

Determinants of Research Productivity of Academic Staff in Nigerian Research Institutes

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Abstract

Rationale of Study – Research productivity is paramount to career advancement and prestige of academic staff of research institutes in Nigeria. In spite of its importance, it has been observed that the level of research productivity of academic staff in Nigeria is low. This study, therefore, investigated the information literacy skills, emotional intelligence and demographic factors as determinants of research productivity of academic staff in research institutes in Nigeria.

Methodology – This study adopted survey research design. The total enumeration method was used. Validated questionnaire was used to gather data from a population size of 782 academic staff in the twelve research institutes. A 78-percent response rate was achieved. SPSS version 20 was used to analyse the collected data.

Findings – The findings revealed that information literacy skills, emotional intelligence and demographic factors had significant relationships with research productivity of the respondents. In addition, information literacy skills, emotional intelligence significantly determined research productivity of the respondents. More importantly, information literacy skills, emotional intelligence and demographic factors significantly determined research productivity of the respondents.

Implications – The study recommends, among other things, that training on information literacy skills and emotional intelligence be conducted for academic staff. Additionally, the management of the research institutes should consider demographic factors of the academic staff when formulating and implementing policies on research productivity.

Originality – Few studies have been done on the influence of information literacy skills, emotional intelligence and demographic factors on research productivity of academic staff in Nigerian research institutes.

Keywords

Emotional intelligence, information literacy skills, research productivity, Nigeria

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1 Introduction

Production of scientific knowledge and its application are important contributors to the development of every country in the world (Najafipour et al., 2009). Consequently, nations that wish to develop do not take research issues with levity. Publishing of research has been and will continue to be a critical factor in the career path of academics. In higher education and research, Rashid (2011) averred that research productivity is exemplified by books, publication of research papers in academic journals, presentations of paper in conferences, seminar presentations, chapters in books, publication of monographs, conference proceedings and production of artistic or creative works.

Research productivity gives academics recognition nationally and internationally. In the academic circles, the major yardstick for measuring success is research publications which are critical determinants of staff tenure and promotion (Kwanya, 2020). Research productivity of academic staff is worth investigation because its quality and quantity are the key performance indicators of scholarly excellence (Okonedon & Popoola, 2012; Onyancha et al., 2021).

Chukwu (2012) remarked that for academic staff to function effectively, information is critical. The continued relevance of scholars and researchers depend on their ability to utilise print or non-print information resources effectively. The information age that we now live in is characterised by information explosion, information overload and information revolution (Awuor et al., 2019). The present situation shows that information users in this century, and beyond, need specific information literacy skills to select, sieve and apply the available information effectively and ethically. Hoq (2016) pointed out that information now comes from various sources unfiltered to individual users. Thus, the challenge now is how to retrieve, evaluate and use the information appropriately.

Besides effective use of information, workers also need to demonstrate inter-relationships and mutual understanding to attain greater productivity. Workers succeed better when they have good knowledge of emotions of others and ability to manage them. Emotional intelligence is the capacity for recognising and managing one's own feelings and those of others they work closely with (Goleman, 1995). Emotional intelligence has also been found to influence achievements in work-places especially when the nature of work is rigorous. Studies have revealed that high emotional

intelligence can lead to increased productivity of employees (Johnson & Indvik, 1999; Ashkanasy et al., 2003).

Academic staff of Nigerian research institutes are required to have considerable high level of research output for prestige, recognition and career progression. It is expected of them to be carrying out research and publishing such as research output in reputable publishing outlets in and outside the country. However, despite the significance of research output, the authors of this study observed that research publications of Nigerian academics, including research institutes, has been low recently. This situation has been documented by several studies (Agarin & Nwaagwu, 2006; Yusuf, 2012; Okonedo, 2015). It was on record that research productivity of tertiary institutions in Nigeria was about the best in sub-Saharan African up to the 1980s. However, there was a gradual decline in research output in Nigeria. This became noticeable in the late 1980s and by 1996, it declined to all-time low. The situation is so bad that the country was ranked among countries with the least publications (Okebukola & Solowu, 2001). The situation has not changed (Ajegbomogun & Fagbola, 2015; Okonedo, 2015; Ifijeh et al., 2018) and abysmal low research productivity continues to be observed among academics in Nigeria. This low level of research productivity, no doubt, has consequences on the status, prestige and rating of the Nigeria academics and research institutes amongst academic communities worldwide. The observed low research productivity has been affecting the promotion and career progression of the academic staff as the slogan publish or perish is practised in the research institutes (Kwanya, 2020).

