Research Management and Research Productivity among Lecturers at Kyambogo University, Uganda

MOSES KANAABI[1], GEORGE WILSON KASULE[2], PHILIP OWINO[3]
[123]*Department of Educational Planning and Management, School of Education, Kyambogo University*
P.O. Box 1 Kyambogo, Kampala, Uganda
Corresponding author email: moseskanaabi@gmail.com
(Accepted: 27 November 2022 / Published: 20 December 2022)
https://doi.org/10.58653/nche.v10i1.03

Abstract

Management is a critical factor for the performance of every organisation. Research management has thus become highly professionalised, with universities instituting systems, practices and structures to manage their research function. Universities also appoint high-level academic and administrative staff to coordinate, oversee and promote research activities to meet their research objectives. However, most universities in Uganda, Kyambogo, inclusive have not instituted functional research management. They still lack well-managed formal research teams, collaborations and partnerships, besides effective research training programmes, research monitoring, research ethical committees, journals and university press. This mixed-method study was, therefore, intended to investigate the effect of research management on research productivity at Kyambogo University. The study used self-administered questionnaires to collect quantitative data from 127 PhD-holding lecturers and interviews with seven key informers. The study applied structural equation modelling to analyse quantitative data and content thematic analysis for qualitative data. The results revealed weak research management in the university, and a positive and significant effect of research management on research productivity, with a Beta value of .402 and a P value of .000. The results imply that the near-absence of research management systems, practices and structures prevents lecturers from conducting research. The study thus recommended the institution of supportive research management systems, practices and structures in the university for increased research output among their academic staff.

Keywords: *Management; Research productivity; Lecturers*

Introduction

Management is a critical factor for the performance of every organisation. In the same vein, research management is a critical support factor for enhancing university research productivity. Research management has thus become highly professionalised, with universities instituting systems, practices

and structures to manage their research function, besides appointing high-level academic and administrative staff to coordinate, oversee and promote research activities to meet their research objectives (Beerkens, 2013). However, most universities in Uganda, Kyambogo inclusive, have not instituted functional research management. They still lack well-managed formal research teams, collaborations and partnerships, besides instituting effective research training programmes and research management units (Cloete, Maassen & Bailey, 2015; Kasozi, 2017). Many Ugandan public universities, Kyambogo inclusive, were transformed from teaching institutions, with research only being emphasised as a teaching component. Similarly, most of the academic staff they inherited had been basically trained as teachers and instructors but not researchers. Consequently, the research function of Ugandan universities, with Kyambogo being no exception, remains weak, with low research output among their academic staff (Cloete et al., 2015; Kasozi, 2017, 2019; Kyaligonza, 2015; Rukanyangira & Oidu, 2021). Research management in this study refers to hiring of research assistants to support lecturers' research activities, instituting formal research teams, establishing formal research partnerships and collaborations, allocating workloads that leave lecturers with enough time for research and instituting research management units like research grants offices, research monitoring offices, research ethical boards, university journals and a university press

Objectives, hypothesis and questions

The objective of this study was to investigate the effect of research management on lecturers' research productivity in Kyambogo University. The study was guided by a hypothesis, i.e. there is a statistically significant effect of research management on lecturers' research productivity in Kyambogo University. The study also sought to answer two research questions, namely: What is the level of research management support provided to lecturers in Kyambogo University? What is the level of research productivity among lecturers in Kyambogo University?

Literature Review

Research management and research productivity

While there is growing understanding of the broad trends in research management methods, there is still a shortage of empirical data demonstrating how these strategies affect research success in a Ugandan university context. Some studies (Iryna, 2018; Schubert, 2009) have revealed a positive impact of research management mechanisms, operational flexibility, target agreements, and an internal evaluation system for research output in the British and German universities. Other studies (Beerkens, 2013; Matovu, 2019) have reported that intensifying research management increases research productivity in universities. Regarding research barriers, studies (Feyera, Atelaw, Hassem et al., 2019; Okendo, 2018; Pulford, Crossman, Begg et al., 2020) have revealed that poor research management support systems were key research constraints in Sub-Saharan African universities. Similarly, Ramjaewon and Rowley (2020) report that the presence of research management structures like research management offices, research grants support offices, and research chairs and centres was a major enabler of research productivity in South African universities, while their absence in Mauritius was a critical research and innovations barrier.

However, some studies (Spapawawisit, Chandrachai, & Thawesaengskulthai, 2018) found research management to be the least critical factor for university research and innovation in Thai public universities, while others (Fullwood, Rowley, & Delbridge, 2013) did not find management to be critical to university research in the UK. It is also worth noting that the majority of the cited

studies were conducted in countries with well-established research management systems like the UK, Germany, Australia andSouth Africa (Iryna, 2018; Beerkens, 2013; Fullwood et al., 2013; Ranjeawon & Rowley, 2020). Other studies were conducted in private universities (Matovu, 2019; Okendo, 2018), hence the identification of contextual gaps in relation to a country with weak and developing university education sectors in Sub-Saharan Africa, Uganda inclusive. Conceptually, some studies approached research management from diverse angles, such as research quality assurance performance indicators (Matovu, 2019), research management support services and capacity (Pullford et al., 2020), research management structures (Ramjeawon & Rowley, 2020), while none of them concentrated on the identification of research activity areas and research training and monitoring of individual academics' research productivity, which were central to research management in the study.

