

Full Length Research Paper

# Research Output of Academic Staff in the South-South Zone of Nigeria

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This study examined academic staff research productivity in Universities in South-South zone of Nigeria. Ex post facto design was adopted for this study. Three hypotheses were formulated to guide this study. The sample size comprised of 480 academic staff drawn from a population of 3120. Data collection was carried out using a researcher – constructed instrument called Academic Staff Research Productivity Inventory (A.S.R.P.I.), which was validated and pilot tested. The data obtained were treated statistically using Independent t -test and contingency Chi-square ( $X^2$ ) analyses. Results indicated that male and female academic staff differed significantly in their research productivity; married and single academic staff differed significantly in their research productivity and there is a significant influence of areas of specialization on academic staff research productivity. It was recommended that academic staff in universities should be encouraged to carry out research work irrespective of their gender, marital status and areas of specialization.

**Key words:** Academic staff, research productivity, South South zone, Nigerian Universities.

## INTRODUCTION

The importance of research cannot be overlooked in a university environment. Research publication in the university is a major or most significant indicator of academic staff productivity. It may be pointed out that, research publication in any field of specialization provide current information for growth, progress, development and an improved society. Research publication is very significant; hence staff promotions are based entirely on it. It increases the social prestige of the academic staff status to the rank of a professor irrespective of his or her gender. Research publication encourages hard work and fills in the gaps of previous researches and create avenue for future investigations. Research attainment is determined by the number of published articles in refereed journals and conference proceedings of repute (Olorunto-ba and Ajayi, 2006).

The importance of quality research cannot therefore be overlooked. Quality research exposes academic staff to new information and sharing of socio-cultural ideas with others. During the process of research, academic staff

has the opportunity to travel outside their environment to seek information and collect relevant data. Quality research by academic staff contributes to genuine indigenous and sustainable development (Bassey et al., 2006). Oke-bukola (2005) pointed out that the purpose of a research assessment exercise is to distribute public funds for research, competitively based on the quality of such research. This therefore implies that the need for quality research has been widely acknowledged not only in academic institutions, but also in management organizations.

Dill (1986) pointed out that, the vast majority of discoveries are made through research in the higher education environment and maintained that, in recent years, the emphasis for research in universities seems to be focused on productivity. Konrad and Pfeffer (1990) and Pfeffer (1993) observed that, typically high status business schools value research productivity which is often reflected in a strong relationship and reward such as pay rises, tenure and promotion. Beyer et al. (1995) observed that, those working at high-status schools may accumulate advantages that should make it easier for them to be productive researchers to the extent that a school which is research oriented may likely attract greater incentives, as well as greater pressures to publish.

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Yusuf (2005) noted that the cliché “publish or perish” is quite popular in the university setting. According to him, this phrase underscores the importance attached to research in any University. In fact, it is the major index of an academic staff’s quality and the determinant of advancement. Research is a systemic attempt, search or investigation to find solutions to problems or questions in order to increase the sum of knowledge (Bako, 2005). It may be targeted at describing events, predicting events or controlling events (Waier, 1991). Research provides greater opportunities for collaboration and networking among scholars spread throughout the world. National and international dimensions of research issues can therefore be studied as they can allow for communication with peers and experts around the world. Through collaborative knowledge building, studies can spotlight trans-national trend analysis through human and instrumentation collaboration.

As significant as research publication is in the university, difficulties are being encountered by academic staff. Bogue and Saunder (1992) and Erwin (1991) observed that less attention has been directed towards other aspects of an institution’s mission including research. Cascio (1992) maintained that staff productivity would be improved if there is a positive response from the employees.

From the above background, this paper seeks to investigate academic staff research productivity in Universities in the South-South Zone of Nigeria. Three null hypotheses were proposed to guide the study.

