

RESEARCHING MULTI-DISCIPLINARY DIVERSITIES AND OPTIMIZING THEIR INHERENT STRENGTHS AND OPPORTUNITIES: THE ROLE PLAYED BY UNILAG RESEARCH MANAGEMENT OFFICE

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ABSTRACT

The University of Lagos is one of Nigeria's premiere Universities, established in 1962 with core values emphasizing commitment to quality academic learning and character, integrity, continuous improvement of staff professionalism and competence, as well as a strong commitment to cutting-edge research. In 2012, the University established the Research and Innovation Office, which was subsequently restructured into two offices: the Research Management Office, and the Innovation and Technology Transfer Office, for more efficient functioning. Over the years, the Office has provided enormous support to over 1,700 academic faculty and researchers for cutting-edge research built on a multi-disciplinary approach. This paper provides a detailed discussion of the strategies employed by the Research Management Office to promote multi-disciplinary research from inception to date, the results of efforts to promote collaboration across the currently existing wealth of diversity in academic and research disciplines among researchers in over 12 faculties of the University, the successes recorded, and the challenges faced. The paper further makes recommendations for the advancement of these strategies, and suggestions for pragmatic solutions to challenges experienced while drawing practical and applicable lessons from international best practices for supporting multi-disciplinary research.

Keywords:

Research Management, Research Administration, Multidisciplinary Research, Partnerships, Academia-Industry Research

INTRODUCTION

The University of Lagos (UNILAG) was established in 1962 with the mandate to build national capacity through learning, research, and service to the community. The University currently has three campuses—the 325 hectares Main Campus bounding the extensive Lagos Lagoon in Akoka area of Lagos; the College of Medicine sharing the sprawling campus with Lagos University Teaching Hospital at Idi-Araba area of Lagos; and the Yaba Central campus housing the Business school. The vision of the University of Lagos is: "To be a Top-class Institution for the pursuit of excellence in knowledge, character and service to humanity"; and the mission is: "To provide a conducive environment for teaching, learning, research and development, where staff and students will interact and compete

effectively with their counterparts globally”.

The core values of UNILAG include a commitment to excellence in learning and character, integrity and respect, continuous improvement of staff professionalism and competence, commitment to continuous improvement of all facilities and enforcement of innovative culture and ethical conduct. The University is a cosmopolitan University located in the Lagos megalopolis area with a population exceeding 25 million people. UNILAG currently has 50 Departments and 98 programmes spread across 12 Faculties: Arts, Basic Medical Sciences, Business Administration, Clinical Sciences, Dental Sciences, Education, Engineering, Environmental Sciences, Law, Pharmacy, Science, and Social Sciences. UNILAG also offers Master’s and Doctorate degrees in most of the aforementioned programmes. In addition, UNILAG has a Distance Learning Institute (DLI) and a Postgraduate School. It currently has a student enrolment of about 59,257 with a total staff of 5,339 out of which the academic staff constitutes around 1,700. Amongst the 1,700 Academic staff members of the University, conducting cutting-edge research remains a core mandate and this pool of researchers has a broad spectrum of research expertise with critical and specialized focus on thematic of national and global relevance such as climate change, transportation, agriculture and food security, social security and welfare, population health, Information Communication Technologies, communicable and non-communicable diseases, industrial and economic development, business and finance, social policy, drug development, and engineering. With this broad spectrum of specialization, the University prides itself as a citadel of research excellence and continues to explore avenues to harness the huge potential in the wealth of expertise of its researchers who are constantly striving to make significant contributions to national and global development through leading-edge research.

The Research Management Office (hereafter known as the RMO) was officially established in May 2021 sequel to the approval of the University Council for the restructuring of its predecessor Office—the Research and Innovation Office, created in January 2012. The restructuring of the office birthed the Research Management Office, and the Innovation and Technology Transfer Office. The Research Management Office is responsible for the central coordination and management of research conducted by researchers in the University. It also provides integrated support services for the efficient administrative management of all pre-award and post-award activities. The RMO recognizes the diverse pool of research expertise of faculty and sought, from inception, to implement strategies to harness the vast potential in the diversity of research expertise of the over 1,700 researchers of the University of Lagos. This paper presents a discussion on the strategies employed by the Research Management Office to harness the opportunities and strengths in the diversity of research expertise of UNILAG researchers and how the strategies were implemented.

