

**INFLUENCE OF QUALITY AND USE OF SERIAL PUBLICATIONS ON
RESEARCH OUTPUT OF POSTGRADUATE STUDENTS OF NATIONAL
OPEN UNIVERSITY OF NIGERIA (NOUN) NORTH-CENTRAL, NIGERIA**

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MTech/SICT/2017/7362**

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FEDERAL UNIVERSITY OF TECHNOLOGY
MINNA**

AUGUST, 2021

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**A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL,
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ABSTRACT

The quality and use of serial publications on research output of post graduate students of National Open University of Nigeria (NOUN) in North-central, Nigeria. The study was guided by five objectives and five corresponding research questions. Descriptive survey research method was adopted for the study. The target population for the study was 7,027 post graduate students in four NOUN study centres in North-central, Nigeria namely: National Open University of Nigeria (NOUN) Abuja Study Centre, National Open University of Nigeria (NOUN) Kogi, National Open University of Nigeria (NOUN) Jos Study Centre, National Open University of Nigeria (NOUN) Nasarawa Study Centre. The sample size for the study was 370 postgraduate students drawn using krejcie and Morgan because the population was too large. Questionnaire was the instrument used for data collection. Stratified sampling technique was used for the study. Out of 370 copies of questionnaire administered, 349 copies were returned and used for the analysis. Descriptive statistical tool involving frequency counts and percentages, mean and standard deviation were used to analyse the data. Pearson Product Moment Correlation (PPMC) was used to analyze the inferential statistics. The result of the analysis revealed that the serial publications available for research are between 2016 and below. The respondents indicated that post graduate students always use serial publications for research output in study centres studied. Similarly, the study revealed further that the respondents agreed with factors such as outdated serial publications affects their research output lack of subscription to electronic databases and paucity of journals in area of interest among others. In conclusion, serial publications used for research output by postgraduate student in National Open University of Nigeria (NOUN) in North-central, Nigeria under study is moderately achieved. The study recommended that the management of National Open University of Nigeria (NOUN) in North-central, Nigeria should purchase and subscribe serial publications to enable postgraduate students have quality research output, the management in study centres with libraries should also ensure that the serial publications available should be adequate, current and relevant, as the use of serial publications by postgraduate students assist in meeting their required research output.

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CHAPTER ONE

1.0

INTRODUCTION

1.1 Background to the Study

In Nigeria, the primary role of a university is the transmission of knowledge, inculcating the minds preparing it for intellectual engagement, and basic research that could lead to the advancement of knowledge. It is generally accepted that research as the source of knowledge generation occupies a critical position in promoting the prosperity of a nation and its citizens' well-being in this knowledge based era. Universities undertake research for several reasons, for instance, the Association of African Universities (AAU) (2010) stated that without research, universities will lose their capacity to offer first class graduate studies. Research output is a means by which academics contribute new knowledge to the existing body of knowledge. Research improves students' self-confidence, enhance their status and contribute to their self- actualization. Abubakar (2011) perceived research output as an outcome of a systematic investigation which appears in print and non-print media, usually embodied in research communication such as serial publications, theses and dissertations. Abubakar (2011) stated further a long list of research output to include: reports, book publications, journal publications, articles, section of books, technical reports, transactions, and edited works, patents to mention but a few. In the same vein, Edem (2015) defined research output as the number of book publications, journal publications, articles and other related research works such as bibliographies and indexes which may be published or unpublished. From another perspective, Department of Education of South Africa University as cited by Madye (2017) viewed research output as any research publications accepted by any evaluation body for promotion and other evaluation purposes. The University of Auckland (2019) defined research output as a particular dissemination, publication, presentation or

communication or pathway in which research is made available to people other than the author.

Research productivity is a core activity of universities globally, and it is crucial in the scientific process as a pre-cursor for knowledge uptake and use (Cloet, 2015). Consequently, evaluating research outputs would be a proxy for knowledge productivity of post graduate students in National Open University of Nigeria (NOUN). With the considerable investment in research throughout the world, it is imperative to assess the research output of post graduate students. The academic research output of post-graduate students can be considered a surrogate measure of universities' ability to prepare the next generation for national development, through academic excellence driven by technological advancement. Imparting research skills is a key aspect of post-graduate training, not only to inculcate scientific inquiry, but also to equip students with the knowledge and skills to critically appraise evidence before applying it (Cloete, 2015). He stated further that the existing assessment of research output by post-graduate students is predominantly from higher income countries. In Nigeria, it revealed that existing work on students research had covered either the zeal and participation of undergraduates in research or mentorship for doctoral candidates, but not their research output. The link between postgraduate research as a residual of novel knowledge and knowledge translation has hardly been researched on by post-graduate students worldwide. No known research mapping the pathway of post-graduate students had been put into inquiry.

Considering the aforementioned, research output can be defined as all products of research by undergraduate and postgraduate students which are reported in form of projects, book publications, journal publications, conference papers and thesis. Research

output is very important not only to the postgraduate students but also institutions of higher learning in general. Holden *et al.* (2015) observed that the peer-reviewed publications are the primary unit by which academic faculties and education programmes are assessed, while Popoola (2018) opined that research output is one of the major determinants of students' productivity. It enables students to share insight, demonstrate academic scholarship, gain recognition, and determines growth progress and impact on the society. In view of the foregoing, it is glaring that no post graduate student can effectively come up with good and positive research output without serial publications. Research output is the final stage of research where findings are disseminated to the appropriate audience. Dissemination can take many forms: a paper in a journal, conference paper or presentation, a formal report or a dissertation/thesis for post graduate study.

Postgraduates are under pressure most times to perform excellently through assignments, paper presentations and projects. Serial publications with its ability to meet up with immediate needs may as well be their saving grace, this implies that serial publications are relevant for research. Serial publications according to Association for Library Collections and Technical Services (ALCTS) (1957) are print or non-print publications issued in parts, usually in numbers, issue dates, or both. Serial publications are therefore expected to continue indefinitely. Serial publications include journals, proceedings, magazines, newspapers, annuals (like reports, yearbook, and directories), transactions of society, encyclopaedia and so on. A unique, internationally used identification number is used for serial publications, other standard codes used on serial publications are ISBN (International Standard Book Number), Bar codes, and IAN/EAN (International Article Number also known as European Article Number). Ogunnuga, (2013) viewed serial publications as a publications issued in successive parts normally

at regular intervals, and a rule intended to be continued indefinitely. It could be published weekly, fortnightly, monthly, quarterly, bi-annually etc. Serials are library in themselves. Moreover, the extent at which serial publications is relevant, familiar and frequent to the students' in universities is a pre-requisite with a nation of discussing serials activities and operation in relation with researches conducted in learning processes. Serial publication represents a most important reference source not only because of their sizes but also because they represent other numerous values which the monograph medium fails to offer. They also assist researchers to sift the maze of irrelevant information resources in their search for the relevant ones. However, the importance of serial publications to post graduate students cannot be overemphasised, they are conveyor of current ideas investigated by science community. Hence, serial publications should be adequate and current. Only Postgraduate students that have access to adequate serials in print and electronic form will be able to have positive research output, where the serials are adequate, they are often been used by Postgraduate students. Also, on the adequacy of serial publications, Olajide and Fabunmi (2011) showed that it is the size of a collection, combined with its quality that ensures its adequacy. Thus, adequacy of serial publication has both qualitative and quantitative dimensions.

Serial publications are usually treated separately in libraries than as they are acquired, processed and disseminated separately due to rate of subscription and peculiarity of its nature. Osborn (2008) defined serials as a printed work that appears regularly, founded with the expectation of unlimited duration, which is not predominantly concerned with events of the day or else it pays attention only to the latest development in a special field.

Serial publications which include newspaper, magazines, newsletters, accessions, journals, indexes, abstract, reports proceedings and transactions of societies etc. Out of them all, journals are the most important to researchers because much of articles therein are products of research and it may never appear in any other publications. Academic and research libraries acquire, organize, store, retrieve and disseminate information contained in journals for researchers, educators, students and other interested persons in their various disciplines.

Similarly, Chiemeké *et al.* (2010) opined that there are many sources of information in the library but the most important and the most current sources are serial publications. In similar fashion, the researcher added that serial publications either in print or electronic format remains the most current form of information resources. Serials are often used as a synonym for periodicals and could be published as journals, newspapers, magazines, bulletins etcetera. Findings and studies revealed that much photocopying of important articles and interesting academic topics in serials are often demanded by library users in Nigerian universities.

Serial publications and postgraduate students are two independent entities that complement each other. Serial publications provide current information that fills new information gaps discovered by students and this enable them consult serial publications for current information. The academic library, the Internet and other institutions that provide serial publication come in as intermediaries between the source (serials) and the receiver (postgraduate students). Patrons therefore, consult these intermediaries for the access to serial publications and for postgraduate students in National Open University of Nigeria (NOUN) library, database and the Internet are major intermediaries. Serial

collections therefore either in print or electronic form, is worthy of unwavering attention especially in its adequacy and currency and overall management.

Serial publications have historically and presently focused on the provision of current and up-to-date information in general or specific discipline, this is one of the reasons why according to Woodward (2011) it constitutes a major part of the collection of academic libraries and also accounts for a large sum of the library expenditure, the academic library inclusive. The academic library is an integral part of tertiary institutions and accounts for majority of the material holdings of a tertiary institution, serving all and sundry especially staff and students of a tertiary institution. To further underline the importance of the serial publications to a tertiary institution, Kwampong (2010) stated that the academic library is the heart and aorta of any academic institution, the researcher went further to state that the health and effectiveness of any academic institution depends on the state of health of the library in that academic institution. Apart from books, serial publications form a vital part of the academic library's collection for meeting the immediate needs of patrons in its community especially postgraduate students for the purpose of this study.

Academic libraries must therefore provide relevant titles in all the subjects/courses covered by its parent institution and also, staff and students are expected to make use of the library most especially the serial section of the Library to get current information in their chosen field of study. In the words of Olanlokun and Salisu (1988), journals are accorded prominence in the library because they provide the latest information in a discipline and if people want to be current in their field they have to read relevant journals.

In line with this view, Adubika (2007) described serial publications as any publication bearing either chronological or numerical designations issued in successive parts, appearing at intervals and as a rule, intended to be continued till infinity. The above definitions not only describe serials literature but also underlay the major importance of serials which provide current information and developments in all fields of activity.

This importance is crucial to the relevance of the research library to its immediate community and the general population. Kinds of serials publications include journals, newspapers, newsletters, year book, encyclopaedia, conference proceedings, transactions of societies and other periodicals like abstracts and indexes. These types of serials vary in content and interval of appearance. Daily Newspapers constitute the highest rate of issues because of its daily publications, but it doesn't provide information on specific fields of study, it takes a little of everything in one issue. Unlike journals, that will not be published daily but focuses on the specifics in a field of study. Serials are usually in print formats but with the advent of information technology, serial publications are now computerized appearing in e-formats. Serial publications are part of Online database and could be in form of Open Access or Closed Access.

This means effectively that the research output of postgraduate students depends to a great extent on the degree of quality of serial publications. Research output are also best published in journals and other components of the serials. Thus, the influence of quality and use of serial publications on the research output of postgraduate students cannot be downplayed. Though many studies have been carried out on serials but only few might have been related to research output of postgraduate students. This study, therefore, is an attempt to investigate the influence of the quality and use of serial publications on

research output of Post graduate students in National Open University of Nigeria (NOUN) North-central, Nigeria.

In relation with the use of serial publications by students in universities, out of the kinds of serial materials available, Afolabi and Akerele (2011) opined that journal is the most important to the students for researchers because much of articles there in are products of research and it may never appear in any other publications. Academic libraries, therefore, provide the latest serial titles in all the subjects/courses covered by the parent institutions and also, students are expected to make use of the publications in the serials section of the library to get current information in their chosen field of study (Sambo & Akpojotor, 2016).

