

UNIVERSITY-INDUSTRY COLLABORATION AND GRADUATE UNEMPLOYMENT IN NIGERIA: A CASE STUDY OF ONDO STATE, NIGERIA

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Abstract

Research evidence has shown that university-industry collaboration presents a wide range of benefits to industries, higher institutions and to the development of a nation. This study investigated the existence of university-industry collaboration; the factors militating against the collaboration and the extent to which university-industry collaboration can reduce unemployment in Nigeria. A descriptive survey was adopted with the use of structured questionnaire and an in-depth interview (IDI) to collect data using cluster random sampling technique to select a sample of 250 participants from three selected universities (FUTA, AAUA and AUO) and industries in Ondo State. Three research questions were raised to guide the study and the data obtained were analysed using descriptive statistics of Statistical Package for the Social Sciences (SPSS 20.0). The study revealed that a weak relationship (97% responses from respondents) exists between universities and industries in Nigeria. It also revealed that university-industry relationship will significantly reduce the level of unemployment among graduates in Nigeria. In addition, lack of interest on the part of industries and lack of awareness of the importance of university-industry relationship were discovered as the major factors militating against university-industry collaboration. Therefore The paper therefore concludes that strengthening university-industry collaboration through policy implementation by the Federal Government will create more industries and entrepreneurial businesses, thereby minimizing the rate of graduate unemployment in the country.

Keywords: university, industry, collaboration, unemployment

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1. Introduction

The increasing rate of graduate unemployment in Nigeria is becoming a disconcerting issue to the government, students and the nation at large. Despite the various government interventions geared towards the reduction of unemployment in Nigeria, the rate of graduate unemployment is still high in the country. Unemployment constitutes a macroeconomic problem which every responsible government is expected to monitor and regulate (Ojimadu, 2011; Akanwa and Akpanabia, 2013). This problem is reflected in the low national and per capital income, and has resulted in a decreasing standard of living. Moreover, the nation's youth feel threatened by the situation; it has created in them feelings of frustration and rejection, culminating in several acts of misconduct. The situation may worsen, for *The Nation* recently reported that one million graduates are churned out annually from well over 300 universities, polytechnics and colleges of education in Nigeria. Moreover, experts fear that Africa's, and particularly Nigeria's rate of unemployment in the global context might increase disproportionately with attendant unsavoury consequences unless the country immediately adopts a pro-active and holistic approach to halt the rising unemployment

(Okereocha, 2014). Consequently, it becomes important to discover new strategies for reducing the rate of unemployment among graduate in the country.

1.1 Research Objectives

The main objective of this study is to examine the extent of university-industry collaboration and graduate unemployment in Nigeria. The specific objectives are to:

- i. Investigate the extent of university-industry collaboration in Ondo State.
- ii. Examine the factors militating against university-industry collaboration.
- iii. Assess the influence of university-industry collaboration on unemployment reduction.

1.2 Research Questions

In order to guide the study the following questions were raised:

- i. What is the extent of university-industry collaboration in Nigeria?
- ii. What are the factors militating against university-industry collaboration in Nigeria?
- iii. Can university-industry collaboration significantly reduce unemployment in Nigeria?

2. Literature Review

A university is an institution of higher education and research that grants academic degrees in a variety of subjects and provides undergraduate education and postgraduate education (Wikipedia, 2014). According to Awuor (2013), universities are supposed to impart high level skills to a reasonable proportion of the workforce, develop the intellectual capability of individuals and be responsible for developing professionals needed virtually in all spheres of human endeavour. They are expected to contribute to national development through high-level relevant manpower training, research and contribution to the communities through their partnership with the industries. According to Scharfetter, Rammera, Fischer and Frohlich, (2002), universities are meant to play three distinct roles:

- a. To conduct fundamental and applied research that shift the knowledge frontier of industry over time.
- b. To generate innovations that are of immediate relevance to industry.
- c. To produce human capital through training and research.

Nevertheless, despite the need for intellectual capability that spurred the creation of university system, there is an increasing rate of graduate unemployment. Research evidence reveals that this is caused by the minimal linkages of universities with the productive sector at every level, from big industry, to agricultural producers, to medium-and-small scale enterprises (Ssebuwufu, Ludwick and Beland, 2012). Consequently, graduates produced from the universities lack the practical skills to satisfy the employer's needs (Ramakrishnan and Yasin, 2011). The skills, knowledge and training that students receive at many African universities do not prepare them adequately to meet the requirements of industries and the job market because of the gap between the industries and universities (Ssebuwufu, Ludwick, and Beland, 2012).

