INSTITUTION-INDUSTRY COLLABORATION AS CORRELATES OF UNIVERSITY GOAL ACHIEVEMENT IN SOUTHWEST, NIGERIA

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Abstract: *Skill gaps in job performance of university graduates indicate a mismatch between university output and labour market needs. A synergistic relationship known as collaboration between institutions and industries can achieve university goals through research, industrial training for students, support for development projects, and joint curriculum development. The paper examined the relationship between institution-industry collaboration (IIC) and university goal achievement (UGA) in South-west Nigeria. The study adopted a descriptive research design of the correlational type with a population of 6,737 lecturers and 30,309 students. Simple random and stratified sampling techniques were used to select 435 lecturers and 455 students as samples for the study. Data were collected using the "Institution-industry Collaboration Questionnaire" (ICQ), the "Goal Achievement in Research and Community Service Questionnaire" (GARCSQ) and the "Goal Achievement in Teaching Questionnaire" (GATQ) with an internal consistency of 0.840, 0.929 and 0.927. The data collected were analysed using descriptive statistics and Pearson product moment correlation at 0.05 level of significance. The findings revealed that a positive significant relationship existed between IIC and UGA at r = 0.215. Additionally, There was a significant positive correlation between Industry training for students and UGA at r = 0.155, among others. The study concluded that a significant relationship existed between institution-industry collaboration and university goal achievement. It thus implies that, university partnership with industry will bring a considerable achievement of university goals. It was recommended among others that universities are to be encouraged to create an enabling environment for effective collaboration with industry to increase goal achievement.*

Keywords: Institution-industry, Collaboration, Collaborative Research, Industrial training, Goal

INTRODUCTION

University education provides opportunities for students to acquire knowledge and skills for self-reliance and relevance in the world of work. Its uniqueness and indispensability reside in the production of skilled manpower relevant to the needs of the labour market. Its inclusion in the National Policy on Education is not only to train high-level manpower but also to provide students with the necessary skills demanded in the industrial sector. Although much success has been recorded at the tertiary level of education in Nigeria, there is still a need to focus more attention on aligning students with the skills demanded in the industrial sector. This can be achieved when universities form linkages with relevant industries. This type of relationship will enable Nigerian graduates to translate acquired knowledge into practice after graduation. Although, Nigerian universities have produced many graduates who have been found competent in their various areas of specialisation, observations show that there are still some graduates who are considered by some employers as being half-baked due to the skill gaps in their

job performance. Hence, it is important to examine the level of institution-industry collaboration in Nigerian universities and how this relates to goal achievement.

The goal of producing skilled manpower, relevant to the needs of the labour market, cannot be singlehandedly attained by the universities. Hence, it was stated in the Nigerian National Policy on Education that universities should collaborate with relevant industries in order to achieve the laudable goals (Federal Republic of Nigeria, 2013). Suleiman (2018), while addressing the issue of industrial work experience for university undergraduates in Nigeria, at a stakeholders' meeting held by the National Universities' Commission, spoke on the need for universities to collaborate with industries. Thus, the idea of an alliance between universities and industries is becoming more pronounced as it helps to bridge the gap between theory and practice. This synergy, known as the collaboration between institution and industry is a critical resource for achieving university goals and can be accomplished through research activities, industrial training for students, support for development projects, and joint curriculum development. This is because some of the courses offered in the universities are practical-based and there is the need to match academic study with industrial practice. Also, this practice is in tandem with the environmental habit theory as used in Vocational and Technical Education. The environmental habit theory as propounded by Prosser and Quingly (1949) justify the need for the university environment to be a replica of where students will subsequently work. Collaboration between the university and the industry is needed in order to bridge the gap between university output and the labour market demand.

Statement of the Problem

The presence of skill gap in the job performance of university graduates shows a mismatch between university outputs and the labour market demands. Discrepancies between the education provided by the institutions and the experience needed by industries create a great concern, not only for industrial establishments, but also for all stakeholders. Employers meet with disappointment in their employees if the latter are given some tasks that need the demonstration of specific skills, and such tasks are not carried out effectively due to lack of technical know-how. The most effective way of bridging the gap between academic theory and industrial demand is for universities to collaborate with relevant industries. However, in developing countries like Nigeria, much attention has not been given to this linkage between educational institutions and industry

Many scholars have carried out studies on several areas which are related to this study. Adebowale and Oyelaran-Oyeyinka (2012), Obanor and Kwasi-Effah (2013) and Adepoju and Adedeji (2016) all carried out different studies on institution-industry collaboration, while Abdulkareem et al. (2015) on the other hand, focused on university goal achievement in their study. Considering the variables and contents of the above-mentioned studies, none of them has combined the two variables that this study is out to examine. Hence, the need to examine the level of collaboration between universities and industries and to determine the contribution of such collaboration to university goal achievement in South-west Nigeria.

