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# State of university-industry collaboration in quantity surveying profession in Nigeria

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## Abstract

**Purpose** – University-industry collaboration (UIC) is a symbiosis relationship, brought about through knowledge and resource sharing, with the attendant benefits of innovation and technological advancement. The purpose of this paper is to investigate the state of UIC in quantity surveying profession in Nigeria with a view to ascertaining the situation and chatting the way forward.

**Design/methodology/approach** – Using quantitative survey research approach, primary data were collected through the administration of structured questionnaires on quantity surveying academia and practitioners. A total of 126 respondents were sampled: 52 university lecturers and 74 quantity surveying firms. Of these, 32 university lecturers (61.54%) and 34 quantity surveying firms (45.95%) provided valid responses. In all, this amounts to 52.38% response rate. The quantitative data obtained were analysed using mean score, frequency distribution, percentage and Mann Whitney test.

**Findings** – The findings show that collaboration is very strong in the areas of student industrial placement and research cooperation between students and academic researchers. However, collaboration in the areas of funding and staff exchange was found to be lagging behind.

**Practical implications** – The findings indicate strong collaboration areas (student industrial placement and research cooperation) to be sustained as well as weak areas (funding and staff exchange) to be critically looked into.

**Originality/value** – The paper represents the first research to empirically assess the state of UIC in quantity surveying profession in Nigeria. In addition, it shows the areas where efforts should be concentrated in maximizing the benefit of UIC.

**Keywords** Nigeria, Practice, Quantity surveying, Training, University-industry collaboration

**Paper type** Research paper

## Introduction

University-industry collaboration (UIC) has been viewed as interconnection that occurs between an industry and a university partner with agreement to advance their mutual interests mainly to encourage knowledge through research and technology exchange (Samuel and Omar, 2015). Lundberg and Oberg (2021) described UIC as the motor for innovation. While university is seeing as knowledge producer, transmitter and diffuser (Sutrisna *et al.*, 2021); the industry is seeing as the converter of research and innovation into viable products and services (Mirza *et al.*, 2020).

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It has been generally acknowledged that universities contribute in research, teaching and knowledge transfer (Malik *et al.*, 2021) while the industry provides the enabling environment and, leveraging on the university research output, create innovative solutions that can results in widespread economic growth (Fernandes *et al.*, 2020). Furthermore, Organisation for Economic Cooperation and Development (OECD) (2017) alluded to the fact that universities have played an important role by providing new knowledge and training to the highly skilled workers that knowledge-based economies depend on. Likewise, the industries had acted as the receiver of knowledge and technology and a place where knowledge and technology are applied (Sutrisna *et al.*, 2021).

While UIC has gained ground, considerably, in developed economies; it has progressed slowly in developing economies (Malik *et al.*, 2021). In this regard, there is a great concern about the collaboration between university and industry. For instance, the traditional training and education models presently in practice have been appraised for lack of co-ordination between the industry requirements and the actual teaching in the university (Alshawi *et al.*, 2007). In Nigeria, the quality of fresh graduates in the Nigerian universities has been continuously criticized by the industry and there have been no sufficient studies on the extent of UIC (Opawole *et al.*, 2012). On this premise, there is great need for researchers to critically take up the issue of UIC with a view to bringing to fore the situation and leveraging on its benefits for improved workings of the society. In this regard, ascertaining the current state of UIC, particularly in a dynamic profession such as quantity surveying, is of great essence in exploring the underline mutual benefits.

Quantity surveying is a profession, within the built environment, saddled with the responsibility of carrying out cost planning and commercial management of construction projects (Shafiei and Said, 2008). The profession is concerns with judicious allocation of construction resources with the overriding aim of ensuring value for money. With improvements in education, advancement in technology and increase in affluence of society; clients have become more discerning as well as demanding on the quality and timeliness of the service they received. As a service provider profession; matching the technical knowledge and innovation requirements with the industry needs and expectations cannot be overemphasized.