Multi-disciplinary research involves exploratory studies aimed at achieving a common goal with the aid of knowledge of other disciplines (Zaiř et al., 2021; Miller et al., 2008). It is often loosely and interchangeably referred to as trans-disciplinary or inter-disciplinary research (Gethmann et al., 2015; von Wehrden et al., 2019). Multi-disciplinary research approach has increasingly demonstrated utility in the positive influence of holistic solutions to research problems. Knowledge of diverse disciplines are critically employed to proffer solutions to research problems and are complementary to one another in ways that would be otherwise impossible to draw clear-cut conclusions (von Wehrden et al., 2019). The leading-edge research strategy lies in the application of knowledge of myriad disciplines to finding lasting solutions to problems especially when the challenges are multifaceted, complex, and cross-cutting. Multi-disciplinary research partnerships could be conducted at both local and international levels (i.e., within universities in developing countries, as well as between developing countries universities and global north universities).

There are gaps in knowledge of what structures are available to encourage researchers to conduct joint work more effectively with international academic counterparts, and practitioners. Not much is known about the scope of systems available for research collaboration on the foundation of multi-disciplinary approaches to research

and scholarships by academics in Nigerian Universities (Ezeanolue et al., 2018; Danbatta, 2016). Knowledge of such practices will better inform decisions about what structures and systems should be established or further encouraged and funded to facilitate high-quality multi-disciplinary research collaboration and how to support the use of outcomes from such partnerships. This paper presents a critical discussion on the strategies employed by the Research Management Office (RMO) of the University of Lagos to promote multi-disciplinary research from the establishment of the Office to date.

The hitherto practices of academics at the University of Lagos conformed largely to orthodox mono-disciplinary research. However, the RMO had a vision to change such narrative and to promote research visibility for the University through the implementation of several strategies to achieve set goals. The Office leveraged the support of senior administrative management staff of the University whose critical foresight and intervention led to the establishment of the Research and Innovation Office in 2012. The results of efforts to promote collaboration among researchers in over 12 faculties of the University, the successes recorded, and the challenges faced are described in this paper. Although the University is far from reaching its desired goals, it has nevertheless recorded some significant strides in the positive direction. The paper makes recommendations for the advancement of these strategies and suggests solutions to challenges experienced with major references to international best practices for supporting multi-disciplinary research

BACKGROUND

Diversity in research teams is a manifestation of a holistic view of research focus (Wagner et al., 2011). Diverse research teams bring high value to research approach, conduct, inferences, and potentially showcase the spectrum of differences from the interpretations of research experts involved in the study. This may benefit the rigour of research (Senabre Hidalgo, 2018) by creating an opportunity for every member of the team to make contributions from their research world view thus increasing the application and relevance of research findings to various stakeholders (Bunders et al., 2010). Moreover, diversity in research is beneficial to academic research by affording a platform where each researcher has access to the same data and is allowed to mesh their analysis of data with the views of others. University research is increasingly encouraging collaboration among teams with members from diverse backgrounds. Since most universities are made up of diverse disciplines, institutions need to explore how to best harness the potential of disciplinary diversity to create impactful research for the contemporary world. This quest is even more relevant for universities in developing countries, especially with the increasing competition for limited funding and stiff competitive research proposals across global universities being judged by funders based on an overall study of the problem from various outlooks (Wollenweber et al., 2005).

