Funding and Lecturer's Research Effectiveness in Public Universities in Uganda: A Case of Kyambogo University

Kasule Wilson George, Kanaabi Moses and Owino Philip
Kyambogo Universitiy, Uganda

Corresponding author's email address: gwkasule@kyu.ac.ug

Abstract

Adequate research funding is vital for generating and disseminating knowledge, skills and orientations that are critical to sustainable development. This study employed a cross-sectional survey method to examine the effect of funding on lecturers' research effectiveness at Kyambogo University as a case for other Ugandan public universities. The study target population was PhD holding lecturers at Kyambogo University. A sample of 127 was used to collect data using self-administered questionnaire. Data were analysed using descriptive statistics and Structural Equation Modelling. Descriptive results reveal that there is moderate level of research funding and moderate research effectiveness at Kyambogo University. Structural Equation Modelling result revealed that research funding is statistically and significantly related to Research effectiveness. It is hereby construed that when the lecturers are availed with adequate funds to conduct research, they are likely to produce quality research outputs worth publishing and presenting in national and international conferences. Since the availability of funding in a university is widely believed to determine the strengths of other capacity correlates, the study thus recommended further investigation into research funding and research effectiveness through mediated relationships by other organisational correlates. Additionally, University education policy makers and managers in Uganda should secure and commit more funds towards the research function in public universities like Kyambogo in a timely manner.

Keywords: Research, Funding, Lecturer, Effectiveness, Public Universities, Uganda

INTRODUCTION

Worldwide, there has been remarkable increase in university research funding from university budgets, government research grants and external funding mainly through university- industry linkages especially in the developed world (Auranena & Nieminen, 2010). However, the financing of research in the resource-constrained Sub-Saharan Africa, with weak industry-University research funding linkages and low philanthropy, has remained a major problem for both public and private universities as they cannot spur innovation and socio-economic development, thus, lead to improved quality of life for the masses (Kasule, 2015). Research funding in most Ugandan universities Kyambogo inclusive, is characterised by small financial budgets that are severely constrained by the many competing demands, hence resulting into low research productivity. Research funding in this study implied university funding to staff members during the process of conducting research, especially data collection, funding the costs of research publication, book authorship, and conference paper presentations, providing financial incentives for research publications, book authorship and graduate students' supervision to completion. The study set out to examine the effect of funding on lecturers' research effectiveness in public universities in Uganda using Kyambogo University as a case. The study was guide by the ensuing hypothesis: "there is a

statistically significant effect of research funding on lecturers' research effectiveness at Kyambogo University".

LITERATURE REVIEW

Theoretical Framework

The study was guided by the Organizational Support Theory and supplemented with the socio-technical systems theory. Organizational Support Theory provide invaluable insights regarding the relationship between employees 'performance and the level of support they receive from their employer (Boateng et al., 2019). Meanwhile the socio-technical systems theory accentuates the interaction and relationship between the social (employees) and the technical (technology, materials and other resources) components in an organization to achieve its goals (Mele et al., 2010). Accordingly, the aforementioned theories enabled the present study to be conducted from an informed point of view.

Empirical Review

Research Funding

The availability of financial support in a university has been deemed key in strengthening other capacity correlates (Kasozi, 2017). There is also a strong contention that the achievement of the university mission largely depends on the financial capacity and the funding mechanisms in place (Kyaligonza, 2015). European, American and some Asian governments show ideological commitment to fund research activities in universities. They ensure that research funds are selectively but adequately distributed to institutions that have demonstrated their research capacity to produce quality research output (Kyaligonza, 2015; Mouton, 2010). However, in Uganda the government has continued to allocate meagre funding to higher education, and the little it gives is allocated to the teaching rather than the research function of universities (Kasozi, 2017). Funding university research in Uganda therefore remains mostly an affair of individual faculty members, and those who are lucky to benefit from foreign Agencies especially in the Science-based faculties (Kyaligonza et al, 2015). However, the kindness and interests of donors are not static and should thus not be expected to stream in forever. In her strategic plan (2015/16-2019/20), Kyambogo University recognised research and innovation as one of the core functions. It even developed a research and innovations policy (2014), as a supportive tool to promote research in the university among others. However, the same university has had research funding budgetary allocations stagnating between 1 % and 2% of institutional budgets, with the actual allocations always falling far below the budgetary projections (KYU Budget book FY 2017/18 – 2020/2021). This may suggest that in practice, research productivity among lecturers is not a priority for both government and public university management, hence the need to examine the effect of research funding on lecturer's research effectiveness.