One of the core research support management practices is the provision of research assistants to academic staff. These are sometimes hired from among graduate students as a component of their research training. Mody et al. (2018) and Nafukho et al. (2019) found that making research assistants available to faculty members in the US and Kenyan institutions, respectively, positively impacted on their annual publication counts. Similar earlier findings (Kyvik & Aksnes, 2015; McGill & Settle, 2012; Vabo, Alvsvag, Kyvik, & Reymert, 2016) all affirmed the close corroboration between post-graduate students as research assistants for academic staff to increase the academics' research productivity in the US, Iranian and Norwegian universities. Similarly, time is one of the most pertinent resources for academic staff and it is the first input in both the teaching and research processes. The scarcity model (Hattie & Marsh, 1996) affirms that research and teaching are competing activities and are thus detrimental to each other since they vie for time, energy and commitment, where more time spent on teaching implies less time left over for research and vice versa (Leišytė, 2016).This assumption was also confirmed by several studies (Albert et al., 2016abut family responsibilities do not explain this gender gap. The type of contract and tenure or rank do not seem to have any influence on productivity. Researchers seeking professional promotion rather than altruism or personal satisfaction are more productive and young scholars publish more than their older counterparts. Additionally, we find a certain research-teaching trade-off and some nuances in the predictors of publication productivity across birth cohorts and fields of study. Finally, international cooperation is one of the most relevant determinants of the number of publications, regardless of the birth cohort. The institutional context in the Spanish research system as regards requirements for promotion and the assessment of research outcomes may contribute to the understanding and interpretation of our results.","author":[{"dropping-particle":"","family":"Albert","given":"Cecilia","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Davia","given":"María A.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Legazpe","given":"Nuria","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"European Journal of Education","id":"ITEM-1","issue":"4","issued":{"date-parts":[["2016"]]},"page":"535-549","title":"Determinants of Research Productivity in Spanish Academia","type":"article-journal","volume":"51"},"uris":["http://www.mendeley.com/documents/?uuid=974a30c0-17a1-4de0-88fc-be9df282866f"]}],"mendeley":{"formattedCitation":"(Albert et al., 2016a; Alhija & Majdob, 2017; Hadre, Beesley, & Pace, 2018; Henry et al., 2020; Janib, Rasdi, Omar et al., 2021; Khalil & Khalil, 2019; Nguyen et al., 2016; Okendo, 2018; Putri & Sofyandi, 2019; Salman, Kausar, & Furqan, 2018; Starovoytova, 2017b; Zhang, Clayton, & Breznitz, 2019) who, without exception, indicated a negative relationship between time spent on teaching and lecturers' research output.

However, the conventional wisdom model (Hattie & Marsh, 1996) contends that research and teaching are complementary, intertwined and mutually beneficial activities where each informs the other (Hattie & Marsh, 1996; Smeby, 1998). This school of thought was supported by Johnson (2013), who found that teaching and research are intricately linked and interdependent. Other scholars (Jung, 2012) argue that research and teaching are not related and assert that heavy teaching loads do not essentially reduce research output in all situations. Other scholars (Sondari et al., 2017) even found it difficult to generate a consensus on the meaning of the time dimension as disagreements emerged from respondents and authors on whether time for supervision of graduate students and for structural position roles falls under teaching or under research. Ordinarily, the academic functions of teaching, student supervision and examination processing usually leave no time for scholarly obligations. This is more evident in institutions in the developing world, Uganda being no exception, where students' enrolments outmatch the academic staffing levels (Ramjaewon & Rowley, 2020; Wamala & Ssembatya, 2015). Since the reviewed investigation of the relationships between research management aspects and research productivity yielded varying results depending on the management variables examined and how they were quantified, and since some of those studies relied on secondary sources like systematic literature reviews while others were conducted in private universities and in specialised institutions offering particular courses like tourism and hospitality, business, accounting and finance, and STEM programmes, empirical, conceptual, methodological and contextual gaps emerged. Hence the need for this study to address and fill the gaps through a university-wide empirical study.

Methodology

The study employed a cross-sectional, correlational, exploratory mixed-method design to collect and analyse both quantitative and qualitative data, concurrently but separately (Creswell, 2014). Quantitative and qualitative datasets were compared to determine the existence of convergences, differences and combinations for proper validation and substantiation of findings (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), with both sciences- and humanities-based faculties, following the same financial and other administrative regulations and facing similar infrastructural and funding challenges. This is thus a basis for the generalisability of the study findings from Kyambogo University to other public universities.

Study population

The study target population consisted of PhD-holding lecturers, deans of faculties and schools and the Directors of Quality Assurance, the Director of Human Resource Management, the University Bursar, the University Librarian and the Director of ICT, totalling 168. The university has 156 PhD-holding lecturers (KYU newsletter, Jan./Feb. 2021). This assertion 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 (Alhija & Majdob, 2017; Heng et al., 2020; Henry et al., 2020).

