

Academic librarians' roles and competencies in research partnership: A qualitative study

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ABSTRACT

In the past decades, academic librarianship has been preoccupied with changes that include academic librarians as research partners due to the changing landscape in scholarly communication services, evolving technologies, and institutional missions. Thus, the idea of academic librarians being a partner in research rather than mere research supporters is a new development in academic librarianship that requires attention, especially on what academic librarians can do to partner with the research community successfully. Therefore, this study employed a qualitative approach to explore academic librarians' roles as research partners and the competencies required for better collaborations. Data were generated through face-to-face interviews with 14 academic librarians purposively sampled from a major research university in Nigeria. Ten themes emerged from the findings regarding academic librarians' role as research partners. These include information discovery and provision, information use and evaluation; grants application; articulation of research topic; literature and reference management; research data management, systematic review, authoring a manuscript, scholarly publishing, and research dissemination. Similarly, eleven themes emerged as the competencies required to be analysed under the dimensions of knowledge, skill, and attitude. These include research methodology and research data management as the knowledge needed in a research partnership. While digital scholarship, systematic review, reference / citation management, data curation and preservation, bibliometrics/information evaluation and communication emerged as the skills required for the effective discharge of their responsibilities. Professionalism, patience, and cordiality were found to be the attitude required. This paper is limited to providing academic librarians with the necessary authority to enhance their performance in a research partnership, and offering them the approach to guide their practice in a research partnership. Thus, the study recommended, among others, the need for enlightenment programmes and activities for academic librarians that cut across training, workshops, and organising conferences in research areas in enhancing their service performance to ensure successful research partnerships.

Keywords: Academic librarians; Roles; Competencies; Research partnership; Embedded librarianship; Scholarly communication.

INTRODUCTION

The academic librarians role in the higher education environment is increasingly challenging due to the proliferation of online content and the shift in academic missions (Furfuri and Ilo 2019). As a result, they are challenged to demonstrate their value to their

employers, especially in research areas, more than ever before. On this note, Nolen, Kathuria and Peacock (2021, p.26) posit that librarians "can be used across a wide-array of disciplines to not only help demonstrate the value and impact of intentionally interdisciplinary publications but also indicate the value of information specialists and information science research." Thus, the academic libraries adopted a collaborative partnership model to support their parent institution's research (Nguyen and This 2020; Mathews, Metko and Tomlin 2018) that walks the academic librarians into new roles, including academic librarians as research partners (Borrego and Anglada 2018; Ducas, Michaud-Oystryk and Speare 2020; Mathews, Metko and Tomlin 2018; Monroe-Gulick, O'Brien and White 2013). The research partnership allows academic librarians to showcase their relevance and contribution to their institutional research output and advance their profession and career development, especially those requiring publishing as mandatory for promotions (Oberbichler et al. 2022; Cary 2019; Weng and Murray 2020). To achieve success, academic librarians must understand their responsibility in the research partnership and the competencies required to perform the tasks.

Literature suggests that academic librarians' success as research partners is a function of their role (Chigwada 2020; Delaney and Bates 2015; Ducas, Michaud-Oystryk and Speare 2020) and the competencies required (Mushi, Mwantimwa and Wema 2022; Gbaje, Yani and Odigie 2018; Yatim et al. 2019). The body of literature revealed understanding one's role in the research partnership is central to a thriving research partnership. These suggested that academic librarians' the roles and required competencies in research partnerships are critical to a flourishing research partnership. Yet, there is scarce empirical research that significantly establishes academic librarians' roles in research partnerships and the competencies required for performing the functions. The few discussions on the topic are on build relationships with faculty academics (Alabi 2018; Díaz and Mandernach 2017), academic librarians' contribution to research development (Borrego, Ardanuy and Urbano 2018) and embedded research practice (Bedi and Walde 2017; Inuwa and Abrizah 2018), as well as their training as embedded librarians (Waller and Tebbe 2017). There is also studies that explored librarians' motivation for collaboration (Borrego and Pinfield 2020; Kaari 2021), including the success or failure of the partnership (Lan and Tuamsuk 2018), however these studies overlook the dynamic process through which academic librarians can enhance their partnership level.

Most of the studies conducted on the roles of academic librarians in research collaborations used a positivist approach to arrive at their findings (Chigwada 2020; Gbaje, Yani and Odigie 2018; Mazure and Alpi 2015; Shao et al. 2018). These studies may lack research rigour and depth in investigating the phenomena of the study as the empirical methodology relied heavily on surveys for data collection. As there has been a literature gap in the methodological approach, an alternative method for researching a new phenomenon involving human experience would be an in-depth investigation and understanding of the phenomenon from those involved (Creswell and Creswell 2017). As such this study is designed as a qualitative study to explore academic librarians' roles as research partners and the competencies needed to enhance their performance in research partnerships.

CONTEXT OF THE STUDY

Doing research continues to be a prominent expectation for academic librarians worldwide (Johnson, Bausman and Ward 2021), and they are encouraged to publish (Fagan et al. 2021;

Crampsie, Neville and Henry 2020). However, academic librarians in other jurisdictions do not require publication as a criterion for promotion and tenure (Bedi and Walde 2017; Ridley 2018). The situation is different in Nigeria - the academic librarians working in Nigerian higher educational institutions must conduct research, and publishing is mandatory to advance tenure and promotion (Sahabi, Otobo and Unobe 2021). Therefore, the penalty for not conducting and publishing research is tantamount to stagnation in promotion and tenure advancement (Adegbaye et al. 2019). One possible way for them to achieve this goal is to partner with the academic community in research (Bedi and Walde 2017; Borrego, Ardanuy and Urbano 2018).

This study recognises that focusing on Nigeria and taking a research university such as the University of Maiduguri as a case setting is essential because the university has a unique and complex situation regarding academic librarians' status and research expectations. The University's Governing Council, at its 61st meeting held on 25th November 1992, approved that "librarians in the university should be referred to as academic staff." However, the "publish or perish" syndrome cut up many academic librarians, thereby stagnating their job promotions and progression. The stagnation in job promotion and pleas from senior library staff to the Council prompted the Council to create a parallel and optional Administrative Librarians' Cadre in 2008. These motivated many senior librarians to move from the academic to the administrative cadre.

After bench-marking against other universities in Nigeria, the University of Maiduguri management found that the administrative librarians' cadre does not exist anywhere in Nigeria. At its 139th meeting on 13th July 2017, the University Governing Council immediately approved the re-designation of librarians to academics. These impromptu changes have affected the development of academic librarians at the University of Maiduguri to acquire the required knowledge, skills, and competencies for research and research processes. While academic librarians in other institutions are deeply publishing as researchers, the situation indicated that the academic librarians of the University of Maiduguri are in the early stage of doing so. Some may have limited skills, knowledge, experience, or confidence to conduct research. Hence, contexts should play a key role in addressing this problem.