According to Ogunniyi *et al.* (2011) serial publications form the backbone of any academic library because of their nature of information value it has for students. Academic and research libraries acquire, organise, store, retrieve and disseminate information contained in serial publications for researchers, educators, students and other interested persons in their various disciplines. The availability of efficient information systems, services and proper utilisation of information by government and the people can improve the life and activities of the citizens and also the quality of the country's development. It also enhances decision-making processes at all levels. For National Open University of Nigeria (NOUN) to perform its role adequately, resources available especially serial publications must be effectively utilised by meeting information need of the students, academic staffs and faculty members. There is the need to have access to relevant information resources in study centre libraries and virtual libraries, postgraduate students make effective use of them to improve the research effectiveness. Oduwole *et al.* (2012) confirmed that students, academic staff,

administrative personnel and the public made use of available Online Public Access Catalogue (OPAC) in University of Agriculture, Abeokuta, Nigeria for report writing, lesson preparation, research methodology and class assignments. Library is to contribute to the advancement of knowledge, it must not only provide the resources but also ensure effective use of the resources by its clientele.

The cost of journals subscription on the Internet however, is high and most libraries cannot afford to subscribe for all journals needed, just a few. It is in this regard that open access journals started (Oren, 2008). Open access journals are scholarly journals that are available online to the readers without financial, legal or technical barriers other than those inseparable from gaining access to the internet itself (Oghenetega & Oghenovo, 2012). Open access journals as the name implies are written for impact and free readership not for payment. Open access journals were initiated out of the burning need of authors and writers to share their discoveries with the large population who don't subscribe to payment journals. Open access journals are freely available on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself". Poulin and Tomaszewski (2014) believe that a significant proportion of scientific articles are being published in OA journals. In December 2016, the Directory of Open Access Journals (DOAJ) listed more than 9400 fully open access journals and this increasing trend is expected to continue. The primary advantage of open access journals is that the entire content is available to users everywhere regardless of affiliation with a

subscribing library. The main motivation for most authors to publish in an open access journals is increased visibility and ultimately a citation advantage (Suber, 2006)

Postgraduate students can now with the quality of serial publications gain access and use information necessary for research, school work and academic achievement. There is also ease, convenience, and accessibility when using serial publications for research output.

1.2 Statement of the Research Problem

Research output is a means by which academics contribute new knowledge to the existing body of knowledge. A general opinion that is supported by Ogunniyi *et al.* (2011) that serial publication is important in any academic institution, if they are expected to have good research output. It is therefore a matter of concern to note that, paltry number of postgraduate students of National Open University of Nigeria (NOUN) in North-central, Nigeria consult the serial resources in the National Open University of Nigeria (NOUN) study centre. This could be due to non adequacy of journals, recent and current serial publications.

The advancement of postgraduate students in National Open University of Nigeria (NOUN) rests on the quality of research output using serial publications. This implies that postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria need serial publications whether print or electronic to have a positive research output. However, from the preliminary investigation by the researcher, research output of postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria seems to be below in expectation. This is because there are no provision for libraries in some of the National Open University of Nigeria

(NOUN) in North-central, Nigeria study centres libraries; the available serial publications mostly are online data base, and open access journals which are available on their website and virtual libraries. Some of the libraries are used as stores in National Open University of Nigeria (NOUN) in North-central, Nigeria which in turn does not allow the students have access to printed serial publications.

However, a study by Owolabi (2012) maintained that post graduate students need the serial collections because it provides latest information on various subjects and not only that, serves as immediate avenue for the provision of up to date bibliographic data on a given specialised area of knowledge. In this view, post graduate students in National Open University of Nigeria (NOUN) in in North-central, Nigeria need to conduct research using serial publication regularly in order to meet the required research output.

However, it has been observed that many studies have been conducted on importance of serial publications but only few might be related to the quality and use to research output of postgraduate students in National Open University of Nigeria (NOUN) in in North-central, Nigeria there is therefore, need, to investigate why some of the National Open University of Nigeria (NOUN) in in North-central, Nigeria study centres don't have serial publications unit and why serial publications are not adequate for use by post graduate students to assist the students have quality research output.

1.3 Aim and Objectives of the Study

The aim of this study is to investigate the influence of quality and use of serial publications on research output of postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria. The specific objectives were to:

1. ascertain the currency of serial publications available for post graduate students in National Open University of Nigeria (NOUN) in North-central , Nigeria
2. determine the adequacy of serial publication available for Postgraduate students in National Open University of Nigeria (NOUN) in North central , Nigeria.
3. ascertain the relevance of serial publications available for post graduate students in National Open University of Nigeria (NOUN) in North-central , Nigeria.
4. ascertain the frequency of use of serial publication by post graduate students in National Open University (NOUN) in North-central, Nigeria.
5. identify the challenges affecting the use of serial publications for research output by Postgraduate students in selected NOUN in North-central, Nigeria.

1.4 Research Questions

The following research questions are postulated to guide the study.

1. How current are serial publications available for research output of post graduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria?
2. How adequate are serial publications available for research by post graduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria?
3. How relevant are serial publications available for research by post graduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria?
4. What is the frequency of use of serial publications by post graduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria?

5. What are the challenges affecting use of serial publications for research output by Postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria?

1.5 Hypotheses

The following null hypotheses were listed to guide the present study and were tested at 0.05 level of significance

1. There is no significant relationship between currency of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.
2. There is no significant relationship between adequacy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.
3. There is no significant relationship between relevancy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

1.6 Significance of the Study

The findings from this study, influence of the quality and use of serial publications on research output of postgraduate students of National Open University of Nigeria (NOUN) will benefit postgraduate students, the heads of National Open University of Nigeria (NOUN) and librarians. This study will benefit post graduate students of National Open University of Nigeria (NOUN) because serial publications will provide them up to date information than textbooks that they need for their research and also makes research of students frequent and current in the frontiers of knowledge.

The study is expected to encourage Heads of National Open University of Nigeria (NOUN) to improve on serial publication subscription, purchase and management in the study centre library. Building a respectable collection of serials in a university is to satisfy various disciplines in the university since libraries are meant to support learning, teaching and research, the roles of serial publications in achieving these cannot be over emphasized.

Librarians will also find the study useful on the need to create an enabling environment on how to make serial publications especially print available in the libraries of National Open University of Nigeria (NOUN), thereby making serial publications available to post graduate students.

1.7 Scope of the Study

The content scope of this study will focus on the influence of the quality and use of serial publications on research output of post graduate students in National Open University of Nigeria (NOUN) North-central, Nigeria. The study is also centred on adequacy, currency and relevancy of research output of post graduate students in relation to the use of serial publications. There are 80 branches of National Open University of Nigeria (NOUN) in Nigeria. However, this study will focus on four (4) NOUN centres in North-central, Nigeria namely, the National Open University of Nigeria (NOUN) Abuja, National Open University of Nigeria (NOUN) Jos, Plateau State, National Open University of Nigeria (NOUN) Nassarawa, Nassarawa State, National Open University of Nigeria (NOUN) Lokoja, Kogi State. The aforementioned study centres selected have libraries.

1.8 Operational Definition of Terms

The following terms are defined operationally in the context of this study.

Adequacy is the quality of serial publications to be sufficient in meeting the information needs of postgraduate students.

Currency refers to serial publications that belong to the present time used in meeting the information needs of postgraduate students in NOUN, North-central, Nigeria.

Influence is the importance or relevance of serial publications in meeting the research output of postgraduate students in NOUN, North-central, Nigeria.

Post graduate students – students who continue or further their studies in a particular field or discipline after having successfully completed their degree program to either pursue masters degree.

Research output is a means by which postgraduate students and academics contribute new knowledge to the already existing body of knowledge.

Relevancy –refers to serial publications that are directly related to information needs of post graduate in NOUN, North-central, Nigeria.

Quality: This is centred on adequacy, currency and relevancy.

Serial Publication is a publication done at interval basis which has no predetermined ending or conclusion.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Conceptual Framework

The arrows in Figure 2.1 show a natural flow among the various parts of the model. For quality research output, post graduate students solely depend on adequate, current and relevant serial publications for their research work. This implies that post graduate students can only come up with a quality research by using adequate, current and relevant serial publications.

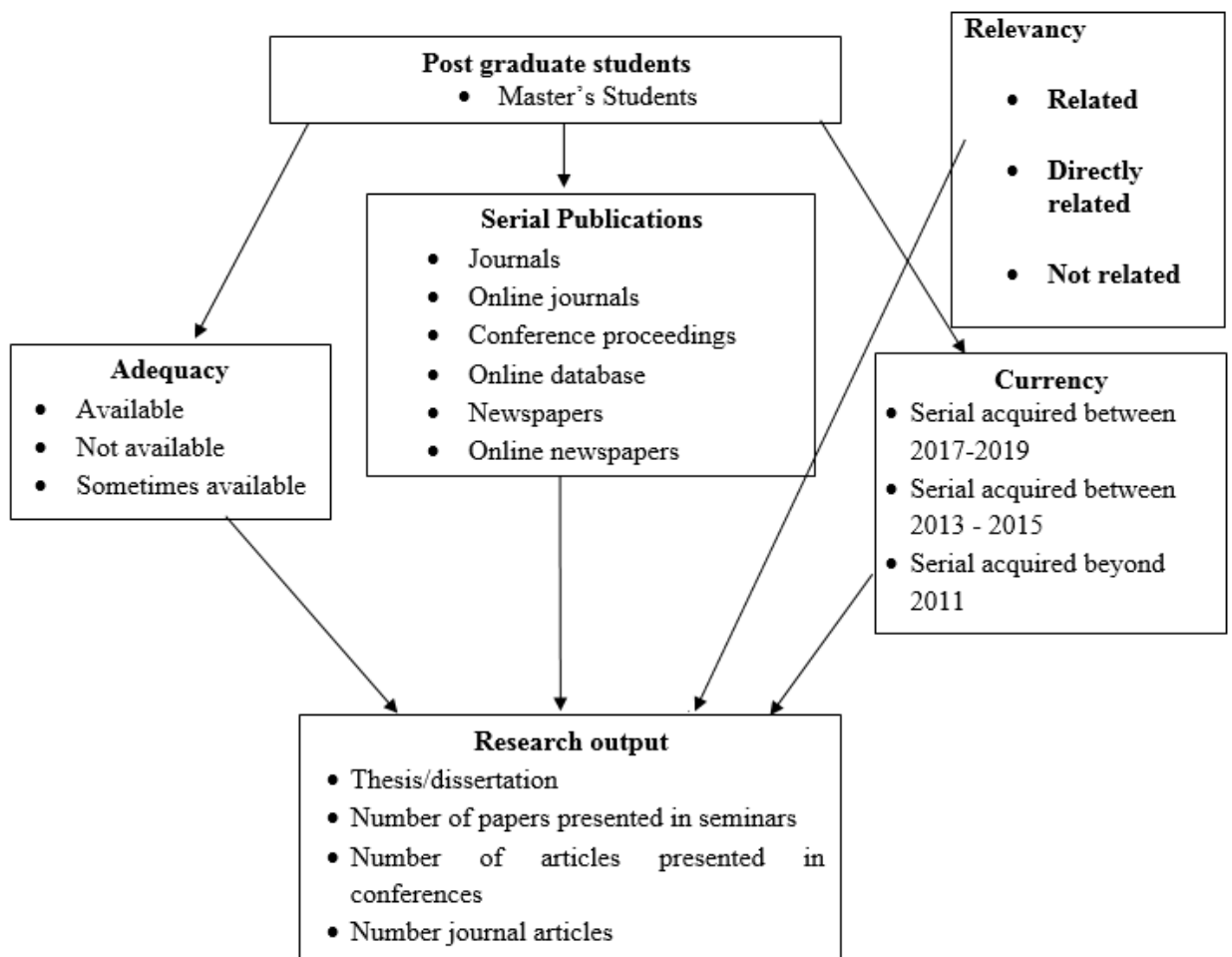


Figure 2.1: Conceptual Framework of the Study (Author's Original Construct)

2.1.1 Concept of Serial publications

Aina, (2004) described serial publications as a distinctive title which is issued in parts, and each issue is published indefinitely. It includes periodicals, journals, newsletters, newspapers and magazines, etc. A periodical such as newspaper or magazine has a distinctive title and is issued more frequently than once a year containing articles. While non - periodical serials are publications that are issued in successive parts once a year or less frequently, yearbooks annuals or monographic series are examples of non-periodical serials. The term periodicals, Serials, Journals are used interchangeably to refer to the group of library materials which appear in a series at regular intervals. In her own view Agbaje (2002) submitted that periodicals are type of serial organized around the concept of preordination which attempts to impart significances to the passage of time by identifying and ordering information along chronological sequences.