In addition, new knowledge acquired and several researches conducted in the universities end up on book shelves due to the gap between the industries and universities. As a result, the economic system becomes affected due to lack of innovations which invariably prevent expansion, creation of new industries becomes impossible and the few industries become

weak and eventually collapse. Several authors have advocated for universities to go beyond their traditional responsibilities of teaching and research, to become developmental universities that collaborate with their external environment such as the industries. Higher institutions are widely recognized as essential contributors to economic development through their role in producing the knowledge, skills, and innovations needed to drive their respective national economies (Ssebuwufu, *et al.*, 2012). Several developed and developing nations of the world have greatly benefited from this collaboration (World Bank, 2013). Consequently, considering the great benefits of knowledge creation through tertiary institutions leading to innovations and industrial growth, the benefit of university –industry collaboration cannot be neglected, if Nigeria is to achieve any significant development, especially in the area of industrial growth and expansion leading to employment generation.

2.1 University-Industry Collaboration

Collaboration between higher institutions and industries has existed for long, particularly in the technology based areas. This partnership, first introduced by Sunderland Technical College in Northern England in 1903, was known as a sandwich programme (Ramakrishnan and Yasin, 2011). Globally, the issue of university-industry partnership has become very prominent on the agenda of higher education policy-making, at national and institutional level (International Institute Educational Planning (IIEP), 2000). Traditionally, industry sought partnerships with universities as a means for identifying and training future employees. University-industry collaboration takes various forms and involves diverse level of commitment. These include research and development, training and curriculum development, and consultancy (Martin, 2000). In terms of teaching and training, university-industry activities include offering professional courses on a fee-basis to respond to the particular skill and training needs of industry. Also, creating opportunities for student attachments and co-op placements in the productive sector is another common way in which universities link up with industry (Homma and Attalage, 2008). Industries also play a role in defining student research projects that focus on issues and problems of direct interest to industry (Boersmaa and Gibbons, 2008).

Developed nations of the world have greatly benefited from the collaboration between universities and industries. Such linkages have helped to coordinate research and development (R&D) agendas, stimulate additional private R&D investment, exploit synergies and complementarities of scientific and technological capabilities, foster the commercialization of public R&D outcomes and increase the mobility of labour between the public and private sectors (World Bank, 2013). The benefits of university-industry collaboration are also evident in developing countries. For example, a study in Chile and Colombia shows that collaboration with universities substantially increased the propensity of firms to introduce new products and to patent (Marotta, Blom, and Thorn, 2007). Universities represent an important driver of economic development and catching-up through their role in education and technology absorption, adaptation, and diffusion (Yusuf 2007). For majority of firms, the most important link to a university is through recruitment of skilled graduates. Consequently, education and training remain one of the key roles of universities, especially in lower income countries where the lack of skilled workers is a major bottleneck hindering the competitiveness and innovative capacity of firms (World Bank, 2013). The basis for this relationship is not necessarily with a focus on commercialization and profit-making but rather with the broader purpose of contributing to social and economic development (Brundenius, Lundval and Sutz, 2009). It remains to consider how this collaboration can proffer solution to the increasing rate of unemployment.

According to Ramakrishnan and Yasin (2011), several benefits of university-industry collaboration (UIC) were highlighted as follows:

- a. **Creating new knowledge:** New knowledge could be created by collaborating with industry. Individuals with specialized knowledge in industry share their experiences and exchange information by conducting technical talks in university.
- b. **Enriching teaching resources:** University-industry collaboration helps to enrich the teaching resources through more practical and hands-on experience such as a research or design project included in the learning objectives.
- c. **Industries acting as consultants to students:** Industries are in the position to advise students on the latest projects and skills required in the market. Industries also offer career guidance to the students by providing information to graduates on job vacancies, resume writing, interviewing techniques and career planning.
- d. **Disseminating information of job opportunities and requirements by industries:** Through this collaboration, industries are able to disseminate important information on contract, full-time and part-time job announcements to the higher institutions such as posting or uploading the latest skills required in the market for specific position and view students' resumes looking for job.
- e. **Providing mentorship in students' in career choice:** This system avails the new intake student the opportunity to get advice from the employer on the course to choose. Also, graduated students whom in Alumni also could contribute in this system on their experience in job market and also may advice their juniors on the skills and other important capabilities that they need to own to succeed in the job market.
- f. **Motivating students in their final year projects:** UIC grant invitation to specialist in industry for the students' final year project presentation. This gives an opportunity for the good students to get attracted by the employers and job offer.
- g. **Providing quality internship programme:** Industry offer internships for students as they are familiar with the students' background. This will help industry to offer relevant and quality internship job related to the students' area of study and prepare them better for their career.