LITERATURE REVIEW

The study reviewed the substantive findings and previous studies' contributions to the topic to create the knowledge gap. The research topic's issues are twofold; the "role" and "competencies" in a research partnership.

Roles of Academic Librarians in a Research Partnership

Traditionally, academic librarians provide scholarly communication services to support the research activities of their parent institutions (Borrego and Anglada 2018). With the changes in knowledgeable communication services comes the movement of academic librarians from support to partnership. One of the pioneers that emphasised the need for academic librarians to move from providing research support to the partnership defined the term "research partnership" as conducting activities beyond assisting researchers in completing and disseminating their research results, but cut across proactive services throughout the research process (Monroe-Gulick, O'Brien and White 2013). The paper illustrates the potential expanding roles for academic librarian in research partnership,

these include translating the topic of investigation, searching for relevant literature, recording the search result, and detailed documentation of the research process.

Arguably different modes of services exist for academic librarians to showcase their relevance to the research community (Nolen, Kathuria and Peacock 2021). These include liaison services and research support services. However, they are short of advancing the academic librarians' career development in terms of research. For instance, Borrego, Ardanuy and Urbano (2018) identify academic librarians' role in providing research support services. It includes identifying the research topic, data collection, and conducting systematic literature reviews. However, the roles are limited and only cover some aspects of research that cannot complete a specific task (Chang 2017).

Similarly, Fontan and Bussière's (2019) study revealed that partnership duties involve identifying the target population, creating tools for gathering data, and involvement in data analysis and findings. Therefore, it can be implied that the support research services roles are included but not limited to the research partnership role. However, the supportive services do not affect the academic librarians' career development in the educational environment, thus, the need to bridge the gap between academic librarians' current literature as research supporters and research partners.

Stenholt and Skrubbeltrang (2018) identified some of the embedded librarians' activities in research as defining and re-defining the research question, developing search terms and synonyms, and conducting a systematic literature review to search and remove duplicate copies. Academic librarians' roles in contributing to the university's research activities was also identified by Shao et al. (2018) which covers to determine the research topic, data collection, process, and analysis, and to prepare, suggest, and propose policies. Similarly, Inuwa and Abrizah (2018) examined the knowledge and practice of embedded librarianship in Nigerian universities. They came up with six themes that emerge from the embedded practice, demonstrating their role in faculty collaboration with research partners as one of the embedded roles but does not extend to identifying the potential role of academic librarians as research partners. At the same time Bedi and Walde (2017) argued that embedding tasks might include integrating academic librarians into the research team to assist with data management, preservation, and project documents. Again, however, the functions identified by the literature fall short of the potential role academic librarians play in attracting research partnerships.

Chigwada (2020) and Ducas, Michaud-Oystryk and Speare (2020) who used a survey design to examine the librarians' new role and responsibility in an academic environment, offered some of the roles of research librarians in providing research support services. Borrego and Pinfield (2020) used a qualitative approach to gain a richer understanding of the nature of research collaborations between librarians and faculty. It explores librarians' motivations for becoming involved specifically in scholarly publishing. However, there remains a gap in understanding the specific role of academic librarians as research partners. The ability to create further awareness has been suggested by Chang (2017), who argues that creating new knowledge is the gap between actual research and the research application. Identifying this gap is also the concern of the current study.

Required Competencies of Academic Librarians in Research Partnership

Ideally, the academic librarians collaborating with faculty members are expected to have competency instruments that define and describe their ability for effective performance, contribution, and collaboration (Bowles-Terry and Sobel 2022; Oladokun and Mooko 2022).

The body of literature acknowledges that the scholarly communication landscape changes require new knowledge to navigate the library and the librarians' changing role. Notably, Schmidt et al. (2016) posit that rapid changes in technology and associated shifts in research and scholarly communications are profoundly changing the role of libraries in the 21st century. Whilst Andrikopoulou, Rowley and Walton (2021) posit that "unless the contribution of librarians is valued and visible, some of their roles will be taken over by other professionals, and other aspects of their roles will be downgraded" (p. 12). Sadly, no single framework enables academic librarians to identify their required competencies as research partners.

It has been asserted that acquiring skills that match a specific role enables the performer to perform their duties confidently and professionally (Malik, Sheikh and Mahmood 2022). On this note, Alabi (2018) argues that the best way to achieve success, no doubt, is to acquire the needed competencies of a given profession. For instance, his study noted that most collaborating librarians under investigation have no expertise in their collaboration area, which is attributed to a lack of skill. Thus, it suggested adequate training in essential skills for effective collaboration. Similarly, Bayley et al. (2018) argued that librarians would be under-equipped to provide impactful contributions without acquiring the necessary skills. Again, Liman et al. (2017) acknowledge the need for academic librarians' skills and competencies, most notably in the use of internet service for effective service delivery. Impliedly, academic librarians' competencies in research partnerships focus more on enhancing their valuable contributions to the research partnership. However, in the absence of direct literature, as stated earlier, academic librarians' required competencies in research partnership are identified in five fields of librarianship that are more or less related to research support services to guide this study. They are reference service, research data management, digital scholarship, bibliometrics for research evaluation, and scholarly communication.

(a) Reference Service Competencies

Grgic and Zivkovic (2017) used questionnaires and identified technological skills, generic skills, personal skills, and long-lived learning as necessary for improving academic reference librarians in Croatia. They further identified search skills as the essential skills needed in reference services since most activities performed by reference librarians are a technology base centred on information retrieval. Similarly, Ketlhoilwe and Molatedi (2015) evaluated librarians' current and future skills in providing reference services. They argued that expertise in retrieving queries, a high ICT skillset, information literacy knowledge, research skills, and search skills abilities are required. However, Chawner and Oliver (2013) argued that academic librarians are expected to maintain their reference traditional skills and writing skills and keep abreast of the changing technologies despite ICT changes. As articulated as they seem, these studies however do not cover the required skills in research partnership but are limited to reference skills terms such as research support services. Thus, literature is needed to cover the necessary competencies of academic librarians in a research partnership.

(b) Research Data Management Competencies

Semeler, Pinto and Rozados (2017), in their study on data librarianship competencies, defined data management as activities tailored toward the research data management throughout the research process. The activities involve using new technological tools and instruments to plan, create, collect, organise, document, archive, share, preserve, and prepare data for a deposit and disseminate research data (Semeler, Pinto and Rozados 2017; Shearer and Schmidt 2016). Furthermore, the data librarian is also required to

acquire skills and the ability to manipulate data and analysis techniques and be knowledgeable of data publication requirements in a journal (Federer 2018).