According to Ogunronbi (2004) serials publications form the backbone of any academic library because of their nature of informational value for the students. Academic and research libraries acquire, organize, store, retrieve and disseminate information contained in serial publications for researchers, educators, students and other interested persons in their various disciplines.

Susanah and Ayobami (2018) suggested that serials are important and popular learning materials because they contain current information. They are available locally and could be ordered overseas. Serials is often used as a synonym for periodicals and could be published as journals, newspapers, magazines, bulletins etc findings and studies revealed that much photocopying of important articles and interesting academic topics in serials are often demanded by library users in Nigerian Universities.

Agbaje (2002) reported that anything that belongs to, forms part or consists of a series are called serials. Serials are of various kind of journals, magazines, newspaper, news bulletin and reviews. Nwalo (2003) and Aina (2004) stated that newsletters, accessions, reports, memoirs, proceedings and transactions of societies and other periodicals like abstracts and indexes. Serials are often thought of as a distinct format. A serial publication is, therefore, regarded as a material that is in a tangible format that is recorded on paper, microfilm, magnetic media or optical disk and retrievable.

Ogunniyi *et al.* (2011) asserted that serial publications are of great importance because they carry latest and up-to-date opinions and development within the various subject disciplines. As explained by Elaturoti *et al.* (1990), serial publications constitute an important part of the library collection because the information contained in them is more current than those in published books. Fayose (1995) affirmed that, “periodicals are useful because they are the most up-to-date resources in the library and that the articles in periodicals are often written by experts in the field. Therefore, they are reliable and the articles are precise and not as cumbersome to read as textbooks. Where regency of information is of prime consideration, the serials have a distinct advantage over the book (Adubika, 2017). According to Annuobi *et al.* (2010), majority of texts/ monographs produced for knowledge have their contents derived from serials articles.

2.1.2 Concept of research output

Research output has remained one of the indices for measuring post graduate students’ success or failure academic institutions. The concept of research output has been variously described. Ashworth and Harvey (2014) sees research output as a clear and tangible evidence of research. According to him researchers can only claim to have carried out any meaningful scholarly research when there is a research output. In her

own view, Lindauer (2018) defines research output as the total number of publications in journals, books, presentations in conferences, chapters in edited works, grants secured and creative works. On the other hand, Whitmire (2013) defines research output as the number of journals published in refereed or non-refereed journals; the number of books published; the number of book reviews, the number of conference presentations and the number of grants obtained during the last two years by an academic staff. A similar definition is that given by Moed *et al.* (2015) referring to research output as those publications in refereed journals and scholarly books through which academics' research outcomes and ideas are circulated among peers and subsequently contribute to debates in the relevant field. Such publications, according to them should be worthy of provoking reactions and throwing up challenges to colleagues. From the foregoing, one may define research output as the outcome of research which may be published or not published. Research output is very important not only to the academic staff but also to academic institutions. It has remained an invaluable yardstick for measuring academic staff productivity. On the other hand, research output has also become a measure of academic institutions' overall performance.

However, placing too much emphasis on research output has been criticized as it may lead to less quality work being published. Effendi and Hamber (2011) observed that "obsession with research output can become a source of stress for individual researcher and can lead to proliferation and trivial works being published in journals and books." In the same vein, Le Grange (2013) also noted that trivial works might be the outcome of the pressure to produce adequate number of publications to meet the requirements for promotion and other benefits. In spite of these criticisms, research output has remained an invaluable yardstick for measuring academic staff productivity and to a large extent, academic institutions' overall performance. Research output, which Chiemeké (2009)

sees as the gateway for both local and international recognition for academic staff, can also be a veritable instrument for influencing policy decisions in academic institutions. According to Martin as cited in Baro *et al.* (2018), there are two basic avenues for building academic power, which is through research function and by providing knowledge for practical applications. The New Zealand Tertiary Education Committee as cited in Tower *et al.* (2015) also understands the importance of research output in the same manner and observed that:

The purpose of conducting research in tertiary education institution is twofold; to advance knowledge and understanding across all fields of human endeavour; and to ensure that learning, and especially research training at the post graduate level, occurs in an environment characterized by rigorous and high-quality research activity.

The concept of research output will be better appreciated when explained in the context of its importance to academic institutions, researchers and even to students. Ahmad *et al.* (2018) and Gray (2015) explained the importance of research output in the light of its role in academic staff teaching effectiveness. They observed that academic staff teaching effectiveness depends to a large extent on research productivity. This is because efforts to produce quality research output require extensive and effective utilization of the resources in the library. This in turn exposes the academic staff to valuable information and better method of teaching. In like manner, Babbar *et al.* (2010) observed that research output constantly keeps academic staff in touch with the latest development in their fields of study. They claimed that lecturers who are striving for high number of research output are more likely to be at the forefront of their disciplines. Research output, no doubt, adds to both the quality and the level of classroom experiences. Accordingly, academic researchers with higher research output are

assumed to be generally more effective at instilling a critical approach to understanding complex research findings rather than a passive acceptance of facts.

The media of communicating research output is also important to scholars. In this regard, Ashworth and Harvey (2014) believes that where a research output is published goes a long way to determining its acceptance. He enumerated such media as academic journals, professional journals, books, reports, edited works and proceedings as the appropriate media for communicating research output. Lindauer (2018) and Whitmire (2013) who also shared this view, however, added that paper presentation in conferences is an important means of communicating an outcome of research to the public.

On the contrary, Van Raan (2015) believes that students' research projects, theses and dissertations are essential components of research output. The lack of consensus on what constitute post graduate research output and the appropriate media may have arisen from individual scholar's background and institutional affiliations.

2.1.3 Utilization of serial publications

The primary function of the institution is to provide full range of information resources which constitutes serial publications and other services necessary to carry out the goals and duties of the institution which the library was established to serve (Imeremba, 2000). However, the provision of these resources and services is not enough and cannot promote the intended institutional goals if the library is not effectively utilized. Chiemeke *et al.* (2007) believe that users approach the library with needs which they hope to satisfy. They categorized library users into four groups namely; general readers, creative readers, adult students and researchers with special interests. According to these authors, all these people utilize library resources for one purpose or the other. The

purpose also informs the choice of resources to be consulted. They observed that the last category, that is researchers; concentrate on the utilization of textbooks, journals and other relevant resources for research as demanded by their different professions.

Similarly, Doraswamy (2018) is of the view that the motives and purpose of the users for approaching the library determine the serial publications that users are likely to consult. He claimed that most faculty members need information for the purpose of research and teaching and as such, they are desirous of serial publications such as journals, theses and dissertations, government publications, conference proceedings and reference materials, online and electronic journals. He opined that libraries that can provide these resources adequately would have gone a long way in satisfying the information needs of their users and promoting research productivity among academic staff. The ideas being put across here is that professional engagement and other assignments also determine the type of library resources utilized in libraries. It is only when the faculty themselves are aware of library resources that they can develop a positive attitude towards library use.

Post graduate students in tertiary institutions utilize serial publications in order to carry out their functions of research, learning and more importantly to research output. Kumah (2015) observed that students rely heavily on journals (print and online) theses and dissertations as well as periodical literature for their research productivity. In the same vein, Olanlokun (2015) confirmed that journal articles, textbooks, theses and dissertation, monographs, treatises and government documents were considered very important to the job performance of the Nigerian academics. In their own contribution Al-Suqri (2007) claimed that social sciences and humanities scholars in a Turkish

University made use of serial publications which are periodicals are used for their programmes and research productivity.

2.1.4 Concept of adequacy, currency and relevancy of serial publications

2.1.4.1 Adequacy of serial publication

It is generally acknowledged that serial publications play an important role in research. According to Wise and Fisher (2015) serials will continue to make a special impact on the scholarly community as they contain the most current and vital information on various disciplines. The role of serial publications in scholarly communication has been well documented. Aina (2004) confirms that a journal is the principal medium for reporting research findings because of the wide publicity it gives to the author. Information in journals is a product of research and may never appear again in any other form (Nwalo, 2003). This accounts for the great importance attached to serial publications by libraries and researchers in Africa. Serials are sources of current information and have several other contributions to make to education. Serials can be regarded as the nerve-centre of any university library because they contain the most up-to-date information on research and knowledge. Agbaje (2002) also concluded that serials constitute one of the most, if not the most important information resource of the information age.

The availability of information and communication technologies and their applications to information delivery in the libraries, especially in the 21st Century have opened up a new and wider horizon for users of libraries. Its products such as computer, the internet,

online databases, CD-ROMs and networks have provided institutions with avalanche of opportunities to widen the scope of their resources and services. Accordingly, Adams as cited in Ezema (2017) reported that electronic information made available by networks has opened a new vista to African researchers, academics and students as well as technocrats. This is because electronic networks have largely addressed the problems of physical document delivery and unavailability of many of these documents in the nation's libraries. In this way, links among academic institutions and staff in Nigeria will not only help in addressing the problem of lack of relevant information needed for research but will also help in increasing collaborations among these institutions and researchers. Also contributing, Lancaster and Sandore (2017) see the internet as:

An electronic resource is now having the most significant impact on library services, operations and on professional activities of librarians. This strength of impact is due to its multi-accepted nature since it simultaneously fulfils three important roles in the library. First, it is a source that can be consulted and used like any other reference tool. Second, it is more dynamic and far reaching than any other resources use in a library setting. Finally, it provides a medium of communication that has extended the potentials of librarians and the interaction beyond the physical library to users, colleagues and other professional activities and relationship with library to users.

The overwhelming acceptance and use of the internet is not surprising because of the enormous capacity of the internet and other e-resources to provide unlimited access to information irrespective of location. In this regard, Kamba (2018) maintains that the internet provides users with the means of carrying out research online by acting as the main engine for exchanging information and publishing. He observed that the use of the internet by Nigerians has reduced the shortage of information resources in Nigeria and

consequently enhanced research and research output. The reason, according to him, is because the internet has the capacity to provide an enabling environment for Nigerian scholars and researchers to overcome the barriers of locations, communication and collaboration.

In his own contribution, Mosuro (2011) identified seven roles the internet play in utilization activities to include: unrestricted access to research information / data; provision of search engines; facilitating the communication of research information; reduction in travelling from place to place for information; allowing research collaboration among researchers; saves time in literature searching; and creating more services that the library renders to researchers.

In the same vein, Ajibola (2014) remarked that information and communication technology (ICT) helped users to have cheap access to database with multimedia capacities as well as helped to improve bibliographic control, error reduction in data analysis and increases the range and scope of research operations. There is no doubting the fact that information and communication technology has tremendously altered the way and even the resources available to researchers and other library users including academic staff. Lofty as the above roles adduced by these authors may be in relation to research activities, they failed to show the level of influence the utilization of internet or other online resources have on academic staff research output.

Post graduate students of different disciplines have shown various levels of use of different types of e-resources in their research engagements. Curtis *et al.* (2017) studying the use of ICT and other online resources by health science faculty (medicine, nursing and pharmacy) at the University of Illinois revealed that there is high use of printed Index Medicus and MEDLINE through electronic means. In another

development, Lazinger *et al.* (2017) claimed that majority of academic staff of science and technology backgrounds of Hebrew University of Jerusalem have rich history of the use of e-resources and conducted research with distant colleagues online. Similarly, Kaminer and Braunstein (2017) observed that academic staff use the e-mail and some other e-resources to communicate with research colleagues for researcher purposes and for other needs. Other online resources common among them included telnet, World Wide Web (www), and e-journals. Other researchers like Oguche (2017); Zhang (2018) and Abubakar (2011) have also noted the various uses of ICT by academic staff and other library users and its significant influence on job efficiency and improved research output.

2.1.4.2 Currency of serial publication

According to Akinbode (2011), access to serial publication in academic institutions is primarily through the university library. Library is regarded as a storehouse of information where serials are stocked for research activities. The university library is established with the mandate to support research, teaching, learning and extension services. The university library acquires, processes and make available library materials including serials to accomplish its role of providing information to the university community. The job of the librarian, according to Akinbode (2011), is to interact with the users to find out what they need or want to know, and to provide clients with the relevant information needed. He further emphasized that for effective use of the library and its materials, users can be alerted of the information available in the library by operating a number of current awareness services.

