Determinants of Academic Research output from Kenyan Universities Academic Staff.

By

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Abstract

The main role of universities is teaching, research and community service. Higher education has become a very huge sector because of the growing number of universities being set up. The academic staff has also been increasing in order to support this sector. It is therefore expected that this upward trend should translate to higher research output from academic staff. Contrary to this, academic research output is still very low despite that fact that most universities have clear policies that support research and have set up structures aimed at promoting research. This study therefore sought to find out what are the determinants of academic research output among academic staff.

This study adopted an exploratory research design where a sample was conveniently chosen from various Universities in Kenya from both public and private using a questionnaire as the data collection instrument. Factor analysis was the technique that was adopted in this study using Principal component analysis for factor extraction. The study concluded that there are various determinants (factors) that determine academic research output. After factor loading, various factors emerged and were categorized as primary and secondary determinants. The primary determinants directly affects research output and are key in determining research output while the secondary factors indirectly determines research output. Secondary factors support research output. This means that there has to be already some research output to be supported by the secondary factors and that is why they are referred as secondary.

Key words: Determinants, Research output, Academic staff, University

1. Introduction

Higher education sector in Kenya has been undergoing changes for the last ten years. These changes have had various implications among them being an upsurge in the numbers of higher institutions seeking accreditation to offer higher level qualification. This has led to an increase on the number of private and public universities. The number of academic staff has also grown in order to meet the meet the demand of students who are yearning to acquire higher education qualifications. The main role of universities worldwide is teaching, research and community service. Majority of academic

staff are more keen and interested in teaching than research. Universities have set up research department which are responsible for coordinating research activities. Apart from putting structures in and availing research still research output from universities is still minimal.

The end product or output of academic research are research publications measured by the number peer-reviewed journal articles written in calendar year (Seyyed, Al-haji umar, & Al-haji, 2004). The same sentiments were also echoed by Stack (2004). Apart from the number of articles, publications can also be measured by other works such as books, book chapters, monographs and conference papers (Bieschke, 2006; Hakelman et al.1995)

There has been a controversy whether teaching and research support each other or they are incompatible. A study by Ozman (1967), Schmitt (1965) and Hammond et al. (1969) found out a differing opinion of the authorities of higher education in regards to teaching and research. The level of competence among academic staff who engages in research has also been a debate. Donald et al. (1976) in their research sought to find out whether faculty research involvement leads to better instructional outcome in various disciplines. Their findings were differing among different disciplines. There is a number of distinct focuses in literature on teaching and research (Jenkins, 2005). Some approach the theme from an historical perspective. One such endeavor by Schimank & Winnes (2000) examines three variants of the teaching/research termed as 'Humboldtian' (Germany, Italy), 'post Humboldtian' (e.g UK, Sweden, Norway, the Netherlands) and 'pre-Humboldtian' (France, Ireland, Iceland, Spain, and Hungary). They contend that academics are most likely to favor the Humboldtian model, based on the close integration of teaching and research. However, national policy makers looking to reduce public expenditure on higher education may have an interest in encouraging a post-Humboldtian approach. Teaching and research has also been studied from the institutions as well as from the students' perspective. Fram & Lau (1996); Robertson & Bond (2005); Zamorski (2002); Elton (2001); Robertson & Bond (2003); Rowland (2000) , Lindsay, Breen & Jenkins, (2002); Mullen (2000); Neumann (1994). A further literature review on teaching and research shows that on various disciplines, there is strong subject component in academic identity (Becher & Trowler, 2001; Musselin & Becquet, 2005).

Research is an involving activity both in terms of money and time. Apart from money that researchers need undertake, they must also create time. For academic staff to effectively and efficiently conduct research, they must reduce their teaching load by reducing the number of hours they teach. Research is not only time consuming but also it can be very expensive depending on the type of research and the scope. Universities at times have selective research funding whereby all research undertaking are not allocated the same amount of money. This means that management does not regard all research as equal. The negative effect of discrimination may impact on researchers output where academic staff may not have the motivation to undertake research. However it must be noted that all research cannot be allocated the same amount of funds.