(c) Digital Scholarship Competencies

Literature reveals that digital and online revolutions have completely changed the way researchers conduct research activities. King (2018) argues that digital librarians with digital skills are not confined to supporting digital humanities by providing research services but our research partners in the process. According to Schmidt et al. (2016), digital librarians must acquire general and technical competencies to provide digital services, particularly scholarly communication and data management. The study also captured the librarians' needs to remain current in the digital environment by updating their knowledge of technology. At the same time, Grguric, Davis and Davidson (2016) argue that it is vital for collaborating librarians to understand the complexity of their partners' needs to satisfy their needs. This implies that academic librarians' understanding of the faculty academic's complexity is also required for successful research partnerships.

The need for competency skills in the digital environment was also emphasised by Inyang and Mngutyô (2018). Similarly. The findings by Johnson and Raju (2018) revealed the need for comprehensive knowledge of professional tasks such as metadata, collection development, referencing and management tools, and knowledge of electronic referencing agencies such as Mendeley, Endnote, RefWorks, and Zotero as the essential competencies expected of the digital librarians in providing effective digital services. At the same time, Ayoku and Okafor (2015) argued that librarians should equip themselves with human and technological expertise to meet evolving technologies' demands and the new role created by the techniques. However, according to Semeler, Pinto and Rozados (2017), the skills and knowledge for understanding the languages, the logic of programming computers, databases, and information retrieval are the most necessary competencies for data analysts. Zhan and Widén (2019) also identified and described the required data analytics competencies as metadata skills, knowledge of data analysis, data acquisition management, data preservation, computer programming language and coding, machine learning, and policies. In addition to these competencies, internet skill has been identified as essential in providing research services in the digital age, including soft skills, bookmarks, web address, search terms, and hyperlinks (Liman et al. 2017).

(d) Bibliometrics for Research Evaluation Competencies

The literature evidenced that most academic libraries have already taking up the focal roles in the area of bibliometrics for research evaluation (Borrego and Anglada 2018; Inuwa and Abrizah 2018; Keenan, Corral and Afzan 2014), as a way of increasing the visibility and widening of the professional status of libraries (Åström and Hansson 2013). Bibliometrics, a well-established part of library and information science research (Narin and Moll, 1977; White and McCain 1977) is referred to as the method used in evaluating research output and impact, and bibliometrics competencies evolves with the emergence of altmetrics to measure the impact of research in a new way (Cox et al. 2019), measuring and establishing the quality of scientific output. In this context, researchers want to evaluate and know their research performance, and the librarians are uniquely positioned with new citation mapping tools to measure and evaluate such performance. According to Cox et al. (2019), bibliometric services perfectly fit the librarians when they know using a bibliometric device, with soft skills to measure and evaluate individual journals, specific articles, and scholars. The literature (Åström and Hansson 2013; Keenan, Corral and Afzan 2014) shows that librarians role in bibliometrics for research evaluation will see them conducting the following tasks: (a) perform citation analysis and/or reports for grant

applications, promotions and tenure; (b) generate bibliometric and scientometric reports for the purpose of mapping research fields and research collaboration by investigating co-authorships; (c) provide impact calculations for academic units and the institution and performance analysis to individual scholars or research groups; and (d) provide bibliometrics training and guidance for individual researchers and research groups.

(e) Scholarly Communication Competencies

The changing landscape in scholarly communication services has changed how librarians offer research services (Schmidt et al. 2016). The new method embeds the academic librarians with their institutions' research activities, where they are seen taking their reference desk services outside the library building (Inuwa and Abrizah 2018). This development has called for librarians to acquire the necessary competencies in research and academic publishing (Lewis and McColgan 2017). Several studies have identified librarians' skills and knowledge in providing research support services in scholarly communication. For example, Calarco et al. (2016) reported that librarians should have extensive ability in academic publishing services, publishing open-access, copyright, and intellectual property law models to perform open-access repository services. Similarly, Gbaje, Yani and Odigie (2018) identified five necessary skills and knowledge needed by scholarly communication librarians to provide scholarly communication services; these include knowledge of the funder mandate and its conditions, knowledge of bibliometrics tools, data curation, and management, as well as communication skills.

Sewell and Kingsley (2017), on the need for scholarly communication literacy needed for research support reviewed the required skills into two significant areas: discipline-specific and generic, transferable skills. The study further noted the need to combine formal education with a practical element in addressing the gaps in scholarly communication education for librarians, thus calling for librarians to acquire new skill sets and competencies, in areas such as open access and data management for effective research services. Finally, Ocholla, Mutsvunguma and Hadebe (2016) examined the latest information service in the changing landscape of librarianship. They argued that changes in the academic environment demand innovative library services and product skills and competencies to match the new roles effectively and successfully.

OBJECTIVES AND METHOD

This paper is a part of a more extensive study¹ that aims to better understand the academic librarians' responsibilities as research partners and the competencies required to enhance their performance in a research partnership. Specifically, this paper explores the roles and required competencies to guide effective research collaboration to match the research support and partnership gap. The research questions posed are twofold:

- (a) What are the academic librarians' potential roles in the portfolio of a research university?
- (b) What competencies do academic librarians believe are needed in a research partnership?

The study employed a qualitative method based on the context of the study described earlier. The study recognises that focusing on Nigeria and taking the University of

¹ Doctoral research by the first author, supervised by the second author submitted to the University of Malaya in 2022 entitled "Roles and competencies of academic librarians for the empowerment and engagement of research partnership".

Maiduguri as the case setting is essential because the University has a unique and complex situation regarding research expectations of academic librarians in research. The philosophy behind the qualitative inquiry is to construct participants' experiences of the study's phenomena and understand and interpret them based on their expertise. Academic librarians who either partner with faculty academics in research or those directly involved in research activities were purposively sampled because they are believed to be informative and are the better research participants from whom quality information regarding the study can be obtained. The following characteristics are required in the sample i.e.

- (a) They have shown interest in the study and willing to be interviewed.
- (b) They have no less than 15 years of working experience
- (c) They are involved in research collaborations
- (d) They have been publishing as research partners

A total of 14 academic librarians fulfilled the aforementioned purposive criteria to provide sufficient contextual information about research partnership. In order to ensure anonymity and confidentiality, each of them was designated by a code AL1 to AL14. Permission to conduct the research was obtained from the University of Maiduguri management. All research participants gave their permission to be part of the study and they were given pertinent information to make an "informed" consent to participate. The study's purpose, aims, nature of data collection devices, and activities were communicated, including the option of withdrawal from the interview at any stage to the participants in writing. Table 1 presents the demographics of the research participants.