Arguably, the multi-disciplinary research approach has become the gold standard for tackling current complex problems of society which demands in-depth knowledge and critical consideration of multiple dimensions such as economic, social, political, psychological, etc. (Bammer et al., 2020; Brown et al., 2010). However, an effective multi-disciplinary approach will largely entail 'softer' human skills—including teamwork, strong leadership, coordination, effective time management, and selflessness. The different viewpoints of team members might sometimes appear conflicting (Korb et al., 2015). However, a deeper insight of the problem should provide a more comprehensive picture and supplement the articulation of a solution to the problem under focus. All members of a multi-disciplinary team are often collectively involved in all aspects of the study, including the design, data collection and analysis (Bunders et al., 2010; Korb et al., 2015). Participants not only learn from themselves but also increase the potential for research findings to have a broader impact, thereby increasing the spectrum of relevance and translation of knowledge (Bunders et al., 2010). Some authors argue that research produced by multi-disciplinary international partnerships is not always valued by developing country institutions because they rarely speak to local contexts of problems (Lipton, 1970; Syed et al., 2012). Such an assumption makes it difficult to recruit experienced

international researchers to participate in international collaboration with faculty in emerging economies or to sustain their involvement beyond a single project.

Modern-day academic institutions are largely structured to promote interdisciplinary collaboration through a myriad of institutional strategies. The research funding landscape is increasingly becoming more favourably biased to consider and preferably fund multi-disciplinary teams (Wollenweber et al., 2005). Similarly, global metrics for university ranking are also taking deeper reviews of the strength, magnitude and frequencies of research outputs involving multi-disciplinary research collaboration in judging the strength of research, as well as the potential for impactful research (Jöns & Hoyler, 2013). For many universities, therefore, investing in institutional structures with the capacity to bolster and promote multi-disciplinary collaboration is becoming increasingly imperative. In many African Universities, there has been evidence of changes in policies governing hiring and promotion to capture engagement in multi-disciplinary research (Ishengoma, 2017; Larsen, 2016). Before this time, much of the policies governing hiring and promotion, to a large extent accorded little reward for multi-disciplinary research and worked against interdisciplinary or multi-disciplinary research as it was mainly regarded as a team rather than an individual accomplishment.

There is also an increasing level of recognition for town and gown engagement in research, vis-à-vis faculty researchers' collaboration with industry and community stakeholders for impactful outcomes. In recent years, the performance of faculty is often measured using co-authorship of scientific articles published with multi-disciplinary teams or through citations, showing how co-authors build their scholarship with equal contribution from all authors (Boyer et al., 2017; McDonald et al., 2010). Mali et al. (2012) contend that "In reality, science never operates as a single community with hundreds of thousands of individual scientists. It is organized by many different networks that cut across the formal boundaries dividing science with regard to disciplinary sectoral, and geographical levels" (p.201). In essence, there is considerable overlapping of interests. The juxtaposition of interests, blurs boundaries and exerts mutual influence which ultimately minimizes the partial or one-sided result of the issue (Bellotti et al., 2016).

METHODS

This section presents a thematic discussion on the strategies employed by the UNILAG Research Management Office to promote multi-disciplinary research and support collaboration between researchers from diverse disciplines within the University, as well as research partnerships with external (from other universities/research institutes) researchers. The RMO's approaches are captured under four major non-chronological themes; namely: Development of a database of researchers, supporting the establishment of multi-disciplinary research centres, promoting a culture of multi-disciplinary partnerships, and collaboration in research.

Development of Database of Researchers

Not long after the establishment of the Research and Innovation Office in 2012, the staff members of the Office worked extensively with experts in the Computer and Information Technology Systems (CITS) unit of the University of Lagos in the modelling and design of a database of researchers across the university. The modelling and design were built using MySQL. The design featured researchers' interest areas, research grant funding experience, research publications, research groups, patents, and research outputs. This led to the design of a well-planned first-ever e-Compendium of researchers and their respective research interest areas in 2013. Information on the research interest areas was gathered through the dissemination of manually completed forms distributed to all faculty researchers requesting for their names, designation, department, research interest areas, research grants received, publications, and contact details. Over 90% of the researchers on campus were captured save a few

who were either on exchange programs or were on sabbatical at the period of information capture (August 2014–December 2014). The collated information was curated into the developed database and produced a novel research expertise profiling of the researchers on campus. The database enhanced the ease of searching for researchers, as well as their research expert areas. This electronic inventory enabled the Research Office to conduct quick searches for expert researchers as soon as there was an advertised call or request for applications by local and international funding agencies. It also enhanced the formation of multi-disciplinary groups which were aggregated through formal invitations by the Research Office based on having similar research interest areas.