Institutions of higher learning are classified into two broad categories. Teaching intensive institutions and the research intensive institutions. The teaching intensive institution puts more emphasis on teaching while research intensive gives research more prominence. The academicians in teaching intensive concentrate more in teaching than research (Fulton 1996). In relations to quality of delivery and mastering the subject contents there is a differing opinion among disciplines. (Robertson & Bond, 2003); (Colbeck, Weaver, Burkum & Bjorklund, 2004). (Prosser, Martin, Trigwell, Ramsden & Lueckenhausen 2005) found out that there is a variation in understanding the subject contents and research active academics' are able to understand their subject matter more and are able to reconcile well between teachings and research.

For research to be enhanced in institution of higher learning there is need to develop a research culture. Research culture is very common in the United Kingdom where the academic unit culture is assessed by Research Assessment Exercises (RAE) as from 1996. Active research academic in the UK participate in RAE in terms of research grants, refereed publications in international journals as well as RAE rating. Academic units needs to develop a research culture by forming research groups, having research seminars, sabbatical and research mentors. Universities should set up ambitious research targets in order to encourage academician engage in research. These targets that are set must include in the performance management so that they can be motivators for academic staff. Units or departments have also a role to play. They must be research focused. In Some universities research is ranked higher than teaching in terms of rewards system. Academics who engage in research are rewarded more than those that concentrate in teaching. Funded research projects in universities provide other rewards and publications in refereed journals are essential for promotions, tenure and they also enable academic staff to maintain high esteem in the eyes of the peers.

This study therefore sought to find out the determinants of academic research output from academic staff. The following objectives guided this research.

1.1 . Research Objectives

1.1.1 To find out whether teaching workload is a factor determining academic research output from academic staff.
1.1.2 To find out whether lack of research culture is a factor determining academic research output from academic staff.
1.1.3 To find out whether lack of research funding is a factor determining academic research output from academic staff.
1.1.4 To find out whether lack of support activities is a factor determining academic research output among academic staff.

1.2 Significance of study

This study will be useful to a number of stakeholders. First, it will provide insights to the university administrators the factors that are hindering academic research output from their academic staff and what need to be done and considered

in order encourage academic staff to engage in publishing. The top management of universities will also benefit from this study in developing policies in relation to academic research output. The finding of this study will point out some of the critical factors they need to consider in developing policies for enhancing research output in their universities.

To the academic staff, the study shed light on the factors that are hindering them to conduct research to be able to balance and adjust accordingly. Lastly the study will contribute to the existing body of knowledge in academic research output from universities

2. Literature Review

Academicians in institutions of higher learning have two major responsibilities of teaching and research. Majority of academic staff concentrates in teaching and a few of them undertake research. (Meltzer, 1949; Crane, 1965; Cole & Cole, 1967; Smith & Fiedler, 1970; Biglan et al., 1971). This biased approach therefore has led to low research output from universities. Academicians who are keen in developing their career and being relevant need to engage in research. In some universities where research is considered vital, research output is used as a strong indicator in making promotion decisions. Academic staff and librarians career advancement and promotions is inclined towards the quality and quantity of their scholarly work in most universities (Nkereuwem, 2005). Academicians are expected to generate academic supremacy to add value to students and the country. They are considered to be intelligent and are expected to provide solutions to political social and economic problems that affect the country. In order to provide the required solutions, they are expected to continuously undertake research to provide knowledge that can be applied practically in solving existing problems (Martin, 2007).

Academicians who engage in research normally have a competitive edge over those who do not undertake research. They are able to achieve their academic goals and get satisfaction; they receive recognition from their peers and colleagues as well as being able to provide practical solutions to community problems. They turn out to be reputable as scholars, are able attract funding as and they can easily be engaged in consultancies. Academic research output is mostly through publications in reputable journals (McKenzie et al., 2002). This is being encouraged by many universities and it is used as a performance management tool for evaluating academic staff. Adomi & Mordi (2003) carried out a research in some west African universities and found out that universities clearly

maintained that articles published in international journal is a pre-requisite for promotion to senior rank. Akerlind (2005) added to the existing literature on how academicians experience growth and development. In his research he found out that there are three areas of focus in academic performance which include personal learning, disciplinary and social change. Academic performance entails increasing work output, academic standing and work quality while personal learning is an ongoing accumulation of knowledge and skills or becoming an authority by having in-depth understanding of one's field of study. Lastly, the disciplinary or social change is how academicians can contribute to the community through their expert knowledge on a particular field of study.