The foregoing information justifies for an investigation into diverse aspects of this low research productivity. This study explored the influence of information literacy skills, emotional intelligence and demographic factors on research productivity by Nigerian academics and researchers. The study specifically probed the relationship between information literacy skills, emotional intelligence, demographic factors on research productivity among the academics in Nigerian research institutes.

2 Literature Review

Literature search done by the researchers suggests that few studies have been done on the influence of the factors. These studies are analysed, categorised and presented hereunder.

Concept and importance of information literacy skills

Evidence from literature shows that information literacy (IL) is confused with many terminologies, definitions and descriptions thereby leading to confusion. As a result, there is consensus that information literacy is a phrase that has not been understood fully (Foster, 1993; Bruce, 1999; Downie, 2016). This lack of agreement on what information literacy is among information experts has generated controversies which are affecting the way IL is conceptualised, named and articulated (Lloyd, 2005). Zurkowski was the first person to use the term in 1974 in a report by the National Commission on Libraries & Information Science (Washington DC) (Kelly, 2013). In this report, IL was described as an individual's competence to use information tools and information resources to solve problems. In another definition, given by National Forum on Information Literacy (NFIL 2012), the concept was described as the capability to possess knowledge when there is need for information, to be able to recognise, retrieve, gauge, and effectively use information to solve challenges at hand.

Information technologies have been facilitating access to information. This is making information technology skills essential in the information age. SCONUL (2003) remarked that information literacy skills are confused with the term information technology skills. SCONUL makes a distinction between them by explaining that the skills needed to use new information technologies is referred to as information technology skills while information literacy skills relate to the capacity of users to pinpoint information sources, navigate, assess, organise and communicate the information ethically (SCONUL, 2003). In the view of Nwosu et al. (2015), information literacy is the recognition of when and why information is needed, where to locate it as well as how to retrieve and evaluate, use and communicate it in an ethical way. It, therefore, follows that an information literate person can interpret and make informed decisions when the information has been utilised. Information overload experienced in the information society by information users necessitates the possession of information literacy skills. Information overload is the condition where individuals are presented with information volume which is beyond their processing capacity (Farhoomand & Drury, 2002). The existence of this overloading usually results to stress and feeling of fatigue syndrome (Awuor, et al. 2019; Shachaf et al., 2016).

Concept and importance of emotional intelligence

The history of the concept of emotional intelligence was traced back to early studies in 1920s (Bar-on & Parker, 2000). However, many scholars started studying and

conceptualising emotional intelligence in early 1980s. One of such scholars is Gardner (1983) that conceptualised intra-personal intelligence and interpersonal intelligence. There was also Steiner (1984) who studied emotional literacy. These pioneer studies were used as a foundation by Salovey and Mayer (1989-1990) when the concept of emotional intelligence was coined. Goleman (1998) averred that emotional intelligence is the capability to monitor and reason with emotions of self as well as that of others while at the same time differentiating among them and using the knowledge gained to direct one's reasoning and behaviour. Three abilities could be adduced from this definition; ability to evaluate and express emotion; regulate emotion; and use emotions in decision making. Emotional intelligence is seen simply as social intellect that gives individuals the ability to relate with others (Petrides et al., 2016).

Goleman (1998) also suggested that there are five critical pillars or competencies of emotional intelligence. These are self-awareness, self-regulation, self-motivation, social awareness and social skills:

- a) Self-awareness: This is the capacity of an individual to understand one's emotions, strengths, and weakness. The major components of this cluster consist of emotional awareness, self-assessment and self-confidence. People with high self-awareness recognise and understand their moods, emotions, and needs. They perceive and anticipate how their actions affect others. Self-aware people are also comfortable talking about and admitting their limitations; so, they know when to ask for help.
- b) Self-regulation: This is the ability to control or redirect our emotional bursts and other impulse behaviours. For example, rather than yelling at a client, you manage to remain calm and later "talk out" the emotion to a co-worker. It is the capacity for effectively and efficiently managing one's motive and behaviour. This consists of self-control, achievement, orientation initiative, conscientiousness, trustworthiness and adaptability. Self-regulation includes the ability to suspend judgement so as to think through the consequences of their behaviour rather than acting on impulse.
- c) Self-motivation: This includes stifling impulses, directing out emotions toward personal goals, and delaying gratification. Even when people do not achieve their goals, those with high motivation remain optimistic. Motivating oneself overlaps

with self-leadership concepts of self-reinforcement and constructive thought patterns.