Agbaje (2011) reported that anything that belongs to, forms part, or consists of a series qualifies to be called a serial. Serials include journals, magazines, newspapers,

newsletters, accessions, reports, memoirs, proceedings and transactions of societies and other periodicals like abstracts and indexes. Serials are often thought of as a distinct format. They are in print, non-print or electronic format. A serial is, therefore, regarded as a material that is in a tangible format, that is, recorded on paper, microform, magnetic media or optical disk and retrievable. Priya and Abdul-Majeed (2015), states that serials publication, including journal and other periodicals constitutes the most important class of materials found in an academic library, because they contain the most up-to-date information.

Adeoya (2012) opined that journals should serve as fountain of knowledge, sources of vital information, and they should be highly intellectual. He further stated that journals are meant to fill a specific gap in communication. Newspapers and magazines treat news items with some sense of urgency, but journals later analyze the issues critically to the implication for specific industries. Specialized journals are research – based depending on its areas of focus. Aina (2004) in his analysis of importance of newspaper and magazines, sees them as sources of information recognized worldwide. In his words “The value of newspaper (magazine inclusive) as a source of information on the history of a nation has been recognized in both national and international level,” (pp.24).

Aina (2004) confirmed that journal is the principal medium for reporting research findings because of the wide publicity it gives to the author. Nwalo (2003) averred that much of the information in journals are products of research and may never appear again in any other form. This shows the great importance attached to serial publications by libraries and researchers.. Serials can be regarded as the nerve-centre of any university library because they contain the most up-to-date information on research and knowledge. Agbaje (2011) also affirmed that serials constitute one of the most, if not

the most important information resources of the information age. Alemna, Chifwepa and Rosenberg (2010) found that African – published journals are valued most of all for their research potential. In particular, they are used to assist in ongoing research to identify possible topics of future research and to publish the results of completed research. Apart from the confirmation that scholarly journal is the principal medium for reporting research findings and used to assist in ongoing research to identify possible topics for future research, there are other types of serials such as magazines, newspapers, memoirs, indexes abstracts, reviews, news bulletins, proceeding and reports that carry first hand reports of scholarly research and theoretical discussions.

2.1.4.3 Relevancy of serial publication

The importance of serial publication in libraries cannot be overemphasized, especially in academic libraries; they contain the latest information on research findings which are of great importance to any academic community. The importance of serial publication has been universally found to be very vital, they are known to keep researchers up-to-date on current information and development trend in various professions and most often than not, information in journals, magazines, and even newspaper never find their way into books. Journals and other serial publication provide a continuous discussion forum and reporting service in specific topics and lines of interest of particular user, thus enabling researchers to keep abreast with all shades of opinion in their subject area instead of having to wait for a very long time before these pieces of information appear in book format. .

Serials are published at different intervals, that is, daily, weekly, monthly, bi-monthly, quarterly, bi-annually, and annually by an academic or research institution, a learned society, reputable publishing organization or professional body. Some serials are

published on subject bases while some are on general topic. It is the serialization that distinguishes serials from books and monographs, and it is the period that dictates format and price.

Serial publication are of great importance because they carry latest, current and up-to-date information. For the latest and up-to-date opinions and development within the various subject disciplines, one would do well to look in the appropriate journals. As explained by Priya and Abdul-Majeed (2015), serials constitute an important part of the library collection because the information contained in them is more current than those in published books. Fayose (2010) affirmed that, periodicals are useful because they are the most up-to-date resources in the library and that the articles in periodicals are often written by experts in the field, therefore, they are reliable and the articles are precise and not as cumbersome to read as textbooks. Where recency of information is of prime consideration, the serials have a distinct advantage over the book (Adubika, 2013).

The importance of serial publication in academic research environment lies in the fact that they are conveyors of current ideas investigated by scientific community. Serials are also noted to be the source of information in some areas especially where library is lacking books on new subject or obscure area. Serials also help to strengthen the library's cultural reading collection and perform educational services, thereby, making students take cognizance of the development in their chosen field.

The foregoing shows the various levels of serial publications quality and use by the post graduate students and the purposes of research output. However, it is not clear from the literature whether the quality of these serial publications influence the research output of the post graduate students.

2.1.5 Constraints to the utilization serial publications

The utilization of serial publications especially in the developing countries has not been without some problems. Tahir *et al.* (2008) have identified some of the problems to include but not limited to the following: Information literacy, Information overload, poor library organization; lack of user skills; poor funding of libraries, lack of current information resources; lack of adequate/relevant materials; poor IT infrastructure; unconducive reading environment; poor power supply; lack of technical support; and lack of user education.

The above problems no doubt will be more pronounced in countries such as Nigeria where issues concerning education are many a time relegated to the background in policy implementations. Earlier Robert (2010), Tyagi (2014) and Kisiedu (2018) in their separate studies commented on the declining budgetary allocations in most tertiary institutions in Africa which have great negative impact on the availability and adequacy of serial publications in libraries. Consequently, African scholars depend heavily on gifts and donated materials from foreign countries for information for their research even on local issues. This scenario seriously affects research output of students in developing countries, including Nigeria, as much time, fund and energy are wasted trying to track down these foreign information resources.

It has also been observed that information literacy affects research output using serial publications (Okiki & Iyabo, 2013). On the other hand, Adeoye *et al.* (2019) observed that irregular power supplies as well as lack of new information and communication technologies (ICT) pose serious challenges to currency of serial publications. Similarly, Salaam and Adegboro (2010) also maintained that poor power supply and information overload have become a major hindrance to influence of serial publications on research output in Nigeria. Other problems affecting effective use of serial publications as

identified by Ugah (2012) and Eiriemiokhale & Ibeun (2017) are lack of awareness on the availability of certain library resources, bibliographic obstacles and inadequate user education.

One of the problems affecting the utilization of electronic database, Ibrahim (2014) identified lack of user skills, lack of technical support and insufficient spare parts as some of the major constraints to effective use and adequacy of electronic database in many institutions in the developing countries including Nigeria. As a result, many of the e-resources in these institutions are under-utilized or not utilized at all. Again due to poor technical support and insufficient spare parts, some of the ICT equipment easily broke down and are hardly replaced.

2.1.6 Strategies for enhancing utilization of serial publication for enhanced research output

In view of the problems confronting the utilization of serial publications for Research output, some strategies have been suggested. Yushau and Fadip (2018) observed that there is lack of ICT facilities in Nigerian educational institutions especially in the polytechnics. This according to them is a major hindrance to adequacy of serial publications. They suggested a general improvement in infrastructural facilities especially ICT infrastructure to ensure enhanced currency of serial publications.

Similarly, Salaam and Adegboro (2010) considered equipping the nation's academic libraries with ICT facilities as a major step for improving effective utilization of the resources. They further suggested the training of Nigerian technicians on the maintenance of ICT infrastructure to ensure their regular maintenance and prevent these facilities from breaking down easily. Other measures they suggested include provision

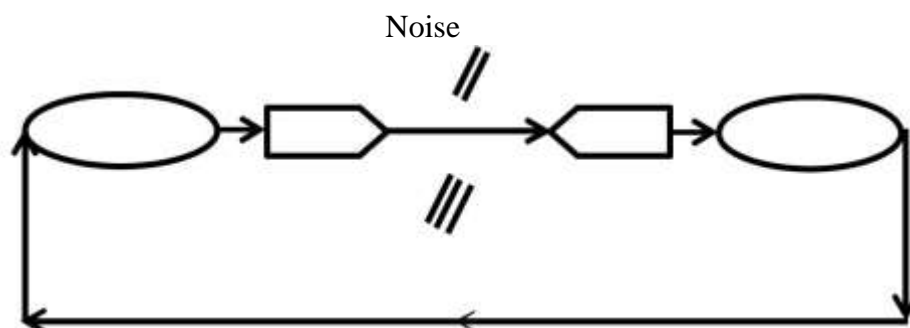
of alternative power supply for libraries attached to academic institutions and inclusion of user education in the educational curriculum.

On the other hand, Afebende and Ebanye (2018) consider lack of user skills as one of the major constraints to effective utilization of serial publications for quality research output. They were of the view that improved user skills through user education, current awareness services and public enlightenment on the resources available in the institution will go a long way in enhancing effective use of adequate and current serial publications available for research in the institution.

As a result of rapid changes that occur in the information environment today, postgraduate students, academic staff and others prefer online resources and the internet as sources of information. Kinengyere (2017) shared this view and pointed out the importance of these resources to post graduate students. As a result, he suggested the provision of electronic resources, internet facilities and ICT network in institutions as way of attracting users to use serial publications. Baro *et al.* (2018) supported this view and further called for the creation of conducive reading environment in these libraries through regular supply of electricity. In her own view, Okafor and Dike (2010) suggested the equipment of institutions of higher learning with relevant books, journals e-journals, internet facilities and other necessary resources as major strategies for enhancing influence of adequacy and currency of serial publications for research output.

2.2 Theoretical Framework

Shannon-Weaver Model of Communication



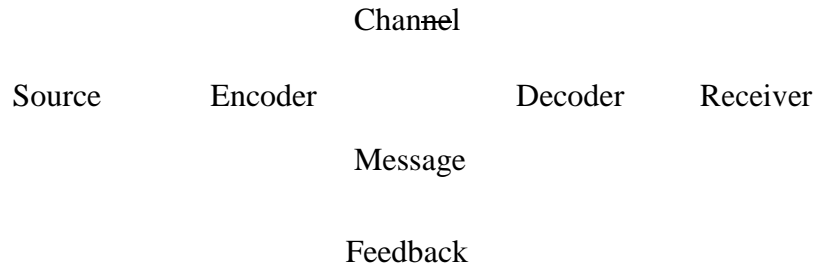


Fig. 2.2: Shannon-Weaver Model of Communication

Figure 2.1 is a typical Shannon-Weaver Model of Communication. Shannon-Weaver Model of Communication was developed in 1947 by Claude Shannon and Warren Weaver. The model was originally meant to handle effective communication between two people; a sender and a receiver. Shannon and Weaver designed the model to be used by engineers dealing with information to improve technical communication but later “the model became widely applied in the field of communication and in other disciplines and today has become one of the most popular inter-personal communication models in use” (Chandler, 1994).

Shannon-Weaver model is all about information generation, communication, utilization and feedback/output. The essential elements are sender, channel/message, receiver and feedback/output. The sender provides or originates the information and this is sent through a channel that carries the message which is passed on to the receiver. The receiver utilizes the information from the sender and produces a feedback which goes back to the sender as evidence that the communication was effective.

The strength of this theoretical model lies in its simplicity and adaptability. Another important feature of the model is that it can be applied to different situations. Chandler (1994) observed that it has attracted both the academics of human communication and information theorists to lead their further research in communication. The present study is anchored on this theoretical model because of its relevance in explaining the

relationship between the serial publications currency and adequacy in National Open University of Nigeria, the adequacy and currency of serials to postgraduate students and their research output.