Academic staff engagement in scholarly productivity is determined by various factors. According to Allison & Long (1990); Stack (1994), the following factors are critical. Firstly, what is collegial expectation? This entails what the college or university expect from the staff in terms of conducting research. Secondly, how does the university reward staff who engages in research. Thirdly, how is the staff intellectually inspired by conducting research and lastly whether institutions physical facilities are available to support research. Higher institutions with graduate programs have higher research output compared with institutions that only offers graduate programme. The reason behind this is some graduate programs have a strong aspect of research where students must undertake research before they graduate. Another aspect that affects research output is workload. Academic staff with heavy workload of either teaching or administration find it difficult to create time to undertake research. Undertaking research is time consuming and anybody who wants to engage in research must create time. In study conducted to ascertain the effect of workload on academic research output, it was found out that heavy workload indeed affect research output. (Harley, 2002; Harley & Lee,1997; Lucas,2001).

Well-equipped libraries can be an important resource in institutions of higher learning in stimulating research. Libraries equipped with e-journal, high internet speed and other facilities can facilitate research. Journals provide a good avenue for academic staff to find out various research output and can be a very good source to find gaps for further research. Departmental stimulation through organizing of seminars and conferences can also enhance research output by equipping staff on how to undertake research.

Gender and publishing is an area that has been researched on in order to find out whether there exists a difference between genders in relation to publication. In trying to find out whether male and female have disparities in research, it has been found out that male scientists are able to publish twice as much as female scientists and the citation of male work is more than that of women (Cole & Singer, 1991). This gender disparity has been termed as a productivity puzzle (Xie & Shauman 1998, 2003). This divide has been attributed to greater parenting and marital responsibilities of women. Some of the earliest studies on gender and publication showed that compared to men,

women publish less (Cole & Zuckmen 1984). This scenario has been attributed to gender differences associated with the position one holds and other factors as well (Xie & Shauman,1998; Smeby & Try, 2005).

The phrase “Publish or perish” is a common in most institutions of higher learning and academic circles. Lewin (1975) opines that this is a myth since most academicians do not have any publication in any journal. This fact is also supported by Ladd & Lipset (1977) in their research. Despite the fact that most academicians have not had any research output, researchers feel that publication is very important in promotions and career development (Tien & Blackburn, 1996). Research activities have increased in some universities and they are being used a criteria or performance indicator when research universities are being evaluated on research activities Toutkoushian et al. (2003). Universities are using the amount of research that is done as a performance indicator and most of them are up to over 50 percent. In the Times-QS “World university rankings, research activity is used as a performance indicator among others like education, graduates and internationalization. Of this, research is considered as the most important contributing 60 per cent enhancement of academic effectiveness (The Times Higher Education Supplement, 2004). This therefore shows that research activity is beneficial to the individual as well the university. For universities, academic research output can give universities competitive advantage. The landscape of provision of education services has changed and the consumers of are looking for the best service providers. Since research activity is used as one of the criteria for ranking universities, those that engage in research are more likely to be ranked better than those that do not engage in research thus attracting students from across the globe. Students perceive their ranking as a sign of quality.

Libraries in universities are regarded as the most important pillar in academic research. For libraries to effectively support research, they need various resources that are needed in the library to support research. Among the library resources that need to be provided are labor, budget and book collection. The library resources cannot be limited to the mentioned three. According to various statistical indicators stated in the Korean Library Yearbook 2009, there are more than 70 different types of university library resources that are needed to support research

Researchers have also tried to ascertain whether there exist relationship between books in libraries and research output. Some research has shown a positive correlation between the library resources in terms of book collections and research output. In trying to determine the relationship between the number of books in the library and research output , some researchers have concluded that collection of books in the library and research output are proportional (Lee, 2005). This implies that the faculty library with more book collections produce more research papers. In his research he concluded that there is a positive correlation between the numbers books in the university library and the research achievements. In a similar study Han (2005) in her research on research and

development universities in Korea found out that universities that invest in library resources are more likely to improve their research competitiveness. It is therefore necessary for universities to invest in resources that support academic research which include books, journals both printed and electronic. In a similar study Ocholla (2007); Onyancha (2007); Sitieni & Ocholla (2010) emphasized that journal are the leading source of scholarly publications and quite often African scholars prefer to publish in foreign journal.