- d) Empathy: This is the ability to understand and be sensitive to the feelings, thoughts, and situation of others. This does not mean adopting other people's emotions, just being sensitised to them.
- e) Social skills: This is the ability to manage the emotions of other people. It requires social competence and skills to guide the way other people act. Social skills include the ability to form networks of relationships and to build rapport – finding common interests and understanding with others. Social skills require other elements of emotional intelligence, particularly empathy and self-regulation (Goleman, 1998).

Several investigations have reported positive effect of emotional intelligence on organisations, institutes and families (Farrell, 2015; Zainal et al., 2017). Higgs (2005) reported that employee performance is significantly influenced by emotional intelligence. Therefore, emotional intelligence is a good predictor of success even more than the conventional method of predicting success using intelligence quotient. Emotional intelligence has been found to be useful in work places, hence many scholars have established the nature of relationship that exists between it and work performance. Studies have revealed that emotional intelligence provides source of capacities which are important for nearly all kinds of work (Cherniss et al., 2006; Sedaro & Baharun, 2020). Petrides et al. (2016) submitted that emotional intelligence has been found to be the management of emotions operating in a realistic and smart way while directed by emotion. In addition, Applewhite (2017) and Farrell (2015) affirmed that the sensibilities and relationships empowers one's understanding, guidance and management of one's emotion and that of others. Falahat and Raman (2017) as well as Subhashini and Shaju (2016) argued that emotional intelligence can predict performance in many important areas including academic, leadership, work performance, and emotional work-family conflict. In the same vein, Zainal et al. (2017) as well as Carter and Loh (2017) reported the influence of emotional intelligence in employee performance and leadership success in organisations.

Effects of information literacy skills on research publications of academics

The importance of information literacy skills is crucial in networked information society. It was submitted that building an information society does not stop with the abundance

of information alone, but by the development and possession of effective information literacy skills that will make information users to exploit the abundant information (Hof et al., 2010). Owusu-Ansah (2005) also shared a similar opinion by saying that coping with the information revolution, users of information also need to possess techniques for exploring information to be able to take rational decision to enhance their knowledge.

According to Okiki and Mabawonku (2013), information literacy skills have significant influence on research output of Nigerian academics. Bhukuvhani et al. (2012) strongly recommended information literacy skills for lecturers to enhance utilisation of electronic information resources effectively. Nwosu et al. (2015) similarly reported that information literacy skills have significant effect on research output of faculty members of Nnamdi Azikiwe University, Awka, Nigeria.

Emotional intelligence and research publications of academics

A number of scholars (George, 2000; Goleman et al., 2002) established that emotional intelligence is important in modern work-life. Similarly, other scholars (Pekaar et al., 2017; Gunu & Oladepo, 2014; Zainal et al., 2017; Dhani & Sharma, 2017) concluded that emotional intelligence affects different activities which include academic world. It has also been reported that emotional intelligence could predict job effectiveness among higher management level of an organisation (Krishnan et al., 2018). In the same vein, studies submitted that emotional intelligence significantly predicts capability (Gunu & Oladepo, 2014; Dhani & Sharma, 2017). Workers with high emotional intelligence could detect and handle their own emotions while simultaneously identifying and empathising with the feelings of other workers (Applewhite, 2017).

Research institutes in South-West Nigeria are some of the critical work-places. Academic staff members of staff in these institutes are essential to the success of these institutes as they are the core staff that engage in research which they are compelled to publish. Carrying out research and turning them into publications is quite stressful. Academic staff of the research institutes might be experiencing lengthened occupational stress that could result in mental and emotional ill-health which might ultimately affect research productivity. Heavy workload, research rigour, poor working conditions and the challenging environment of most research institutes in Nigeria could be significant factors that could lead to emotional distress among the academic staff and might affect their research output.