In no time, the University recorded a remarkable increase in the number of formalized research groups, and applications for research grants by the various research groups soared. With increasing support from the RMO, the number of submitted research grants proportionately increased, and more successes were recorded with awarded grants from both local and international funding agencies. Table 1 shows the scholarly output from research collaboration involving multidisciplinary teams. The data compared academic publications from multidisciplinary collaboration 10 years before and after the creation of the Research Office. The results show increments in the number of scholarly outputs from multi-disciplinary research. Table 2 shows the grant revenues generated through multidisciplinary research collaboration between 2017 and 2022, while Figure 1 shows a graphical illustration of the same data.

Table 1. Scholarly Output from Multi-Disciplinary Collaboration (Comparing 10 years pre and post the establishment of the Research & Innovation Office)

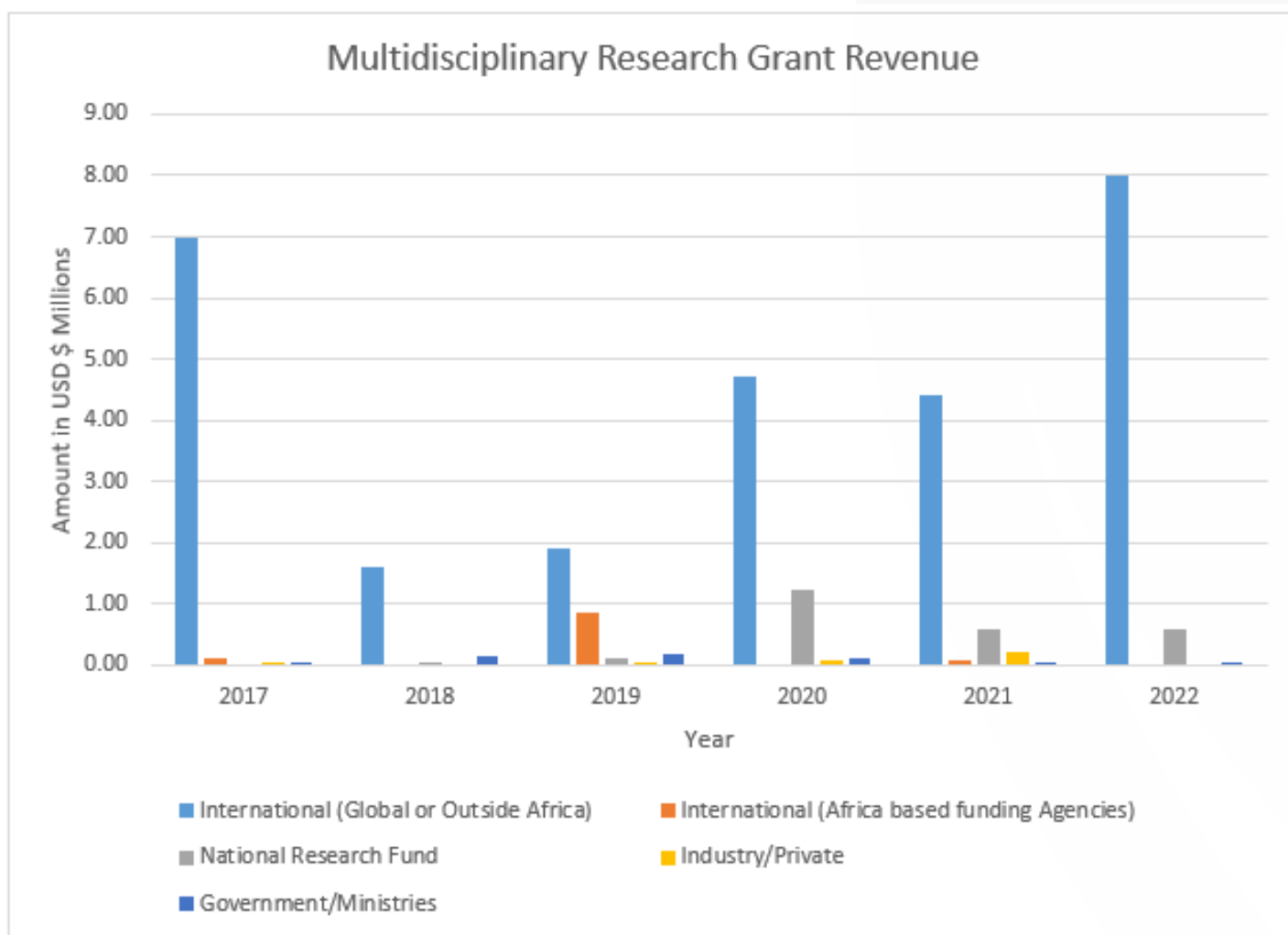
Pre-establishment of the R&I Office		Post-establishment of the R&I Office	
Year	Number of Multidisciplinary Scholarly Outputs	Year	Number of Multidisciplinary Scholarly Outputs
2003	82	2013	353
2004	127	2014	352
2005	135	2015	388
2006	185	2016	384
2007	284	2017	495
2008	337	2018	644
2009	343	2019	688
2010	349	2020	814
2011	431	2021	902
2012	418	2022	944