Sample size

There are seven teaching academic units in Kyambogo University from which lecturers were drawn to participate in the study, as shown in Table 1 below.

Table 1: Population of PhD-holding academic staff from faculties/schools and the samples obtained

No.	Faculty/School	No. of PhDs	Sample
1	Arts and Social Sciences	36	33
2	Education	27	25
3	Engineering	16	15
4	Science	43	39
5	Special Needs and Rehabilitation	08	8
6	Vocational Studies	17	16
7	School of Management and Entrepreneurship	09	09
	Total	**156**	**145**

Source: Guidelines to Kyambogo University Faculty websites, 2021; KYU Vice Chancellor's speech at the induction of the new general assembly, 2021

Sampling design

The sample size was determined by Krejcie and Morgan (1970)'s Table of Sample Size Determination. Out of the 156 lecturers, the table suggested a minimum sample of 145 participants. Of the 145 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 88%, which is considered adequate for social science studies (American Association of Public Opinion Research, 2011). Out of the seven faculty/school deans, the researcher managed to access three deans for interview sessions. Of the three Directors of Quality Assurance, Human Resource and ICT Department, the researcher managed to access two, while the University Librarian and the University Bursar were also interviewed, bringing the total of the accessed population to 134 participants.

Table 2: Summary of the study population

Category of department	Target population	Sample size	Accessed population
Lecturers (PhD holders)	156	145	127
Faculty/School Deans	7	7	3
Directors of Directorates/Departments	3	3	2
University Bursar	1	1	1
University Librarian	1	1	1
Total	**168**	**157**	**134**

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 was used, while convenience sampling was employed to get the respondents from each faculty. 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. The sample of participants required for interviews was subjectively selected by the purposive sampling method among participants with the required information (Kumar, 2014). Purposive sampling was thus used for the selection of Deans of Faculties, the Directors of Quality Assurance, Human Resource Management and ICT, the University Librarian and the University Bursar, who were believed to have the needed information on research management in the university.

Data collection

The survey data collection involved the use of two data collection methods, namely a questionnaire survey and interview method. A five-point Likert scale self-administered questionnaire was administered to the lecturers, while an open-ended interview guide was used to collect qualitative data from the interview participants. 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 management and research productivity (Pearse, 2011). Data collection tools were treated 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. 833 for research management and 0.783 for research productivity. The questionnaire 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 0.779 and 0.858, respectively, for research management while the same measures for research productivity stood at 0.797 and 0.881, 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 instruments were incorporated into the instruments.

Data collection procedure: The research was approved by the Kyambogo University Graduate School, cleared by the Gulu University Research Ethical Committee, Uganda National Council for Science and Technology and Kyambogo University secretary to obtain data from the university. 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. Similarly, written requests for interviews with the interview guides, introductory and clearance letters, and consent forms were distributed to the sampled interview participants. Three deans, two directors, the University Librarian and the University Bursar accepted the request, and interview dates and time appointments were fixed. The researcher took notes of the participants' responses, without video- or audio-recording of responses, as this made most of the participants uncomfortable and the researcher realised that this was going to compromise some of their responses to interview questions.

Operationalisation and measurement of study variables

The dependent variable of the study was operationalised as number of journal articles published in peer-reviewed journals, book chapters published, research conference papers presented and graduate students (at master's and PhD levels) supervised to completion per lecturer in the previous five years (2015-2019). These measures of research productivity had been employed by several scholars (Henry et al., 2020; Ifijeh & Ogbomo, 2018; Jameel et al., 2019; Kim et al., 2007) in differing contexts, from which the study selected and adapted five widely used items that fit the Kyambogo University research contexts and modes across disciplines in the university. To address the quality issues, the data collecting instrument specified and collected data on the number of publications in peer-reviewed journals, since they are deemed to be of higher quality than non-peer-reviewed journals (Starovoytova, 2017). The items on research management were adopted and modified from Bay and Clerigo (2013), Kotrlik et al. (2002) and Ghabban et al. (2019), with some additional items incorporated to align with the Kyambogo University research management structures. All negative items were reversed and coded during analysis to appear positive.

Findings

The researchers conducted descriptive statistics to establish the strengths of each variable in the study. Table 3 gives the pertinent results.

Table 3: Research management descriptive results (N = 127)