Effects of demographic factors on research output of academic staff

Many scholars have carried out studies on demographic factors and research productivity (Kipchirchir, 2014; Dhillon et al., 2015). One of the demographic factors that has been investigated in relation to research output of academics is gender. Results from such studies have generally indicated that male researchers publish more than their female colleagues. Fayaz and Hussain (2017) compared the research output of male and female researchers and reported that males published more than their female counterparts in research across regions and disciplines. Many studies have confirmed this view (Cikara, Rudman & Fiske, 2012; Baccini et al., 2014; Bohm et al., 2015; Ogbogu, 2009). Many reasons have been touted to explain this imbalance. The reasons include institutional factors that are not favourable to female academics; restrictive research culture against gender topics; as well as pressure on women to raise family (Cowden et al, 2012; Williams & Ceci, 2012). In spite of unfavourable atmosphere, Van Arensbergen et al. (2011) reported that young female academics were reducing this gap and in some cases, young female outperformed their male colleagues.

Research productivity is also influenced by other demographic attributes such as the educational qualification of scholars. Babalola (2014) studied librarians in Nigeria and reported that academic qualification(s) has a significant influence on research productivity. Svein and Dag (2015) studied academic staff in Norwegian universities and concluded that higher educational qualification as well as better funding and collaboration in research were conducive to research output for new generations of academic staff. Kendagor (2018) submitted that staff qualifications could predict significantly the research productivity of scholars in Kenyan universities. In addition, Frantz et al. (2010) revealed that higher productivity in research by senior academics was the availability postgraduate students that turned out publications from their theses and dissertations in collaboration with the senior lectures who served as supervisors of theses and dissertations. In the contrary, Williams (2003) submitted that educational qualification has no significant relationship with research output. Lyytinen et al. (2007) established that the quality of doctoral training explained the variance in the research output of academics.

The influence of age on research output has been investigated in several studies. However, the results have not been consistent. A curvilinear relationship between research output and age has been established. Empirical studies support this hypothesis and find an inverted U-shaped relationship between research output and age of scholars

in which the latter peaks at a specific age (which varies depending on the field) and then falls again (Turner & Mairose, 2013). Similarly, Ebadi and Schiffauerova (2016) reported a decline in research productivity as age increases, especially, after the chronological age of 40 years.

3 Theoretical framework

This study was anchored on Campbell's (1998) performance theory. The theory postulates that the latent structure of job performance can be modelled using the following eight general factors: (1) job-specific task proficiency, (2) non-job-specific task proficiency, (3) written and oral communication, (4) demonstrating effort, (5) maintaining personal discipline, (6) facilitating peer and team performance, (7) supervision or leadership, and (8) management or administration.

The second theory relevant to this study was the Goleman emotional intelligence theory. Goleman (1998) theory provides a framework of emotional intelligence that reflects how an individual's potential for mastering the skills in terms of self-awareness, self-management, social awareness, and relationship management translates into success in the workplace.

The two theories explained above were relevant to this study. The ability of academic staff in the research institutes in the emotional domains (emotional competences) represent the degree to which they could master research skills and perform research duties to extents which enable them to have high performance in research productivity. The Campbell theory of job performance is also relevant as it identifies the skills that are needed to enhance research productivity. These skills are indicators of performance of academic staff of academic staff in research institutes in Nigeria.

The conceptual model of this study is depicted in Figure 1. This model is constructed based on the relevant literature reviewed. Independent variables are information literacy, emotional intelligence, demographic factors while the dependent variable is research productivity. Information literacy skills is measured using the following the dimension such as the ability to: recognise that information is needed, understand and article scope of information needs, search strategies of various types of sources of information, locate information sources using information access tools, understand and use the various of information effectively, synthesise newly gathered information with previous information, organise and analyse information, evaluate information, communicate information tailored to particular audience in an effective formats and ethic of using

information. Emotional intelligence is measured using dimensions such as self-awareness, self-regulation, self-motivation, social skills and empathy. Demographic variables include age, gender, salary, marital status, academic status, educational qualification, working experience, family size and type of employment of the respondents. Research productivity is measured using scholarly publications in textbooks, chapters in books, journal articles, patents, conference proceedings, monographs, occasional papers and technical reports. This model proposes that information literacy skills, emotional intelligence and demographic factors would significantly determine research productivity of academic staff in research institutes in Nigeria.

Hypotheses

Based on the literature reviewed, the following hypotheses were formulated and tested at 0.05 level of significance:

H1: There is no significant relationship among information literacy skills, emotional intelligence, demographic factors and research output of the academics surveyed.

H2: Information literacy skills, emotional intelligence and demographic factors will not significantly determine research output of scholars in institutes surveyed.