Table 2. Grants Revenue from Multi-Disciplinary Research 2017-2022

Funding Agency	Year/Amount in USD (\$)					
	2017	2018	2019	2020	2021	2022
International (Global or Outside Africa)	7,066,029.59	1,619,387.32	19,104,594.13	4,757,351.42	4,467,067.50	8,050,194.00
International (Africa-based funding Agencies)	101,843.00	*	846,779.00	*	82,454.63	*
National Research Fund	*	220,833.32	1,170,075.95	1,225,268.42	587,734.30	597,059.76
Industry/Private	60,590.94	*	5,555.55	69,950.00	229,834.60	*
Government/Ministries	15,738.80	151,151.17	165,215.59	108,333.29	18,116.30	59,470.28
TOTAL	7,244,202.33	1,991,371.81	21,292,220.22	6,160,903.13	5,385,207.33	8,706,724.04

*No funding received.

Figure 1. Multi-Disciplinary Research Grant Revenue (2017–2022)



Supporting the Establishment of Multi-disciplinary Research Centres

In addition to the increased numbers of scholarly publications, there arose a need to further harness the strengths and opportunities in multidisciplinary collaboration. With increasing calls by funding agencies for multi-disciplinary cutting-edge research, it became imperative to further aggregate the research groups (also known as research clusters) into stronger groups with a similar focus but broader multi-disciplinary composition. This led to the quest for more Research Centres. By and large, a Research Centre is considered by the Institution as an independent, inter-disciplinary training and research unit operating under its cost-code, and typically having exclusive autonomy to appoint staff, while subject to oversight by a director, and an overall oversight by the University research management apparatuses such as the Research Management Office, the Office of the Deputy Vice-Chancellor (Academics & Research), the Office of the Vice-Chancellor, and the Senate. In response to the need for Research Centres, the RMO developed forms (approved by the University Management) for the establishment of Research Centres (RCs). Researchers from diverse disciplines with homogeneous, identical, and related interests completed the forms with a clear articulation of the justification for the establishment of the research centres of interests. Proposals for the establishment of research centres, or promotion of research groups to research centres were submitted to the Research Management Office (RMO) and forwarded for critical reviews and subsequent consideration by the Committee for approval of research centres. Recommendations were advanced to the Deputy Vice-Chancellor (Academics & Research) (DVC-A&R) by this committee following the objective review of the applications.