	Research Management		SD	D	UN	A	SA	Mean
1	Has a well-established research and innovations unit	*f*	**46**	**45**	**14**	**17**	**5**	**2.13**
		%	36.2	35.4	11.0	13.4	3.9	
2	Has a developed research and innovations implementation manual to guide the implementation of the research policy	*f*	**33**	**45**	**29**	**17**	**3**	**2.31**
		%	26.0	35.4	22.8	13.4	2.4	
3	Has a functional University Research Grants and Publications Committee to support lecturers' research activities	*f*	**7**	**30**	**13**	**56**	**21**	**3.43**
		%	5.5	23.6	10.2	44.1	16.5	
4	Hires research assistants to support lecturers' research activities	*f*	**57**	**43**	**12**	**10**	**5**	**1.92**
		%	44.9	33.9	9.4	7.9	3.9	
5	Allocates teaching loads that leave lecturers with enough time for research activities	*f*	**30**	**56**	**13**	**22**	**6**	**2.35**
		%	23.6	44.1	10.2	17.3	4.7	
6	Factors in the time spent on research activities when computing lecturers' workloads	*f*	**47**	**45**	**15**	**15**	**5**	**2.10**
		%	37.0	35.4	11.8	11.8	3.9	
7	Has formally established collaborations with other research organisations for lecturers' research activities	*f*	**10**	**40**	**37**	**30**	**10**	**2.92**
		%	7.9	31.5	29.1	23.6	7.9	
8	Organises regular research dissemination conferences for its lecturers	*f*	**27**	**65**	**14**	**17**	**4**	**2.26**
		%	21.3	51.2	11.0	13.4	3.1	
9	Has its own functional journal for publication of lecturers' research outputs	*f*	**83**	**28**	**7**	**7**	**2**	**1.56**
		%	65.4	22.0	5.5	5.5	1.6	
	Overall mean							**2.33**

Source: Primary data

The overall mean (2.33) implies that research management systems, processes and units were still weak in the university. Specifically, seven of the nine items measuring this dimension had low means falling below 2.5. Such items had cumulative percentages lying on the side of low research management systems, structures and practices. For instance, on the item "The University hires research assistants to support lecturers' research activities", only 12% agreed with the statement, as opposed to the 79% of the respondents who disagreed, with a mean of 1.92. Such a perception implies that lecturers miss out on the support of research assistants, who would play a vital role in helping lecturers in field data collection and entry activities in a similar way the university hires teaching assistants to support lecturers in conducting tutorials in their teaching function. On the item "The University has a well-established research and innovations unit", 72% of the lecturers disagreed with the statement, in contrast with only 17% who responded in the affirmative. This implies that the university lacks research management structures to spearhead the implementation of the research and innovations policy. However, regarding the collaboration item "The University has formally established collaborations with other research organisations", 32% agreed with the statement, 39% disagreed, while 29% were undecided. The sharp division of opinion and the big number of undecided responses could imply that many lecturers had no information on the research collaboration opportunities that the university had formally established with external players from which they could immensely benefit in terms of research funding, training and co-authorships. Such findings further imply that research management as a form of support was still very low in the university.

The table below shows descriptive results for research productivity, which was the dependent variable for the study.

Table 4: Research productivity descriptive results (N=127)

	Research Productivity							
	Articles Publication		*Never*	*Rarely*	*Sometimes*	*Always*	*Frequently*	**Mean**
1	I publish my articles in peer-reviewed journals	**f**	**4**	**11**	**32**	**59**	**21**	**3.65**
		%	3.1	8.7	25.2	46.5	16.5	
2	I collaborate with members within my department to develop research publications	**f**	**13**	**34**	**26**	**32**	**22**	**3.13**
		%	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	

	Research Productivity							
	Articles Publication		*Never*	*Rarely*	*Sometimes*	*Always*	*Frequently*	**Mean**
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 master's 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 Ph D students to timely completion	**f**	**50**	**26**	**10**	**29**	**12**	**2.43**
		%	39.4	20.5	7.9	22.8	9.4	

No	Articles Publication		0	1 - 2	3 - 4	5 - 6	7 - 8	Mean
11	Number of peer-reviewed journal articles published	*f*	**6**	**35**	**45**	**13**	**28**	**3.17**
		%	4.7	27.6	35.4	10.2	22.0	
	Book Authorship							
12	Number of book chapters authored	*f*	**70**	**44**	**10**	**2**	**1**	**1.58**
		%	55.1	34.6	7.9	1.6	0.8	
	Conference Presentation							
13	Number of conference papers presented	*f*	**17**	**29**	**30**	**26**	**25**	**3.10**
		%	13.4	22.8	23.6	20.5	19.7	
	Student Supervision							
14	Number of master's students supervised to completion	*f*	**25**	**29**	**21**	**16**	**36**	**3.07**
		%	19.7	22.8	16.5	12.6	28.3	
15	Number of PhD students supervised to completion	*f*	**105**	**13**	**6**	**2**	**1**	**1.28**
		%	82.7	10.2	4.7	1.6	0.8	
	Overall mean							**2.82**

The overall mean (2.82) implies generally low research productivity in the university. Specifically, seven of the 10 items used to measure research productivity had high cumulative percentages lying on the side of low research productivity. For instance, 58% of the lecturers indicated that they rarely collaborated with members within their departments to develop research publications, 81% and 79% hardly authored books and book chapters, respectively, in their academic disciplines, 72% rarely presented research papers in faculty-based conferences, while 69% hardly presented papers in national conferences. This implies that teaching faculties in the university rarely organise academic conferences for their lecturers to present papers on their research findings. Regarding graduate students' research supervision, only 32% of the lecturers indicated that they had supervised PhD students' research to completion, as opposed to 39% who attested that they had never supervised

any PhD student's research. In a quest to further examine lecturers' research productivity, the study sought to analyse their productivity counts regarding the four measures of research productivity in the previous five years (2015–2019). The results still revealed low research productivity. For instance, 5% of the lecturers in the sample had never published any article in a peer-reviewed journal, while 55% indicated that they had never authored a book chapter, 14% indicated that they had never presented a conference paper, 20% had never supervised a master's degree student, and 83% had never supervised a PhD student to completion.