4 Methodology

The descriptive survey research design of the correlational type was employed for this study. The descriptive survey approach was chosen for the study because it seeks to gain insights into a phenomenon as a means of providing the necessary information in an area of study. This type of design was used by Shriatmadari and Mahdi (2012) when they investigated barriers to research productivity of scholars at the Islamic Azad University in Iran.

The total population consisted of all the 782 academic staff of the twelve research institutes in Nigeria. It comprised of 746 researchers and 36 librarians in the twelve institutes surveyed. Librarians were part of the respondents as they are also categorised as academic staff in the research institutes surveyed in Nigeria. Total enumeration sampling was used because the population was not too large. The population of the study is shown in Table 1. The fields of specialisation of these institutes are agriculture, socio-economics, science and technology, legal, industrial, planning and administration and foreign affairs research. All the institutes covered in this study were established by the

Federal Government of Nigeria with the exception of the International Institutes for Tropical Agriculture (IITA).

Table 1: Population of Academic Staff in Research Institutes in South West, Nigeria

S/N	Research institutes	Acronym	Location	Speciality	Researchers	Librarians	Total
1	Nigerian institute for Oceanography and Marine Research	NIOM	Lagos	Marine	66	2	68
2	Cocoa Research institute of Nigeria (CRIN)	CRIN)	Ibadan	Cocoa	74	3	77
3	Institute of Agricultural Research and Training (IAR&T)	(IAR&T)	Ibadan	Agriculture	53	2	55
4	Federal Institute of Industrial Research	FIIRO	Lagos	Industrial	64	2	66
5	Nigerian Institute for Social and Economic Research,	NISER	Ibadan	Socio & Economic	55	3	58
6	Nigerian Institute of International Affairs	NIIA	Lagos	International affairs	26	4	30
7	Nigerian Institute of Advanced Legal Studies	NIALS	Lagos	Legal matters	83	7	90
8	International Institute for Tropical Agriculture	IITA	Ibadan	Agriculture	58	2	60
9	Forest Research Institute, Jericho	FORIN	Ibadan	Forestry	88	2	90
10	National Horticultural Research Institute	NIHOR T	Ibadan	Horticulture	75	3	78
11	National Institute for Medical Research (NIMR), Yaba.	NIMR	Lagos	Medical	73	3	75
12	National Institute for Planning & Administration	NIEPA	Ondo	Admin & Planning	32	3	35
TOTAL					746	36	782

A structured Questionnaire tagged Information Literacy Skills, Emotional Intelligence, Demographic factors and Research Productivity Questionnaire (ILSEIDFRPQ) was used for this study. The Questionnaire used was designed and validated. It elicits biographical

information as well as all the necessary information relevant to the study. In order to affirm the validity and reliability of the questionnaire, 30 copies of the questionnaire were administered to academic staff of the National Centre for Agricultural Mechanisation, Ilorin, Kwara State, Nigeria. The data was subjected to reliability analysis using Cronbach Alpha method.

5 Results

Hypothesis 1: There are no significant relationships among information literacy skills, emotional intelligence, demographic factors and research productivity of the academic staff

Table 2: Significant relationships between Research Output and independent Variables

Variables		RESEARCH PRODUCTIVITY (r)
RESEARCH PRODUCTIVITY	Pearson Correlation N	1.000 610
RECOGNIZING INFORMATION NEEDS	Pearson Correlation Sig P N	.445* .002 610
INFORMATION SEEKING STRATEGIES	Pearson Correlation Sig P N	.434* .006 610
LOCATION OF INFORMATION	Pearson Correlation Sig P N	.373* .070 610
USE OF INFORMATION	Pearson Correlation Sig P N	.448* .000 610
SYNTHESIS	Pearson Correlation Sig. P N	.389* .028 610
EVALUATION	Pearson Correlation Sig. P N	.475* .004 610
COMMUNICATION	Pearson Correlation Sig. P N	.418* .003 610
LEGAL/ETHICAL ISSUES	Pearson Correlation Sig. P N	.387* .031 610
SELF- AWARENESS	Pearson Correlation Sig. P N	.468* .005 610
SELF REGULATION	Pearson Correlation Sig. P N	.472* .006 610
SELF MOTIVATION	Pearson Correlation Sig. P N	.437* .001 610
EMPATHY	Pearson Correlation Sig. P N	.330* .001 610
SOCIAL SKILLS	Pearson Correlation Sig. P N	.360* .038 610