Objectives of the Study

The main objective of this study was to examine the relationship between institution-industry collaboration and university goal achievement in South-West Nigeria. Specifically, the study was carried out to:

i. examine the level of institution-industry collaboration in public universities in South-west Nigeria;
ii. examine the level of university goal achievement in public universities in South-west Nigeria;
iii. examine the relationship between institution-industry collaboration and university goal achievement in South-west Nigeria;
iv. determine the relationship between collaborative research and university goal achievement in South-west Nigeria; and
v. investigate the relationship between students' industrial training and university goal achievement in South-west Nigeria.

Research Questions

In addressing the problem of this study, the following research questions were raised:

i. What is the level of Institution-industry collaboration in public universities in South-west Nigeria?
ii. What is the level of university goal achievement in South-west Nigeria?

Research Hypotheses

Ho_1: There is no significant relationship between institution-industry collaboration and university goal achievement in South-west Nigeria

Ho_2: There is no significant relationship between collaborative research and university goal achievement in South-west Nigeria.

Ho_3: There is no significant relationship between students' industrial training and university goal achievement in South-west Nigeria.

LITERATURE REVIEW

Concept of Institution-Industry Collaboration

Institution-industry collaboration (IIC) is a term used in Nigeria to describe the relationship, association, partnership or connection between universities and related industries. The aim of this Partnership is to bridge the gap between academic research and industrial practice. It covers various programmes and activities, such as collaborative research, students' industrial training and developmental projects support. IIC aims to improve the skills of the workers, to increase the product, technology, process and to update the workforce. Natarajan (2014) defined IIC in terms of collaboration, co-sponsorship, inter-agency or inter-organisational partnership between educational institutions and industries where the two agencies are engaged in the shared design and supervision of programs or initiatives with the aid of contributing capital that will provide reciprocal benefits to both organisations. The forms of partnerships differ according to the extent of interconnections between the institutions and the industries involved. Idris and Rajuddin (2012) described a gap between the standard of the training that students undergo and the expectations of employers in Nigeria's business and industry.

Furthermore, the scholars claimed that conducting engineering education in collaboration with industry is of huge importance for the student training. During their course of study, they established curriculum inadequacies and a student-oriented issue of not being exposed to working tools and machines but only full of theoretical knowledge. This was supported by Obanor and Kwasi-Effa (2013) who confirmed that the innovative technological skills of the majority of graduate engineers working in some industries are underused as they only build, operate or maintain machines. They discovered that some engineering students produced some machines through research, but these were not improved to the level of marketability or commercialisation due to insufficient interaction between educational institutions and industries that can benefit through technology transfer and exchange of information.

The universities and the industries are two distinct entities of different features. These variations in their features tend to serve as obstacles for successful collaboration. Obanor and Kwasi-Effa (2013) further revealed that collaboration between universities and industries was mostly through individual effort. Their collaboration was observed to be weak because it was informal. It was also observed that some lecturers seldom attend conferences organised by industries because they sometimes consider these conferences as being below standards. The researchers, therefore, concluded that there was a low level of collaboration between universities and industries. Pai and Chiplunkar (2014) reported that, for mutual benefit, collaboration between institutions and industries occurs for various reasons at different levels. They also thought that such an interaction could be for matters relating to curriculum, training, study, and transfer of technology. Similarly, in an investigation on teacher training in the United States, Campbell and Dunleavy (2016) wrote about the need to link the work of university and the knowledge of practitioners through guided field experience. The article concentrated on the importance of these collaborations in ensuring achievement of university goals.

This general concern is whether the education provided in Nigerian universities is in line with the skills needed in the labour market or whether the curriculum applies. Adeyemo et al. (2010), inspired by some views, questions and concerns regarding the level of preparedness of graduates for productive employment in Nigeria,

described IIC as one of the factors deciding the employability of Nigerian universities ' science and technology graduates in the labour market. Dyankor (2009) explained IIC as applicable in some countries. He stated that many forms of administrative linkages, such as permanent joint consultation, had been established because of the partnerships that existed between schools and industries through collaborative researches.