In this study, the industry refers to those firms; companies and Ministries, Departments and Agencies (MDAs) of government that utilizes the services of quantity surveyors while the university refers to the universities with quantity surveying academic training programmes. The operation and activities of quantity surveying are knowledge-based and fit well to the so called "knowledge society" or "knowledge economy" (Sutrisna *et al.*, 2021). The "knowledge society" or "knowledge economy" terminologies are often used to describe a shift from traditional economies to the use of knowledge, innovation and leveraging on the current information and communication technology (ICT) boost. The ICT has brought about the challenge of acquiring sustainable competitive advantage by knowledge based organizations and for this to be fully confronted; knowledge sharing through collaborative processes has become very key. In such a volatile and competitive environment a proactive collaboration, in sharing of ideas and external resources, is seen to be very relevant (Segarra-Cipress and Bou-Llusar, 2018) in delivering products and services to meeting customer needs. Simao and Franco (2018) have pinpointed the use of external sources of knowledge aligned with internal ones in contributing to the introduction of organizational innovation processes. Despite the numerous advantages, opportunities and needs for UIC, little is known regarding the state and nature of the phenomenon in relation to quantity surveying profession in Nigeria.

Hence, this paper reports a research conducted to examine the situation with a view to presenting a basis for improvement and chatting the way forward. The paper starts with a review of relevant literature followed by a description of the research method and presentation of the research findings. The findings are discussed and conclusion drawn with appropriate recommendations.

## Literature review

### *University-industry collaboration in context*

UIC refers to the alliance or relations that exist between the industry and the university with an objective of advancing mutual interests (Samuel and Omar, 2015). Fernandes *et al.* (2020) described UIC as an investment which is made principally to help create innovative solution that will results in widespread economic growth and improve the capacities of the collaborating partners. Sutrisna *et al.* (2021) listed three active participants in achieving innovation in any organization. The industry was regarded as "wealth generator", the university "novelty producer" while the government, which comes in between, was regarded as "public controller". The model incorporating these three key players in explaining the structural development in knowledge –based economies is known as "triple helix model" (Leydesdorff, 2018). This study adheres to the underline theoretical background of university and industry as projected in this theory. Coming together of the two entities is considered to be very crucial in research and development (R&D) that can better the fortune of any nation.

UIC can have various shapes and can be studied in different perspectives. For instance, Thune (2011) classified collaboration between universities and industries in various ways and context such as sustainable learning, business activities, knowledge passing, research and education. Various studies have also provided the evidence of the benefits of UIC. These have been documented in form of: sponsored research which eventually developed into practical application (Mirza *et al.*, 2020); potential financial reward of patents and licences that result from the commercialization of academic research (Caulfield and Ogbogu, 2015); knowledge transfer between universities and industrial firms (especially to compensate for low investment in R&D often found in developing countries) (Garcia *et al.*, 2020); gaining access to research funding (Grimaldi and vonTunzelmann, 2002) and expansion of university networks (Murray, 2002; Mirza *et al.*, 2020) among others. University and industry play crucial role in sustaining national innovation systems. Collaboration between university and industry is seeing to be fundamental to aptitudes improvement, generation, obtaining and appropriation of skill, and the advancement of business enterprise (Mirza *et al.*, 2020). In this regard, it has been demonstrated that coordinated effort with university significantly expanded the inclination of industry to present new discoveries and patent. The real outcome of UIC is mostly based on knowledge and technology transfer (Philbin, 2010) and this can be measured in terms of the gamut of intellectual property rights sold or bought (Ibeme, 2020). In this regard, Obanor and Kwasi-Effah (2013) discovered that technology transfer and collaboration between most industries and universities is at very low level in developing economy and particularly in Nigeria. Recent study by Cudic *et al.* (2022) proved that countries investing in UIC have better performance. Such area of investments was identified as knowledge, networking and R&D. Therefore, the growing competitive environment has necessitated university and industry to undergo actual connections and straight knowledge transfer that can bring about new prospects.