MONTHLY SALARY	Pearson Correlation Sig. P N	.334* .008 610
ACADEMIC STATUS	Pearson Correlation Sig. P N	-.385* .035 610
GENDER	Pearson Correlation Sig. P N	.275* .005 610
AGE	Pearson Correlation Sig. P N	-.233* .009 610
HIGHEST ACADEMIC QUALIFICATION	Pearson Correlation Sig. P N	-.323* .006 610
WORK EXPERIENCE	Pearson Correlation Sig. P N	.417* .009 610
MARITAL STATUS	Pearson Correlation Sig. P N	.321* .009 610
EMPLOYMENT STATUS	Pearson Correlation Sig. P N	.218* .002 610
SIZE OF NUCLEUS FAMILY	Pearson Correlation Sig. P N	-.267* .003 610

From Table 2, it is seen that there are significant relationships of information literacy skills: recognising information needs ($r=0.445$, $P<0.05$); information seeking strategies ($r=0.434$, $P<0.05$); location of information ($r=0.373$, $P<0.05$); use of information ($r=0.448$, $P<0.05$); synthesis of information ($r=0.389$, $P<0.05$); evaluation of information ($r=0.475$, $P<0.05$); communication of information ($r=0.418$, $P<0.05$); legal ethical issues of information ($r=0.387$, $P<0.05$). Emotional intelligence – self-awareness ($r=0.468$, $P<0.05$); self-regulation ($r=0.472$, $P<0.05$); self-motivation ($r=0.437$, $P<0.05$); empathy ($r=0.330$, $P<0.05$); social skills ($r=0.360$, $P<0.05$). Demographic factors – monthly salary ($r=0.334$, $P<0.05$); academic status ($r=-0.385$, $P<0.05$); gender ($r=0.275$, $P<0.05$); age ($r=-0.233$, $P<0.05$), highest academic qualification ($r=-0.323$, $P<0.05$); work experience ($r=0.417$, $P<0.05$); marital status ($r=0.321$, $P<0.05$); employment status ($r=0.218$, $P<0.05$); size of nucleus family ($r=0.267$, $P<0.05$) with research productivity of the respondents.

Table 3: Relative contribution of independent variables to research productivity

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.P
	B	Std. Error	Beta		
I (Constant)	19.878	2.740		7.255	.000
MONTHLY Salary	-.028	.151	-.007	2.834	.004
ACADEMIC STATUS	-.203	.083	-.057	2.445	0.31
GENDER	.427	.169	.052	2.527	0.0282
AGE	-.170	.015	-.032	11.33	0.039
Highest Academic Qualification	.170	.092	-.029	-.715	.475
WORK EXPERIENCE	.425	.144	-.038	2.951	0.012
MARITAL STATUS	.278	.466	.025	.597	.551
EMPLOYMENT Status	.760	.721	.046	1.055	.292
Size of NUCLEU family	-1.140	.624	-.075	-1.827	.068
RECOGNIZING INFORMATION NEEDS	-.105	.0917	-.084	6.176	0.006
INFORMATION SEEKING STRATEGIES	0.562	.102	.054	5.510	0.002
LOCATION INFORMATION	0.381	.091	.051	4.187	.0008
USE OF INFORMATION	.268	.078	.236	3.443	0.001
SYNTHESIS		.080	.207	7.763	0.005
EVALUATION	0.621	.100	.162	7.280	.0009
COMMUNICATION	0.728	.087	-.250	-3.407	0.001
LEGAL-ETHICAL ISSUES	-.297				
SELF -AWARENESS	3.308E-02	.096	.028	.343	.732
SELF REGULATION	.221	.084	.147	2.626	.009
SELF MOTIVATION	-.305	.082	-.107	3.72	0.002
EMPATHY	-.141	.070	-.115	-2.001	.042
SOCIAL SKILLS	4.140E-03	.072	.004	.058	.954
	.174	.081	.113	2.139	.033

