



# **Gendered Analysis in Academic Career Advancement: Fifteen Years' Trend at Sokoine University of Agriculture, Tanzania**

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Author FAM designed the study, collected the data, performed the statistical analysis and wrote the first draft of the manuscript. Author ASS provided technical analysis on Publish or Perish software, managed the analyses of the same and commented on various drafts of the manuscript. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

**Aims:** Despite notable success in reducing gender disparity in some sectors, the problem still persists in many higher learning institutions in Tanzania. Using fifteen years data of staff employment from Sokoine University of Agriculture (SUA), this study assessed gender disparity in employment and career advancement among academic staff.

**Study Design:** The study adopted the descriptive research design by describing the current situation using SUA as a case study.

**Place and Duration of Study:** The study was conducted at Sokoine University of Agriculture between March and May 2017 using data of academic staff.

**Methodology:** The Publish or Perish software was used to retrieve data on scholarly publications of individual academic staff between 1985 to 2017 for cohorts employed between 1985 and 2011. Descriptive analysis was employed to establish gender disparity in staffing and publication productivity.

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**Results:** The findings show female academic staff increased from 5.3% to 20.78% only between the academic year 2000/2001 to 2015/2016. Likewise, gender gaps are observed across all academic ranks since the majority of staff are at the lower academic ranks where women were less in each aspect. Age-wise, the university is composed of aging senior academic staff where among 33.22% of all professors almost 15% (13.5% M & 1.1%F) were above 60 years old. On scientific publications, findings reveal female staff to be below the cohort/ group average for almost all years against their counterparts.

**Conclusion:** There is a clear disparity between male and female staff based on age, academic qualifications, ranks and publication productivity that implies the existence of some obstacles.

*Keywords: Gender disparity; career advancement; academic staff; publications.*

## 1. INTRODUCTION

Reducing gender inequality in all spheres of human life has been one of the development targets for many countries. This is mainly based on the fact that any successful strategy seeking to bring about sustainable development should promote gender equality [1]. In Africa, the implementation of global initiatives such as the Millennium Development Goals (MDGs) has been reported to eliminate gender disparity in some sectors particularly in primary education. However, large disparities are still found in tertiary and higher education in most developing countries [2] where women fare poorly compared to men with respect to student enrolment, staff recruitment and retention, leadership positions as well as academic ranks. Many female academics remain underrepresented at the higher faculty ranks such as professorship. For instance, [3,4] reported huge gender inequalities in Kenyan and Ugandan universities whereby very few women had progressed into senior academic positions. This situation is attributed to various reasons including stereotypical views and social construction about the capability of women [3], workloads, rigid promotion criteria, inflexible work conditions, work-family balance [5,6] masculine organizational culture [7] as well as poor networks and the inexistence of role models [8]. These barriers can be divided into two categories - individual barriers that are related to individual employee choices based on her wants and institutional barriers that are related to the working culture and environment.

Universities around the world have their own goals, working culture, practices, and beliefs. In order to attain their objectives, the culture of universities around the world is often characterized by employment and retention of competent employees as well as stringent criteria for career progressions. While these high standards and institutional norms aim at having

an ideal worker who fits within the academic institutions, these requirements tend to set inflexible structures for the workers. Consequently, these requirements tend to perpetuate gender inequality where women often stand on disadvantaged positions. For example, publication productivity stands at the central position for various rewards such as promotion to higher academic ranks, leadership positions and salary [9]. Existing patriarchy system in most African countries has led to the failure of women to balance work-family life hence get more effects on career growth [10].

Career progression in academia is often represented by a pipeline model which refers to the notion that an academic career can be idealized as a linear progression from undergraduate education to a professorship [11]. The pipeline model posits a relatively rigid, straight forward progression through a fixed set of transition points in educational and occupational careers [12,13]. The pipeline model is criticized for being dominated by ideal norms where the worker is expected to adhere to strict high standards measures like quality and quantity of publications in a specified time frame of moving up the academic ladder while at the same time balancing work and life. The model becomes rigid and tight with limited flexibility to accommodate candidates who lag behind time given other responsibilities [12].

## 2. CRITERIA FOR ACADEMIC CAREER PROGRESSION AT SOKOINE UNIVERSITY OF AGRICULTURE

Prior to the year 2016, the practice of recruiting and promoting academic staff in public universities in Tanzania varied among universities although some common criteria such as the number of publications were used. The government of Tanzania enacted the Harmonized Scheme of Service for Academic

Staff (2014) which came into operation in 2016. This scheme provides a uniform system for career progression among public universities. The Sokoine University of Agriculture operationalizes this scheme by developing institutional criteria and conditions for employment and promotion of academic members of staff famous known as Up the Ladder. The implementation of the Up the Ladder goes along with other institutional policies and guidelines such as human resource policy. While having common guidelines among institutions is appreciated, it should be noted that these academic institutions are heterogeneous in terms of fields of specialization and academic working environment. Furthermore, each field of specialization has its own specific structure and logic [14] and gendered somewhat differently [15]. Therefore, tackling gender disparity among academics calls for gender equality measures tailored to the specific discipline, field or institution.