Collaborative Research as a form of UIC

An important area of collaboration between universities and industries is in research activities. Research implies careful examination of an object or situation for the purpose of effecting development and improvement. It is a way of acquiring dependable and useful information and data about a particular object as well as the analysis of the data collected in order to arrive at a valid conclusion. Accordingly, the primary purpose of research is to discover answers to important questions to resolve social problems (Odia & Omofonmwan, 2013). Oyesola (2010) saw research as the application of the scientific method to attain or prove new and exciting theories, search for new ideas, inventions, discoveries and establishment of new knowledge, principles, and methods. Research is also regarded as being a systematic and unbiased quest for understanding, developing theories and proving the validity of concepts, hypotheses and assumptions. It's a quest for new facts which needs care and diligence. Experimentation is about seeking experience, taking new information and discovering ways of applying it to life's many problems (Oyesola, 2010). Research is the process of achieving effective solutions to problems by means of organized and systematic data collection, analysis and interpretation (Osuala, 2001). Research is the quest for information, facts, similarities and relationships and the process of seeking solutions to problems by systematically collecting, analysing and interpreting data (Ajoku, 2006). According to Chikwe et al. (2015), research is the identification of problems, gathering new data, finding solution to a problem through carefully designed procedures and logical analysis. Collaboration between academics and industry can lead to a range of benefits including the provision of solutions to counterparty problems, the improvement of standard of living, the improvement of educational practices, the eradication of poverty and ignorance, and national development (Nwakpa, 2015). In addition to improving research and development (R&D), collaborative research between universities and industries has other important benefits (Happell, et al., 2018; .Li & Bhangu, 2022; Loan-Clarke & Preston, 2002; McSweeney, et al., 2022; Muenzen, et al., 2022).

Industrial Training as a form of UIC

Universities and industries also collaborate in the area of students' industrial training. There is a growing demand by companies, industries, and other organisations for well-trained graduates with relevant entrepreneurial skills who can be employed to meet the nation's need. Students' Industrial Training is the practical training programme that students receive from relevant organisations while still in school, such as Students Industrial Work Experience (SIWES). The scheme is an educational programme designed for students to participate in work activities while still in school. Based on this, students are given the opportunity to be part of the actual work situation in a real work (Emeahara & Chris-Israel 2017; Akerejola (2014)., It is a skill development programme put in place to prepare students of tertiary institutions for transition from school to work (Abraham-Ibe, 2014). According to Nsu (2012), SIWES is a planned, monitored training and intervention program centred on specified and specific learning and career goals which leads to the development of participants' occupational skills.

A goal is the cause of all the productive actions taking place in the institutions. Hence, Mamedu (2016) affirmed that a high quality of work-life is expected to generate satisfactory university goal achievement. Abdulkareem and Oyeniran (2011) stated that for universities to achieve their goals, their inputs and production process must be properly managed for efficiency and effectiveness. Gberevbie (2017) considered staff training in the organisation as part of the organisational culture which should be encouraged in order to achieve organisational goals. Abdulkareem *et al.* (2015) pointed out some of the achievements recorded so far in the Nigerian university education system. These include high contribution to international literature, exemplary teaching quality, community and extension services, explosion both in the number of universities and academic enrolment,

modernisation and enrichment of curriculum. Abdulkareem *et al*. (2015) further explained that university goal achievement can be measured in terms of goals approach, system resource approach, internal process approach, strategic constituency approach. But the goal approach is best used in a place where the goals of the institutions are well defined. Since the main goal of university education in Nigeria, according to the Federal Government of Nigeria (FGN), (2013), is the development of human capital towards the development of the society, teaching, research and community service will, therefore, be adopted in the present study for the assessment of university goal achievement.

METHODOLOGY

The study adopted a descriptive research design of the correlational type with a population of 6,737 lecturers and 30,309 students. Simple random and stratified sampling techniques were used to select 435 lecturers and 455 students as samples for the study. For the study, data were collected by using the "Institution-industry Collaboration Questionnaire" (ICQ), the "Goal Achievement in Research and Community Service Questionnaire" (GARCSQ) and the "Goal Achievement in Teaching Questionnaire" (GATQ). In order to ensure face and content validity, experts eliminated irrelevant and ambiguous items from the instruments. With internal consistency values of 0.840, 0.929, and 0.927 respectively, Cronbach's Alpha (α) was used to estimate instrument reliability. Data collected were analysed using descriptive statistics and Pearson product moment correlation at 0.05 level of significance.