### *University-industry collaboration in quantity surveying profession*

In relation to construction education and training, the primary role of university is the preparation of people for a vocation in the built environment (Hughes, 2010). It is also a known fact that built environment practice does not take place in the universities but in the industry. The practitioners have to be up to speed with the latest research from universities and carry out their practice in the light of the most recent thinking. In moving the frontier of practice forward therefore, the focus must be on the connection and synergy between universities and industry. For quantity surveying practice, multi-faceted conflicting pressures, from different

sections, are part of the abound concerns that need to be addressed if a streamlined and successful professionalism is to be achieved (Samuel and Omar, 2015). Perera *et al.* (2017) opined that the pressures are academically and industrially imposed. It was observed that the academic and training needs in quantity surveying practice seem to have been pulled at opposing directions in a three-dimensional way. In other words, academics are more interested in producing students with basic knowledge which could serve as threshold for further advancement while the industry is concerned with the utilization of the knowledge earned by personnel to contribute to the immediate industrial demands and maximization of profits. Accordingly, it was found that university collaboration is a major measure to counter the pressure. The importance of UIC has not been fully recognized in quantity surveying; thus, the concept has negligible practice. However, there have been calls for the creation of synergy between the academia and the industry for the much-desired collaboration. This synergy could be in curriculum development, funding and training.

*Areas of collaboration between university and industry*

Previous studies on UIC show that the collaboration can be in various forms. For example, several studies have provided strong evidence of partnership between industry and academic institution in the area of R&D. Universities and industries have, therefore, been encouraged to collaborate in R&D (Lind *et al.*, 2013). Accordingly, research centres and organizations are being created alongside academic institutions for technological advancement and to further the developmental stride of the society. Sutrisna *et al.* (2021) had harped on the lack of investment and R&D in the construction sector as the bane of low absorptive capacity of research outcomes by companies in Australia. Another area of collaboration advocated by researchers is "funding". Funding agencies view research centres as a tool for developing the society (Lind *et al.*, 2013). Consequently, funding partners often collaborate with research institutions with a view to solving the problems in the industry for the good of the society. The regulatory bodies can do a lot in facilitating collaboration between the stakeholders by coming up with supportive measures that are founded on the ground to affect the production system positively. This can, in turn, be a driver for national development. Multi-national and international companies often provide significant levels of funding for university to conduct cutting edge research that are capable of advancing their businesses. Such include, oil and gas, pharmaceutical and aerospace industries (Philbin, 2008). These large corporations are accessing universities on a global basis and this, no doubt, are leading to a greater level of competition between universities in order to gain research funding. Funding arrangements are often structured in a way that will encourage the passage of researches to the industry (Grimaldi and vonTunzelmann, 2002). The involvement of firms in funding research works will help them have access to information at a less expensive rate. Such funding can be in form of research funding or sponsorship, provision of scholarship (as motivation for university staff and students) and providing fund for infrastructural development. Investment in R&D is seen to be fundamental for innovation. As such, specific industry-sponsored university research is often developed to solve a particular problem. Another source of finance to universities is the potential financial reward of patents and licences from the commercialization of academic researches (Mirza *et al.*, 2020). Vicente-Oliva *et al.* (2015) identified the lack of investment in R&D activities within the construction sector as a resultant effect of low absorptive capacity of research outcomes. While Chan *et al.* (2002) alluded to increase in revenues, higher research productivity and easy of patenting as motivation for UIC, Awasthy *et al.* (2020) hinged on organizational commitment and availability of resources through networks as a precursor for UIC.