However, the engagement of university-industry collaboration in developing and African countries is not imminent (World Bank, 2013 and Ssebuwufu, *et al.*, 2012). According to a research conducted by the Association of African Universities (AAU) in 2012, universities in African countries are being confronted with considerable constraints with regards to the structure of their economies, political environments, and institutional research capacity (Ssebuwufu, *et al.*, 2012). According to the authors, these problems include:

- a. Lack of an enabling environment for reorienting and aligning universities towards a more entrepreneurial role;
- b. Prevalence of small industries which are often small to medium-scale firms producing for local markets;
- c. Lack the awareness of the existing research results and new technologies on the part of industries;
- d. Irrelevance of some universities researches in several African countries;
- e. Weak Capacity of Many African universities to conduct research and technology development;
- f. Long years of neglect in financing of university research which has resulted to weak research infrastructures and reliant on donor funding for research; and

- g. Low salaries and moonlighting activities of some academic staff which has led to the migration of many talented academics to wealthier parts of the world, leaving few qualified researchers to conduct local research.

Despite the poor state of university-industry linkages in Africa, African universities are taking steps to initiate and accelerate measures to strengthen institutional capacity to support linkages with industry and the broader productive sector (Ginies and Mazurelle, 2010 ; Tiyambe, 2004).

3. Methodology

The study adopted a descriptive survey research design which assessed the responses of the sampled personalities selected in three universities: the Federal University of Technology Akure (FUTA), Adekunle Ajasin University (AAU) and Achievers University Owo (AUO) and ten service and manufacturing industries in Ondo state:(Okitipupa Palm Oil Industry, Stanmark Cocoa Industry, Cocoa Industry limited Ile Oluji, United Bank of Africa (UBA), First City Monument Bank (FCMB), JOF Ideal Farms Limited Owo, Olam Cocoa Processing limited, Guarantee Trust Bank Akure, Tower Aluminum Roofing Limited and First Bank Akure). The population of the study are experts on the subject matter engaged from academic settings (i.e. deans, heads of department, lecturers, key officers in the student affairs offices and Student Industrial Work Experience Scheme (SIWES) divisions) and field/non-academic settings (i.e. human resource manager, managing directors and general managers of the industries sampled in Ondo State. A cluster random sampling technique was used to sample 150 respondents from academic settings (three universities) and 100 respondents were drawn from the industries, making a total of 250 respondents. The study instruments included structured questionnaires used for quantitative data while in-depth interview (IDI) were used for qualitative data collection which involved interviewing the deans, heads of department, human resource managers and managers who have vast experience on the university-industry collaboration and graduate unemployment with regards to their departments, institutions and industries. The questionnaire had three basic sections. Section A of the questionnaire contained items eliciting socio-demographic information of the respondents; Section B measured the extent of university-industry collaboration while Section C contained items that measured the potential of university-industry collaboration towards the reduction of graduate's unemployment. The questionnaires were administered by research assistants and the researcher ensured the retrieval of all the questionnaires. The descriptive statistical analysis was done using the Statistical Package for the Social Sciences (SPSS 2.0).

4. Results

In Table 1, the descriptive analysis for the respondents' sex (academic and industries) shows that 90.4% of the total respondents were male while 9.6% were female. Descriptive analysis for work status (academic) reveals that 1.2% of the total respondents are deans from the selected universities, 9.2% are heads of departments, and 7.2% are staff of student affairs units, while 42.4% are experience university lecturers.

Descriptive analysis for work status (industries) reveals that 4.4% of the total respondents are managing directors from some selected industries, 5.6% are general manager, and 5.2% are HR managers/personnel officers while 24.8% are senior staff from selected industries. Descriptive analysis for years of experience (academic and industries) shows that 4% of the

total respondents have below 5years working experience, 8.8% are between 5-10 years working experience, 62% are between 11-20 years working experience, 18.4% are between 21-30 years of working experience, while, 6.8% are between 31-40 years of working experience. Also descriptive analysis for educational qualification (academic and industries) also revealed that 43.6% of the total respondents have first degrees, 15.3% have Master's degrees, 38.8% have Ph.Ds. holders, while 1.2% have post-doctoral training.