Qualitative findings

The qualitative findings indicated the diverse views of interview participants with regard to the level of research management support made available by the university and the level of lecturers' research productivity.

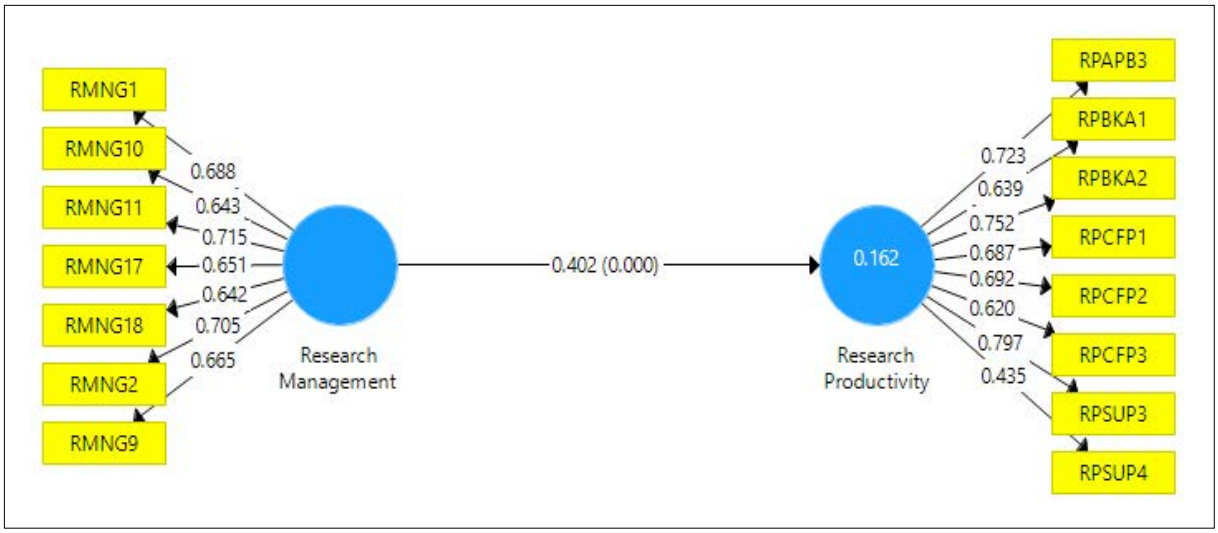
***Research management*:** The qualitative results were aligned along three main themes, namely: *research training and mentoring*, *research monitoring*, and *research management units*. These were assumed to create a favourable research environment in the university. One of the outstanding findings concerning research training and mentoring was the lack of experienced senior staff at the rank of associate and full professor to mentor the new and younger staff members in scholarly writing, grant proposal writing and publications writing. It, therefore, becomes difficult to pass on research competencies from one workforce generation to another, which is intended to build a solid pool of highly productive researchers. Another emerging issue about research management was research monitoring in the university. The findings revealed that there were no monitoring and tracking system to follow up lecturers' research progress from conception to dissemination of research findings, for purposes of extending support towards their research efforts. The findings revealed that the university management had not yet taken the evaluation of lecturers' research output as a priority, since it was still up to the individual lecturers to submit their publications for promotion.

Research management units are deemed relevant in coordinating various forms of research support to lecturers, ranging from identification of research funding opportunities, internal and external partnerships and collaboration opportunities, training staff in grant-winning proposal writing and ethical clearance, to monitoring and tracking research progress. The findings indicated that the university lacks a research and innovations office at the deputy vice-chancellor level in its structure, and that it lacks also a grants office to look out for calls for grants research proposals and guide staff on how to apply for them. The findings further revealed that there is no research ethical committee for ethical clearance of research projects. In addition, the findings revealed that the university does not have its journal for the dissemination of research. However, the findings indicated that the university has concentric layers of research grants and publications committees, ranging from departments to faculties and finally to the overall university level.

***Research productivity*:** Qualitative findings from interviews were interpreted to answer the second research question regarding the level of research productivity among lecturers in Kyambogo University. The emerging themes from the research productivity variable were aligned with the indicators of the variable in the study, namely: a*rticles publication, book authorship, student supervision and conference presentation*. The findings generally revealed that research productivity in all applicable forms is still low in the university, with book authorship being the lowest perceived form while conference paper presentation was the most visible form, although the quality of papers presented remains too poor to fetch awards. The findings from interviews confirmed the quantitative findings

which rated book authorship to be the lowest indicator of research productivity in the university. The number of graduate students supervised to completion indicates the level of a lecturer's engagement in research activities, hence his/her level of productivity.

Quantitative findings



The study objective sought to investigate the effect of research management on research productivity, hence the hypothesis that there is a statistically significant effect of research management on lecturers' research productivity in Kyambogo University.