Another area that deepens UIC is the area of staffing/academic mobility (staff exchange) (Malik *et al.*, 2021). This relates to the movement of academic staff and researchers to the

industry for a scheduled period of time to understudy the practices with a view to discovering the industry problems and be able to formulate research direction and agenda. Likewise, the practitioners will have a scheduled period to coming to the university to engage the students and academic staff as well. The essence of this will be to bring on board their practical experience and exposure to the training and research effort of the university. For example, in Nigeria there is provision for student industrial work experience scheme (SIWES) in the curriculum of architecture, engineering and construction related disciplines. In this regard and to balance the logic behind this initiative, the issue of teacher industrial working experience scheme (TIWES) has been advocated and launched in country such as Thailand (Malik *et al.*, 2021). This policy will encourage university researchers to spend some time working in industry as full time or part time staff. To complete the cycle, the industry practitioners could assist in providing occasional *pro bono* training for the students in the universities. This kind of interactions can improve business productivity and entrench innovation through R&D, technology transfer and staff mobility and exchange (Fuentes and Dutrenit, 2012). Furthermore, industry often collaborates with university in the areas of infrastructure development and scholarship provision. Bonaccorsi and Piccaluga (1994) much earlier recognized personal formal relationship (in form of scholarship) and formal non-targeted agreements (in form of research grants and donations) as few of the specific areas of connection between university and industry. The issue of scholarship, grant or donation provision indicates that not all the UIC are formalized and may happen at the individual or organizational level (Ankrah and Al-tabbaa, 2015). From the aforementioned literature review, the UIC area variables were synthesis (as presented in Table S1) and use for the study.

## Research methodology

This research investigated the current state of UIC in quantity surveying profession in Nigeria. Survey research method was adopted for the study. Primary data were obtained through structured questionnaire administered on targeted relevant stakeholders. Relevant information was initially obtained through an extant literature search and review upon which the criteria and variables used in the compilation of the questionnaire were based. The population within the context of the study is a database of quantity surveying practicing firms and quantity surveying academia in universities offering quantity surveying programme located in the study area. In the context of this study, quantity surveying firms (practicing in the study locations) represents the industry while quantity surveying departments (in the selected institutions) represents the university. The study area was limited to three of the six states in the Southwestern Nigeria. These states include Lagos, Ondo and Osun states. The choice of these states emanated from the fact that the three (3) federal universities, in which quantity surveying is being offered, are located. These universities are the University of Lagos, Akoka (UNILAG), the Federal University of Technology Akure (FUTA) and Obafemi Awolowo University Ile-Ife (OAU).

For the practicing firms, the total enumeration of those in Ondo and Osun states were surveyed. These amount to 6 and 5 numbers respectively. For those in Lagos state, a total number of 125 registered firms were found to be in practice. Because of this large population (in comparison with those of Ondo and Osun), 50% of the recorded practicing firms (amounting to 63 numbers) were systematically selected and sampled. The figures were as sourced from the Nigerian Institute of Quantity Surveyors (NIQS) Directory. For the academia, a total enumeration of the lecturers in the selected institutions (UNILAG, FUTA and OAU) was adopted. From the personal preliminary investigation of the respective institutions, these amount to 13, 26 and 13 numbers, respectively. The sampling frame and corresponding sample size is as presented in Table 1. The questionnaire was carefully designed for the purpose of providing answers to the research questions and in achieving the

study objectives. In satisfying the ethical consideration, all respondents were well informed of the need and essence of the study via the covering letter accompanied the questionnaire. There was no form of coercion in eliciting the required data whatsoever. They were well assured of the confidentiality and the use of the data generated for research purpose only. The questionnaire comprises of two sections. The first section elicited general information about the respondents while the second section dealt with issues relating to the objective of the study. The respondents' choices of answers ranged on a 5- point Likert scale 1 to 5, where 5 indicates "highly important"; 4 "very important"; 3 "important"; 2 "slightly important" and 1 "not important". The data obtained were analysed using frequency distribution, percentage, mean score and Mann Whitney test upon which inferences and conclusions were drawn. While frequency distribution was used to collate and simplify the responses, mean score was used to determine the significance of each variable as rated by the respondents. Several studies have used similar statistics when conducting evaluation from survey results. The Mann–Whitney test was used to determine the level of understanding and agreement among the group respondents. In addition, Cronbach's alpha of reliability statistics test was calculated to check the internal consistency of the questionnaire used for the study. The result indicated the acceptable reliability coefficient value of 0.872 for the variable items.