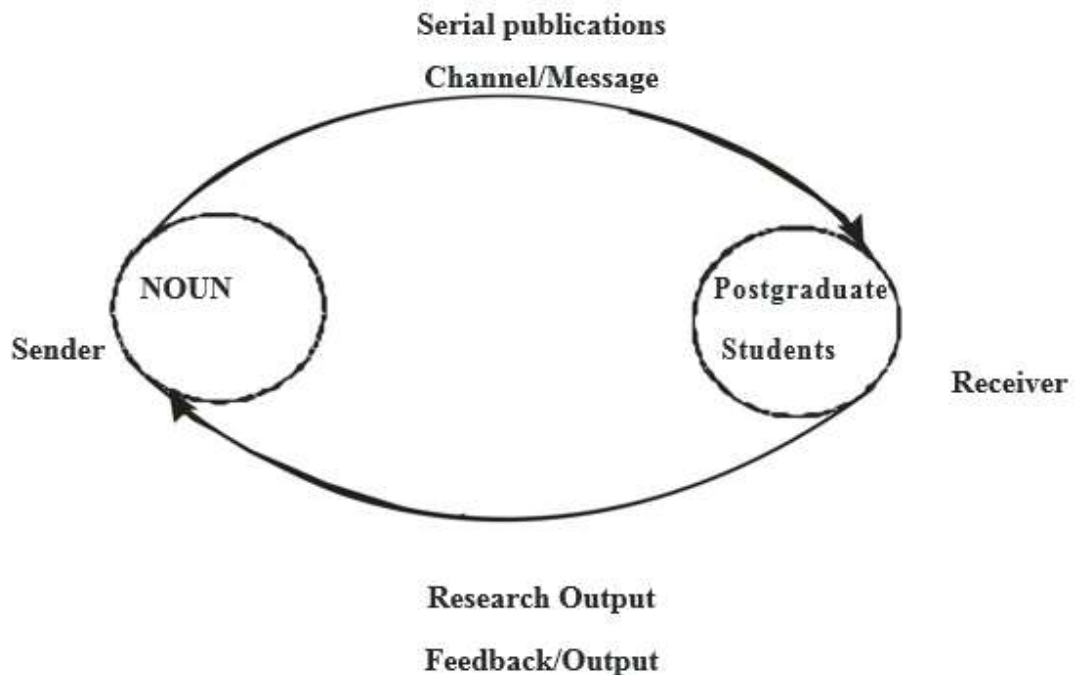


Fig. 2.3: Adaptation of Shannon-Weaver Model of Communication

In Figure 2.2 which is an adaptation of Shannon-Weaver model of communication, the sender or the originator of the message are the library staff of NOUN and other serial publications found in the library (Shannon, 1948). The serial publications are the channels of information to the postgraduate students which are made available by library personnel of NOUN to the students, who in turn utilize them for their research output. The research output return to the library in the form of thesis, journal articles and conference papers to form part of the serial publication. In Figure 2.2, the Sender replaced the Source of information in Figure 2.2. Serial publication in Figure 2.2 becomes the message which replaced the Channel in Figure 2.2. The Receiver in the

original model is also replaced by postgraduate students in the adaptation while research output replaces the feedback in the Shannon-Weaver original model.

2.2.1 Information utility theory

Information Utility Theory is a fundamental concept in the discussion of information seeking and user behaviour. This theory was developed in 1994 by Ross J. Todd. The theory is all about information products and their utilization. It states that a user of information products will keep on demanding and using information resources provided that he or she derives maximum satisfaction from their use, or that the source being utilized continues to meet his or her information needs. Information utility theory is based on Bertran Brookes' "Fundamental Equation of Science" published in 1980. Todd reviewed this work and conceptualized a theoretical framework known as the information utility theory for furthering the understanding of the cognitive aspect of information utilization. This theory was initially applied in collection development as it provided acquisition librarians the guide to buy more of titles which are heavily utilized while discarding those that are no longer useful to users. In another development, Bawden (2011) reported its application to a very limited degree in practice, "qualitatively as a framework for the study of general public information utilization for health information and quantitatively in a study of archaeological research." Similarly, Cornelius (2012) applauded the theory claiming that it has remained operational as a general consideration within information retrieval and utilization theory.

This theory is relevant to this study in the sense that it provides a framework for understanding post graduate students attitude towards the quality and use of serial

publications. Post graduate students no doubt will continue to use the serial publication available in National Open University of Nigeria (NOUN) so long as these resources meet their needs.

2.3 Review of Related Empirical Studies

Some empirical studies have been conducted on serial publication both within and outside Nigeria.

A study on awareness and use of serials in an African University Library: Faculty and Students' Perspective was carried out by Erica and Christopher (2017) sought to determine the level of awareness and use of serials among faculty members and graduate students, and how this affect their perception of the value of print serials in teaching and learning. The study made use of survey research methods through the use of questionnaires. The population of the study consisted of 165 faculty members and 97 graduate students, with an eventual return rate of 66% each, respectively. The findings of the study revealed that both faculty and graduate students were, relatively, aware of the print serial collection in the library. However, despite this awareness, they used print serials, relatively, less frequently. Again, the study established that both faculty and students have significant positive perceptions on the usefulness of print serials in their teaching, learning and research roles. We recommend to librarians to create awareness of print serial collections while updating the collection, and enhance the positive perception of print serials by demonstrating, through outcome measures, how the use of print serials can be beneficial to the academic and research community.

A study by Susanah and Ayobami (2018) evaluates the extent to which serials publications are accessible and used for learning purposes by the students in Nigerian Universities. The descriptive survey research design was adopted with the study

population made up of students from one federal government owned university, one selected state owned university and one selected private owned university in Ogun state. A self-constructed questionnaire was used for data collection in this study, was analyzed using descriptive statistics and Statistical Package for Social Scientists (SPSS). Findings revealed that Nigeria university students have access to different serial collections in academic libraries. Serial publications are available and students have equal access to serials publications in the library. Restriction of some serials materials to undergraduate constitutes impediments to the use of serials by students in the university libraries. Students who visit the library frequently to read Bulletins are better informed about the university issues. It was also revealed that students often visit the serial section in the Universities libraries for academic purposes. The Serial Librarian attitude affects students' use of serial section. There is a need to create conducive environment for students and guide the students in the proper use of serial publications. Serial Librarians should be well guided to give the best to the students in the use of serial publications and there is need for various universities to subscribe to different online or electronic serials.

A study carried out by Sambo and Akpojotor (2016) assessed the undergraduates' perception and utilization of serial materials in Federal University of Petroleum Resources Library. The study sample population comprised 1,365 registered library users' registration statistics 2014/2015 academic session. The instrument used for data collection in this study was questionnaire. The major findings of the study revealed that main library serial section had highest respondents whereas newspapers and thesis were the serial materials regularly used by the respondents while some never or hardly used journals. The major challenges confronting utilize of serial units in Federal University of Petroleum Resources, Effurun were some serial materials are not easily accessible,

lack of space in serial section, delay in supplying of daily and lack of journals in my area of study etc. The followings recommendations were made; articles should be organized to improve students' knowledge/skills, lecturers should mandate the students to use journals, librarians should device other strategies of enlighten library users, serial section should be expanded, Training and seminar on the use of journals, among others.

Ogunniyi *et al.* (2011). Investigated the use of serial publications in Adeyemi College of Education Library, Ondo, by the academic staff of the School of Arts and Social Sciences. Questionnaire was the main instrument of collecting data from the respondents. Also, complete enumeration sampling method was used. Out of the 49 questionnaires administered, 30 (61.2%) were returned and found useful for analysis. The study found that 20(66.7%) used the serial section of the Library while 10 (33.3%) did not. Also, 12 (6.6. %), 6(20%) and 12 (40%) used the section very often, often and rarely, respectively. It was inferred from the result that those that were not using the section did so because of the notion that there is non-availability of new journals in their areas of interest. It was recommended that the serial section should send list of recent journals and photocopies of contents' table to relevant departments to improve the use of the section.

Akinbode and Nwalo (2017). Investigates serials management in university libraries, determines the extent to which serials are accessed and used and appraises the influence of availability, accessibility and use of serials on publications output of lecturers in federal universities in Nigeria. Questionnaire administration method was adopted to accumulate data for the study. Combinations of both open-ended and closed-form types of questions were used. The study reveals that the universities studied have different types of serials in stock. Print and electronic serials were the major forms of serials used

by lecturers in Nigerian universities with print serials being the more utilised. University libraries and Internet were the major sources of serials used by the lecturers. The result also reports that lecturers in Nigerian universities had publications in six categories of publications. The influence of serials management on access and use as revealed by the results, management on access ($r = 0.112$; $P < 0.01$) was significant while management on use ($r = -0.031$; $P > 0.01$) was not significant. All the independent variables (management, access and use) when combined had significant influence on the dependent variable (publications output) ($F_{(3; 860)} = 12.48$, $R = 204$, $R^2 = 0.04$; $P < 0.01$). The study therefore recommends that government should provide adequate fund for provision of relevant, current and adequate serials for research activities to improve publications output of lecturers in Nigerian universities and that universities should maintain the policy associated with ‘publish or perish’ to boost research, information generation, utilisation and dissemination

Okagbue *et al.* (2018). Conduct a study on research output analysis for universities of technology in Nigeria. Research outputs of universities are often used for the determination of their ranking, prestige and impact among competing partners across the globe. This research focused on the qualitative analysis of research outputs, based on 27 identified research areas, for universities of technologies in Nigeria. The 27 subject areas of the top ten universities of Nigeria were obtained from Scopus database. Universities having less than two hundred documents were not included. Ranking and statistical methods were used for data analysis. The result showed that the research outputs from the universities of technology in Nigeria were poor especially when compared with other African countries like Egypt, Morocco, Ghana, South Africa, and Algeria and so on. Agricultural and Biological Sciences, Engineering, Environmental Sciences and Medicine were identified as subject areas of high research output. The

universities seem to perform poorly in 3 core science areas which are chemistry, physics and mathematics. Recommendations were made based on the findings of this study.

Okiki (2013) conduct a study on Availability of Information Resources for Research Output: Perception of Academic Staff Members in Nigerian Federal Universities. The volume of information resources potentially available in the globe is massive; hence it becomes necessary to examine available information resources for academics research activity in the academia. This study, therefore, examined the perception of academics on availability of information resources for research productivity in federal universities in Nigeria. Descriptive survey research design was adopted. The Multistage sampling technique was used to select 1,057 academic staff members from twelve federal universities in the six geo-political zones of Nigeria. The categories of academic staff covered in the study were from professorial cadre to graduate assistant. The instruments used for data collection were: Availability of Information Resources ($r= 0.69$) and Research Productivity of Academics ($r=0.91$). Eight hundred and seventy-three copies of the questionnaire were used for analysis. Data were analyzed using descriptive statistics, Pearson Product Moment Correlation Coefficient. There was no significant relationship between availability of information resources and academics research productivity. The mean score of information resources availability was adequate in Nigerian federal universities libraries ($\bar{x}=2.41$; $SD = 0.90$) which means that information resources were readily available to academics for research productivity. To further sustain academic staff research productivity, librarians should organize continuous awareness program on availability of information resources to increase research productivity of academics.

2.4 Summary of Literature Review

The literature review focused on the influence of serial publication on research output of postgraduate students. It shows that serial publications are generally believed to be all the print and non-print periodicals available in the library. Research output on the other hand is seen as the number of journal articles, book publications, and conference papers presentations, thesis by academics within a specified period.

The review shows that the quality and use of serial publications is actually made of information obtained from the information available to post graduate students for their research. The literature also shows that the following serial publications are regularly utilised by post graduate students'; journals, online journals, books, conference proceedings, government documents, newspapers/magazines and non-print media such as CD-ROMs and online and data base.

The literature reviews further showed that some problems hinder the quality and use of serial publications. They are as follows: paucity of relevant materials, insufficient fund for the library, irregular/lack of quality services, outdated resources, poor infrastructure (power supply, accommodation, sitting facilities, etc.), poor attitude of staff to services and lack of knowledge on how to use e-resources. Some theories and model related to utilization of serial publications were also identified and reviewed. First was Shannon-Weaver model of communication which provides a theoretical explanation of the relationship that exists between serial publications of post graduate students and their research output. It is on this model that the present study is based. Todd's information utility theory was another theoretical framework that was reviewed. Some relevant empirical works both locally and internationally were also identified and reviewed.

These studies were mainly on serial publications and research output of post graduate students.

Another important revelation from the literature is that in spite of the importance of higher education in Nigeria no empirical study has been conducted in National Open University of Nigeria (NOUN) with regard to quality and use of serial publications and research output of post graduate students as far as this researcher could discover. Hence, all the local and international studies found and reviewed in this study concentrated on the university and polytechnic systems. It is, therefore, not known through research whether the quality and use of serial publications influences research output of National Open University of Nigeria (NOUN) post graduate students. Literature reviewed also failed to show clearly if serial publications are adequate, current and relevant, its influence on post graduate students research output and the frequency of usage. This is the gap in knowledge that this researcher seeks to fill.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Design

This research adopted the survey research design method, it is cross-sectional in nature. It is used to measure a situation with a view to correcting inadequacies or effecting improvement (Singleton & Straits, 2009). Ponto (2015) defined survey research design as a way of collecting information about the opinion, attitude, feeling, belief and behaviour of people where each member of population has equal chance of being selected. The Survey research design is the selection of random samples from large and small population to obtain empirical knowledge of a present nature. It is less cumbersome than many other data collection techniques. It's pertinent to note that the survey method can be used to collect information on a wide range of data, including personal facts, attitudes, past behaviours and opinions. The survey research design, was instrumental during the course of this research because it is relatively cheap and serve as a fast way of collecting information and data on the influence of quality and use of

serial publications on research output of postgraduate students in National Open University Nigeria in North Central Zone, Nigeria.