## Literature review

Research is one of the pivotal points on which university education rests. Others include teaching and community service. Research consists of a study and investigation to discover facts, insights and other elements central to the matter at issue. It is so critical and crucial that it determines the quality of any higher institution. It constitutes a key criteria for the promotion of academic staff and, as such, it is highly regarded, sought after and requires high level participation and quality work (Akegwu et al., 2006).

Obibuaku (2005) contended that research entails a lot of effort and demands a great deal of money. If a member of the academic staff is to carry out a research with the purpose of publishing it in reputable journals outside the country, there is need to have funds and laboratory equipment required to accomplish the work. If Nigeria is going to catch up with and get into the main stream of development, her universities must be alive to their research responsibilities, because research is essentially the cutting edge of scientific, technological and economic development. According to Obibuaku, the products of science and technology, which Nigerians consume with unbridled avidity, take their root from world class universities and research institutions. Krishna et al., (2001) noted that articles published in reputable journals provide

an avenue of recognition for many researchers, since a published journal article is the first formal presentation to the scientific community of an innovation or discovery.

The National Universities Commission (NUC), Nigeria’s higher education funding and regulatory body, in its 2005 ranking, assessed research output at the country’s universities as measured by the number of scholarly research articles published in prestigious international academic journals and the number of citations in scholarly indexes. It found that only 20 universities scored between 10 and 200 scores in their research output (World Education News and Review, 2006). This shows that out of over 70 universities in the country only 20 are found to have performed better with regard to their research output. This is worrisome because the majority of the universities are found wanting in this regard. Even at the world level, no Nigerian university ranked among the first five thousand in terms of research productivity in the latest ranking of world universities in January 2007. The only Nigerian university that came close to this rank was Obafemi Awolowo University which took the 5,834<sup>th</sup> position (Internet Lab 2007). Available data indicate low levels of investment in research capacity and education, and help to explain why the country’s non-oil economy has remained consistently sluggish during a decade of international economic expansion (Hartnett et al., 2003). On the research side, Nigeria’s number of scientific publications for 1995 was 711 – significantly less than its output of 1,062 scientific publications in 1981 by a comparatively much smaller university system (Task force, 2000). In contrast, scientific publications were 3,413 for South Africa, 14,883 for India, 310 for Indonesia, and 5,440 for Brazil (Task force, 2000). The country’s low research output probably reflects the low priority accorded to research and development by government decision-makers. For example, Nigeria’s federal university system spends only 1.3 percent of its budget on research (Hartnett, 2000). For education, Nigeria spends an estimated 2.4 percent of its GNP while Sub-Saharan Africa as a whole spends 5.1 percent (Hinchliffe, 2002; UNESCO, 2000)

The university system in most African countries reflects an imbalance with regard to the percentage of female students and staff at the university, especially in the scientific, technology and leadership positions (Onokala and Onah, 1998). This is reflected in the small number of female staff in the faculties of sciences and science – based disciplines and in the fact that most women are found at the lower professional ranks unable to progress to seniority at the same pace as their male colleagues. Reasons for slow mobility of women are as follows: their multiple social responsibilities which demand women’s time, thus hindering their performances in the sciences and other research required for their mobility on the job as well as lack of female mentors (Onokala and Onah, 1998).

Long et al., (1998) examined the relationships between status of academic origin, status of academic affiliation

and research productivity for a sample of 270 doctoral graduates in management. Their findings in general indicated that, in terms of academic origin, productive scholars were not heavily concentrated among a few universities. Graduates of the 31 schools rated as middle status did essentially as well as those from the top 21 institutions in terms of both research quantity and quality. The status of academic affiliation had a relatively strong association with research productivity, both in terms of publication counts and citation counts. Those with high-status academic affiliations published more articles in top management journals than those with middle-status affiliations and those with low-status affiliations. In addition, the middle-status subjects published more than the low-status subjects.