RESULTS

Research Question One: What is the level of Institution-industry collaboration in public universities in South-west Nigeria?

Table 1
Level of Institution-industry collaboration in public universities in South-west Nigeria

Level	Score Range	Frequency	Percentage
Low	17-39	48	6.9
Moderate	40-62	422	60.5
High	63-85	227	32.6
Total		**697**	**100**

Table1 revealed the level of Institution-industry Collaboration (IC) in public universities in South-west Nigeria as assessed by the participants (Lecturers and Students) in public universities in South-west Nigeria was rated moderate at 60.5 %. Frequency and percentage were used to determine the level. This means that collaboration between the universities under study and industries was at an average level.

Research Question Two: What is the level of university goal achievement in South-west Nigeria?

Table 2
Level of University Goal Achievement in South-West Nigeria

Level	Score Range	Frequency	Percentage
Low	31-71	122	17.5
Moderate	72-113	568	81.5
High	114-155	7	7.0
Total		**697**	**100**

Table 2 indicated the level of university's goal achievement in public universities in South-west Nigeria as assessed by the participants (Lecturers and Students).The level was scored moderate at 81.5 %. Frequency and percentage were used to determine the level. This implies that goal achievement level of the sampled public universities in South-west Nigeria was moderate, that is, at an average level, based on respondents rating.

Hypotheses Testing

The hypotheses were tested using Pearson Product Moment Correlation statistical tools at 0.05 level of significance to determine whether there existed significant relationship between institution-industry collaboration and university goal achievement in South-west Nigeria.

Table 3: Institution-Industry Collaboration (collaborative research and students' industrial training) and University Goal Achievement in South-west Nigeria

Hypotheses	r-Values	P-Values	Decisions
HO_1	.215**	.000	HO_1: Rejected
HO_2	.169**	.000	HO_2: Rejected
HO_3	.155**	.000	HO_3: Rejected

Note: *Significant $\rho < 0.05$

Result from Table 3 indicated the Pearson correlation analysis value yielded r = 0.215 which is positive relationship with p value .000 < 0.05. This shows a positive significant relationship result. Hence, the hypothesis was not accepted. This implies that a positive significant relationship exists between the institution-industry collaboration and job university goal achievement in South-west Nigeria.

Also, the Pearson correlation analysis value yielded r = 0.169 which is positive association with p value .000 < 0.05. This reveals a positive significant relationship result. Therefore, the hypothesis was not accepted. This implies that a positive significant relationship exists between collaborative research and university goal achievement in South-west Nigeria.

In addition, the Pearson correlation analysis value yielded r = 0.155 which is positive relationship with P value .000 < 0.05. This means a positive significant relationship result. Hence, the hypothesis was not accepted. This shows that there is a positive significant relationship between students' industrial training and university goal achievement in South-west Nigeria.

Discussion of Findings

The study investigated Institution-industry collaboration, quality assurance practices and university goal achievement in universities in South-west Nigeria. Two research questions were raised to examine the level of institution-industry collaboration, quality assurance practices university goal achievement in the universities. Research question one, as shown in table1, revealed the level of institution-industry Collaboration (IC) in public universities in South-west Nigeria and found it to be moderate at 60.5 %. This implies that collaboration between the universities under study and industries was only moderate but not as high as it is expected to be. Slow response on the part of some universities to industrialists' invitation for collaboration slows down the rate of the alliance.

The level of university goal achievement in public universities in South-west Nigeria, was moderate as assessed by 81.5 % of the respondent. This implies that goal achievement level of the sampled public universities in South-west Nigeria is moderate based on respondents rating. The implication of this finding was that universities in South-west Nigeria achieved their goals in teaching, research publication, and community service in a moderate measure, when looking goal achievement in general.