Dependent Variable: Research Productivity

Table 3 indicates the relative contribution of components of independent variables to the dependent variable the (research productivity):demographic factors(monthly salary ($\beta=-.007$; $p<0.05$),academic status($\beta=-.057$; $p<0.05$); gender ($\beta=.052$; $p<0.05$); age($\beta=-.032$; $p<0.05$); highest academic qualification($\beta=-.029$; $p<0.05$); work experience($\beta=0.38$; $p<0.05$; marital status($\beta=.025$; $p<0.05$; nature of employment($\beta=-.075$; $p<0.05$), information literacy skills(recognising information needs($\beta=-.084$; $p<0.05$); information seeking strategies($\beta=.054$; $p<0.05$; location of information($\beta=.051$; $p<0.05$; use of information($\beta=.236$; $p<0.05$; synthesis of information($\beta=.207$; $p<0.05$; evaluation($\beta=.162$; $p<0.05$; communication of information($\beta=-.250$; $p<0.05$; legal ethical-issues ($\beta=.028$; $p<0.05$), emotional intelligence(self-awareness($\beta=.147$; $p<0.05$; self-regulation($\beta=-.107$; $p<0.05$); self-motivation ($\beta=-.115$; $p<0.05$); empathy($\beta=.004$; $p<0.05$; and social skills ($\beta=.113$).This shows that demographic factors, information

literacy skills and emotional intelligence were critical factors in determining research publications.

Hypothesis 2: Information literacy skills, emotional intelligence and demographic factors will not significantly determine research productivity of the respondents.

Table 4: Summary of Multiple regression analysis of Research Productivity of the respondents

Sources of Variation	DF	SS	MS	F. ratio
Due to regression	22	980.555	44.548	2.799
Due to residual	287	9344.069	15.918	
Total	609	10324.125		
Model R	Adj R square (R ²)	Adj R Square	Standard error of estimate	
		0.3661	0.6051	3.9898

The combination of independent variables (information literacy skills, emotional intelligence and demographic factors) was subjected to multiple regression analysis with research output as the dependent variable.

This result is showed in Table 4. This table shows the summary of multiple regression analysis of independent variables (information literacy skills, emotional intelligence and demographic factors) on research publications. The result indicates that the analysis of variance of multiple regressions yields an F value of 2.799 which is significant at 0.05 level. This implies that the independent variables (information literacy skills, emotional intelligence and demographic factors) significantly determined scholarly publications of respondents; hence the hypothesis is rejected.

The data in Table 4 also shows that the three independent variables when combined to determine research productivity of the academic staff investigated yielded a coefficient of multiple correlation (adj R = 0.6051. P<0.05) and a coefficient of determination (adj R²) = .03661 which is significant at 0.05 level. This implies that about 36.61 percent of variance in research output of the respondents is traced to demographic factors of the respondents, information literacy skills and emotional intelligence.

6 Discussion

The findings of this study revealed that research output of respondents is greatly determined by information literacy skills possessed. This means the more information

literacy skills acquired by the respondents, the higher their research production level is likely to be. This finding corroborates Wilson (2001); Bhukuvhani et al. (2012); Okiki and Mabawonku (2013). This study also established that emotional intelligence significantly determines research publications of the respondents. Numerous studies have demonstrated that employees' performance is positively related to emotional intelligence (Zainal et al., 2017, Pekaar et al., 2017). Rebello (2013) submitted that faculty members with high emotional intelligence performed better. The results of this study in respect to emotional intelligence and research productivity support Ashkanasy et al. (2003) that the influence of emotional intelligence on job performance is significant. The inference from this finding is that the higher the emotional intelligence of the respondents, the higher their scholarly productions. As such, anything done to improve emotional intelligence of academic staff of these institutes will significantly enhance their research productivity.

The finding showed that research productivity is one of the issues which required a specific level of emotional intelligence from the academic staff to succeed. The reason being that by the nature of their work, surveyed academics, among other things, have to engage in the formulation and execution of various research projects; compilation and interpretation of research data and reports; rendering consultancy and technical services to industrial concerns; designing equipment and materials in the mandated areas of various institutes; and they are also saddled with administrative duties. Apart from other responsibilities, academic staff members in research institutes are required to attain high level of research productivity by publishing in reputable outlets and presenting quality research papers in local and international conferences before they can be promoted and advance in their careers.

The results also indicated that all the demographic factors individually significantly determined the research output of the respondents. Significant relationship between salary and research output level revealed in this study is similar to the finding of Levent et al. (2012) who concluded that research output is significantly related to the salary of academic staff. Findings of this study revealed that four types of employment existed in the institutes surveyed, namely, full-time, part-time, adjunct and contract. The study further showed that the nature of employment significantly related with research publications of researchers surveyed. This concurred with earlier studies by Vu and Doughney (2006) which revealed a variance in research productivity as a result of the nature of employment among full time, adjunct and part-time faculty in 36 Australian

universities. The same relationship was also confirmed by Atkinson and el-Guebaly (1996).