Table 1: Socio-demographic Characteristics of Respondents across the study Participants

VARIABLES		MALE		FEMALE		TOTAL	
NAME OF INSTITUTIONS		N	n%	n	n%	N	%
	FUTA	40	16.0%	10	04.0%	50	20%
	AAUA	50	20.0%	00	00%	50	20%
	AUO	50	20.0%	00	00%	50	20%
INDUSTRIES							
	Manufacturing Industries	48	19.2%	02	0.80%	50	20%
	Service industries	38	15.2%	12	4.80%	50	20%
	Total	226	90.4%	24	09.6%	250	100%
STATUS							
	Deans	03	01.2%	00	00.0%	03	1.2%
	Head of Departments	23	09.2%	00	00.0%	23	9.2%
	Student affair officers	12	04.8%	06	02.4%	18	7.2%
	Lecturers	102	40.8%	04	01.6%	106	42.4%
	Managing Directors	10	04.0%	01	0.40%	11	4.4%
	General Managers	11	04.4%	03	01.2%	14	5.6%
	HR managers/personnel	08	03.2%	05	02.0%	13	5.2%
	Senior staff	57	22.8%	05	02.0%	62	24.8%
	Total	226	90.4%	24	09.6%	250	100%
YEARS OF EXPERIENCE							
	Below 5years	07	02.8%	03	01.2%	10	4.0%
	5-10 years	14	05.6%	08	03.2%	22	8.8%
	11-20 years	146	58.4%	09	03.6%	155	62.0%
	21-30 years	42	16.8%	04	01.6%	46	18.4%
	31-40 years	17	06.8%	00	00.0%	17	06.8%
	Total	226	90.4%	24	09.6%	250	100%
EDU. QUALIFICATION							
	B.sc	93	37.2%	16	06.4%	119	43.6%
	M.sc	96	12.5%	07	02.8%	103	15.3%
	P.HD	34	38.4%	01	0.40%	35	38.8%
	Above PhD	03	01.2%	00	00.0%	03	01.2%
	Total	226	90.4%	24	09.6%	250	100%
Source: Authors' Field Study Survey, Ondo State. (C2014)							

Figure 1 shows the perception of the academic staff in the universities and the workers in the industries of the extent of collaboration that exists between the two sectors. 97% of the total respondents significantly agreed that a weak relationship exists between universities and industries in Nigeria, while remaining the 3% scored the relationship between universities and industries to be average. None of the respondents perceived to strong relationship between universities and industries. Therefore, there is a weak collaboration between universities and industries in Nigeria.

Research Question 1

What is the extent of Universities-Industries collaboration in Nigeria?

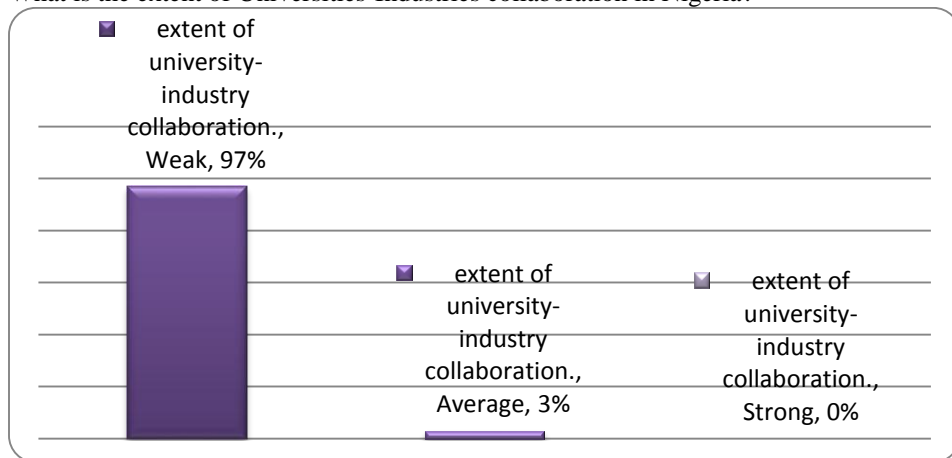


Figure 1: Survey Chart showing the extent of University-Industry Collaboration.

Source: Authors Field Survey, 2014.