In addressing the hypotheses formulated for the study, the null hypothesis and all the operational hypotheses formulated were rejected. The main hypothesis of the study which stated that there was no significant relationship between institution-industry collaboration and goal achievement in public universities in South-west Nigeria, was rejected. Result from Table 3 indicated the Pearson correlation analysis value yielded r = 0.215 which is positive relationship

with p value .000 < 0.05. This shows a positive significant relationship result. Hence, the hypothesis was not accepted. This implies that a positive significant relationship exists between the institution-industry collaboration and university goal achievement in South-west Nigeria. This shows that university goals will be achieved if there is enough alliance between universities and industries. This explains the important role that such collaborative activities play in achieving the laudable goals of university education in Nigeria. The institutions cannot singlehandedly produce skilled manpower required at the labour market without forming alliance with industries. Corroborating the importance of this type of collaboration, Obanor and Kwasi-Effah (2013) conducted research on an assessment of the university-industry collaboration and technology transfer in schools of engineering and sciences in Nigeria and found a low level of technology transfer and collaboration between most industries and universities in Nigeria. Aloysius et al. (2018) investigated the universities and industry's employability collaboration among Nigerian undergraduates in the labour market. The study revealed a skill mismatch between academic theory and industrial practice due to lack of adequate collaboration between universities and industries. This was in line with Kunttu (2017) who presented a qualitative analysis of nine cases of educational involvement in university-industry research collaboration. The findings revealed that all educational activities involving industrial partners facilitate research-based information transfer from the academia to the industry, and they help industrial partners to efficiently utilise this information. Adebowale and Oyelaran-Oyeyinka (2012) studied university-industry collaboration in Nigeria. and the result revealed that there was a historical lack of collaborative interactions between industries and universities, thus a generally low-level collaboration due to the absence of interaction and information. Furthermore, universities did not collaborate sufficiently with the users of knowledge. Adepoju and Adedeji (2016) investigated the existence of the university-industry collaboration in Ondo state and found a weak relationship existed among universities and industries in Ondo state but that the relationship if made strong, could reduce the level of unemployment among graduates in Nigeria.

Considering the operational hypotheses, hypothesis one was not accepted because a significant relationship was found between collaborative research and university goal achievement in South-west Nigeria. Result from Table 4 indicated that the Pearson correlation analysis value yielded r = 0.169 which is positive association with p value .000 < 0.05. This means that if universities collaborate with industries in the area of research activities such as joint conferences, seminars and workshop there will be transfer of knowledge which will eventually lead to the achievement of university goals. It is important to state that without research, existing old knowledge will be recycled and development might become static due to lack of new improvement. Therefore, it is important research work should show novelty of ideas and not repetitive but reproductive so as to have impact on the life of the society. This was in line with the report of Fredericks (2016) who opined that research is needed and very important as well for a meaningful classroom teaching to occur. In view of this, universities collaborate with industries to gain new knowledge to cope with the complex issues they face by regularly seeking new information because the acquisition of knowledge is continuous. Ramsden (2003) noted that research in teaching creates awareness and influences lecturers to be aware of the latest developments in their field and reflect those issues in their course materials through developing or applying new teaching methods to be effectively delivered for student learning purposes.

Hypothesis two was also rejected because a positive significant relationship was established. Table 5 showed that the Pearson correlation analysis value yielded r = 0.155 which is positive relationship with P value .000 < 0.05. This means that exposing university students to industrial attachment before graduation will avail them the opportunity of acquiring the needed practical skills thereby reducing the skill gap between academic theory and industrial practice thereby enhancing university goal achievement. In view of this, employers of labour demand that graduates who possess high level academic knowledge and who are also able to demonstrate core competencies and skills are required for a successful workplace (Lowden, et al., 2011). Stadt and Gooch (2010) stated that the experiences gained by students must be planned and supervised by the school and employers so that the programme can contribute to students' education and professional development while still in school. Still on the importance of SIWES, Mafe (2009) posited that there are two basic

forms of learning which are education and training, and both are essential for the employee to be productive in the work environment. Ugwuanyi et al. (2010) also noted that the training given by SIWES is a key factor that enhances efficiency and expertise in the workforce.

CONCLUSION

The study examined the relationship that existed among institution-industry collaboration and university goal achievement in South-west, Nigeria. Based on the findings of the study, it was concluded that institution-industry collabor and goal achievement were at average lev public universities in South-west Nigeria. The study also concluded that a positive significant relationship existed between institution-industry collaboration and university goal achievement, between collaborative research and university goal achievement and between students' industrial training and university goal achievement.

Based on the findings of this study, increase universities' goal achievement, administrators are to create an enabling environment for effective institution-industry collaboration (IIC) by looking for how IIC will be profitable to both parties. In the same vein, University Authorities should monitor and appraise university goal achievement in teaching, research, and community service. Lastly, the Students Industrial Work Experience Unit of the universities should pay more attention to the exercise for maximum result.

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21

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