The results reiterated that age is significant in determining research output of academic staff, just as it was submitted by Williams et al. (2001). This discovery also agreed with Migosi (2010) as well as Evans and Bucy (2010) that research output of males is higher than that of women. This conclusion, however, disagrees with Ramsden (2005) as well as Okonredo et al. (2015). This discovery disagrees with the finding of Sax et al. (2002) who submitted that the variables influence scholarly productivity for male and female were family-related issues. However, the finding agrees with Callaghan (2016); Hunter and Leahey (2010); Williams and Ceci (2012).

This study further established that educational qualification is significantly related to research productivity of the respondents. This results tally with Babalola (2014) in a study on librarians in colleges of education in Nigeria. Similarly, this discovery further buttressed the finding of Huang et al. (2015) that additional qualifications possessed by fellowship-trained ophthalmologists influenced their research production.

This study also revealed the relationship between work experience and research productivity of academic staff. This result concurs with Vasil (1992). Besides, this study showed research output is significantly influence by marital status of the respondents, this result tallies with Frandsen et al. (2015) who found that marriage is associated with research productivity. Interestingly, this study found out that research publication is significantly related to academic status of the academics. This finding agrees with Okiki (2013) who established that academic rank significantly influences research output as professors have the highest publications in a study of Nigerian academics. Brooks (2006) attributed this relationship to policies that promote academics to higher ranks. This finding, however, is contrary to Mishra and Smyth (2012) who established that there was no significant variance in the publication output of senior and junior academics in Australian law schools. One of the reasons given by Tien (2000) was that junior academics were more propelled to publish to secure tenure and/or promotion while senior academics do not have such pressure any longer (Lissoni, et al., 2011).

The findings further showed that the three independent variables - information literacy skills, emotional intelligence and demographic factors - when combined significantly determined the publications output of the academics surveyed as they accounted for

about 36.61 percent of variance in research output of the respondents. This implies that all the independent variables have a strong effect on scholarly publications.

7 Contribution to knowledge and implications

The major contribution to knowledge of this study is in the area of conceptual model developed for this study to explain the influence of information literacy skills, emotional intelligence and demographic factors on research productivity of academic staff of the research institutes. This conceptual model could be used to explain the variance in research output of academic staff.

This study perhaps is one of the pioneer empirical studies to establish the positive influence of emotional intelligence on research productivity of academic staff in Nigeria. This finding has shown that emotional intelligence the significant importance of all the components of emotional intelligence in increasing research productivity of the academic staff. In addition, this study established that information literacy skills, emotional intelligence and demographic factors are critical in predicting and in improving research productivity of the academic staff. The implication of this findings is that information literacy skills, emotional intelligence and demographic factors of the academic staff in the research institutes should be taken seriously by the academic staff and management of the research institutes surveyed. The findings of this study also has implications for the practice of libraries in these institutes as they have to re-examine their roles in promoting information literacy skills among the academic staff. The findings of this study also have implications for the administration of the research institutes as they need to take the issue of emotional intelligence more seriously in order to improve research productivity of the academics demographic factors and information literacy skills need to be considered by policy makers in improving research output of scholars.

8 Conclusion and recommendations

The findings of the study indicated that there is a significant relationship between information literacy skills and research productivity of academics in Nigerian research institutes. There is also a significant relationship between emotional intelligence and research output of the academics surveyed. This study also established that there is a significant relationship between emotional intelligence and research output of scholars surveyed in Nigeria. In addition, the findings showed that there is a significant relationship between demographic factors and research publication of the academic staff in the research institutes. The study therefore concluded that information literacy skills,

emotional intelligence, and demographic factors significantly determined research productivity of Nigerian academics in research institutes.

Based on the findings of this study, the following recommendations are outlined:

- a) The libraries in the research institutes should mount various training and programmes that will improve information literacy skills. This could be achieved by organising seminars and workshops on information literacy for the academic staff.
- b) The management of the research institutes should organise training that will improve emotional intelligence of the academics in the research institutes.
- c) There is also the need for the management of the research institutes to implement policies that will put favourable demographic factors that will enhance research productivity of the academic staff.
- d) Administrators and management and of the research institutes should also endeavour to pay attention to emotional intelligence when planning to recruit academic staff.

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