Table 5: Structural equation model results

	Beta	STDEV	T Statistics	P- Values
Research Management → Research Productivity	0.402	0.070	5.754	0.000

Structural equation modelling results established a positive significant effect of research management on lecturers' research productivity in Kyambogo University ($\beta = .402$, $p < .05$). The findings thus led the study to accept the second hypothesis that there is a statistically significant effect of research management on lecturers' research productivity.

Discussion

Level of research management

Every university is expected to institute sound research management systems, structures with units and practices that promote its research function. The qualitative findings indicated that the university's research management was weak, with many departments lacking senior staff to train and mentor the younger junior staff members in research activities aimed at building a solid pool of active and experienced researchers in line with the university research and innovations policy objectives. Besides, the findings indicated the absence of annual research performance targets from faculties and departments, and descending to individual academics regarding research training and output. The qualitative findings also revealed the absence of supportive monitoring and tracking systems for lecturers' research performance. The results revealed the absence of guidance given to department heads on how to track research performance in their departments, the absence of a record of lecturers' research performance, and the non-existence of evaluation of lecturers' research output

by departments, faculties, the graduate school and the Quality Assurance Directorate. Consequently, there is no automatic and accelerated promotion of academic staff based on outstanding research performance. The findings further indicated the absence of research management units, such as the research and innovations office to manage research activities, coordinate research teams, partnerships and collaborations, secure research grants, and organise research conferences and training programmes, among others. The Research Ethical Review Committee and the university journal that would help to ease the lecturers' research ethical clearance and publication processes of their research findings respectively are also lacking.

The above findings are at variance with earlier findings (Beerkens, 2013; Ramjeawon & Rowley, 2020), who established that the increase in research output among academics in Australian and South African universities was a result of deliberate efforts to professionalise research management with universities appointing high-level academic and administrative staff at an equivalent level of deputy vice-chancellor whose sole responsibility was to oversee research activities. The findings were also in support of those by Fayera et al. (2017), Okendo (2018) and Kenya Commission of University Education (2013), who, in varying contexts, found poor management, supervision, monitoring and evaluation of university research programmes to be the major constraints on high-level research performance in Ethiopian, Kenyan and Tanzanian universities.

Level of research productivity

Both descriptive results and qualitative findings revealed low research productivity in the university. The low research productivity implies that the research culture in the university is still weak, with many academic departments lacking formally established research teams combining lecturers and graduate students to undertake joint research projects. The findings further strengthen the assertion that the research function in the university is still too individualized, with minimal institutional productivity support approaches. It is also worth noting that Kyambogo University does not have any centralised data bank on the research productivity of its lecturers and students apart from the repository under the Library Services Department. Depositing research output in the university repository is not a mandatory requirement, and many lecturers see no reason to deposit their scholarly works with the university after no support has been given to them during the research and publication process.

Book authorship was reported to be the lowest indicator of research productivity in the university. This could be attributed to the amount of time invested in book writing, the high costs of authoring and publishing books and the rigorous exercise of marketing books. With the absence of structured university support like the University Press to subsidise publishing costs and help lecturers to market their books, many lecturers tend to ignore book authorship and go for the easier-to-accomplish article publication and conference paper presentations. The university management should, therefore, consider instituting structured book publication support with incentives attached to motivate lecturers and increase the authorship of books and book chapters as part of the university research function.

Research management and research productivity

Descriptive results indicated a weak perception of research management as a form of support and low research productivity in the university. Likewise, structural equation modelling analysis results from testing the hypothesis that research management is a significant predictor of lecturers' research productivity. The findings confirm the notion that effective and efficient management practices are a

critical requirement for organisational performance (Beerkens, 2013; Ranjaewon & Rowley, 2020). The quantitative findings are at variance with some earlier findings (Jung, 2012; Johnson, 2013) that did not establish a strong direct relationship between research management practices, systems and structures, and research productivity as reviewed in literature. The quantitative findings, however, confirm those by Beerkens (2013), Ranjeawon and Rowley, (2020) and Pulford et al. (2020), who reported that intensifying research management through creating structures and systems increases research productivity growth, hence confirming the positive association between research management and research productivity. The significant positive relationship between research management practices, like the hiring and provision of research assistants to support lecturers' research activities, support earlier findings by Mody et al. (2018), Nafukho et al. (2019), Vabo et al. (2016), Kyvik and Aksnes (2015) and McGill and Settle (2012) who, in differing contexts, reported without exception that the provision of research assistants was positively associated with lecturers' research output.

Another university research management practice would be to facilitate the formation and operations of internal departmental, inter-departmental and inter-faculty research teams and collaborations. Such teams improve peer support, create platforms for research training and mentorship of junior staff by senior experienced staff in research activities, besides promoting inter-disciplinary synergies among lecturers. The significant effect of such research management practices thus implies that the absence of formal research teams and collaboration arrangements within the university could be a key predictor of the low research performance. The study findings were, therefore, in agreement with those of Nguyen et al. (2016), Khalil and Khalil (2019), Kwiek (2018), Putri and Sofyandi (2019) and Vabo et al. (2016), who found that research collaboration between colleagues at department and faculty levels provided peer support, especially in the form of training for younger and less experienced academics to improve their research skills, become more efficacious and motivated in addition to creating a supportive research culture for increased research outputs.