Table 1: Demographics Information of the Participants

No	Codes	Department / Unit	Gender	Qualification	Working experience (years)
1	AL1	Research	Male	PhD	20
2	AL2	E-library	Male	PhD	22
3	AL3	Information	Female	Masters	17
4	AL4	Research & bibliographic service	Male	Masters	15
5	AL5	E-library	Male	Masters	21
6	AL6	E-library	Male	Masters	24
7	AL7	Collection development	Male	Masters	18
8	AL8	Readers services	Female	PhD	24
9	AL9	Cataloguing	Female	Masters	20
10	AL10	Cataloguing	Male	Masters	21
11	AL11	Serials	Male	Masters	21
12	AL12	Readers services	Male	Masters	14
13	AL13	Collection development	Male	Masters	20
14	AL14	Information	Male	Masters	10

The interviews were conducted in the English language. The data collection lasted nine months, from February to September 2021, and each participant was interviewed twice, which lasted for 45 to 60 minutes per interview. The interview sessions were conducted in the participants' offices in the university environment for easy access and convenience. The discussions were audio or/and video recorded. Specific quotes of interest were transcribed from the recording; they were coded, and analysed based on the participant's responses to construct key themes. The questions posed for the interview are as follows:

- (a) Can you describe your role as a research partner? Specifically what do you do?

- (b) Please tell me what motivates you to do a research partnership; how are you involved?
- (c) How do the faculty academics perceive your role as a research partner?
- (d) What is the necessary knowledge for academic librarians as research partners?
- (e) In your opinion, what research skills and abilities do you feel academic librarians require to partner successfully with the faculty academics?
- (f) What is your professional strength in managing your responsibility as a research partner?
- (g) What responsibilities or gaps do you fill in the partnership that the faculty members lack?

FINDINGS

Roles of academic librarians in a research partnership

Ten themes emerge as the roles of academic librarians in a research partnership, presented in three primary phases, namely pre-research, while research, and post-research, as illustrated in Figure 1.



Figure 1: Academic Librarians' Potential Roles in a Research Partnership

Pre-Research Phase

The pre-research phase is the stage of the research partnership where the collaborating parties work together to gathering basic information about a potential topic using a variety of reference sources. This phase also includes the beginning of the research grant life cycle, which involves announcing opportunities, submitting applications, and reviewing. Analysis of the interview data uncovered three roles described below.

(a) Information discovery and provision

By information discovery and provision, the relevant pieces of information from a database given a user query and extracted using appropriate techniques are provided to users or

users' community. A few participants acknowledged that the academic librarians, as research partners, are information providers. They provide preliminary information regarding the potential research topic and guarantee the availability and accessibility of the print and electronic information needed. For instance, AL14 said *"I play several roles as a research partner, including searching and collecting necessary information about the potential topic"*. Similarly, in AL2 aforesaid, *"I provide information in preparation for the research to give a clear understanding of the research topic"*. In performing this role, academic librarians not only search the available databases to retrieve current information (*I use available and appropriate databases, books, and journals to search for and retrieve the relevant and available documents - AL3*) but also assess the authenticity and quality of what is found (*I determined whether an identified format is worth downloading for research throughout the research life cycle using the appropriate and available database - AL12*). It implies that the academic librarians diagnose the types of information required to meet the research needs at this stage.

(b) Information use and evaluation

Information use and evaluation refers to the critical understanding of the academic librarians' information resources selected and applied to suit the research needs. Apart from providing preliminary information about the potential topic, the academic librarians offer advisory services on the study's workability as part of their responsibilities as research partners. At this stage of negotiation, the information needs of the research are diagnosed and discussed, as illustrated in the following three verbatim responses:

I also advise my co-researcher on the suitability of the proposed topic because if the issue is not researchable, we will waste our time. (AL2)

We advise the faculty members on the selected topic and the research policies that either support, encourage, or discourage the chosen research topic depending on a given situation. (AL13)

Academic librarians are seen as information providers, even where their participation is beyond providing access to information. We help evaluate information they [academics] find to determine if it is appropriate for their research. It strikes me that we need to agree with what quality research is. (AL11)

(c) Research grant application

Research grant application refers to the effort made by academic librarians in seeking and identifying relevant funders of research and the policies of the funder mandate. The participants' responses revealed that grant writing is becoming one of the academic librarians' roles in providing scholarly communication services. This activity has offered academic librarians a significant role in the research partnership. The participants disclosed that they have collaborated with various researchers and understand the research policies for research support (AL2, AL4, and AL6). In addition, the participants acknowledged participating in verifying proposed study has not been performed, forming the application form, searching literature to provide background for the proposal, advising on and editing / reviewing the grant application before its final submission (AL1, AL4, and AL5). Participants also pointed to the importance of being part of the grant application process because their early involvement allows them to become familiar with the questions that need to be addressed in the grant application. That indicated that they had been involved in grant writing in one way or the other to cover the financial statement of the proposed research from a private organisation, the university, and other funding agencies. *"I partake in the grant application process. I single-handedly wrote the research proposal grant and contributed two articles as co-author, this is significant for me"* (AL10). Thus, the involvement of academic librarians in the early phase of the research allows them to do

more than just providing access to information, exposing them to performing necessary processes that will translate evidence into action.

While-Research Phase

The while research phase is the stage of the research partnership where the collaborating parties work together to produce research output. This stage involves conducting research activities from the initial step to publishing the research manuscript. Analysis of the interview data uncovered five roles illustrated below.

(a) Articulation of research topic

The findings revealed that choosing a research topic is one of the critical stages in the research process. The success of the research depends on how well the research topic is articulated. In this respect, three participants disclosed the importance of evaluating a topic in terms of finance and information resources, as illustrated in the following verbatim responses.

Research starts from articulating the subject of the research itself, which depends on your research partners' expertise and the shared responsibility of the team of researchers. (AL1)

Research starts with a research issue. As a research partner, I participate in creating research problem. (AL6)

We search and review the literature to create a gap and identify a suitable topic in a given study area. We spend a lot of time because a well-articulated research topic will make the research process less cumbersome. (AL11)

Furthermore, the interviews revealed that the research topic, in some cases, is being formulated solely by academic librarians. In contrast, in some cases, the academic librarians come together with the faculty members to develop the research topic, which is dependent on the nature of the research, as illustrated in these verbatim responses:

Even though identifying a research topic is cumbersome because one keeps defining and redefining the problem to fit the study's purpose and objective, I formulate the research topics for the research I have co-authored on different occasions. (AL12)

When the faculty members come up with a research topic, I try to see the issue's suitability by reviewing relevant literature and coming up with a researchable topic. (AL7)

I help formulate research questions and objectives, refining and reshaping research topics (AL9).

Their responses indicated that academic librarians who have sufficient knowledge and skills in conceptualizing research problems and reviewing related literature can perform confidently in articulating research objectives which is fundamental in conducting a robust and useful research.

(b) Literature and reference management

Literature and reference management consists of academic librarians' activities search, review and collect relevant literature and organize them and their bibliographic metadata in database for later retrieval. This will allow the research team to insert citations and references in a chosen referencing style when authoring a paper. The participants' responses identified literature management as one of the essential professional duties academic librarians are conversant with, indicating that the academic librarians conduct a complete literature search to locate relevant articles and review the related literature to

identify research gaps. Almost all the participants said that the academic librarians were conversant in searching, reviewing and managing the literature, as illustrated in participants' responses below.