## Data analysis and results

### *Respondents' information*

The results of respondents' information indicate that a good number (64.5%) of the respondents, in the quantity surveying firms, are principal partners while the remaining (35.5%) are associate partners. The bulk of the surveyed academics (59.6%) had, at least, BSc. academic qualification. In relation to the respondents' professional qualifications and work experience, the results show that the entire respondents from both quantity surveying firms and academic staff have registered with the NIQS and their work experience spanned between 15 and 20 years. From the general background information, the participants were adjudged qualified and competent to provide the needed information for the study and the information so provided can be relied upon.

### *Areas of university-industry collaborations in quantity surveying profession*

The results of the survey show the importance placed on different areas of UIC in relation to quantity surveying in Nigeria. The descriptive analysis is as presented in Table 2. The mean scores of the derived six variable items vary from 2.91 to 4.34. This shows that all the respondents considered the six identified areas of collaboration as important. The topmost area of collaboration is *industrial training/placement for students* with the means score of 4.34. This is followed by R&D (mean score of 3.45), *infrastructural development* (mean score of 3.18), *scholarship* (mean score of 3.19), *funding* (means score of 3.00) and *staff exchange*

| Category of Respondents | Lagos state P | Lagos state %/NS | Ondo state P | Ondo state %/NS | Osun state P | Osun state %/NS | Total (Selected) |
|---|---|---|---|---|---|---|---|
| Quantity Surveying Firms | 125 | 50(63) | 6 | 100(6) | 5 | 100(5) | *74* |
| Academic Staff | 13 (U) | 100(13) | 26 (F) | 100(26) | 13 (O) | 100(13) | *52* |
| *Total (Selected)* | 138 | *76* | 32 | *32* | 18 | *18* | *126* |

**Note(s):** P – Population; %/NS – Percentage/Number selected
U – UNILAG; F – FUTA; O - OAU
**Source(s):** Table by authors

**Table 1.**
Sampling frame/ sample size

**Table 2.**
Areas of university-industry collaboration in quantity surveying profession

| Scope/Area of Collaboration | QS firms M | QS firms R | Academic staff M | Academic staff R | Overall M | Overall R | Mann Whitney | *p*-value |
|---|---|---|---|---|---|---|---|---|
| Funding | 3.23 | 3 | 2.73 | 5 | 3.00 | 5 | −0.965 | 0.503 |
| Staffing/Academic Mobility (Staff Exchange) | 2.87 | 6 | 2.96 | 4 | 2.91 | 6 | −1.074 | 0.412 |
| Research and Development | 3.14 | 4 | 3.76 | 2 | 3.45 | 2 | 0.140 | 0.413 |
| Industrial Training/Placement for students | 4.28 | 1 | 4.39 | 1 | 4.34 | 1 | 0.421 | 0.669 |
| Infrastructural Development | 3.04 | 5 | 3.32 | 3 | 3.18 | 3 | −0.167 | 0.663 |
| Scholarship | 3.51 | 2 | 2.68 | 6 | 3.09 | 4 | 0.144 | 0.164 |

**Note(s):** Significant @ 5% M -Mean; R- Rank
**Source(s):** Table by authors

(mean score of 2.91). A pictorial quick view of the result is as presented in Figure S1. In order to determine if the perception of the two respondent groups (quantity surveying firms and academic staff) in the ranking of six (6) identified areas of collaborations has a significant difference, Mann–Whitney test was carried out at a significance level of 5%. As illustrated in Table 2, the results of *p*-value, obtained from Mann–Whitney test are well above 0.05, which implied that the perception between the two groups of quantity surveying practitioners and the academia, on all the identified areas of collaboration has no statistical significant difference. This showed that the respondents have a common understanding of the situation and that there is high degree of agreement between the two groups.