Synder in Nowaczyk and Underwood (1995) focused on aspects of strategic management to determine factors which were equated with research excellence as an aspect of job performance. They selected a sample of institutions from the top 100 in the previously mentioned National Science Foundation rankings. The implication was that excellence in research was the reason for an institution to be ranked highly. Their finding that the number of dollars generated by research was the most often cited measurement of success should come as no surprise. They also found that while most of those surveyed could identify factors, such as dollars, which were used to measure the success of the research programme, it was not clear whether or not these factors were selected consciously as factors necessary for the attainment of the objectives, or because they were the easiest factors to measure. Directly related was their finding that those universities that were ranked higher had faculty that were adept at obtaining research grants.

With the emphasis on productivity, the number of publications is frequently used as an indicator of quality in research. The fact that the research was published was taken as an indication of its quality. This indicator was often further categorized and weighted by identifying the type of publication (book or research article) and if it was an article, the type of journal (refereed or not-refereed) and the institutions of employment of the authors. Although, it was a good indicator of how prolific the researcher or the department was in producing acceptable articles, it did not address the impact of those articles (Nowaczyk and Underwood, 1995). A study conducted by Moed et al. (1989) attempted to draw a distinction between what they saw as output (the number of publications) and the impact of those publications on the institutions. The impact was determined by checking citations of the articles over a period of years. Their determination was that one should use caution in adapting such indicators because citation practices seem to differ significantly from field to field and citation practices within fields could also change during the decade.

Research has shown that a status hierarchy existed among business schools (D'Aveni, 1996). Although the

status of a business school was probably highly correlated with its quality in terms of instruction, research, resources, and students, a school's status might also be affected by perceptual and reputation components that were not related to the actual quality of the education provided (D'Aveni, 1996; Judge et al., 1995).

## METHODOLOGY

This research was carried out in the South-South geopolitical zone of Nigeria. It is one of the six geopolitical zones in Nigeria. Others include the North-East, North-West, North-Central, South-East and South-West. There are 6 states in this zone with 11 universities: 4 Federal, 6 States and 1 Private. Ex post facto design was adopted for this study. The academic staff population in these universities was 3,120. This information was obtained with the assistance of Academic Staff Dispositions obtained from the Establishment Divisions of the Registries of the 11 universities. A sample size of 480 academic staff was drawn using stratified random sampling technique. The basis for stratification was faculties. 8 faculties constituted the sample in which male and female academic staff was drawn.

A further breakdown of the sample showed that there were 280 male academic staff members, while their female counterparts were 200. The reason for this disparity was the unequal population of male and female academic staff in the universities studied. Male academic staff had higher population than their female counterparts. The researchers – constructed instrument called “Academic Staff Research Productivity Inventory” (A.S.R.P.I.) was used for collecting data for analyses. Section A contained demographic variables, while section B contained a 30 – item 4-point Likert type questionnaire. The validation was carried out by experts in measurement and evaluation, while the reliability was established through a pilot (trial) test. The reliability values obtained ranged from 0.71 to 0.88, which indicated that the instrument was good enough to measure what it purports to measure. Thereafter the instrument was administered to the sampled subjects. The administration of the instrument was personally carried out in the sampled universities by the researchers. Copies of the instrument were distributed to the sampled academic staff and an interval of one week was allowed for them to personally complete the instrument before the researchers went to collect them back. Data collected were subjected to statistical treatment using Independent t-test and contingency Chi-square statistical analyses, at 0.05 level of significance.

## RESULTS

### Hypothesis one

There is no significant difference between male and female academic staff in their research productivity. The independent variable is academic staff gender (male and female) while the dependent variable is research productivity. Independent t-test is used to compare the mean scores of male and female academic staff. A Summary of the result is presented in Table 1.