I rigorously search for and review relevant literature for my co-authored paper.

(AL3)

Managing the literature is difficult for the faculty members; organising and retrieving the necessary literature is a problem to them. As a librarian, I don't have this issue; I can access a thousand pieces of literature and organise them so that no single relevant information is left out. (AL1)

Being in the library, I'm closer to the information, I manage the research literature. I provide current information, search for contemporary literature, and identify investigation, scope, and limitation trends. (AL5)

I play the role of managing the literature; as a librarian, I should know the kind of relevant and current literature that is required for our project. (AL2)

The above assertion indicates that the academic librarians play a significant role as a research partner by not only conducting a literature search, but also managing the literature for later retrieval. It was apparent from the interview data that literature and reference management is a most vital, unique, and fundamental role academic librarians play in a research process, which the faculty members could not easily handle. They put it this way:

From my experience, I understand and observe that knowledge of literature management is lacking among the faculty members, while the academic librarians of course are very efficient and effective at that. (AL4)

You see, the gaps are so many, but I want to hammer on the literature search; most faculty members don't know how to search for information; we do the searching for them for relevant literature. (AL2)

The faculty members are not conversant with literature search and evaluation, and citation and bibliography making which is the domain of an academic librarian. (AL1).

(c) Research data management

Research data management refers to a term that describes the activities involved in managing research data throughout the research life cycle and beyond. It is another area in the while-research phase where the academic librarians and faculty members work together to produce data as the research output. According to A1, *"Another area that we do play a role as academic librarians in terms of research partnership: is research data management; we are resource managers, and because of the trend of IT, we have moved from managing resources physically to data management; we collect data to the extent that we regulate the vast proliferation of information what we traditionally call bibliographic control. So the new trend of research is about data management.* (AL1).

It is interesting to note that the responses of the academic librarians indicated that the faculty members have a very basic knowledge of the traditional method and policies concerning data management. The participants are optimistic that the faculty members cannot easily handle the activities involved in the processing and managing of research data, leaving the academic librarians to collect and manage the research data. A few of them said:

While managing research data is in demand, the faculty members are not knowledgeable on this aspect of research. Therefore, it is an opening for academic

librarians to join research partnerships with faculty members; the librarians organise, preserve, and share research data. (AL10).

You see, as far as I'm concerned, the academic librarians in a research partnership are ears and eyes of the research because we engage deeply in the research process, providing and managing research data. (AL14)

I conduct many activities in managing the research data, what I mean is that I organised the research data throughout the research activity from entry through to its dissemination, preservation, and archival on the institutional repository to enable innovative reuse. (AL9).

(d) Systematic review

A systematic review is now becoming a research standard conducted by researchers to identify gaps by synthesising a vast body of literature on a specific topic to proffer solutions to the recognised phenomenon. It entails critically evaluating published articles to establish gaps and identify literature relevant to a study. The interview findings indicated that academic librarians play a role in systematic review activities, including searching for literature, writing the methodology, citation management, and in synthesis i.e. summarising and formulation conclusions and recommendations, as captured from the following explanations.

We play different roles in conducting a systematic review. Some of the tasks we perform are known even to the layman. These include searching and selecting relevant publications for the study. While the less familiar characters are forming criteria, systematic searches, and research question formulation, which goes beyond searching for information resources and clarifying what is to be included in the systematic research and how long it will take. (AL9)

I play a vital role in the systematic search and review process. However, I believe the faculty members cannot handle it. These include identifying relevant articles, defining criteria for inclusion and exclusion to narrow and broaden literature search, synthesising all related essays, and producing research results. (AL8).

These findings indicated that academic librarians' learning about or being involved in systematic reviews are clear, and may continue to evolve as they take on new roles with systematic review to reflect the unique needs of different research disciplines and/or review types.

(e) Authoring a manuscript

Authorship refers to a sustainable contribution to creating, evaluating, preserving, and disseminating scholarly writings to the research community. The interview data unveiled that academic librarians contribute to the following aspects in authoring a manuscript: research methodology, bibliometrics analysis, copyright literacy, and evaluation of the manuscript (peer review) as illustrated below.

I used the qualitative method to analyse data for the research I co-authored with faculty members. However, the faculty members lack knowledge in qualitative data analysis. Therefore, I single-handedly analysed the data collected for the paper I co-authored. (AL2)

We generate bibliometric reports to evaluate scholarly writing, develop new areas of study; this involves analysing review, bibliographies, index, abstracts, or citations. We explore bibliometric reports to evaluate scholarly writing, develop new areas of study, play a central role in providing relevant and adequate information in a systematic review, and review available and applicable databases to retrieve data. (AL6)

I negotiate with the publishers concerning the use, reuses, reproduction, and exploration of the scholarly works, selecting license terms that require users of the academic work to give authors credit for their actions. I also educate my research partner on the importance of open-access publishing and disseminating our research output to ensure full access to our scholarly articles. I also offer advice concerning copyright law and the implication for selecting an avenue for publication. (AL5)

Librarians are proficient on reviewing literature, my part is to assess the research manuscript and to summarise the literature to develop an accurate and reasonable research result before sending the manuscript to editors. I will always be the one to do the final review. (AL8)

These indicated that academic librarians serve as reviewers in research partnerships that include; filtering, evaluating, and editing research manuscripts, using the established criteria, and following the peer review process. This means that the participants were very confident in performing or executing the activities they mentioned above.

Post-Research Phase

Two sub-themes emerged regarding the academic librarians' research activities in the post-research process - scholarly publishing and dissemination of research. The participants seem to have a clear understanding that they need to collaborate in publishing and disseminating the university's research output.

(a) Scholarly publishing

Post-research phase consists of publishing activities conducted after completion of writing the research findings. More than half of the participants indicated that one of the academic librarians' post-research roles as research partners includes conducting scholarly publishing activities. A few of them described the different roles they performed:

I recommend the relevant journals where to publish, based on the content and subject area, this is to avoid rejection and publishing in predatory journals. (AL2)

One of my roles as a research partner is publishing research results in different channel such as in a newsletter summarising all the essential information, and in subscription-based journals.(AL6)

I identify publishing outlets for research and offer advisory services concerning posting on reputable and impact factor journals that can either be open access journals or subscription-based journals based on disciplines. (AL8)

(b) Research dissemination

Participants in this study viewed that the visibility of a research output depends on how well the research is being disseminated; they acknowledged disseminating research results using appropriate channels, and felt that performing the activity makes the academic librarians a vital component of the research team. These include institutional repositories, posting on social media and archiving on relevant digital platforms. as reflected in the following responses:

Another responsibility I execute as a research partner is disseminating research results to the target audience, in our repository which I believe is the purpose of doing research, for others to read. (AL7).

We used social media, including Twitter, blogs, and the new open access journal models, to disseminate research results. (AL3).