## Discussion and implications

This research investigated the current state of UIC in quantity surveying profession. Findings from the empirical results give a very clear picture of the level of importance attached to the identified areas of collaboration. The findings have a lot to do with the level of innovation and advancement in training and practice of quantity surveying in Nigeria. For example, the *industrial training/placement for students* found to be the number 1 area of collaboration confirms the existing literature on Nigeria situation generally. For instance, Opawole *et al.* (2012) earlier found that industrial training/internships for students as the prevailing area of collaboration between industry and university in Nigeria. In this regard, student industry work placement and some form of industry input into university teaching programme is seeing as a promising area of UIC that can promote the much desired technological and innovative advancement in the profession. The situation may not be far from what obtains in other developing countries. For example, Malik *et al.* (2021) lately found student *placement in industry* to be the second topmost important area of collaboration in Pakistan with *joint research/publication* being the topmost area. As such *industrial training/placement for students* is seen as a form of collaboration in the right direction. One of the primary purposes of university is to prepare students for career success in the industry. University academic training blended with industry placement provides valuable experience to students. The opportunity to participate and be involved in industry sponsored projects allows students to build relationship that can lead to career development. In related matter, the findings, also show a good stand of UIC in the area of infrastructural development and scholarship provision. The issue of scholarship provision is not surprising because many quantity surveying firms, in the study area, award scholarships every year to best students in quantity surveying in the universities. This ranges from best students on specific courses to overall best graduating student.

Findings regarding certain areas of collaboration are, however, different from what obtains in the developed economies. The common areas of collaboration are often in R&D and Funding. The situation, as found in this study, may not be too bad anyway as collaboration in area of R&D was rated number 2. Often, the industry compliments the research effort of the universities where students (at BSc, MSc. and PhD. levels) and academic researchers are adequately supported in their research projects. The students often go to the practicing firms to gather necessary data for their research studies and they always accede to the students' request. This is another strong area where effort should be concentrated in advancing the frontier of knowledge and innovative development in quantity surveying profession. While the academic researchers often decide on the area of interests where to direct their research effort, they may lack the inspiration to know exactly the needs of the industry. For quantity surveying profession, the great concern should be how to get the industry involved in the formulation of research agendas that could address the related industry problems. For the university, the benefits will be the opportunity to address research questions with real-world applications and research with tangible impacts. The benefits to the industry will be the opportunity to improve business performance through the development of new skills and technologies, and extension of the capabilities and expertise available. Both the industry and university have much to gain from this kind of collaboration since they are jointly involved in promoting the discovery of new synergies and models that promise mutual potential for innovation.

However, two key areas that the empirical findings brought to fore for attention are *funding* and *staff exchange*. The two areas are not faring well as far as quantity surveying in Nigeria is concern. They stand at distance number 5 and 6, respectively. In the area of funding, the industry is expected to play a significant role in the face of dwindling economic resources at the public disposal. Experience from the Nigeria business environment shows that government funding is not increasing but rather declining by the day. Researchers and research institutions must therefore look for alternative sources of fund and which the industry can provide. Universities are therefore supposed to partner with companies and firms in financing specific research that are tailored towards solving specific problems of the industry. Existing literature points to the support of government in facilitating UIC through funding. For any society or nation be abreast of new ideas in various filed of commercial endeavour, the issue of funding (which comes mostly in form of research funding) cannot be overemphasized. Such funding can come about in form of tax payment and revenues from facilities and development centres. This is the practice in the developed economies and it is the way to go.

To address the staff exchange collaboration gap, a collaborative staff exchange platform can be initiated by either of the party. For example, those in the industry (the practitioners) could assist in providing *pro bono* training to complement the existing training structure in the universities as well as provide fund to undertake specific research to solving a particular problem in the industry. The key thing here is how industry might better support research in academic institution and how teaching (and research) might meet the needs of the industry. In another perspective, there could be policy formulation that includes industry practitioners in the policy making body of the universities. Bhutto and Lohana (2018) had suggested that the higher education policy should allow for the inclusion of at least one person with industry background in the board of studies of universities. This suggestion is seeing to be very appropriate for a professional discipline such as quantity surveying. On the other hand, the university should, at all time, showcase and create awareness of its ability to effectively solve the industry challenges through research and innovation. Quantity surveyors in academic could uptake their leaves in the industry with a view to understudying the practices and creating areas of research interest.