Without providing these resources universities research output will probably continue to be minimal from most universities. Provision of resources will act as catalyst as well as provide a basis for academic staff to engage in research.

There has been an ongoing debate whether collaboration increases research productivity. This debate has had its share of criticism and there has been dissenting views about it. The critical point is that collaboration is important. Most researchers who collaborate especially distinguished researchers aim is not to increase their own productivity but to act as mentors for junior researchers and students (Bozeman & Corley, 2004). The motivation for collaboration has been a hot debate which has also been researched over some time by various researchers. The fundamental question has been whether collaboration increases productivity. A research done by Beaver and Rosen (1978) to ascertain the motivators of collaboration identified a number of motivation among them access to special equipment and facilities, access to special skills, access to unique materials, access to visibility, efficiency in use of time, efficiency of use of labor, to gain experience, to train researchers, increase productivity, to multiply proficiencies. Another study on collaboration and research productivity include among the recent one where (Melin, 2000) conducted a survey to ascertain the motivation and benefit of collaboration. She surveyed 195respondents and found out that co-authors has special competence, special data or equipment. The social reasons include old friends, past collaboration, supervisor student relationship and development and testing new ideas. In relations to the benefits, the study concluded that collaboration increases knowledge, higher scientific quality outcome, enhances contact and connections for future work and generate new ideas. (Beaver, 2001) was also in agreement that collaboration leads to higher productivity. Collaboration gives other researchers opportunity to use their skills where other researchers may not be competent and contribute their strong skills and knowledge. In collaboration, each collaborating partners have something to offer that the other partners may not have. It has been found out that scientists who are not from English speaking countries or who are not fluent in English are eager collaborate (Bozeman & Corley, 2004).

In Africa, it has been found that there is little research collaboration despite its benefits of advancing research as per (Onyancha, 2007; Ocholla & Ocholla, 2007). More Specifically, Ocholla (2007) found out that collaboration between library and information profession is low due to lack of

willingness to corporate, poor networking, lack of collaborative research funding and insufficient joint research work between students pursuing graduate studies and their supervisors.