Research Funding and Research Effectiveness

Heng et al, (2020) reveal that funding was the most important factor for encouraging academic staff to enhance their research effectiveness in Canada, Kenya, India, Iraq and in other Asian countries. Starovoytova (2017b) also affirmed that the major problems faced by academic researchers in Kenyan Universities were inadequate funding for research and research infrastructure, low remuneration and self-sponsored publishing, all related to low funding as the major barrier to effective research productivity. Zhang et al. (2019) also reported a decrease in the amount of funding for research assistants and postdoctoral students as the main barrier to research performance in US Universities. Yang, (2017) reported that governmental research

funding was the most influential factor affecting research effectiveness among Taiwanese professors. Khalil & Khalil (2019) reported that financial barriers such as insufficient research funding were the most challenging impediments to research performance among academics in Saudi Arabia, Kuwait and Vietnam respectively. Similarly, Okendo, (2018) found that the low salary of the academic staff in a Tanzanian University does not encourage them to actively engage in research activities without additional funding for research.

METHODOLOGY

The study employed a cross-sectional survey method which made it possible compare many different variables at the same time (Creswell, 2014). The study was conducted in the seven academic units of Kyambogo University, the second largest of the nine public universities in Uganda, and the first to be created under the Universities and Tertiary Institutions Act (2001). The University has both sciences- and humanities-based faculties, and follows Uganda Government financial and other administrative regulations. That said, the University face infrastructural and funding challenges. Accordingly, this justify the generalisability of the study findings from Kyambogo University to other public universities.

Study Population

The study target population consisted of PhD-holding lecturers. Kyambogo University has 156 PhD-holding lecturers (KYU newsletter, Jan. /Feb. 2021). This affirmation was corroborated by records from faculty administrators about the number of PhD academic staff in their faculties. The study's focus on only the PhD-holding lecturers was guided by the Kyambogo University Human Resource Policy (2014) and the Makerere University Appointment and Promotion Policy (2006 –2014), which set a doctoral degree as the consensual minimum requirement for one to fully qualify as a lecturer. This is besides the fact that PhD training programmes are intended to, among others, build the trainees' research experience. PhD-holding academics are thus assumed to be more competent in conducting research, preparing presentations, writing publications and supervising graduate students' research (Heng et al., 2020).

Sample Size and Sampling design

The sample size was determined by Krejcie and Morgan (1970)'s Table of Sample Size Determination. Out of the 149 respondents to whom the questionnaire was distributed, only 127 lecturers responded and filled in copies were returned to the researcher, representing a return rate of 85%, which is considered adequate for social science studies (American Association of Public Opinion Research, 2011). The sampled population was divided into seven clusters, each corresponding to one of the seven faculties/schools. To obtain a representative sample of lecturers from the seven faculties, cluster sampling coupled with simple random sampling were used to get the respondents from each faculty/school to participate in the study. The researcher first contacted respondents through phone calls and e-mails and asked them to participate in the study. Those who responded positively received the questionnaire either in hard copy or in soft copy using the Google forms application.

Research Procedure

The research was approved by Kyambogo University Graduate School, cleared by Gulu University Research Ethical Committee, Uganda National Council for Science and Technology. Lastly, permission was sought from Kyambogo University Secretary to obtain data. The researcher contacted the lecturers through the faculty administrators and heads of department, who provided the respondents' telephone and e-mail address

contacts, on which they were called and sent e-mails requesting them to participate in the study and to indicate the mode of questionnaire delivery. The number of positive responses obtained was 149, and questionnaires were distributed together with an introduction letter, a clearance letter and a consent form to the respondents. Twenty-seven respondents opted for online questionnaires while 122 received hard copies.