Besides internal university research teams and collaborations, inter-university and external collaborations between universities and other organisations, whether in industry, academia, non-governmental organisations or with state enterprises, are also assumed to bring together researchers from different backgrounds and contexts, resulting in inter-disciplinary synergies as well as research training opportunities. They also contribute to improvements in university research funding that is badly needed in underdeveloped countries like Uganda. The significant positive relationship between research collaboration management practices and systems and research productivity supports earlier findings by Abas et al. (2018), Ghabban et al. (2019), Garner et al. (2018) and Jameel and Ahmad (2020) who, in differing contexts, found university, government and industry research collaborations, international collaborations and inter-disciplinary research collaborations to be important factors for enhancing research productivity.

Conclusion and Recommendation

The **s**tudy findings showed that research management as a support factor for research productivity in the university was low. The findings also imply that lecturers cannot improve on their research output without supportive management systems, practices and structures being in place in the university. Besides literature building on research management and research productivity for future scholars, the study clearly provides university administrators with pertinent practical information useful for designing and developing research management systems, practices and structures, with particular emphasis on instituting a research and innovations unit at the level of deputy vice-chancellor to

organise and coordinate all managerial support to the university research function, a research grants/partnerships management office to secure grants and research collaborations with research funding agencies, and also to offer training in writing grant-winning research proposals. A Research Ethical Review Board/Committee, a university journal and a press should also be established to speed up research clearance issues and to support journal publication and book authorship among its staff members to improve its visibility in the scholarly world.

Limitations

The study had proposed very rich mixed data collection methods, including self-administered questionnaires, interviews and document analysis. However, the absence of centralised records on lecturers' research output in the university limited the corroboration of findings from the self-reported counts to address the issues of respondent bias, for a comprehensive data analysis on lecturers' research output.

Areas for further study

The study concentrated on research management as an organisational support factor for research productivity. However, productivity is an interplay of organisational and individual employee factors such as self-efficacy, ambition, interest, age, sex, family responsibilities and levels of motivation. The study, therefore, recommends future researchers to explicitly examine the impact of individual factors on research productivity.

Declaration

Funding

The study was self-funded by the corresponding author as a requirement for his PhD award study programme.

Conflict of Interest/Competing Interest

The researcher did not encounter any conflict or competing interests related to this study.

Availability of data and materials

The datasets used and/or analysed during the study are available from the corresponding author on reasonable request.

References

Abbas, J., Habib, M., & Noman, R. (2019). Are human capital, intellectual property rights, and research and development expenditures really important for total factor productivity? An empirical analysis. *International Journal of Social Economics*, 46(6), 756 –774. https://doi.org/10.1108/IJSE-09-2018-0472

Alghanim, S.A. & Alhamali, R.M. (2011). Research productivity among faculty members at medical and health schools in Saudi Arabia. Prevalence, obstacles, and associated factors. *Saudi Medical Journal*, *32*(12), 1297–1303.

Alhija, F. M. N. A., & Majdob, A. (2017). Predictors of teacher educators' research productivity. *Australian Journal of Teacher Education*, *42*(11), 34–51. https://doi.org/10.14221/ajte.2017v42n11.3

Bay Jr, B. E., & Clerigo, M. E. C. (2013). Factors associated with research productivity among oral healthcare educators in an Asian university. *International Education Studies*, *6*(8), 124–135.

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, J. K., & Tutu, R. A. (2018). Navigating the uncertain path of research partnerships. *Journal of Higher Education in Africa/Revue de l'enseignement supérieur en Afrique*, *16*(1/2), 77–94.

Cloete, N., Maassen, P., & Bailey, T. (2015). *Knowledge production and contradictory functions in African higher education*. African Minds.

Creswell, J. W. (2014). *A concise introduction to mixed methods research*. SAGE Publications.

Creswell, J. W., Klassen, A. C., Plano Clark, V. L., & Smith, K. C. (2011). Best practices for mixed methods research in the health sciences. *Bethesda (Maryland): National Institutes of Health*, *2013*, 541–545.

Feyera, T., Atelaw, H., Hassen, N. A., & Fufa, G. (2019). Publication productivity of academics in Jigjiga University, Ethiopia. *Educational Research and Reviews*, *12*(9), 559–568.

Ghabban, F., Selamat, A., Ibrahim, R., Krejcar, O., Maresova, P., & Herrera-Viedma, E. (2019). The influence of personal and organizational factors on researchers' attitudes towards sustainable research productivity in Saudi universities. *Sustainability*, *11*(17), 4804.

Hattie, J., & Marsh, H. W. (1996). The relationship between research and teaching: A meta-analysis. *Review of educational research*, *66*(4), 507–542.

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

Henry, C., Ghani, N. A. M., Hamid, U. M. A., & Bakar, A. N. (2020). Factors contributing towards research productivity in higher education. *International Journal of Evaluation and Research in Education*, *9*(1), 203–211.

Ifijeh, B.A., & Obaidjevwe, M.O., & Ifijeh, Goodluck (2018). Utilization of academic library resources for research productivity among lecturers in private universities in South-South Nigeria. *Library Philosophy and Practice* (e-journal). 2071.