3.2 Population of the Study

The population of the study is 7,027 postgraduate students in four National Open University of Nigeria (NOUN) centres in North-central, Nigeria. The target population of the study are the Master students of the National Open University of Nigeria (NOUN) who are currently running one programme or the other. The population of the Master students of the National Open University of Nigeria North Central zone, Nigeria is 7,027 which will be the aggregate population for the study. The breakdown would be shown in Table 3.1.

Table 3.1: Population of the Study

S/N	Name of National Open University Nigeria (NOUN)	Number of Master's Student
1	National Open University of Nigeria, Abuja, FCT	1,984
2	National Open University of Nigeria study centre, Lokoja, Kogi State.	1,637
3	National Open University of Nigeria study centre, keffi, Nassarawa State	1,766
4	National Open University of Nigeria study centre, Jos, Plateau State.	1,640
Total		7,027

Source: Internal record of the institutions (2019)

3.3 Sample and Sampling Technique

The sample size of the population is 370 Master degree students of the National Open University of Nigeria (NOUN) within North-central, Nigeria. The sample size is drawn from Krejcie and Morgan (1970), recommended table for determining sample size of a population where it is stated that, for a population size of 1,200 a sample size of 291 should be used and for a population size of 1500, a sample size of 306 should be used. Therefore, for a population size of 7,027 a sample size of 370 is adequate for this study. This shows that a sample size of 364 is obtained from 7,027 at a level of confidence of 95% and at margin error of 0.5. The researcher will use stratified sampling technique to select 364 out of the 7,027 target population of Master's students of the National Open University of Nigeria (NOUN) with libraries in North-central, Nigeria.

Stratified sampling technique was used to sample each National Open University of Nigeria (NOUN) under study. According to Kothari and Garg (2014) stratified sampling is a type of sampling method in which the total population is divided into smaller groups or strata to complete the sampling process. The strata are formed based on some common characteristics in the population data. After dividing the population into strata, the researcher randomly selects the sample proportionally. The rationale for this selection includes the fact that these selected study centres have common characteristics needed for the research and among others which is the availability of libraries in these selected National Open University of Nigeria (NOUN) study centres offer masters programmes and they are accredited by National University Commission (NUC).

Table 3.2: Sample Size of the Study

S/N	Name of National Open University of Nigeria	Postgraduate students
1.	National Open University, Abuja, FCT	104
2.	National Open University of Nigeria study centre, Lokoja, Kogi State	88

3.	National Open University of Nigeria study	93
	centre, Keffi, Nassarawa State	
4	National Open University of Nigeria study	85
	centre, Jos, Plateau State	
Total		370

3.4 Data Collection Instrument

The research instrument adopted for the collection of data of this study was the questionnaire. A questionnaire titled “Influence of Quality and Use of Serial Publications on Research Output of Postgraduate Students in National Open University of Nigeria (NOUN) in North-central, Nigeria (IQUSPROPS).” The questionnaire was structured and based on research questions with provisions for the respondents to tick where appropriate. The questionnaire was structured for the study based on Ponto (2015) recommendation that in a study, it is advantageous for respondents to answer at their convenient time. The purpose of using questionnaire was to enable the respondents express their opinions on subject matter.

Respondents were offered range of opinion in order to choose the one reflect their views. The questionnaire for the study is named questionnaire for post graduate students which contained six (6) sections. The questions in Section “A” contained items on their demographic information; Section “B” contained items on how current are serial publications available for post graduate students’ research output; Section “C” contained items on the how adequate are serial publications available for post graduate students’ research output. Section “D” contained items on the how relevant are serial publications available for post graduate students’ research output Section “E” contained items on the frequency of use of serial publications on research output of post

graduate students, Section ‘‘F’’ contained items on the challenges militating against the quality and use of serial publications on research output of post graduate students.

3.5 Validity of Research Instrument

The questionnaire was validated with the help of the researcher’s supervisor, two (2) lecturers in the Department of Library and Information Technology and an expert in Statistics Department of Federal University of Technology, Minna. They thoroughly when through the content of the questionnaire, whether it is in accordance with the research question and statement of the problem. Furthermore, the format of the questionnaire, the appropriateness of the questionnaire title, clarity of items contained therein and to correct any grammatical errors in the questionnaire. The comments, observations and criticism made were used to correct and strengthen the instrument. Their criticisms served as improvement on items in the format of the research instruments in order to enable the questionnaire address urgent and emerging issues on the quality and use of serial publications on research output of post graduate students as it affects the students.

3.6 Reliability of Research Instrument

The reliability was carried out using forty (40) copies of questionnaire administered to postgraduate students of the National Open University of Nigeria (NOUN), Kaduna, Kaduna state. The collected data were analysed using Cronbach Coefficient Alpha formula which gave a result of 0.87 indicating that the instrument is very reliable and suitable for the study. The result is attached as Appendix B (pp. 81) of the work.

3.7 Procedure for Data Collection

The researcher collected a letter of introduction from the Head of Department, Library and Information Technology, Federal University of Technology, Minna to National

Open University of Nigeria (NOUN), Kaduna study centre, Kaduna State. The letter was attached to the copies of the questionnaire to be administered. The researcher personally administered the questionnaire alongside with the help of seven (7) other research assistants who will be selected from the four National Open University of Nigeria (NOUN), under study. The respondents had four (4) weeks to fill the questionnaire after which it was collated by the researcher.

3.8 Method of Data Analysis

The data were analysed using descriptive and inferential statistical tools. Descriptive statistical analysis was used to analyse the descriptive data from the respondents. Frequency distribution, mean and percentages were used for descriptive analysis, while Pearson Product Moment Correlation (PPMC) descriptive statistical tool was used to test the three null hypotheses.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

This chapter presents the analysis and interpretation of the data collected from the respondents and testing of the hypotheses. Interpretation of results are organised under the following sub-headings:

4.1 Response Rate

A total number of three hundred and seventy (370) copies of questionnaire were administered to the respondents in the four (4) National Open University of Nigeria (NOUN) under study. Three hundred and forty nine (349) copies of questionnaire were filled, returned and found usable for the analysis. Table 4.1 below shows the response

rate based on the copies of questionnaire administered, returned and their percentage(s) in each of the National Open University of Nigeria studied.

Table 4.1: Response Rate

S/N	Name of National Open University of Nigeria (NOUN)	No. of Administered Questionnaire	No. of Returned Questionnaire	Percentage(s) (%)
1	National Open University of Nigeria Abuja study centre, FCT	104	97	27.8
2	National Open University of Nigeria, Lokoja study centre, Kogi State	88	82	23.5
3	National Open University of Nigeria, Keffi, study centre Nassarawa State	93	87	24.9
4	National Open University of Nigeria, Jos study centre, Plateau State	85	83	23.8
	Total	370	349	100

Table 4.1 reveals that 104 copies of questionnaire were administered to postgraduate students attending National Open University of Nigeria, Abuja, 97 copies representing [27.8%] were returned, 88 copies of questionnaire were administered to postgraduate student attending National Open University of Nigeria study centre, Lokoja, Kogi State, 82 copies of questionnaire representing [23.5%] were returned, 93 copies of questionnaire were administered to postgraduate students attending National Open University of Nigeria study centre, Keffi, Nassarawa State, 87 copies representing [24.9%] were returned and 85 copies of questionnaire were administered to postgraduate students attending National Open University of Nigeria study centre, Jos, Plateau State, 83 copies representing [23.8%] were returned.

4.2 Descriptive Analysis of Demographic Data

The respondents were asked to indicate their demographic variables.

Table 4.2 shows the demographic data based on their occupation

Occupation (postgraduate student)	Frequency	Percentage(s)
Civil service	161	46.1
Farming	48	13.8
Business	71	20.3
Trading	34	9.7
Unemployed	21	6
Others	14	4
Total	349	100

The results from Table 4.2 shows that 161(46.1%) of the respondents were civil servants, 48(13.1%) of the respondents were into farming, 71(20.3%) of the respondents were into business, 34(9.7%) of the respondents were into trading, 21(6%) of the respondents were unemployed, while 14(4%) of the respondents have other occupations.

This shows that most of the respondents are civil servants.

Table 4.3 shows the demographic data based on their gender

S/N	Gender	National Open University, Abuja, FCT	National Open University of Nigeria study centre, Lokoja, Kogi State	National Open University of Nigeria study centre, Keffi, Nassarawa State	National Open University of Nigeria study centre, Jos, Plateau State	Frequency	Percentage(s)
1	Male	63	57	58	42	220	63
2	Female	34	25	29	41	129	37
	Total	97	82	87	83	349	100

The results from Table 4.3 shows that 63 male and 34 female of the respondents represents National Open University of Nigeria, Abuja, FCT. 57 male and 25 female of the respondents represents National Open University, Lokoja, Kogi State. 58 male and 29 female of the respondents represents National Open University, Lokoja. Kogi State. 42 male and 41 female of the respondents represents National Open University, Jos, Plateau State. The table shows that 220(63%) represents male and 129(37%) represents female of the studied area. This shows that most of the respondents are male.

4.3 Answering Research Questions

4.3.1 Research Question One: How Current are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

Table 4.4 below shows the response rate by postgraduate students on how current are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN)?

Table 4.4: How Current are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

S/N	Statements	SA	A	D	SD	N	\bar{x}	STD	Decision
		4	3	2	1	349			
1	Serial publications available for my research are between 2017-2019	3(0.9%)	101(28.9%)	164(47.0%)	81(23.2%)	349	2.07	0.74	Disagreed
2	Serial publications available for my research are between 2014-2016	146(41.8%)	45(12.9%)	120(34.4%)	38(10.9%)	349	2.86	1.09	Agreed
3	Serial publications available for my research are between 2011-2013	11(3.2%)	87(24.9%)	186(53.3%)	65(18.6%)	349	2.53	0.81	Agreed
4	Serial publications available for my research are between 2008-2010	83(23.8%)	109(31.2%)	125(35.8%)	32(9.2%)	349	2.70	0.93	Agreed
5	Serial publications available for my research are between 2005-2007	140(40.1%)	11(31.8)	81(23.2%)	17(4.9%)	349	3.07	0.91	Agreed
6	Serial publications available for my research are below 2005	61(17.5%)	84(24.1%)	139 (39.8%)	65(18.6%)	349	2.40	0.98	Disagreed

Key: Strongly Agreed (SA), Agreed (A), Disagreed (D), Strongly Disagreed (SD).

Table 4.4 shows how current serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN). It shows that out of the six items listed for postgraduate students to indicate how current are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN), four items have high mean scores above 2.5 benchmark. These items include item 2: Serial publications available for my research are between 2016-2014 ($\bar{x}=2.86$; $SD=1.09$), item 3: Serial publications available for my research are between 2013-2011 ($\bar{x}=2.53$; $SD=0.81$), item 4: Serial publications available for my research are between 2010-2008 ($\bar{x}=2.70$; $SD=0.93$) and item 5: Serial publications available for my research are between 2007-2005 ($\bar{x}=3.07$; $SD=0.93$). On the other hand, two items produced low mean scores below the benchmark of 2.50 because they were not used for research output by postgraduate student. These include item 1: Serial publications available for my research are between 2019-2017 ($\bar{x}=2.07$; $SD=0.74$) and item 6: Serial publications available for my research are below 2005 ($\bar{x}=2.40$; $SD=0.98$).

4.3.2 Research Question Two: How adequate are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

Table 4.5 below shows the response rate by postgraduate students on how adequate are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN)?