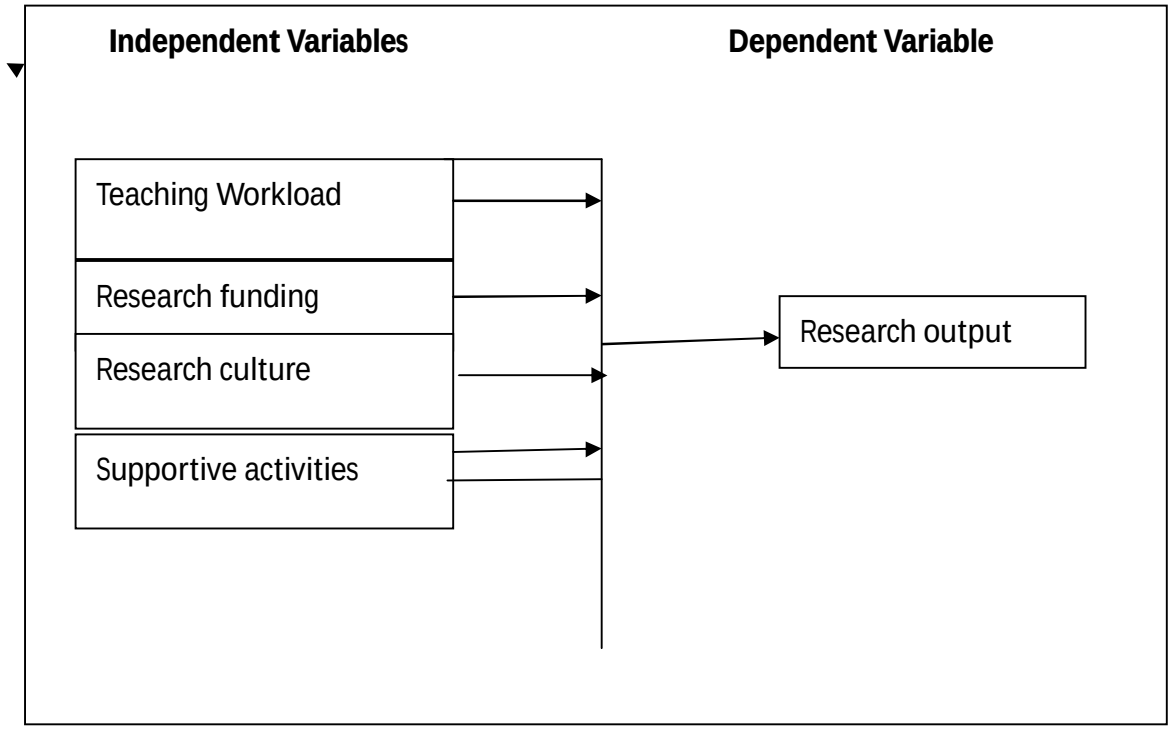

Figure 2.1 Conceptual framework

After a thorough literature review, the study considered four broad factors which were drawn from various literature reviews as factors which determine research output. They included, Teaching workload, Research culture, Funding and Support. In teaching workload, the amount of work that academic staffs are involved with affects research output. The university research culture as a determinant of research considered the aspects on how universities view research. Conducting research is a costly undertaking and therefore the funding is a critical factor in relations to research output. It has been argued by scholars that the number of research output depends on the amount of funding. A research done by Gulbrandsen & Smeby (2005) on a sample of Norwegian lecturers, found out that there evidence of a positive relationship between external funding and lecturers' scientific performance. In order to ensure that academic staff undertakes research, various supportive activities and structures must be in place.

From the four main determinants that were identified the study considered other sub determinants or factors in each main determinant as follows. Teaching workload considered the following; Heavy workload, reduced workload, workload in administration responsibilities, and whether universities

have a policy regulating work load (workload management policy)
In research culture , the following factors were considered, research seminars , research groups, recognition of research output, whether universities uses research output as a performance management tool for academic staff,(research appraisal), research mentors, research training, research funding, research participation, and research development in terms of how university promotes faculty development
The third aspect that was considered was funding. Among the sub-determinants considered were internal funding of faculty staff to conduct research (funding internal), whether the university provides research funding (funding provision), the procedures for research funding (funding procedure), whether the amount provided for research is enough (funding enough) and whether the staff are aware of the funding grants available (funding grants)
Lastly, in support activities the following factors were considered. Does universities support research (support management), the research policies (support policies), whether research policies are geared to supporting research (Support policy support) whether there is a research department that supports research (support department), the availability of electronic resources (support e-journals), the availability of research journal in library (support Library) the support to present papers in conferences (support conferences) , making the staff aware of availability of external research funding (support exfunding) and whether the university collaborates with other universities in research project (support collaboration)

3. Methodology

This study adopted an exploratory study in order to identify the key issues and key variables.
The population of study was the academic staff of universities in Kenya both public and private. A sample was chosen from the population by use of convenient sampling. The data collection instrument was a questionnaire. The questionnaire had closed ended questions where the five point liekert scale was used to ascertain the respondent's opinions. A total of 54 respondents both male and female responded to the questionnaires. The data was analyzed by use of Exploratory Factor Analysis which sought to find out the factors. In factor extraction the study applied Principal Component Analysis. Factor extraction was meant to determine the smallest number of factors that could be used to determine which factors that affect academic staff from engaging in research explained the greatest variations. Further factor rotation was done to determine the factor loading.

4. Data Analysis

4.1 Factor Analysis

The output of academic research from academic staff in most institutions of higher learning has been very low. One of the major roles of universities is research apart from teaching and community service. Conducting research is an important role that universities are expected to undertake and come up with solutions to problems that affecting various aspects in the environment. This therefore implies that academic staff in universities must engage in research. Unfortunately this is not the case and this research sought to find out determinants of academic research output among academic staff.

From empirical studies a number of factors have been explored as factors that affect research output. After a through literature review, the researcher found out that there are number of determinants that affect research output. The 28 determinants that were identified were grouped into four major categories which included Workload, Research culture, Funding and Support activities. Using Exploratory Factor Analysis (EFA), the study sought to find out the determinants that are affecting academic staff from engaging on research. In order to analyze these determinants a factor analysis was done to get a small set of variables from these large set of variables in order to identify a relatively small number of factors that can be used to represent relationship among a set of many interrelated variables.