Figure 2 shows the responses of the academic staff in the universities and the workers in the industries on the factors militating against the collaboration of university-industry. 1% of the total respondents attributed it to the falling standard of education, 23% attributed it to lack of awareness of the importance of university-industry collaboration, 57% attributed it to lack of interest on the part of industries, 2% attributed it to lack of interest on the part of universities, 1% attributed it to the high rate of industrial migration from Nigeria to other countries. 4% attributed it to inadequate infrastructure and basic support from government and industrialists which will facilitate industrial growth, 7% attributed it to the decline in industrialization due to bankruptcy, mismanagement, etc. while 5% agreed that the shift from human skills to computer skills constitute a threat to universities-industries relationship. Therefore, the major militating factor against UIC is the lack of interest on the part of industries and lack of awareness of the significant of university-industry relationship.

Research Question 2

What are the factors militating against universities-industries collaboration in Nigeria?

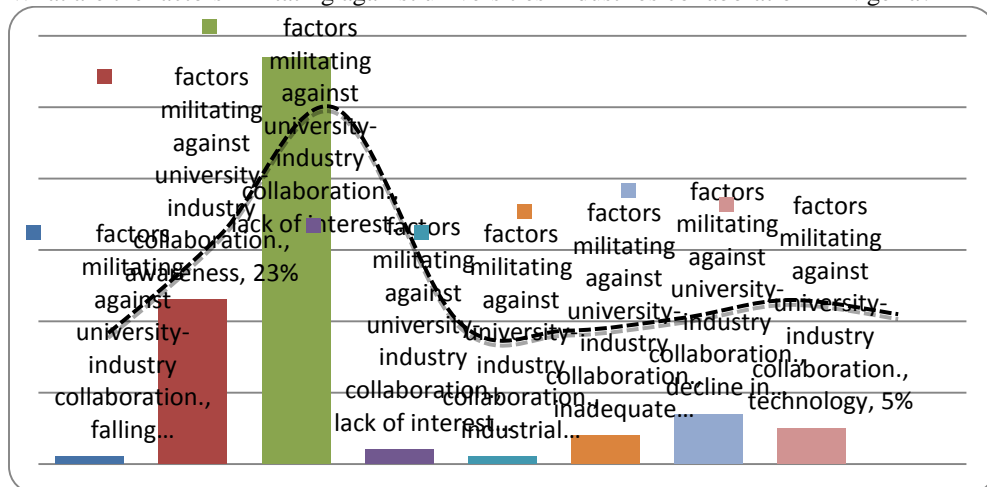


Figure 2: Survey chart showing the factors militating against University-Industry

Source: Authors Field Survey, 2014.

Research Question 3

Can university-industry collaboration significantly reduce unemployment in Nigeria?

Figure 3 shows the responses of the academic staff in the universities and the workers in the industries on the question of how significantly university-industry collaboration can contribute to the reduction of graduate unemployment in Nigeria. 98% of the key informants to the study agreed that strong university-industry collaboration will significantly reduce rate of unemployment among Nigeria graduates, while 2% did not agree that strong universities-industries collaboration will reduce rate of unemployment among Nigerian graduates. This indicates that major stakeholders are of the opinion that university-industry collaboration will significantly reduce unemployment among Nigerian graduates.

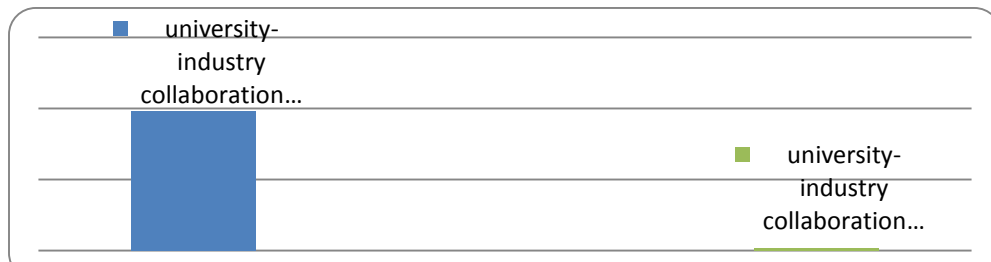


Figure 3: Chart showing the survey % response to University-Industry collaboration reducing unemployment among Nigeria Graduates

Source: Authors Field Survey, 2014.

4.1 Content Analysis Index of the In-depth Interview (IDI)

The result of the IDI reveals that re-introduction of university-industry relationship will significantly reduce rate of unemployment among Nigerian graduates. The reintroduction of the collaboration as envisaged is to block the increasing rate of unemployment to be caused by fresh graduates while government in its own capacity defines means in reducing the alarming numbers of unemployment in circulation.