Academic librarians play an essential role in providing free access to information resources using social media like Twitter and blogs, even though I preferred using

open-access platforms, primarily the institutional repository, for other researchers to benefit from the scholarly work. (AL9)

Competencies Required of Academic Librarians in a Research Partnership

The study identified the academic librarians required competencies in a research partnership, based on the triad of Knowledge, Skills and Abilities (KSA) competency model used to recruit and retain qualified individuals for successful job performance. Although the participants used the terms knowledge and skills interchangeably, this study identifies a thick line between the two. Knowledge refers to the mental ability that governs and influences how academic librarians use their skills to discharge their responsibilities as research partners. At the same time, skill represents the academic librarians' practical ability to carry out their duty in a research partnership. As a result, two themes emerged as the knowledge needed by academic librarians in a research partnership. Six themes emerged as the necessary academic librarians' skills to partner with the faculty academics. In comparison, three themes emerged regarding their attitudes required, as illustrated in Figure 2.

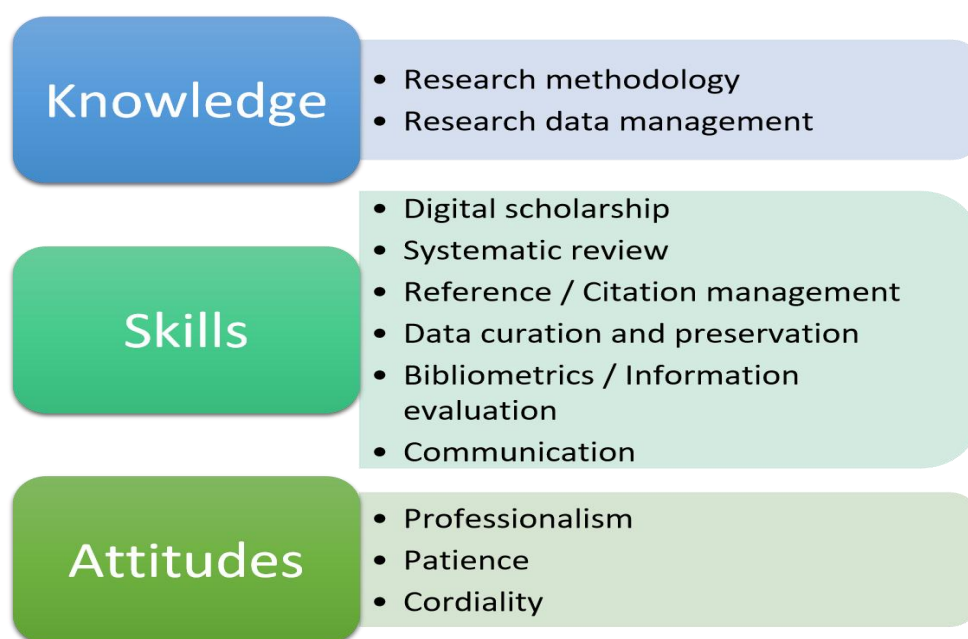


Figure 2: Competencies academic librarians believe as needed in a research partnership

Required Knowledge of Academic librarians in a Research Partnership

Knowledge refers to the theoretical aspect of learning that academic librarians acquire from formal training to execute their research partnership roles.

(a) Research methodology knowledge

Most participants declared that research methodology knowledge contributed in facilitating collaborative work throughout the research process. A few even thought the academic librarians are uniquely well suited to become a productive force for researcher–community partnership given their expertise in teaching research inquiry skills and research methods.

I partnered with one of the faculty members, he told me that he didn't know anything about the qualitative method. Therefore, I was left with the burden of

analysing the interview data based on my experience; yes academic librarians must understand research methodology fully. (AL2)

The necessary knowledge for the academic librarian as a research partner cuts across understanding all aspects of the research process. These include basic knowledge of research methods, qualitative and quantitative. (AL3)

Academic librarians understand research methodology and analytical techniques to manipulate and analyses data. (AL7)

Librarians understand the research principle, and it's all about knowing the research methodology; not all researchers see the difference between qualitative and quantitative methods. If you don't know the difference, you write research for writing's sake without meeting the actual target, and when such paper is reviewed, it will not bring out the expected grade. (AL6)

We can contribute, we have a good knowledge of research design (AL11)

(b) Research data management knowledge

Responses from three participants revealed that academic librarians as research partners require knowledge on how to manage research data throughout the research life cycle and beyond, as illustrated below.

The higher expectation from our university and funding agencies requiring the research impact requires us to have data management knowledge, as we will oversee the implementation of RDM activities (AL4).

My knowledge in research data management placed me in a very high position in the research environment; it has allowed me to work with several committees on several projects. However, academic librarians should understand what constitutes research data in different disciplines, competent in organising research data and folders, and structure file names and metadata processes. (AL1)

Good to have a better understanding of the tools and instruments for managing the research data. Academic librarians should acquire new knowledge to support data curation activities, enable efficient managing, sharing and reusing research data. (AL8)

The above assertions indicate that data management is concerned with creating, collecting, organising, and preserving research data. These activities required the academic librarians to be conversant with terminologies and necessary tools to implement research data management services.

Required Skills of Academic librarians in a research partnership

Skills refers to the ability to use knowledge; it is the application of knowledge required of academic librarians to perform their research partnership duties. The skills are also learned primarily by practice.

(a) Digital scholarship skill

Almost all the participants pointed out the need to continually explore and update their skills of the evolving technologies essential in providing digital content. These include creating and managing digital content and keeping up with the digital licensing and research tools are shaping the way that librarians provide quality content to researchers.

Most activities surrounding academic librarians' partnership role concentrate on information search and retrieval. But for academic librarians to provide adequate services, they must be equipped with a wide range of digital skills using software applications, and keeping abreast of the evolving technologies. (AL13)

Knowledge of modern technologies hovering around open information sharing environment, with learning the digital tools is crucial to achieving success in providing digital content. The academic librarians seeking to partner with the faculty members need to acquire the necessary skills to use digital technology, communication tools or networks (AL11)

Academic librarians need to be very familiar with the digital tools, to conduct video conferencing, and to do content analysis. Skills in using software to develop digital content, digital licensing agreements should become more sustainable for quality content. Of equal importance is possessing expert knowledge of the range of digital resources, including evaluating and filtering them. (AL9)

(b) Systematic review skill

Interview findings revealed that the academic librarians play a central role in performing and collaborating on systematic reviews. The participants reported that they must obtain skills and explore new and different ways to interact and work in partnership with researchers to be successful in being part of the systematic review process.