The DVC-A&R afterwards made recommendations to the Vice Chancellor and to the University Senate following consultation with the relevant Faculty Board(s), and Departments. Eventually, some RCs were approved and established. Today, UNILAG has specialized centers of excellence whose training and research mandates include addressing issues of national and global challenges. These Centres include: The African Centre of Excellence for Drug Research, Herbal Medicine Development and Regulatory Science (ACEDRHMDRS); African Research University Alliance (ARUA) Centre of Excellence for Urbanization and Habitable Cities; Centre of Excellence for Cinematography; African Network for Drugs & Diagnostics Innovation Centre of Excellence for Malaria Diagnosis; Centre of Excellence for Geosciences; Biodun Sobanjo Centre of Excellence for Multimedia; Institute for African and Diaspora Studies (IADS); Centre for Environmental Human Resources Development (CENHURD); Centre for Biodiversity Conservation and Ecosystem Management (CEBCEM); Centre for Economic Policy Analysis and Research (CEPAR); Centre for Autism and Neuro-Development Disorders (CAND-DO); Centre for Human and Zoonotic Virology (CHAZVY); Centre for Housing Studies (CHS); West African Regional Research and Training Centre for Low Vision Rehabilitation (WARTCLOR); and the Centre for African Regional Integration and Borderland Studies (CARIBS). This clearly shows a remarkable stride in the history of the University and highlights how the diversities and plurality in research interest areas have been harnessed to improve the University's capacity for research. The RMO has provided invaluable support for the establishment of over 15 Research Centres since its inception. Some of this support range from identifying highly performing research groups for upgrade to research centres (especially where significant research funding has been secured by the groups) to providing support for the academic and research engagements at the various research centres.

Capacity Building for Early Career Researchers

The RMO organised regular capacity building programmes for early career researchers. During these programmes, there have always been strong emphasis on the need for collaboration with faculty from other disciplines, as well as collaboration with non-academic stakeholders. The RMO believes that engaging all stakeholders in the research process is central to capacity building. Thus, we involve stakeholders in the planning, monitoring, and evaluation of research processes in order to foster effective and efficient research outcomes. In this way, the University's advocacy for collaborative research is also enhanced, and efficient use of research outcomes is supported. Our research capacity-strengthening strategy goes beyond training to include assisting researchers with opportunities to

manage relationships between the different sectors of society (such as private, public, and community groups) that may benefit from the research. The RMO has long regarded the training of researchers as the primary benefit that it can provide to society. Therefore, the Office strives to support early career researchers who will systematically contribute to the knowledge base and national development. The RMO believes that UNILAG, being one of the highly rated higher education institutions in Nigeria, holds the responsibility of catalysing the achievement of national goals and objectives through multi-disciplinary cutting-edge research. This echoes Alan's (2013) argument that universities as research institutions must see their positions as being at the heart of social development. Such is our institutional attitude—and reflects our position and our responsibility to society.

Catalysing Research Consortia

This approach involves creating easily accessible platforms for research collaboration and linkages (with relevant academic, industry, national, regional, or international others) so that UNILAG researchers can more effectively generate useful knowledge from cutting-edge research, thus informing better decision-making and national development. Some of the assistance provided by the RMO in this area includes communicating research information through its various media of communication with the community of researchers including emails, newsletters, WhatsApp platforms, etc. to those that might be interested in meeting new collaborators, partnering for research grant applications, or meeting with researchers from industry or other research institutions. The RMO has facilitated many stakeholder collaborations with researchers from various faculties and provided support to ensure that the benefit from the research translates to development in society. Through the RMO's intervention, much of our generated new knowledge is tailored for effective uptake and is easily accessed by anyone in a position to make policy decisions or invest in the commercialisation of research output.

CHALLENGES ENCOUNTERED

Conflict of Interests and Ideas

Members of multi-disciplinary teams often had views that differed. Harmonization and reconciliation of divergent views to achieve a common purpose often presented a huge challenge as arguments to establish superiority of views were sometimes intense. In one instance, a team member had articulated an idea that the team lead found contrasting with hers. This led to some bouts of heated argument, and debates that divided and polarized the group, and eventually, the member exited the group for another. While this does not occur very frequently, the RMO picked some lessons concerning the constitution of groups, especially with intellectuals whose personal and philosophical paradigms contrasted sharply and were often too rigidly bound to their personal opinions.

Assigning Roles Responsibilities and Appointing Team Leadership

In instances where groups of people who did not know each other before the group formation were brought together, leaving the task of appointing a group leader to the group members did not always evolve smoothly as everyone felt entitled to the position of a group leader. They considered the stakes to be high as the group leaders often emerged as Principal Investigators for most applications and in all official dealings with the RMO. To navigate this recurring challenge, the RMO drafted a list of guidelines on the selection and determination of who should be a group leader. The document also guided decisions on the selection of Principal Investigators.

