarXiv to publish pre-prints reduces the chances of articles being published in journals. Many scholars are of the perception that that posting pre-prints to PsyarXiv decreases the originality works while others think that it is unethical to use PsyarXiv to post pre-prints before articles are published. Furthermore, the majority of the scholars in the field of psychology also thought

that publishing in PsyarXiv gives room for other people to hijack their works; while others do not think that using PsyarXiv will increase the impact of their research through early citations. These reasons are possible indications of the low level of awareness recorded in this study. Even when other scholars (such as Chung, 2020; Kirkham et al., 2020; da Silva, 2017) have explained the benefits of pre-prints servers generally, many scholars in the field of psychology are yet to be fully aware.

This evidence supports the findings of Corvello and his colleagues that researchers who are knowledgeable on the scientific social networking sites gain new competence which also contributes to the productivity of their research. The result of this study is in disagreement with that of Odiachi and Obinyan (2020) which showed, on the contrary, that all the respondents in their study were aware of the existence of open access resources. The researchers also open that majority of the participants became aware of open access resources through conversation with library personnel. Another study showed also that the level of awareness of some researchers about open access is very low (Munikwa, 2018); adding that not all researchers are of the open-access resources at their disposal and that some who are aware lacked the willingness of utilizing it. However, the study's finding is dissimilar to that of Chiarelli et al., (2019) rather held that participants were aware of preprints' growing popularity, and their most enticing characteristic was their early and rapid distribution. The disputes in the results of this and the cited studies should be taken lightly because this study's focus was on PsyarXiv while the cited studies' focus was on open access resources which include other materials and platforms like journals, institutional database and so on.

The second aspect of this study showed that there is a low extent in the way psychology scholars utilise PsyarXiv in the sharing of pre-prints. This finding was highly anticipated because the majority of the scholars indicated that they have never posted any pre-print material to PsyarXiv; others refuted having made comments on other scholars' articles posted to

PsyarXiv. Only a few respondents make use of the PsyarXiv very often to make their preprints visible, while others do not even own a PsyarXiv account. The majority of the respondents do not use PsyarXiv to search for literature contents related to their research projects while some indicated that they do not cite sources posted on PsyarXiv. Only a few respondents revise posted works on PsyarXiv whenever there is an update, while the majority do not use PsyarXiv to share preprints with other scholars for suggestions. These are some of the reasons why there was a generally low level in the deployment of PsyarXiv for pre-prints posting. This finding supports the result of Yebowaah and Plockey (2017) which reported a low level of utilization of e-resources. Another study also revealed a low extent of utilization of open access publication by lecturers (Bozimo & Obuh, 2012). Furthermore, Msagati (2014) discovered also that the level at which members of academic staff uses electronic journals in search for literature was low acknowledging Google search engine as their major means for literature exploration.

The third aspect of this study found a weak, positive and significant relationship between scholars' awareness and their utilisation of PsyarXiv in the sharing of pre-prints. The implication of this finding that increased use of PsyarXiv may be attributed (to some extent) to increased awareness among psychology scholars. This finding is quite glaring since a person cannot make use of what he/she does not know. This study has been able to reveal that 10.3% of staff utilisation of PsyarXiv is due to their awareness about it. Other factors (beyond the scope of this study) are accountable for the remaining 89.7% of the variance in staff use of PsyarXiv and may also be responsible for the low extent of utilisation of PsyarXiv pre-print servers. These other factors, according to previous research include poor electricity, inadequate internet bundle, low level of ICT skills, poor perception of ICT, amongst others (Owan et al., 2021). This finding agrees with the result of Bozimo and Obuh (2012) which also revealed that the use of open access publication is explained by its awareness.

Limitations, Implications and suggestion for further research

This study's major limitation is the narrow focus on scholars and the small geographical scope covered. This implies that conclusions drawn in this study may not be generalised to scholars in other disciplines. Even within the field of psychology, the results nor conclusions may not be extended to psychologists in other areas of the nation, continent or the world. Nevertheless, the result of the study has implications for research and practice. The result has been able to provide an idea of the status of staff awareness and utilisation of PsyarXiv, which may enable policymakers to design sensitisation campaigns to improve the awareness of scholars even in other disciplines to utilise their discipline-specific platforms like SocarXiv, arXiv, BioarXive and so on. Researchers. The study will also enable scholars to understand the benefits of using pre-prints generally to maximise all the benefits. The study's finding has research implications because it has extended the literature and provides a pathway for future studies to be based. Thus, constituting a basis for further research. It is suggested that future research be based on a large-scale sample and should incorporate other pre-prints and discipline that were not covered in the study.

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