Data Collection

A five-point Likert scale self-administered questionnaire was administered to the lecturers. The five-point scale on agreement and frequency was considered to clearly capture valid and reliable data on the opinions of the respondents on research funding and research effectiveness (Pearse, 2011). The questionnaire was subjected to expert opinion validation by three management experts, two of whom were at the rank of senior lecturer and the third at that of associate professor for content validity, whose index was 0. 83 for research management and 0.78 for research productivity. Thereafter, it was pilot-tested on lecturers at Makerere University Business School and reliability tests were conducted using SMART-PLS to generate measurement models, which revealed Cronbach alpha and composite reliability values of 0.77 and 0.85, respectively, for research management while the same measures for research productivity stood at 0.79 and 0.88, respectively. Changes that were recommended by the validation panel, and those identified as needed during the pilot test, with regard to the wording of items, the design of scales, and the instructions for completing the study instrument were incorporated.

Data analysis

Data were analysed using descriptive statistics which helped to describe and summarize data in a meaningful way. In order to be able to make a decision on the study hypothesis, Structural Equation Modelling was used to measure and analyze the linear causal relationships among the study variables.

RESULTS

The descriptive statistics were performed to establish the strengths of each variable facet used in the study. Table 1 gives the results regarding status of research funding at Kyambogo University.

Table 1: Research Funding Descriptive Results (N = 127)

	Research Funding		**SD**	**D**	**UN**	**A**	**SA**	**Mean**
1	Gives financial incentives to lecturers for their research publications	*f*	41	41	22	18	5	2.25
		%	32.3	32.3	17.3	14.2	3.9	
2	Promptly pays lecturers' allowances for supervising graduate students (Masters and Ph. D) to completion	*f*	56	37	15	16	3	2.00
		%	44.1	29.1	11.8	12.6	2.4	
3	Does not meet lecturers' books publication costs (R)	*f*	13	22	25	38	29	3.38
		%	10.2	17.3	19.7	29.9	22.8	
4	Does not give monetary rewards to lecturers for publishing books in their academic disciplines (R)	*f*	9	5	27	41	45	3.85
		%	7.1	3.9	21.3	32.3	35.4	
5	Does not give lecturers monetary rewards for publishing book chapters in their academic disciplines (R)	*f*	8	6	24	41	48	3.91
		%	6.3	4.7	18.9	32.3	37.8	
	Overall mean							3.077

Source: Primary data

Table 2: Descriptive Statistics for Research Effectiveness (N = 127)

	Research Productivity							
			Never	***Rarely***	***Sometimes***	***Always***	***Frequently***	**Mean**
	Articles Publication							
1		f	4	11	32	59	21	3.65
	I publish my articles in peer reviewed journals	%	3.1	8.7	25.2	46.5	16.5	
2		f	13	34	26	32	22	3.13
	I collaborate with members within my department to develop research publications	%	10.2	26.8	20.5	25.2	17.3	
	Book Authorship							
3	I author book chapters in my academic disciplines	f	20	40	40	16	11	2.67
		%	15.7	31.5	31.5	12.6	8.7	
4	I author books in my academic disciplines	f	41	42	20	10	14	2.32
		%	32.3	33.1	15.7	7.9	11.0	
	Conference Presentation							
5	I present papers in my faculty conferences	f	23	40	29	23	12	2.69
		%	18.1	31.5	22.8	18.1	9.4	
6	I present papers in national conferences	f	16	32	39	26	14	2.92
		%	12.6	25.2	30.7	20.5	11.0	
7	I present papers in international conferences	f	6	19	36	41	25	3.47
		%	4.7	15.0	28.3	32.3	19.7	
8	I participate in formal departmental research teams to prepared conference papers	f	8	26	34	38	21	3.30
		%	6.3	20.5	26.8	29.9	16.5	
	Student Supervision							
9	I supervise masters' students to timely completion.	f	9	17	24	40	37	3.62
		%	7.1	13.4	18.9	31.5	29.1	
10	I supervise PhD students to timely completion	f	50	26	10	29	12	2.43
		%	39.4	20.5	7.9	22.8	9.4	
	Overall Mean							3.02

Source: Primary data

Table 1 shows the descriptive statistics about research funding which was the independent variable. According to the findings from the Table above, the overall mean (3.07) implied a moderate level of research funding for research effectiveness. Specifically, all the five items had cumulative percentages lying on the side of relatively low funding for research activities. For instance, on the item "The University promptly pays lecturers' allowances for supervision of graduate students' research to completion, 73% disagreed with the statement as opposed to only 15% that were in agreement. This implies that 85% of the lecturers were not satisfied with the promptness of payment for their graduate students' research supervision allowances yet this is one of the measures for lecturers' research effectiveness in a university. Similarly, on the reversed items "The University does not give monetary rewards to lecturers for publishing books and book chapters respectively, 68% and 70% agreed with the statements in contrast to the 11% who disagreed. This implies that the University does not adequately reward its lecturers for research output which would be a motivating factor for increased research effectiveness.