The academic librarian required skills in searching the various databases to conduct systematic reviews. (AL5)

To conduct a systematic review, one needs to acquire extensive skills of search strategies such as truncation wildcat and the like. (AL9)

A systematic review is another form of investigation that attracts co-authorship; in my opinion, academic librarians who collaborate with the faculty members should acquire the necessary review skills. Systematic review knowledge is an essential ingredient for an effective research partnership. (AL3)

For academic librarians to participate and contribute responsively to the research activities, they can demonstrate their skills in searching strategies doing systematic reviews (AL10)

The academic librarians perform a systematic search of relevant literature for the study using available databases, journals, and other print resources, thus need to be skillful in providing such services. Search skill is essential in retrieving current literature; faculty members will not be successful if you don't deliver this service. (AL2)

We play a key role in conducting a systematic review; we review available and relevant databases, we retrieve the information, we know how to use the information professionally. (AL6).

(c) Reference / citation management skill

Few participants demonstrated their reference or citation management expertise reflecting that they have a unique and extensive skill set to meet the faculty's referencing needs in terms of research and academic writing.

Another skill is referencing, which is a domain of professional librarians. One of our major contribution in the partnership is to look at the issue in referencing; this is a gray area but the librarians can understand well. (AL1)

We have citation management skills to organise documents professionally; acknowledging authors, paraphrasing, and making direct quotations necessarily. (AL4)

We have specific areas of expertise and are trained information literacy experts. We are always available to help researchers find and verify the credible sources they need for their academic work, and how to use them in their papers. (AL6)

(d) Data curation and preservation skill

The participants acknowledged that as they should respond to the role for research data management, they must prepare themselves with the skills in data curation i.e. documenting, managing and preserving research data to produce datasets. The goal is to keep the data valuable so it can be reused in as many applications as possible. Their responses pointed to the need for formal education and training in such areas to curate, preserve, and archive data and research results successfully. For instance, AL8 remarked *“We ensure the record management, preservation, and archival of research results for a very long period despite technological changes. To deliver such professional duties effectively, we must understand the curation laws and theories, curation system, and metadata standard”*. Similarly, a few others disclosed that academic librarians need to acquire data curation skills and *“keep abreast of the latest trends and best practices in the field of data curation services to researchers in all disciplines”* (AL13).

(e) Bibliometrics / information evaluation skill

As academic libraries are increasingly offering support services for bibliometrics to the researchers, the participants admitted that having basic level bibliometrics competencies identified such as explaining bibliometric concepts, doing basic bibliometrics analysis, using the appropriate tools and databases, and applying bibliometrics in research evaluation are essential for research partnerships. The academic librarians' overall responses indicated that they could critically evaluate published literature bibliometrically to be involved in the information evaluation of research output.

Understanding the new citation mapping tools and applications is essential in measuring and evaluating research performance.(AL7)

Equally important is the [bibliometrics] knowledge and and applying the skills to evaluate research output (AL2)

I think what are necessary for academic librarians in research partnership includes experience in research assessment, doing journal studies, using bibliometrics database (AL14)

With the journal impact factor evolving as a new trade for measuring the quality of scientific output, a good knowledge of bibliometrics tools is required by academic librarians to be research partners. (AL1)

Academic librarians can acquire technical skills in bibliometrics tools and applications to correctly measure and evaluate scientific output. The faculty members, on some occasions, do ask for the evaluation of research performance, journals, and articles. Such services required understanding the new citation mapping tools and applications. (AL9)

We generate bibliometrics reports to evaluate scholarly research, develop new areas of study; this involves analysing review, bibliographies, index, abstracts, abstracts, or citations. (AL5)

(f) Communication skill

Despite different contexts and resources, the desire to communicate effectively was common to all information environments, including research. The academic librarians in this study realised that “communication skill” underpins much of what they do in a research partnership, especially in the aspect of writing skills and communicating effectively with their research partners, as illustrated in the following verbatim statements.

Academic librarians need to acquire research and communication skills because if you cannot communicate fluently, you will find it difficult to relate with the faculty members. Communication is very vital when it comes to any partnership. (AL2)

Academic Librarians' Roles and Competencies in Research Partnership

Research communication is a two-way drive; academic librarians must be good speakers and excellent listeners because somebody is there to listen to them whenever they speak. Whatever their research collaborator says, they are there to listen to. Equally, when the collaborator writes, they are there to comment vice versa. These call the need for us to be competent. (AL13).

I believe communication skills are essential competencies required by academic librarians in research partnerships, for perfecting in the presentation of presenting scholarly articles. (AL12)

Required Attitude of Academic librarians in a Research Partnership

Attitude refers to as the manner in which academic librarians may deal with things emotionally, and is often reflected in a person's behaviour. Professionalism, patience, and cordiality emerged as the three major attitude dimensions that will at least to some extent dictate the level of impact the attitude academic librarians may have to the performance of the research partnership tasks they are asked to perform.

(a) Professionalism

Professional attitude refers to academic librarians' professional manner in which they behave as research partners to influence their research partnerships' performance. The participants felt that regardless of how knowledgeable and skillful a person might be, they will perform their research role less well or even not perform the role at all if their professionalism towards performing the role is wrong. Most participants described professionalism attitude as a unique role that gives academic librarians an edge on the research partnership.

We need to understand our profession to the point that we can take responsibility in the research process and help the academics. Because the level of our professional knowledge in providing research services will give us enough expertise to understand the complete research process (AL4).

Apart from the skill, you must have the professional attitude, the ability to translate knowledge into action and understand the situation. Skills, knowledge, and ability, these three go hand in hand, combining these will give you an added advantage in the research partnership. Having the right attitude, the research ability matters to translate knowledge and skill into action. (AL1)

As information professionals, academic librarians need to exhibit positivity in research, we should produce more research and contribute to our profession. (AL7)

Research is useful to libraries, understanding, comprehending, and identifying a research problem empowers academic librarians with the necessary authority as research partners. It helps in our professional career development (AL10)

Research is interesting, we must develop the ability to identify a research problem and formulate the topic to develop empirical studies. Our professional experience in librarianship matters greatly; this includes suggestions and solutions to copyright issues.(AL9)

Their responses indicated that academic librarians held positive attitude on research usefulness to profession, and are positive towards research, and this is an important ingredient to partner with faculty members effectively.

(b) Patience

Based on interview data, patience was uncovered as a personal behaviour that can also influence academic librarians' performance in research partnerships. It refers to the capability to accept or tolerate situations and circumstances, as illustrated from the

verbatim quotes. According to the participants, developing research partnership takes time, as such patience was uncovered as a personal behaviour that can influence academic librarians' performance in research partnerships.