Iryna. D. (2018). *Experience in Research Management in the United Kingdom Universities: Philosophical and Analytical Approach*, 1(5).

Jameel, A. S., & Ahmad, A. R. (2020). Factors impacting research productivity of academic staff at the Iraqi higher education system. *International Business Education Journal*, *13*(1), 108–126. *https://doi.org/10.37134/ibej.vol13.1.9.2020*.

Janib. J, Rasdi, R.M., Omar.Z, Alias S.N, & Zeinab. Z (2021). *The relationship between workload and performance of research university academics in Malaysia: The madiating effect of career commitment and job satisfaction*,17(2), 85–99.

Jung, J. (2012). Faculty research productivity in Hong Kong across academic disciplines. *Higher Education Studies*, *2*(4), 1–13.

Kasozi, A. B.K. (2019). Creation of the next generation of thinkers and inovators: Doctoral training in Uganda universities. *Makerere Journal of Higher Education*

Kasozi, A. B.K. (2017). The impact of governance on research in Ugandan universities. *Makerere MISR Working Papers* (No.32), 60. Makerere Institute of Social Research.

Khalil, O. E., & Khalil, N. (2019). Business research productivity and barriers. *International Journal of Productivity and Quality Management*, *26*(1), 34–57.

Kim, H. S., Pedersen, E., & Cloud, R. (2007). Social support, research interest, stress, and research productivity of textiles and apparel faculty. *Clothing and Textiles Research Journal*, *25*(2), 156–170. *https://doi.org/10.1177/0887302X07300620*.

Kotrlik, J. W., Bartlett, J.E., Higgins, C.C., & Williams, H. A. (2002). Factors associated with research productivity of agricultural education faculty. *Journal of Agricultural Education*, *43*(3), 1–10.

Kwiek, M. (2018). International research collaboration and international research orientation: Comparative findings about European academics. *Journal of Studies in International Education*, *22*(2), 136–160. https://doi.org/10.1177/1028315317747084

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 Human Resource Policy (2014).

Kyvik, S., & Aksnes, D. W. (2015). Explaining the increase in publication productivity among academic staff: a generational perspective. *Studies in Higher Education*, *40*(8), 1438–1453. *https://doi.org/10.1080/03075079.2015.1060711*.

Leišytė, L. (2016). New public management and research productivity–a precarious state of affairs of academic work in the Netherlands. *Studies in Higher Education*, *41*(5), 828 –846.

Makerere University appointment and promotion policy, 2006–2014.

Matovu, M. (2019). An analysis of quality assurance key performance indicators in research in Ugandan universities. *International Journal of Instruction*, 12(1), 1308–1470.

McGill, M.M., & Settle, A. (2012). Identifying effects of institutional resources and support on computing faculty research productivity, tenure, and promotion. *International Journal of Doctoral Studies*, *7*, 167.

Mody, M., Tang, C. H. (Hugo), Gaulke, C., & Gordon, S. (2018). Examining the personal and institutional determinants of research productivity in hospitality and tourism management. *Journal of Hospitality and Tourism Education*, *30*(1), 36–51.

Nafukho, F. M., Wekullo, C.S., & Muyia, M.H. (2019). Examining research productivity of faculty in selected leading public universities in Kenya. *International Journal of Educational Development*, *66*, 44–51.

Nguyen, Q., Klopper, C., & Smith, C. (2016b). 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. Electronic Journal Business Research Methods. Vol. 9 Issue 2, 2011. www eibrm.com

Pulford, J., Crossman. S., Begg. S., Quach. J. A., Abomo. P., El Hajj &, Bates, I. (2020). Strengthening research management and support services in Sub-Saharan African universities and research institutions. *AAS Open Research 2020*. https://doi.org/10.12688/aasopenres.13100.1.

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. *https://doi.org/10.13189/ujer.2019.071410*.

Ramjeawon. P., V., (2020). *Enablers and barriers to knowledge management in universities: Perspectives from South Africa and Mauritius*. *https://www.emerald.com/insight/2050-3806.htm*.

Rukanyangira, N., & Oidu, M. K. (2021). Higher education institutions contribution to research and innovations through public private partnership (PPP).

Schubert, T. & Schmoch, U. (2009). Sustainability of incentives for excellent research - The German case. *Scientometrics*, *81*(1), 195-218.

Starovoytova, D. (2017). Productivity at engineering-school: Number of publications per faculty-member. *Journal of Education and Practice*, *8*(28).

Supapawawisit, B., Chandrachai, A., & Thawesaengskulthai, N. (2018). The critical factors of research and innovation creation in public universities in Thailand. *International Journal of Trade and Globa Markets*, 12(1–2), 109–117.

Vabø, A., Alvsvåg, A., Kyvik, S., & Reymert, I. (2016). The establishment of formal research groups in higher education institutions. *Nordic Journal of Studies in Educational Policy*, *2016*(2–3), 33896.

Vico, E., & Hallonsten, O. (2019). How industry collaboration influences research: The case of the Swedish interdisciplinary materials consortia, 1990–2000. *Industry and Higher Education*, *33*(5), 289–307. https://doi.org/10.1177/0950422219839017.