Table 4.5: How adequate are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

S/N	Statements	SA	A	D	SD	N	\bar{x}	STD	Decision
		4	3	2	1	349			
1	Serial publications available are sufficient and other sources are not needed for my research.	3(0.9%)	101(28.9%)	164(47.0%)	81(23.2%)	349	2.02	1.01	Disagreed
2	Serial publications available are not sufficient and other sources are needed for my research.	146(41.8%)	45(12.9%)	120(34.4%)	38(10.9%)	349	2.67	1.23	Agreed
3	Printed journals are readily available for my research.	11(3.2%)	87(24.9%)	186(53.3%)	65(18.6%)	349	2.54	0.94	Agreed
4	Printed journals are not readily available for my research.	83(23.8%)	109(31.2%)	125(35.8%)	32(9.2%)	349	2.04	0.93	Disagreed
5	Information resources available in the virtual library are sufficient for my research	140(40.1%)	11(31.8)	81(23.2%)	17(4.9%)	349	2.59	0.86	Agreed
6	Information resources available in the virtual library are not sufficient for my research	111(31.8%)	86(24.6%)	85(24.4%)	67(19.2%)	349	2.23	1.11	Disagreed

Key: Strongly Agreed (SA), Agreed (A), Disagreed (D), Strongly Disagreed (SD).

Table 4.5 shows how adequate are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria. It shows that three items listed for postgraduate students to indicate how adequate are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN), 3 items have high mean scores above 2.50 bench mark. These items include item 2: Serial publications available are not sufficient and other sources are needed for my research. (\bar{x} =2.67; SD=1.23), item 3: Printed journals are readily available for my research (\bar{x} =2.54; SD=0.94) and item 5: Information resources available in the virtual library are sufficient for my research (\bar{x} =2.54; SD=0.86). On the other hand, three items produced low mean scores below the bench mark of 2.50 because they were not used for research output by postgraduate student .These include item 1: Serial publications available are sufficient and other sources are not needed for my research (\bar{x} =2.02; SD=1.01), item 4: Printed journals are not readily available for my research (\bar{x} = 2.04, SD=0.93), item 6: Information resources available in the virtual library are not sufficient for my research (\bar{x} =2.23; SD=1.11)

4.3.3 Research Question Three: How relevant are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

Table 4.6 below shows the response rate by postgraduate students on how relevant are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria.

Table 4.6: How relevant are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)

S/N	Statements	SA	A	D	SD	N	\bar{x}	STD	Decision
		4	3	2	1	349			
1	Serial publications available are appropriate for my research.	65(18.6%)	106(30.4%)	160(45.8%)	18(5.2%)	349	2.62	0.84	Agreed
2	Serial publications available are not appropriate for my research.	65(18.6)	83(23.8%)	125(35.8%)	76(21.8%)	349	2.39	1.02	Disagreed
3	Serial publications available are exactly what is needed for my research.	48(13.8)	117(33.5)	145(41.5)	39(11.2%)	349	2.50	0.87	Agreed
4	Serial publications available are far from what i need for my research.	43(12.3)	79(22.6%)	132(37.8%)	95(27.2%)	349	2.20	0.98	Disagreed
5	Printed journals are relevant for my research.	109(31.2%)	118(33.8%)	100(28.7)	22(6.3%)	349	2.90	0.92	Agreed
6	Printed journals are not relevant for my research.	30(8.6%)	110(31.5%)	151(43.3%)	58(16.6%)	349	2.32	0.85	Disagreed

Key: Strongly Agreed (SA), Agreed (A), Disagreed (D), Strongly Disagreed (SD).

Table 4.6 shows how relevant are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN). It shows that three items listed for postgraduate students to indicate how relevant are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN), have high mean scores above 2.5 bench mark. These items include item 1: Serial publications available are appropriate for my research ($\bar{x}=2.62$; $SD=0.84$), item 3: Serial publications available are exactly what is needed for my research ($\bar{x}=2.50$; $SD=0.87$) and item 5: Printed journals are relevant for my research ($\bar{x}=2.90$; $SD=0.92$). On the other hand, three items produced low mean scores below the bench mark of 2.50 because they were not used for research output by postgraduate student .These include item 2: Serial publications available are not appropriate for my research ($\bar{x}=2.39$; $SD=1.02$), item 4: Serial publications available are far from what i need for my research ($\bar{x}= 2.20$, $SD=0.98$), item 6: Printed journals are not relevant for my research ($\bar{x}=2.32$; $SD=0.85$)

4.3.4 Research Question Four: What is the frequency of use serial publications for research output by post graduate students in National Open University of Nigeria (NOUN)?

Table 4.7 below shows the response rate by postgraduate students on the frequency of use serial publications for research output by post graduate students in National Open University of Nigeria (NOUN)

Table 4.7: What is the frequency of use serial publications for research output by post graduate students in National Open University of Nigeria (NOUN)

S/N	Statements	SA	A	D	SD	N	\bar{x}	STD	Decision
		4	3	2	1	349			
1	Always	71(20.3%)	88(25.2%)	138(39.5%)	52(14.9%)	349	2.51	0.98	Agreed
2	Often	67(19.2%)	76(21.8%)	133(38.1%)	73(20.9%)	349	2.59	1.05	Agreed
3	Occasionally	82(23.5%)	74(21.2%)	164(47.0%)	29(8.3%)	349	2.60	0.94	Agreed
4	Never	89(25.5%)	87(24.9%)	113(32.4%)	60(17.2%)	349	2.39	1.02	Disagreed

Key: Strongly Agreed (SA), Agreed (A), Disagreed (D), Strongly Disagreed (SD).

Table 4.7 shows the frequency of use serial publications for research output by post graduate students in National Open University of Nigeria (NOUN). It shows that three items listed for postgraduate students to indicate the frequency use of serial publications for research output by postgraduate students in National Open University of Nigeria (NOUN), have high mean scores above 2.5 bench mark. These items include item 1: Always (\bar{x} =2.51; SD=0.98), item 2: Often (\bar{x} =2.59; SD=1.05) and item 3: Occasionally (\bar{x} =2.60; SD=0.94). On the other hand, one item produced low mean score below the bench mark of 2.50 because they were not used for research output by postgraduate student .This include item 4: Never (\bar{x} =2.39; SD=1.02).

4.3.5 Research Question Five: What are the challenges of the quality and use of serial publications by post graduate students in National Open University of Nigeria (NOUN)?

Table 4.8 below shows the response rate by postgraduate students on the challenges of the quality and use of serial publications by postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria.

Table 4.8: What are the challenges of the quality and use of serial publications by post graduate students in National Open University of Nigeria (NOUN)

S/N	Statements	SA	A	D	SD	N	\bar{x}	STD	Decision
		4	3	2	1	349			
1	Out dated serial publications affect my research output	25(7.2%)	118(33.8%)	189(54.2%)	17(4.9%)	349	2.53	0.69	Agreed
2	Inadequacy of serial publications affect my research output.	37(10.6%)	77(22.1%)	146(41.8%)	89(25.5%)	349	2.18	0.93	Disagreed
3	I do not know how to use serial publications	51(14.6)	77(22.1%)	138(39.5%)	83(23.8%)	349	2.28	0.99	Disagreed
4	I do not have access to print serial publications	64(18.3%)	139(39.8)	123(35.2%)	23(6.6%)	349	2.70	0.84	Agreed
5	Lack of subscription to electronic databases	53(15.2%)	99(28.4%)	153(43.8%)	44(12.6%)	349	2.56	0.90	Agreed
6	Paucity of journals in area of interest	16(4.6%)	105(30.1%)	168(48.1%)	60(17.2%)	349	2.62	0.78	Agreed
7	I do not know how to use the virtual library.	95(27.2%)	98(28.1%)	117(33.5%)	39(11.2%)	349	2.71	0.99	Agreed

Key: Strongly Agreed (SA), Agreed (A), Disagreed (D), Strongly Disagreed (SD).

Table 4.8 shows the challenges of the quality and use of serial publications by postgraduate students in National Open University of Nigeria (NOUN). It shows that five items listed for postgraduate students to indicated the challenges of the quality and use of serial publications by postgraduate students in National Open University of Nigeria (NOUN), have high mean scores above 2.5 bench mark. These items include item 1: Out dated serial publications affect my research output (\bar{x} =2.53; SD=0.69), item 4: I do not have access to print serial publications (\bar{x} =2.70; SD=0.84), item 5: Lack of subscription to electronic databases (\bar{x} =2.56; SD=0.90), item 6: Paucity of journals in area of interest (\bar{x} =2.62; SD=0.78) and item 7: I do not know how to use the virtual library (\bar{x} =2.69; SD=0.99). On the other hand, two items produced low mean scores below the bench mark of 2.50. These include item 2: Inadequacy of serial publications affect my research output (\bar{x} =2.18; SD=0.93). item 3: I do not know how to use serial publications (\bar{x} =2.28; SD=0.99).

4.4 Testing of Hypotheses

H₀₁: There is no significant relationship between currency of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

Table 4.9 shows the relationship between currency of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

Table 4.9: Relationship between currency of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

Variable	n	df	Mean	SD	R	P
currency of serial publication			28.57	1.24		
		347			0.266	0.05
	349					
Research output of postgraduate students			21.26	1.07		

Table 4.9 shows that the correlation coefficient is 0.266, $P > 0.05$. That is, critical value R is greater than P value of 0.05. Therefore, the null hypothesis is rejected. This indicates that current serial publication will be useful for research output of postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria.

H₀₂: There is no significant relationship between adequacy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

The table below shows the relationship between adequacy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN) in North-central, Nigeria.

Table 4.10: Relationship between adequacy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN)

Variable	n	df	Mean	SD	R	P
Adequacy of serial publication			23.72	1.03		
		347			0.578	0.05
	349					
Research output of postgraduate students			25.39	1.09		

Table 4.10 shows that the correlation coefficient is 0.578, $P > 0.05$. That is, critical value R is greater than P value of 0.05. Therefore, the null hypothesis is rejected. This implies that there will be adequacy of serial publication for research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

H₀₃: There is no significant relationship between relevancy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

Table 4.11 shows the relationship between relevancy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

Table 4.11: Relationship between relevancy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

Variable	n	df	Mean	SD	R	P
Relevancy of serial publication			24.33	0.80		
		347			0.601	0.05
	349					
Research output of postgraduate students			27.14	0.99		

Table 4.11 shows that the correlation coefficient is 0.601, $P > 0.05$. That is, critical value R is greater than P value of 0.05. Therefore, the null hypothesis is rejected. This indicate that there is relevancy of serial publication used for research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

4.5 Summary of Findings

Based on the results of the analysis, the following are the summary of major findings:

1. The study revealed that for currency of serial publications used for research output by postgraduate students of the National Open University of Nigeria (NOUN): Serial publications available for my research are between 2005-2016.
2. The study also revealed that for adequacy of serial publications used for research output by postgraduate students of National Open University of Nigeria (NOUN): Serial publications available are not sufficient and other sources are needed for my research, Printed journals are readily available for my research and Information resources available in the virtual library are sufficient for my research.

3. The relevancy of serial publications used for research output by postgraduate students of National Open University of Nigeria (NOUN): Serial publications available are appropriate for my research, serial publications available are exactly what is needed for my research and printed journals are relevant for my research
4. The frequency of use of serial publications for research output by postgraduate students of National Open University of Nigeria (NOUN) shows that the serial publications are always used for research.
5. The challenges of quality and use of serial publications by postgraduate students of National Open University of Nigeria (NOUN) lack of subscription to electronic databases and paucity of journals in area of interest.
6. There is significant relationship between adequacy of serial publication and research output of postgraduate students of National Open University of Nigeria (NOUN), North-central, Nigeria.
7. There is significant relationship between currency of serial publication and research output of postgraduate students of National Open University of Nigeria (NOUN), North-central, Nigeria.
8. There is significant relationship between relevancy of serial publication and research output of postgraduate students of National Open University of Nigeria (NOUN), North-central, Nigeria.