Table 2 shows descriptive results about research effectiveness which was the dependent variable for the study. The overall mean (3.02) implied a moderately low research effectiveness in the university. Specifically, seven of the ten items used to measure research effectiveness had high cumulative percentages lying on the side of low research effectiveness. For instance, 58% of the lecturers indicated that they rarely collaborate with members within their departments to develop research publications. Similarly, 81% and 79% of the lecturers indicated that they hardly author books and book chapters respectively in their academic disciplines, with a mean value of 2.32 for books and 2.67 for book chapters. Regarding conference presentations, 72% of the lecturers indicated that they rarely present research papers in faculty-based conferences, while 69% indicated that they hardly present in national conferences. This implies that teaching faculties in the University rarely organise academic conferences for their lectures to present their research findings, which is a key indicator of research effectiveness in the university. Regarding graduate students research supervision, 61% of the lecturers indicated that its common practice for them to supervise masters' students' research to timely completion. On the other hand, only 32% of them indicated to have supervised PhD students' research to completion as opposed to the 29% who rarely do so, and the 39% of the PhD holding lecturers who attested that they have never supervised any PhD student's research. This implies that there could be few PhD programmes in most academic faculties, which denies lecturers the opportunity to work with graduate students to promote their research effectiveness. Furthermore, the data was subjected to Structural Equation Modelling. Figure 1 shows the results regarding whether there is a significant relationship between research funding and lecturers' research effectiveness.

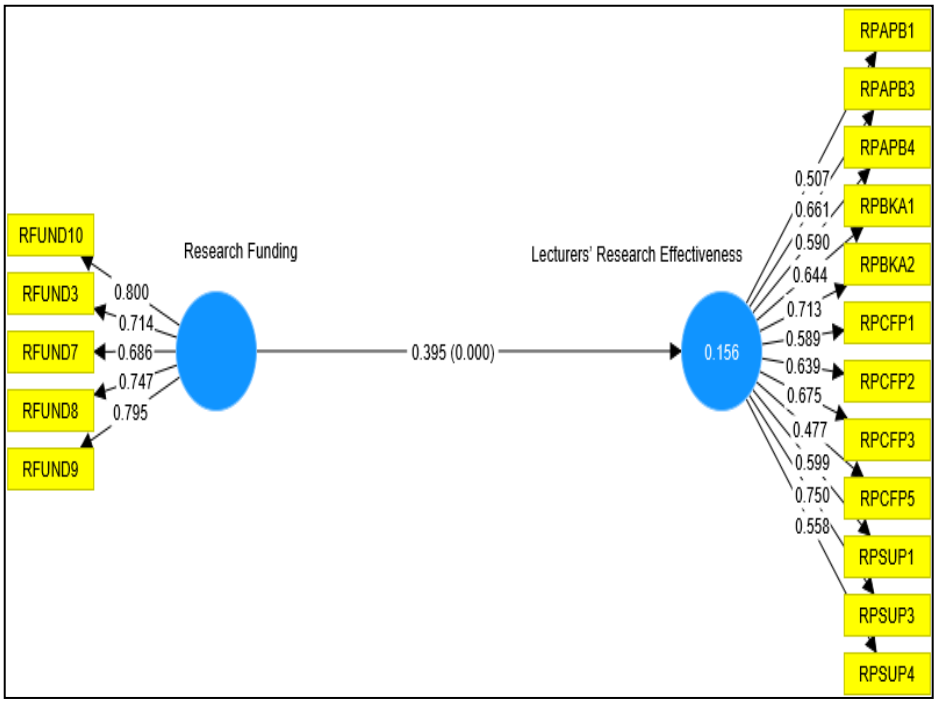

Figure 1: Structural Model

Variance Prediction Estimates

	R-square	R-square adjusted
Lecturers' Research Effectiveness	0.156	0.149

Bootstrapped Structural Model Estimates

	Beta	Std. Error	T statistics	P values
Research Funding -> Lecturers' Research Effectiveness	0.395	0.069	5.741	0.000