Team Compatibility and Efficiency of Cooperation

Some of the groups (research clusters) were formed through the RMO's intervention of randomly selecting faculty with similar interests on the database (compendium of faculty research interest areas), but from diverse disciplines to reflect the multi-disciplinary foundation. However, as members were randomly selected, the RMO sometimes ran

into a challenge with selecting members who were not compatible due to personal differences or low tolerance for apparent contrasts in ideologies, perceptions, and expectations. Groups having such individualistic shortcomings soon suffered attrition and low productivity. In some cases, the RMO made conscious efforts to inject new team members who appeared more flexible and accommodating of the differences. Some of the members were a bit uptight about unlearning the methods they were already familiar with and learning a new methodology rooted in another discipline. This stalled team progress, and in some cases led to the stunting of envisaged progress.

Meeting Deadline for Time-Bound Tasks

Working in multi-disciplinary groups was often time-consuming as communication between people from different disciplines turned out to be a time-demanding exercise. From our observation, team members in multi-disciplinary groups took longer periods to develop and submit their proposals than conventional single-disciplinary teams would require. The multi-disciplinary team members required more time to settle down and grasp the multi-faceted complexities of the RFAs (Request for Funding Applications) than the regular mono-disciplinary projects would require. Also, the majority of the team members often mentioned that they needed more time to read more and learn about the new disciplinary perspectives involved in the research. In addition, the RMO observed that the physical proximity of partners is important to facilitate frequent meetings before the submission of RFAs. In cases where faculty members in Akoka Campus of the University (which was home to the faculties of Social Sciences, Sciences, Arts, Law, Engineering, Education, Management Sciences, and Environmental Sciences) collaborated with faculty members at the Idi-Araba Campus (which hosted the College of Basic Medical Sciences, Dentistry, Clinical Sciences, and Pharmacy), physical travels for face-to-face meetings in the traffic-congested city of Lagos was a herculean task, which often demanded leaving for such travels long before the meeting scheduled time. To address this challenge, multi-disciplinary research teams working to submit a proposal were constituted and communicated early enough about meeting schedules and provided with frequent reminders via text messages on their mobile telephones. They were also frequently reminded about what the submission would require and provided with early support to get a comprehensive breakdown of the call requirements by unpacking the calls, summarizing the call requirements and guidelines via debriefing and disseminating relevant information.

Resistance to Change and Stereotypes

A few faculty members were stereotyped against multi-disciplinary research. This set of people considered that multi-disciplinary research could be detrimental to their progression as academics. Their stance was that it could derail the focus of their research and publication trajectories. To this group, multi-disciplinary research was judged as non-productive as the long hours spent trying to understand each other would otherwise yield more publications if they worked in silos or within their disciplines. Another argument was that multi-disciplinary research often involved larger numbers of team members. This meant that the authorship of research papers would involve too many co-authors and as total points allotted during assessments for promotion were divided among the total numbers of authors for any single publication, having too many authors would translate to having lower scores. In essence, they believed that the evaluation of multi-disciplinary projects, either by external assessors or evaluators for triannual promotion, could lead to under-evaluation. They also contend that since multi-disciplinary research was often multi-focal, they are more likely to be under-evaluated for deviating from their discipline if not reviewed by people with multi-disciplinary background.

DISCUSSION

Multi-disciplinary research partnerships are mutually beneficial collaborations that allow researchers to collectively produce and use relevant research evidence. Building and maintaining the trusted structures, systems, and strategies to promote and sustain a culture of research partnership, the bedrock of multi-disciplinary research,

takes time. Establishing and developing interventions to change fixed mindsets against multi-disciplinary research partnerships usually demands collective efforts. There is evidence suggesting that universities are valued and ranked by levels of engagement in collaborative research with other research institutions (Alan, 2013). Much of the rigour in cutting-edge research produced via multi-institutional collaboration is shaped by the added value of partnerships—the work benefits from multi-regional contributions, encourages multiplicity of views and fosters multi-expert perspectives. Researchers who partner with their multi-disciplinary or multi-institutional counterparts are more equipped to understand broader contexts and address relevant, pressing questions (Bellotti et al., 2016).