“Oh! Ensuring that (universities-industries collaboration) would be a proactive step to embark on by the government to address the unemployment menace in the country and which can be realistically done through formulation of functional policies that is sufficient in its’ own capacity to compel industries to collaborate with universities”.

(IDI/Dr./University/2014)

Content analysis index as well revealed that collaboration between industries and universities will not be parasite relationship but a symbiosis, i.e. the duo will benefit from the relationship. A relationship between universities and the industry will not only significantly reduce unemployment but tackle many industrial challenges and provide answers to long-time unanswered questions in the industries through comprehensive research and experiments.

“it is important to note at this juncture that the benefits from the relationship between the universities and industries will not be one sided, as it reduces unemployment among Nigeria graduates, so it tackle most industrial challenges and provide answers to long time unanswered questions in the industries through research, also increase sources of fund to the universities to improve its standards. It can largely lead to national development, innovations and technology inventions and as such increase the economy of the nation”

(IDI/MD/industry/2014).

In conclusion, the Content Analysis Index identified some factors militating against the collaboration between industries and universities outside the previously identified ones.

*“It is important to note that, in the days we enjoyed such collaboration, I can confidently tell you that the numbers of graduate is then less than the available industries we have then, so there is serious need for human capital but now there is a strong negative relationship between number of graduates and number of industries; industries now are decreasing in numbers and number of graduates are on increasing side and on the other side no present policy implementation in the country makes it mandatory or strengthen the relationship between the two bodies”***(IDI/Prof./university/2014)**

4.2 Discussion

The main purpose of the study is to examine the extent to which university-industry collaboration can reduce the graduate unemployment rate of in Nigeria. The study with reference to Ondo State revealed that there is a weak collaboration between universities and industries which is common to several African countries (Ssebuwufu, *et al.*, 2012, Awu or 2013; World Bank, 2013). 97% of the total respondents significantly agreed that the relationship between universities and industries is weak, while 3% scored the relationship between Universities and industries to be average. This collaboration is considered necessary in improving the skills, knowledge and training of students in the universities which will prepare them adequately to meet the requirements of industry and the job market

((Ssebuwufu, *et al.*, 2012 and Ramakrishnan; Yasin, 2011). This was also justified by the responses from the universities and the industries which indicate a higher percentage of the respondent (98%) consenting to strong universities-industries collaboration as a tool of reducing the rate of unemployment among Nigeria graduates, while only 2% did not agree that strong universities-industries collaboration will reduce rate of unemployment among Nigeria graduates. Consequently, we can state both the universities and industries believe that the collaboration will solve the problem of unemployment.

Furthermore, the results of the study established several factors militating against the collaboration of universities and industries in Nigeria. However, many of the respondents (57%) attributed the weakness of the relationship to lack of interest on the part of industries, and (23%) to lack of awareness of the importance of university-industry relationship. Other factors identified include decline in industrialization, inadequate technology, inadequate infrastructure and support, lack of interest on the part of universities, falling standard of education and industrial migration. Some of these problems are prevalent in several African countries (Ssebuwufu, *et al.*, 2012).

5. Conclusion and Recommendations

There is clear indication that collaboration between universities and industries can reduce the rate of graduate unemployment in Nigeria. This partnership offers enormous benefits to higher institutions, industries and the larger economy. These benefits are in the areas of creation of new knowledge, enrichment of teaching resources, provision of quality internship programmes to students, better coordination of research and development and contribution to national development through high level relevant manpower training and research. Also, industries can play a role in defining student research projects that focus on issues and problems of direct interest to industry. The growth and the expansion of industries lie heavily on the products of the universities in terms of innovations generated, applied research and the intellectual capabilities developed. This would go a long way to create more industries and job opportunities, thereby minimizing the rate of graduate unemployment in the country. Therefore, in order to strengthen the relationship between the two sectors, the government is required to formulate and implement policies in the following areas:

- a. Policy enforcing the industry collaboration with higher institutions as a basic requirement in staying in business.
- b. Policy on adequate funding of the universities' research and researchers to boost the quality of research. This will build the confidence of industries on research conducted in the universities and strengthen the collaboration between industries with university.
- c. Policy to stimulate patent activity of universities and commercialization of research products.
- d. Policy on government funding of viable entrepreneurial ideas emanating from the universities. This will lead to the creation of more business and industries.

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