The result presented in this table revealed that the calculated t-value is 4.86 while the critical t-value is 1.965 at 0.05 level of significance and 478 degrees of freedom. Since the calculated t-value is observed to be higher than the critical t-value, the null hypothesis is rejected, while the alternate hypothesis is retained. With this result, there

**Table 1.** Independent t-test statistical analysis of the difference between male and female academic staff in their research productivity

Variables	N	X	SD	t-value
Male	256	16.37	4.61	4.86*
Female	224	14.23	4.94	

\*Significant at 0.05; df = 478; Critical t-value = 1.965.

is a significant difference between male and female academic staff in their research productivity. In addition, male academic staff were found to have a higher mean research productivity ( $X = 16.37$ ) than their female counterparts ( $X = 14.23$ ). This therefore means that male academic staff engages in more research activities than their female colleagues.

### Hypothesis two

There is no significant difference between married and single academic staff in their research productivity. The independent variable is marital status while the dependent variable is academic staff research productivity. Independent t-test statistical analysis is used to compare the research productivity of married and single academic staff. A summary of the result is presented in Table 2.

The result presented in this table indicated that the calculated t-value is 7.80 while the critical t-value is 1.965 at 0.05 level of significance and 478 degrees of freedom. Since the calculated t-value is observed to be greater than the critical t-value, the null hypothesis is rejected while the alternate hypothesis is retained. This implies that there is a significant difference between married and single academic staff in their research productivity. A further observation of the result revealed that married academic staff have a higher mean ( $X = 17.12$ ) research productivity than their single counterparts ( $X = 14.05$ ). Therefore married academic staff churns out more research publications than their single colleagues.

### Hypothesis three

There is no significant influence of academic staff areas of specialization on their research productivity. The independent variable is academic staff areas of specialization while their research productivity is the dependent variable. Contingency Chi-square ( $X^2$ ) statistical analysis is used to treat data from the independent and dependent variables. A summary of the result is presented in Table 3.

The result presented in this table showed that the calculated Chi-square ( $X^2$ ) value is 30.12 while the critical Chi-square ( $X^2$ ) value is 14.07 at 0.05 level of significance and 7 degrees of freedom. Since the calculated Chi-square ( $X^2$ ) value is greater than the critical Chi-square

**Table 2.** Independent t-test statistical analysis of the difference between married and single academic staff in their research productivity

Variables	N	X	SD	t-value
Married	263	17.12	3.98	7.80*
Single	217	14.05	4.58	

\*Significant at 0.05; df = 478; Critical t-value = 1.965

are ( $X^2$ ) value, the null hypothesis is rejected while the alternate hypothesis is retained. With this result, there is a significant influence of areas of specialization of academic staff on their research productivity.

## DISCUSSION OF RESULTS

Results in Table 1 indicate that there is a significant difference between male and female academic staff in their research productivity. That is male and female academic staffs are not productive research-wise on an equal basis. Their mean ( $X$ ) research productivity showed that male academic staff ( $X = 16.37$ ) do better than their female counterparts ( $X = 14.23$ ).

This result suggests that male academic staffs are more productive in terms of conducting quality researches and publishing them in reputable journals than their female counterparts. The plausible explanation for this result is that male academic staffs are by nature stronger and more resilient to undertake highly tasking and strenuous activities such as research activity. Thus, while male academic staff can spend several hours, if not days or months to execute a research activity, female academic staff may not have such strength. Hence, this finding is not surprising. This finding corresponds with the outcome of Ogunyemi (1997), Onokala and Onah (1998) and Oloruntoba (2001) finding that male staffs are more effective than their female counterparts in functioning in some subject areas (Mathematics and sciences). This finding is relevant here because subjects like mathematics have similar characteristics with research activity in terms of their highly tasking nature. Furthermore, additional support for this finding is drawn from the works of Rahji (2001), Kotrlík et al. (2002) and Oloruntoba and Ajayi (2006). While Rahji (2001) found a difference in labour productivity between the sexes, Oloruntoba and Ajayi (2006) found that most male academics have higher publishing rates than their female colleagues. Kotrlík et al. (2002) pointed out that female faculty members are lagging behind more experienced male faculty members. However, the findings of this hypothesis is contradicted by the findings of Martin and Smith (2005) and the opinion of Plato in Ekanem (2005), who found that females are more effective than males and that men and women have equal ability and can attain the same heights, given the same opportunity.