The RMO at the University of Lagos considers strong multi-disciplinary research partnerships as a promising strategy for cutting-edge and value-driven research, with the potential to contribute positively to national development. Many universities in developing countries are constrained by limited resources and capacity to develop systems to support strong local and international multi-disciplinary collaboration—including collaboration with industry, Small and Medium Enterprises, and community stakeholders. The UNILAG RMO has been in existence for only nine years but has recorded significant progress from supporting faculty multi-disciplinary research collaboration. The recorded successes, however, have been attained with some challenges which have reflected the steep learning curve experience for the Office and the administrators who work in the Office. In the past decades, academic faculty members in many Nigerian universities have experienced difficulties in establishing and sustaining practices for multi-disciplinary research partnerships with Western world university faculty members (Mushemeza, 2016; Mutula, 2009). In some cases, the RMO had experienced significant challenges in seeking multi-disciplinary partnerships to meet the requirements for the submission of some international RFAs. These challenges persist in many Nigerian Universities and contribute, among many other factors, to the yawning gap in university research ranking and/or research revenue between research institutions in developed world countries and their counterparts in the developing countries.

Investments in human capital and infrastructure are usually needed to create the capacity and culture for research partnerships and such investments, usually, will enhance access to impactful research with potential for national development in the short term (Dale & Newman, 2010); higher valuation and use of research in the mid-term (Britz et al., 2006); and, ultimately, improvements to policy, resource allocation, or service delivery to promote national development (Oketch, 2006). In articulating organisational capacity building, Kaplan (2000) contends that an organisation must view itself not as a victim of the slights of the world, rather as an active player that can effect change and progress. UNILAG's RMO adopted both training and research cluster formation approaches to encourage the development of young researchers' skills in producing quality research that was multi-disciplinary and development oriented. This strategy worked in harnessing the inherent strengths and opportunities in diversities of faculty research expertise. Many of our early career faculty were keen to see that, through multi-disciplinary research collaboration, they were motivated to apply their research expertise to other areas. This approach, in many instances led to incremental innovation and breakthrough technologies, some of which were patented by the Technology Transfer Office. There are, however, more support systems to implement as a premier University. We understood that different competencies also mean different approaches to problems, which can sometimes generate conflicts (Hollaender et al., 2002). Therefore the management of such occasional conflicts is crucial. The RMO is currently working on a Conflict of Interest Policy. Indeed, the RMO has been an immense source of support and encouragement for multi-disciplinary research, across all faculties of the University and the establishment of the Office has been generally seen as a 'good thing'.

CONCLUSION

Building a culture of multi-disciplinary research and optimizing the inherent strengths and opportunities in diversities of research interest areas of over 1,700 faculty members of one of Nigeria's largest and foremost

Universities demands abundant infrastructural, systemic and pecuniary support apart from administrative dedication, patience, and perseverance. In the absence of these basic requirements, the objectives for multi-disciplinary research will not be attained and the entire effort will be proven futile. Embarking on total support for multi-disciplinary cutting-edge research has added value and quality to the nature of research and innovation conducted at the University of Lagos. The evidence is glaring with the increasing number of research clusters formed, the increasing number of research centres established in the last couple of years, and the increasing number of quality proposals submitted in response to RFAs. But at the same time, the approach has brought many challenges which are quite complex and full of intricacies. The RMO has provided immense support to navigate through these challenges and continues to provide support for better quality research. The support was provided with unification and coordination of the diverse members from divergent disciplines as they formed multi-disciplinary groups.

Today, the University understands, recognizes, and appreciates the importance of multi-disciplinary research. UNILAG believes that to deal more comprehensively with Nigeria's contemporary and future problems, multi-disciplinary research is of immense importance. The University is pushing for policies on promotion and recognition of excellence that will reward researchers engaging in multi-disciplinary research to enhance the University's visibility through publication in high-impact journals, patents and intellectual property accomplishments, and successful grant biddings. We conclude that supporting multi-disciplinary research will facilitate harnessing inherent potentials in diversities of research strengths and allow us to fully explore opportunities for cutting-edge research capable of proffering solutions to national and global challenges and fostering development.

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