In factor extraction the study applies the Principal component analysis (PCA) meant to decompose the variation in a multivariate data set into a set of components such that the first component accounts for as much of the variation in the data as possible . Factor extraction was meant to determine the smallest number of factors that could be used to determine which factors that affect academic staff from engaging in research explained the greatest variations. From the principal component analysis it was noted that 76.46 per cent of the variations were explained by the first 10 components as per table 1. This fact is confirmed with the initial eigenvalues confirmed that the first ten values had an eigenvalues of more than 1. A screen plot further displayed ten components which had eigenvalue of more than one. After extraction of the 10 components by the use of principal component analysis, the study further sought to explain the predictors. In component 1 workload administration explains the greatest variations. (.671) followed by funding provision (.647) while research mentors explains (.634). In component 2 workload reduction and support policy explain the greatest each with (.606) followed by funding awareness. Variations in component 3 are explained by research output (.633) followed by research seminar (.618) while support research department explains (.537). Research training (.609) explains the greatest variations in component 4 while in component 5 support library (.508) explains the greatest variations.

Component 6,7 8 9 and 10 were not explained by any variations

Table .1

Total variance explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.124	15.274	15.274	2.693	9.975	9.975
2	2.91	10.779	26.054	2.385	8.832	18.806
3	2.577	9.545	35.599	2.186	8.094	26.901
4	2.25	8.332	43.93	2.178	8.066	34.966
5	2.017	7.471	51.401	2.177	8.064	43.03
6	1.583	5.863	57.264	2.009	7.441	50.471
7	1.548	5.735	62.999	1.993	7.381	57.852
8	1.346	4.985	67.984	1.847	6.839	64.691
9	1.181	4.374	72.358	1.75	6.482	71.174
10	1.109	4.108	76.466	1.429	5.293	76.466
11	0.815	3.018	79.484			
12	0.785	2.907	82.391			
13	0.733	2.716	85.107			
14	0.631	2.338	87.445			
15	0.587	2.173	89.618			
16	0.578	2.139	91.756			
17	0.486	1.799	93.556			
18	0.431	1.595	95.15			
19	0.31	1.15	96.3			
20	0.276	1.023	97.323			
21	0.204	0.755	98.079			
22	0.148	0.549	98.628			
23	0.132	0.489	99.117			
24	0.097	0.361	99.478			
25	0.055	0.203	99.68			
26	0.048	0.176	99.857			
27	0.039	0.143	100			

Extraction Method: Principal Component Analysis.

Table 2

Component matrix

	Component									
	1	2	3	4	5	6	7	8	9	10
Workload_administrative	0.671									
Funding_provision	0.647									
Research_mentors	0.634									
Support_ejournals	-0.604									
Wokload_heavy	0.598									
Workload_mgtpolicy	0.596									
Funding_sufficient	0.55									
Research_funding	0.518									
Research_seminar										
Worload_reduced		0.606								
Support_supportpolicy		0.606								
Funding_awareness		0.509								
Support_conferences										
Research_groups										
Research_output			0.633							
Research_seminars			0.618							
Support_researchdept			0.537							
Research_training				0.609						
Funding_procedure										
Funding_internal										
Support_funding					-0.65					
Support_library					0.506					
Support_awarepolicy										
Support_research										
Support_collaboration							-0.534			
Research_appraisal										
Research_development										

Extraction Method: Principal Component Analysis.

a.10 components extracted

After factor rotation by Varimax with Kaiser Normalization method, the rotation revealed 10 components. Workload management policy explained the greatest variations (.820) followed by

research mentors (.787) while research seminar explained (.597). After rotation research funding(.708) explains the greatest variations, followed by workload administration (.658) and then followed by funding provision in component 2.Variotions in component 3 is explained by Research appraisal (.828), followed by workload reduced(.658) while support research explains (.540) Component 4 after rotation ,Support conferences (.814) explain the greatest variations followed by research group(.725).