**Table 3.** Contingency Chi-square ( $\chi^2$ ) statistical analysis of the influence of academic staff areas of specialization on their research productivity.

Areas of Specialization	Research		Productivity		$\chi^2$ - value	
	High	Low	Total			
	Fo	Fe	Fo	Fe		
Arts	53	46.7	29	35.3	82	30.12*
Science and Technology	31	30.1	22	22.9	53	
Social Sciences	44	38.6	24	29.4	68	
Management Studies	29	35.3	33	26.7	62	
Agricultural Science	19	26.2	27	19.8	46	
Education	50	42.6	25	32.4	75	
Medicine	35	29.5	17	22.5	52	
Law	12	23.8	30	18.2	42	

\*Significant at 0.05; df = 7; Critical  $\chi^2$  -value = 14.07.

Results in Table 2 indicate that married academic staff differs significantly from their single counterparts in their research productivity. That is to say, academic staff who are married are more productive in research works judging from their mean (X) research productivity ( $X = 17.12$ ), than their single counterparts ( $X = 14.05$ ). A plausible explanation for this finding may go this way. The fact that married academic staff are 'settled' may make them concentrate more on research activities than their single counterparts whom thoughts and problems of being single may deprive them the opportunity and desire of settling down to produce high quality research works. One would have expected this finding to be the other way round that is single academic staff being more productive in research activities than their married counterparts. After all one would assume that family responsibilities may not allow married academic staff to concentrate and do meaningful work unlike their single counterparts. These family responsibilities may interrupt their research agenda to take care of children, sick or elderly parents or in-laws (Oloruntoba and Ajayi, 2006). Given this scenario, married academics' participation in research productivity may appear to be lower than their single counterparts.

Results in Table 3 reveal that there is a significant influence of academic staff areas of specialization on their research productivity. This implies that areas of specialization of academic staff determine their productivity in research works. It therefore follows that academic staff in more demanding areas of specialization such as medicine are likely to be less effective in research productivity than those whose areas of specialization do not make much demands on them such as Arts. Furthermore, another germane explanation for this finding is that an academic staff area of specialization might be one that attracts stiff competition. As such there is intense desire to reach the pinnacle of one's academic career (professorship) like others. In this regard, one is likely to be very

committed in carrying out quality research work. According to Robbins (2001), people with high achievement needs are willing to pay in an attempt to expand their skills, and that high achievers have a compelling drive to do things better than others or more efficiently. They have the quest to excel even though the odds are over-whelmingly stacked against them (Akuegwu, 2005). This finding is corroborated by Konrad and Pfeffer (1990) and Pfeffer (1993) who found that high status schools (universities) value research productivity, which is often reflected in a strong relationship between research productivity and rewards such as pay rises, tenure and promotion. In another vein, areas of specialization that provide more facilities are likely to be sources of motivation for academic staff to engage in more quality research (D'Aveni, 1996). It therefore follows that this finding is not out of place. It is in line with the essence of universities as citadels for teaching, research and service.

### Conclusion and Recommendations

From the findings of this study, the following conclusions were drawn. Male and female academic staffs differ significantly in their research productivity. Male academic staffs were more productive research-wise than their female counterparts. They were more involved in research activities than the females. Married and single academic staff differs significantly in their research productivity. Academic staff that were married showed higher research productivity than their single counterparts. There is a significant influence of areas of specialization on academic staff research productivity.

It was therefore recommended that;

- (1) Universities should provide equal opportunities for academic staff with regard to research work

- (2) Research work should be encouraged among academic staff in universities irrespective of gender, marital status and areas of specialization
- (3) An enabling environment should be provided in the universities for more research-oriented activities
- (4) The government should extend more funds to the universities for the purpose of fostering research activities.

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