4.6 Discussion of the Findings

Research Questions

4.6.1 Research question 1: How Current are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

The findings of the study revealed that the currency of serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN) are: Serial publications available for my research are between 2016-2014, serial publications available for my research are between 2013-2011 and serial publications available for my research are between 2010-2008 as indicated in Table 4.3.1. This findings of the study is in line with Nyiyongo *et al.* (2020) who revealed that serial resources such as Journals, Newspapers and magazines were used to a great extent while transaction and memoires of society, newsletter, annuals, proceedings, numbered monographic series, bulletins, series computer database and report are used to moderate extent for research activities by postgraduate students in University libraries in Benue State.

In the same vein, Olanlokun and Mommoh (2014) confirmed that journal articles, textbooks, theses and dissertation, monographs, treatises and government documents were considered very important to the job performance of the Nigerian academics. In their own contribution Ufuoma *et al.* (2015) that periodical are used to a great extent, that users consulted more than five different types of newspapers daily in order to solve information needs.

4.6.2 Research question 2: How adequate are serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN)?

The study also revealed that the adequacy of serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN) are: Serial publications available are not sufficient and other sources are needed for my research, Printed journals are readily available for my research and Information resources available in the virtual library are sufficient for my research. The findings of the study is also supported by Robert (2011), Tyagi (2014) and Kisiedu (2018) in their separate studies commented on the declining budgetary allocations in most tertiary institutions in Africa which have great negative impact on the availability and adequacy of serial publications in libraries. Consequently, African scholars depend heavily on gifts and donated materials from foreign countries for information for their research even on local issues. This scenario seriously affects research output of students in developing countries, including Nigeria, as much time, fund and energy are wasted trying to track down these foreign information resources. In the same vein Tomomowo-Ayodele and Hameed (2018) revealed that all students have equal access to serials publications. Undergraduate students were restricted to some classified materials in the library. This is a serious inhibiting factor to the effective and efficient use of serial publication by students in the library. Students who consult Bulletins frequently in the library have better access to serials and were better informed about the programme in the University community. Students who frequently go to the library to read Newspapers, Journals and abstract are not well informed about the university community programmes. Students frequently patronize the serial section of the library for academic purposes. Despite the mammoths benefit attached to the use of serials by students in the library, attitude of serial librarian affects student's use of serial section adversely.

Students' low expectation from the use of serials publication has culminated into its neglect in the library

4.6.3 Research question 3: How relevant are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

The study shows the relevance of serial publications used for research output by postgraduate students in National Open University of Nigeria (NOUN). The respondents indicated that Printed journals are relevant for research output for postgraduate student as shown in table 4.3.3. The relevance of serial publications especially in the developing countries has not been without some setbacks. Akinbode (2011) stated that the success of every library therefore should be measured in terms of its efforts in acquiring and managing relevant serials. Similarly, the motives and purpose of users for approaching the library determine the information resources that users are likely to consult. Most faculties needs information for the purpose of research and teaching and are desirous of information sources such as journals, theses and dissertations, government publications, conference proceedings and reference materials

4.6.4 Research question 4: What is the frequency use of serial publications for research output by post graduate students in National Open University of Nigeria (NOUN).

The analysis from research question four showed that the frequency use of serial publications for research output are always used by postgraduate students of the National Open University of Nigeria (NOUN). This corroborates with the findings of Anunobi (2010) who noted that user expectation from any information providing system is to make available directly or remotely and in real time the needed information, format notwithstanding. She said in the university environment, the library major information's

providing system supports teaching, learning and research which information materials of various types. Among these diverse information materials, serials are needed especially by faculty and research students. However, with the development of it ICT based library services which brought with it self services and simultaneous to resources

4.6.5 Research question 5: What are the challenges of the quality and use of serial publications by post graduate students in National Open University of Nigeria (NOUN)?

The study revealed that the challenges of the quality and use of serial publications by post graduate students in National Open University of Nigeria (NOUN), North-central, Nigeria are out dated publications affected the research output, inadequacy of serial publications affect my research output, lack of subscription to electronic databases and paucity of journals in area of interest. The findings of the study is in line with Akinbode (2011) who identified some of the challenges as; inadequate funding, high foreign exchange rate, inflation, poor attitude of users, inadequate facilities, lack of staff, non-availability of current serials, poor lighting, inaccessibility of available issues and insufficient number of copies influenced serial management, practices and use in libraries on publications output of lecturers in Nigerian Universities.

In a similar study, Ekefere (2012) studied the management and use of serials collections at College of Education Library, Ilorin, Kwara State, Nigeria. The result revealed that funding, acquisition, user's attitude and human resources were mainly institutional problems. It was recommended among others that adequate funding, users' educations, subscriptions, improved human services for effective and efficient services in order to satisfy users' needs would alleviate the problems of serials.

4.7 Findings on the Tested Hypotheses

H₀₁ There is no significant relationship between currency of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

The test of the null hypothesis between currency of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN) studied has shown that there is significant relationship between them. This indicated that current serial publication will be useful for research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria. This is similar to the view of Susanah and Ayobami (2018) suggested that serials are important and popular learning materials because they contain current information. They are available locally and could be ordered overseas. Serials is often used as a synonym for periodicals and could be published as journals, newspapers, magazines, bulletins etc findings and studies revealed that much photocopying of important articles and interesting academic topics in serials are often demanded by library users in Nigerian Universities.

H₀₂: There is no significant relationship between adequacy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

The test of null hypothesis one revealed that there is significant relationship between adequacy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria. This implies that there will be adequacy of serial publication for research output of postgraduate students in National

Open University of Nigeria (NOUN), North-central, Nigeria. This was corroborated by Ogunronbi (1997) serials publications form the backbone of any academic library because of their nature of informational value for the students. Academic and research libraries acquire, organize, store, retrieve and disseminate information contained in serial publications for researchers, educators, students and other interested persons in their various disciplines.

H₀₃ There is no significant relationship between relevancy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria.

The test of the null hypothesis between relevancy of serial publication and research output of postgraduate students in National Open University of Nigeria (NOUN) studied has shown that there is significant relationship between them. This indicated that there is relevancy of serial publication used for research output of postgraduate students in National Open University of Nigeria (NOUN), North-central, Nigeria. This is supported by Elaturoti *et al.* (1990), serial publications constitute an important part of the library collection because the information contained in them is more current than those in published books. Fayose (1995) affirmed that, “periodicals are useful because they are the most up-to-date resources in the library and that the articles in periodicals are often written by experts in the field.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

From the findings of the study it could be deduced that research output has remained one of the indices for measuring post graduate students' success or failure in academic institutions. The serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN) Abuja, FCT, Lokoja, Kogi State, Lafia, Nassarawa State and Jos, Plateau State is moderately achieved. On the other hand, the challenges of the quality and use of serial publications by post graduate students of National Open University of Nigeria (NOUN) are quite tough for the researcher. Postgraduate students are faced with the challenges of paucity of journals in area of interest, out dated serial publications, inadequacy of serial publications and lack of subscription to electronic databases.

5.2 Recommendations

Based on the findings of the study, the following recommendations are made:

1. The management of the National Open University of Nigeria (NOUN) in North-central, Nigeria should provide current serial publications for research of post graduate students.
2. The management of National Open University of Nigeria (NOUN) in North-central, Nigeria should also provide serial publications that will be available and appropriate for research
3. The management of National Open University of Nigeria (NOUN) in North-central, Nigeria where the study centres are established should strive to provide adequate serial publications that will be used for research by postgraduate students.

4. National Open University of Nigeria (NOUN) in North-central, Nigeria should endeavour to update serial publications for research work of postgraduate students.
5. National Open University of Nigeria (NOUN) in North-central, Nigeria should ensure that postgraduate students should frequently use serial publications for their research.
6. The management of National Open University of Nigeria (NOUN) in North-central, Nigeria should make serial publication available in different area of interest.

5.3 Contribution to Knowledge

The study contributes to knowledge in the following areas:

1. The study revealed that the serial publications available are not sufficient and other sources are needed for research work, the serial publications should be sufficient enough for the postgraduate student.
2. The study revealed that even though Information resources available in the virtual library are not sufficient for research. The postgraduate student still need to make use of electronic database.
3. The study has equally added to the already existing literatures on how to use serial publications and research output of postgraduate student.

5.4 Suggestion for Further Research

1. This study was on the influence of quality and use of serial publications on research output of postgraduate students of National Open University of Nigeria (NOUN) North-central, Nigeria. As such, it is therefore, necessary for one to suggest a similar research on the effect of adequacy and currency of serial publications on

research output of postgraduate students in Federal Universities, North-central, Nigeria

2. Assessment of information dissemination on the use of serial publications on research output of postgraduate students in Federal universities, South-West Nigeria.

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APPENDIX A

Department of Library and Information Technology,
Federal University of Technology, Minna,
Niger State.

30th October, 2019.

Dear Respondent,

I am an MTech student of the Department of Library and Information Technology, Federal University of Technology, Minna with Matriculation Number MTECH/SICT/2017/7862. Currently, I am conducting a research titled “Influence of adequacy and currency of serial publications on Research Output of Post graduate Students in National Open University of Nigeria (NOUN) North-central, Nigeria”. I will appreciate it if you could kindly complete the attached questionnaire. Any information obtained in connection to the study will be used strictly for the purpose of this research only and will be treated with confidentiality.

Thank you.

Yours sincerely,

AWODI, Maryam
(MTECH/SICT/2017/7862)

SECTION A: Demographic Data

1. Name of Institution/ Study Centre _____

2. Gender: Male [☐] Female [☐]

SECTION B

1. How Current are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

S/N	Items	SA 4	A 3	D 2	SD 1
1	Serial publications available for my research are between 2019-2017				
2	Serial publications available for my research are between 2016-2014				
3	Serial publications available for my research are between 2013-2011				
4	Serial publications available for my research are between 2010-2008				
5	Serial publications available for my research are between 2007-2005				
6	Serial publications available for my research are below 2005				

2. How adequate are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

S/N	Items	SA 4	A 3	D 2	SD 1
1	Serial publications available are sufficient				
2	Serial publications available are not sufficient				
3	Printed journals are readily available for my research.				
4	Printed journals are not readily available for my research.				
5	Information resources available in the virtual library are sufficient for my research				
6	Information resources available in the virtual library are not sufficient for my research				

3. How relevant are serial publications used for research output by post graduate students in National Open University of Nigeria (NOUN)?

S/N	Items	SA 4	A 3	D 2	SD 1
1	Serial publications available are appropriate for my research.				
2	Serial publications available are not appropriate for my research.				
3	Serial publications available are exactly what is needed for my research.				
4	Serial publications available are far from what i need for my research.				
5	Printed journals are relevant for my research.				
6	Printed journals are not relevant for my research.				

4. What is the frequency use of serial publications for research output by post graduate students in National Open University of Nigeria (NOUN)?

S/N	Items	SA 4	A 3	D 2	SD 1
1	Always				
2	Often				
3	Occasionally				
4	Never				

5. What are the challenges of the quality and use of serial publications by post graduate students in National Open University of Nigeria (NOUN)?

S/N	Items	SA 4	A 3	D 2	SD 1
1	Out dated serial publications affect my research output				
2	Inadequacy of serial publications affect my research output.				
3	I do not know how to use serial publications				
4	I do not have access to print serial publications				
5	Lack of subscription to electronic databases				
6	Paucity of journals in area of interest				
7	I do not know how to use the virtual library.				

Cronbach Alpha Reliability Analysis Result

Notes

Output Created		08-OCT-2019 23:32:59
Comments		
Input	Data	C:\Users\dell\Desktop\DEFAULT BACKUP\ANALYSIS\AWODI.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	
	Matrix Input	
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the procedure.
Syntax		RELIABILITY /VARIABLES=SB1 SB2 SB3 SB4 SB5 /SCALE('ALL VARIABLES') ALL /MODEL=ALPHA.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02

CRONBACH ALPHA RELIABILITY COEFFICIENT DATA

SECTION B

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.787	.762	13

SECTION C

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.951	.934	4

SECTION D

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.914	.893	4

SECTION E

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.904	.882	4

SECTION F

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.795	.675	6

The total Cronbach's Alpha = $\frac{0.787 + 0.951 + 0.914 + 0.094 + 0.795}{5}$

$$= \frac{4.351}{5} = 0.87$$

Cronbach's Alpha = 0.87 (This indicates that the instrument is reliable and can therefore be used for the study)