Support journal (.715) explains the greatest variations in component 5 followed by research training (.674). After rotation it was revealed that funding procedure (.767) explain the greatest variation followed by Funding awareness (.764). Variations in component 7 are explained by support research department (.764) and support training (.762) explain the variations In component 8 support awareness policy explains (.885, while in component 9 support collaborations explains (.779) and component 10 Research development explain (.873). Table

Table 3

Rotated component matrix

	Component									
	1	2	3	4	5	6	7	8	9	10
Workload_mgtpolicy	0.82									
Research_mentors	0.787									
Research_seminars	0.597									
Wokload_heavy	0.512									
Research_funding		0.708								
Workload_administrative		0.658								
Funding_provision		0.636								
Research_output		-0.606								
Funding_sufficient		0.574								
Research_appraisal			0.828							
Worload_reduced			0.727							
Support_research			0.54							
Support_conferences				0.814						
Research_groups				0.725						
Support_ejournals					0.715					
Research_training					0.674					
Support_supportpolicy					0.63					

Funding_internal	-0.539					
Funding_procedure		0.767				
Funding_awareness		0.764				
Support_researchdept			0.764			
Support_funding			0.762			
Support_awarepolicy				0.885		
Support_collaboration					0.779	
Support_library						
Research_development						0.873
Research_seminar						

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Table 4

Factor extraction

FACTOR	LOADINGS	
Workload Management policy	0.82	Research culture and Workload (PRIMARY)
Research mentors	0.787	
Research Seminar	0.597	
Workload heavy	0.512	Funding (SECONDARY)
Research funding	0.708	
Workload administration	0.658	Support activities (SECONDARY)
Funding provision	0.636	
Sufficient funding.	0.574	
Research appraisal	0.828	
Workload reduction	0.727	
Support research	0.54	

5. Conclusions

After factor rotation the factor loading in component one showed four factors which included that included workload management policy, research mentor, research seminars and workload heavy. These were considered to be factors that affect research output. These factors were labeled as research culture and workload. They were considered as primary factors that can enhance research output. There is need for universities to have clear policy that governs the workload of staff so that they can create time to undertake research. Research mentors are critical in mentoring junior academic staff to undertake research. Researches seminars should be encouraged and conducted to train people how to undertake research. Lastly heavy workload affects acdemic staff research output. This concurs with the research done by (Harvley, 2002; Herley and Lee,1997 and Lucas 2001) who found out that workload indeed affects research output

The second loading displayed three factors which included research funding workload administration and funding provision. These factors were categorized as funding. Funding in real sense does promote research output through facilitation. The facilitation is availed only after the researcher has shown interest and has done a bit of research like proposal writing. So this was considered a secondary factor which does not directly promote research output but facilitates research. For a research to be funded there has to some initial research that has to be done. So it was concluded that funding is secondary factor and not primary factor that determines a research output. The third rotated factors that emerged in component three included, research appraisal, workload reduction and supporting research. After a critical analysis of these factors, they were labeled support activities. They support the research to be done but they are not directly involved in motivation staff to engage in research appraisal is where the evaluation process and reward is linked to research output. Workload reduction can only be effected in university where the academic staff are engaged in research and support of research those activities that are aimed at ensuring that research is continuous. These factors were also categorized under secondary factors that do not directly affect research output.

Therefore it can be concluded that some factors are more critical in ensuring research output from academic staff. These factor are termed as primary factors

5.1 Discussions

The result of this study clearly shows that there are various determinants of academic output. The major four determinants that were identified in this study include first, workload management policy which emphasizes that there is need for higher institutions of learning to have a clear policy on the load of teaching and administrative duties that academicians must undertake in order to create time to engage in research. Secondly, research mentors are critical in ensuring academic staff

engages in research. It is a fact that research is not easy to conduct and get its findings published in reputable journals. There is therefore need to have mentorship program by senior academicians who have had an experience in research and publication guides other junior staff on how to conduct research. This will create confidence and provide the necessary basic tools and information on how to carry out research. The third determinant that was revealed in this research was research seminar. There is need for universities to organize seminars so that academicians can share and present papers so that other academicians can be able to learn from others. This will also create the confidence among other academic staff to engage in research. Lastly the study also revealed that heavy workload is also a determinant of academic research output. If academicians have a huge workload in teaching is more likely to affect the research output. It has been ascertained in other researches that young academicians do encounter high teaching load and role overload (Lucas and Turner 2007), (Debowski, 2006).

It is therefore important to note that these factors that were identified were categorized as primary factors which are the most important determinants for research output among academicians. A part from these primary factors there were other determinants that were identified and were categorized under secondary determinants. Secondary determinants do not ignite research among academic staff but they support research. The primary determinants are important consideration when promoting research among young researchers who do not have research experience. The secondary factors are important and can promote research among experienced research scholars who have an experience on conduction research

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