Results from the model revealed that research funding is statistically and significantly related to the Research effectiveness (β = .395, p = 0.00). The results in this study indicate that when the lecturers are availed with adequate funds to publish articles and books. On top of being financially rewarded for their publications, they will be motivated to produce quality research outputs that can lead to innovation and socio-economic development. The findings, lead us to accept the hypothesis that there is a statistically significant effect of research funding on lecturers' research effectiveness.

DISCUSSION

Research Funding

Authors such as Neema & Chandrashekar (2021) ascertain that funding is a basic organisational support facet for research effectiveness. Study results herein indicated that research funding at Kyambogo is still generally low and bedeviled by irregular delays, application rejections, and funds deductions. The study also found out that funds allocated to individual lecturers remain too limited to cater for all research

expenses such as hiring research assistants and procuring research equipment. Moreover, the university is yet to develop the capacity to secure big research grants especially in science disciplines. This could be attributed to the lack of senior staff to mentor and train other academics in quality grant wining research project proposal writing. It could also be due to the absence of research management Units like the research grants office to coordinate and support academics to write quality grant winning proposals as is the practice in research intensive universities (Beerkens, 2013). Results also indicated that there are bottlenecks in the process of procuring and accessing the limited funds from the university.

Research Funding and Research Effectiveness

Ordinarily, the availability of funding would be assumed to enable the creation of research support systems like hiring research assistants to help lecturers, recruiting more teaching staff to reduce lecturers' workload allocations and organising research dissemination conferences and exhibitions. Funding would also enable the creation of research management structures like the research and innovations office, research grants office, Research Ethical Committee and the research journal, all aimed at supporting lecturers in conducting research. The absence of funding may therefore negatively constrain individual lecturers from conducting research in an institutionalised approach to enhance the university research and publication function. The study findings are therefore in support of some earlier reviewed findings by Khalil and Khalil (2019), who reported that low funding and the increased rigidities in dispensing the meagre funds made it difficult to access research grants needed to conduct research, publish findings and attend research conferences, hence a demotivating effect on lecturers' research efforts in Kuwait University. The findings also conform to those of Putri and Sofyandi (2019), who reported that the increased funding ability of the university to provide opportunities for lecturers to attend conferences and research seminars resulted into increased research publications in Indonesia. The availability of funding is also assumed to enable the university provide and improve on the research supporting infrastructure such as improving internet connectivity, e-library services like subscription to online information resources, virtual library services that can be accessed even from off-campus, field and laboratory research equipment among others. The significant relationship between funding and research effectiveness does not only confirm the above supposition but is also in agreement with Nguyen et al (2016), who reported that academic staff research effectiveness in Vietnam Universities was limited by inadequate funding to provide research materials and equipment in addition to failure to meet academics' publication fees due to insufficient funding. The study findings also corroborate the propositions of the Organisational Support Theory used to guide the study, whose antecedents include organisational rewards such as financial payments for graduate students' supervision, and, article and book publication financial rewards. These are expected to generate increased employee performance such as increased research effectiveness for the case of this study.

CONCLUSION AND RECOMMENDATION

Low and delayed funding for lecturers' article publication costs, the absence of funding for book authorships, the meagre and delayed graduate research supervision allowances were found to be the major indicators of the low funding for research at Kyambogo. Accordingly, the significant relationship between research funding and research effectiveness imply that funding remains a critical support factor for research effectiveness. Thus, University education policy makers and managers in Uganda should secure and commit more funds towards the research function in public

universities like Kyambogo in a timely manner. However, this study just as any other empirical study has limitations. Accordingly, there is need for further investigation into research funding and research effectiveness through mediated relationships by other organisational correlates so that research effectiveness at Kyambogo is greatly improved.

ACKNOWLEDGMENT

The authors highly appreciate all the staff of Kyambogo University involved in the study for providing vital information that has made the study successful.