Working with others as a team requires tolerance and understanding, without which the research aims will be defeated. Academic librarians must be patient in listening and understanding other co-authors' opinions. It takes patience to collaborate with the research community. (AL6)

The right frame of mind for participation in research partnerships requires a lot of patience and understanding. Some partners may decide to pull out at the end of the day or halfway because of a lack of understanding or an issue. Indeed collaboration requires a lot of patience, but the librarians are prepared to handling such matters. (AL1)

Developing good relationship takes time, and the academic librarians must be willing to spend time learning and developing the ability to see themselves as equal to the faculty members. And not all of us are the same in terms of the knowledge base and having an open mind, taking correction from others, responding to challenges, and having confidence in their ability to do research. Be friendly, be patient and show our corporate behaviour. (AL5)

(c) Cordiality

A few participants uncovered a cordial relationship with the faculty members as yet another personal attitude exhibited by the academic librarians toward positive partnership. It describes a relationship that is friendly and sincere. In other words, the ability to relate with the faculty members is a behaviour that will enhance academic librarians' performance in terms of the research partnership

When a good relationship is established with my co-authors, it is easy for me to discharge responsibilities as a research partner because the friendly welcome atmosphere gives us satisfaction. (AL7)

For academic librarians and the faculty members to partner, they need to believe [trust] in one another and exhibit attitude that shows satisfaction and love for what they do as research partners. (AL1)

In my opinion, a pleasant attitude among research members can influence academic librarians to empower themselves as research partners. (AL4)

I think positive behaviour in terms of approachability encourages collaborations (AL3)

DISCUSSION

Academic librarians are increasingly required to understand their potential research roles in their research institution's portfolio to effectively and diligently perform as research partners. From the interview data gathered through this study, it became clear that the academic librarians in the case setting are currently providing research support and quite a number of them have established research partnership with the faculty. Ten themes emerged as academic librarians role in a research partnership that indicated academic librarians have positioned themselves as essential players in the faculty research workflows and the campus research enterprise. Their roles in the research process cut across research activities before the actual research (pre-research), during the research process (while research), and publishing the research results (post-research), although at varying conditions of involvement and priorities.

The interview responses revealed that before the commencement of the research process, the collaborating parties met to discuss how to go about the research project. These include involvement in the development of grant applications for research funding, also demonstrated in Otter, Wright and King (2017). Some participants disclosed that the pre-research phase is essential in establishing a partnership relationship. The avenue allows the academic librarians to articulate and evaluate the study's visibility, adequacy of time, and resources for carrying out the research. The while-research phase is the second stage of the research partnership process, where the collaborating parties work together to produce research output. Based on the interview responses, academic librarians have different understandings of their partnership roles in the while-research process; these encompass several responsibilities, including articulation of research topic; literature and reference management; research data management, systematic review, and authoring a manuscript. At the same time, the post-research phase consists of research activities conducted after writing the research findings. These are the dissemination of research results and research publishing. Thus the findings reveal that the academic librarian, as a research partner, performs a professional role vital to completing the research, which indicates that academic librarians need to enrich their understanding in research in new research practices or workflows, specifically in the identification of funding, research data management, publishing and scholarly work dissemination and research evaluation, congruent to the study by Tran and Chan (2020).

The literature reviewed reveals some of the roles, including but not limited to academic librarians' responsibilities in a research partnership identified by this study. For instance, Monroe-Gulick, O'Brien and White (2013), Shao et al. (2018) and Borrego, Ardanuy and Urbano (2018) view the concept of "research partnership" as conducting activities beyond assisting researchers but cutting across translating the investigation topic, searching for relevant literature, and research dissemination. In contrast, this study has confirmed the roles identified in studies by Otter, Wright and King (2017) and Tran and Chan (2020) in aspects such as evaluation, grant application, reference management, scientific publishing and research evaluation, although the latter found that academic librarians did not plan to be highly involved in funding identification, tracking and management. Moreover, this study is in total agreement with Chang (2017), who opined that creating new knowledge is the gap between actual research and research application and he further stated that creating new knowledge required proactive participation throughout the research life cycle. Thus, the current study suggests that academic librarians, in terms of research collaboration, do not only provide access to information resources but provide proactive services to co-create new knowledge.

Similarly, the current study identified areas of competencies that are common with those identified in the literature. These include knowledge, skills and attitude in research partnership. Knowledge on research data management is emphasised by Semeler, Pinto and Rozados (2017) who reported that research data management as activities tailored toward data librarianship throughout the research life cycle requires data competency. The research methodology knowledge in different stages of the research process highlighted in this study was also found by Austria and Cabonero (2020) who asserted that academic librarians must have understanding, knowledge and skills of the research process across five domains (i.e. conceptualizing of research, reviewing related literature, identifying appropriate research methodology, and writing analysis and interpretation of data) to the extent that they need to conduct and publish research.

However, the six skills themes that emerged from the study, digital scholarship, systematic review, reference / citation management, data curation and preservation, bibliometrics / information evaluation and communication could not be empirically identified in the literature, although the literature reviewed explicitly highlighted these roles where academic librarians are involved either to support or to partner in research. While concerning digital scholarship, Schmidt et al. (2016) mentioned that the general competencies needed to provide digital research services captured the need for the librarian to remain current in the digital environment. In contrast to Borrego and Anglada's (2018) findings, librarians' main constraints may be due to knowledge and skills gaps among the academic librarians, and lack of confidence surrounding their expected roles in executing their responsibilities. Individual factors such as personality and attitude are significant aspects in research collaboration. This study found that representation of professionalism, patience and cordiality among the academic librarians and faculty is important in eventual research collaboration. This relates with Enakrire, Chista and Adeyinka's (2020) study that called for members of research group to have "cordial interactions and an understanding that collaboration is characterised by respect for each member's knowledge, skills and expertise and recognising the other as an equally partner, with different and complementary skills" (p. 344). Nevertheless, the overall study findings suggested that academic librarians understand that they should possess the relevant research knowledge and skills, as well as the right attitude for an effective research partnership.

CONCLUSIONS

Echoing Borrego, Ardanuy and Urbano (2018), at a time when academic libraries increasingly need to enhance their reputation and demonstrate their value to their university, research partnership with faculty is one possible path toward demonstrating the alignment of the library with the university mission. This study is limited to exploring the role and competencies required of academic librarians in a research partnership, purposively sampled academic librarians in one university in Nigeria who met the sampling criteria. The intellectual scope of this study is to build a collaborative research partnership approach for academic librarians as research partners, thus it leaves aside the collaborative roles and required academic librarians' competencies in another partnership aspect, for example, teaching. Librarians' participation as research partners spreads throughout the whole research process, from information discovery, the conceptualisation of the original idea to the publication and dissemination of the results. The results offered a set of ten roles for academic librarians who wished to demonstrate their value; and understanding these roles in each phase of research is important for those who seek to enhance the effectiveness of their collaborative partnership with academics. An effective collaborative partnership involves the selection of competent librarians who have well-developed knowledge areas, practical skills and personalities that mesh well together, with the greatest potential for successful outcomes. The results show that academic librarians who collaborate in research projects bring skills that improve the quantity and quality of research outputs therefore, contribute to the university mission. Future studies could explore how researchers view these partnerships and what kind of benefits that they obtain from the partnering with the academic librarians in research.

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AUTHOR DECLARATION

There are no conflicts of interest involving either of the authors of this paper.

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