The findings, from this study, have implications for UIC and resultant effects in the development of quantity surveying profession in Nigeria. Firstly, the paper represents the

first research to empirically assess the state of UIC as it relates to quantity surveying profession in Nigeria. In addition, it shows the areas where efforts should be concentrated in maximizing the benefit of UIC for the enhancement of quantity surveying training and practice. Secondly and most importantly, the strong connection in terms of students' industrial placement and synergy on research are seen as good omen and this portend a very strong point for UIC in the development of the profession. Conversely, the lagging behind of UIC in the very crucial matters of funding and staff exchange portend negative implications.

## Conclusion and recommendations

This paper aimed to investigate the current state of UIC in quantity surveying profession. This was with a view to ascertaining the situation and chatting the way forward for improvement. The need for the study stemmed from the fact that, despite the numerous benefits of UIC, there is no study that has empirically looked into the concept in relation to quantity surveying profession in Nigeria. From the literature search six common areas of collaboration between university and industry were synthesized and used for the study: these are: industrial training/placement for students; R&D; infrastructural development, scholarship; funding and staffing/academic mobility. Although all the six identified areas were considered important, the findings revealed the two most collaborated areas as "Industrial Training/Placement for students" and "R&D". Surprisingly, two fundamental areas of collaboration, funding and staff exchange (academic mobility) were, however, rated the last and second to the last, respectively, among the identified six areas. In line with the findings, the study concluded that a lot still needs to be done to improving the situation and for the benefits of UIC to be maximally explored in quantity surveying profession in Nigeria. There is the need to sustain and strengthen the identified areas of strength and critically looked into the areas that lag behind expectation.

Based on the findings of the study, the following recommendations are put forward. First, there is need for sustenance and improvement in the identified areas of strength. The current policy of students' industrial placement, in the teaching curriculum, should be sustained while the industry should continue to strengthen the cordial research collaboration with the students and academic researchers. Secondly, funding assistance framework (from the industry) should be well encapsulated to assist the universities in their research pursuit. In this regard, the government can make a dedicated funding assistance policy with the industry. For example a policy of education tax fund, whereby any business enterprise taking contract from government can be made to pay a certain percentage of their annual turnover to a "trust fund" dedicated for research sponsorship in universities. Lastly, the issue of staff exchange and transfer of knowledge, between the industry practitioners and academic staff, should be critically looked into. On the part of the university, there can be a policy such as "Teacher Industrial Works Experience (TIWES)" as it obtains for the students. There is a policy of "Students Industrial Work Experience Scheme (SIWES)" for the architectural, engineering and construction (AEC) students to have a dedicated period to be in the industry and understudy the practices before graduation. This policy, no doubt, is yielding positive results. The same can be enacted and inculcated as part of staff continuous professional development and re-training initiative for the teachers (academic staff). On the part of the industry, the practitioners can synergize with the university by creating a platform for them to periodically teach in the academic institution (probably on *pro-bono* arrangement). With this they will be able to contribute to the training of the students from the strength of industrial experience. Both parties should work towards creating a conducive atmosphere for this arrangement to thrive for their mutual benefit and the good of the society at large.

The study focused on investigating the state and nature of UIC in quantity surveying profession, using south-western Nigeria as a case. The study was limited in a number of ways. First, it was limited to south-western geopolitical zone of Nigeria. It will be interesting to carry out a further comparative study of the situation in other geopolitical zones of Nigeria and probably capture what happens in other professions in the built environment. Secondly, the practitioners who represent the industry, in this context, were limited to those in consultancy firms. Whereas quantity surveying services are being utilized in other private sector, such as construction firms, and Ministry, Department and Agencies of government. Capturing the experience and information from the practitioners in these organizations can make a difference. In addition, there will be need for further research to empirically dissect the barriers to UIC as it relates to quantity surveying.

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**Supplementary Materials**

The supplementary material for this article can be found online.

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