REFERENCES

Auranena, O., & Nieminen, M. (2010). University research funding and publication performance—An international Comparison. Research Policy 39, 822–834. doi:10.1016/j.respol.2010.03.003

Beerkens, M. (2013). Facts and fads in academic research management: The effect of management practices on research productivity in Australia. Research Policy, 42(9), 1679-1693.

Boateng, F. D., Makin, D. A., Abess, G., & Wu, G. (2019). Speaking out: Officers speaking about police misconduct in Ghana. The Police Journal: Theory, Practice and Principles, 92(2), 121–135. https://doi.org/10.1177/0032258x18768384.

Creswell, J. W. (2014). Qualitative, quantitative and mixed methods approaches.

Heng, K., Hamid, M., & Khan, A. (2020). Factors influencing academics' research engagement and productivity: A developing countries perspective. *Issues in Educational Research*, *30*(3), 965–987

Kasozi, A. B. (2017). The Impact of Governance on Research in Ugandan Universities. Makerere Institute of Social Research, MISR Working Paper, N^{O}.32, 60.

Kasule, G. W. (2015). Professional development on innovation competence of teaching staff in Ugandan universities. Wageningen University: Wageningen, ISBN: 978-94-6257-285-0.

Khalil, O. E. M., & Khalil, N. (2019). Business research productivity and barriers. International Journal of Productivity and Quality Management, 26(1), 34–57. https://doi.org/10.1504/IJPQM.2019.096990.

Kumar, R. (2014). Research methodology: A step-by-step guide for beginners (3rd ed.). London: Sage Publications Ltd.

Kyaligonza, R. (2015). An Investigative Study of Research Productivity of the Academic Staff in Public Universities in Uganda. Direct Research Journal of Social Science and Educational Studies (DRJSSES), 2(4), 60–68.

Kyambogo University Budget Book FY 2017/18-2020/2021.

Kyambogo University Human Resource Policy (2014).

Mele, C., Pels, J., & Polese, F. (2010). A Brief Review of Systems Theories and Their Managerial Applications. Service Science, 2(1–2), 126–135. https://doi.org/10.1287/serv.2.1_2.126.

Neema, S., & Chandrashekar. L (2021). Research Funding-Why, When, and How? Indian Dermatol Online Journal, 12(1):134-138. doi: 10.4103/idoj.IDOJ_684_20. PMID: 33768035; PMCID: PMC7982031.

Nguyen, Q., Klopper, C., & Smith, C. (2016a). *Affordances, barriers, and motivations: engagement in research activity by academics at the research-oriented university in Vietnam.* Open Review of Educational Research, 3(1), 68–84.

Okendo, O. E. (2018). Constraints of research productivity in universities in Tanzania: A case of Mwenge Catholic University, Tanzania. *International Journal of Education and Research*, *6*(3), 201–210.

Pearse, N. (2011). Deciding on the Scale Granularity of Response Categories of Likert type Scales: The Case of a 21-Point Scale. Electronic Journal of Business Research Methods, 9(2), pp159-171.

Putri, R. K., & Sofyandi, H. (2019). Research climate and institutional support in improving performance of scientific publications at private university in Indonesia. Universal *Journal of Educational Research*, 7(4), 67–71. Rafi, M., JianMing, Z., & Ahmad, K. (2019). Evaluating the impact of digital library database resources on the productivity of academic research. Information Discovery and Delivery, 47(1), 42–52. https://doi.org/10.1108/IDD-07-2018-0025

Starovoytova, D. (2017b). Research-productivity at engineering-school: Number of publications per faculty-member. *Journal of Education and Practice*, *8*(November), 14–38. Uganda Universities and Tertiary Institutions Act 2001.

Yang, J. C. C. (2017). A Study of Factors Affecting University Professors' Research Output: Perspectives of Taiwanese Professors. *Journal of College Teaching & Learning* (TLC), 14(1), 11–20. https://doi.org/10.19030/tlc.v14i1.9968.

Zhang, Q., Clayton, P. A., & Breznitz, S. M. (2019). *The Hope Fulfilled? Measuring Research Performance of Universities in the Economic Crisis*. International Regional Science Review. https://doi.org/10.1177/0160017619869788.