This paper presents patterns of gendered distribution and differences in career progression among academic staff in various cohorts at Sokoine University of Agriculture (SUA). Specifically, the paper presents percentage distribution of academics by rank, age and qualifications, and publication productivity among the academic cohort by sex. It is important to understand the magnitude of gender disparities among academics in various aspects in Tanzanian universities to be able to set institutional specific strategies for overcoming the challenges.

### 3. MATERIALS AND METHODS

This study was conducted at the Sokoine University of Agriculture (SUA) in Tanzania. Data on staff deployment were obtained from the Directorate of Planning and Development. The percentage distribution of staff by academic qualifications, rank, and age were based on 15 years (2000-2015) while data retrieved for publication productivity captured the staff scientific publications information since 1985 to 2017.

The Publish or Perish (PoP) software was used to retrieve data on scholarly publications of individual academic staff between 1985 to 2017 for cohorts employed between 1985 and 2012. This particular software was used because it retrieves data through Google Scholar, which has broader coverage than other databases such

as ISI and Scopus [16]. A search strategy was developed that included staff names and their possible variants and each individual staff was searched through PoP to retrieve the associated publications. Search results were carefully refined to ensure that only works of intended persons were captured. Unclear publications were re-searched via Google scholar to verify whether they were actually written by those particular authors. Scholarly publications considered in this study include journal articles, books, book chapters, and conference papers.

A total number of all publications published by each staff since the year of his/her employment to the time of this study (2017) were retrieved. Then, the average number of publications in each cohort (staff who were employed in the same year) was established by summing up all published papers in a cohort and divide by the total number of staff in the same cohort. Furthermore, the analysis on publication productivity per staff was established by comparing the number of publications of each staff against the average publications per cohort. The productive staff is the one who is able to produce the average publications close to the cohort publications average. Descriptive analysis was employed to establish percentage distribution of male and female academic staff by rank, academic qualifications, age and publication.

## 4. RESULTS AND DISCUSSION

### 4.1 Male and Female Academic Staff at SUA

During the academic year 2015/2016, only one fifth (20.78%) of all academic staff at SUA were females. This disparity systematically cuts across various academic ranks. For instance, female professors comprised only 2.23% of all academicians as compared to male professors who comprised 15.03%. Similarly, female associate professors comprised only 1.86% of all academicians as compared to male associate professors (14.10%). In the rank of lectures, only 1.62% of academicians were females against 18.37% of males (Table 1). This demonstrates that despite the small number of female academic staff, their pace in progressing into senior academic ranks is also slow.

A fifteen years' trend between 2000/2001 and 2015/2016 shows that the proportion of female academics at SUA had increased at a very low

rate from 5.3% to 19.9% (Table 2). This increase is attributed to, among other factors, the efforts taken by the university to close gender gaps in employment and students' enrolment at SUA. Such efforts started way back in the year 2000 when the initiatives to establish gender policy started. The implementation of the gender policy requires making other institutional policies and instruments gender-sensitive and also increasing gender awareness among SUA community. As a result, the SUA Human Resources Management Policy [17] aims to take affirmative action to increase the proportion of female members of staff to at least 50% by the year 2025. Other initiatives for increasing female staff include making job advertisements and employment procedures gender-sensitive. In some cases, headhunting and encouraging females to apply and appear for the interviews were employed in some departments where there were no female applicants.

#### 4.2 Qualifications of Academic Staff

Like many other universities, SUA academicians are required to attain the highest level of education in order to possess the required competence and expertise. During the year 2015/2016, half (50.3%) of all academics had doctoral degrees and 42.5% had master degrees in various fields of specialization. However, the sex disparity is also evident in this aspect whereby among doctoral degree holders, males and females accounted for 41.6% and 8.27% respectively. Similarly, males and females accounted for 31.35% and 11.13% of the master's degree holders. This pattern in gender disparity in education qualifications is similar to most African societies (Adebayo & Akanle, 2014). In the African context, the traditional role of the woman as a mother and wife in many cases usually halt women's career advancement [18]. While men might be flexible in grabbing opportunities, women experience some other

family challenges limiting their choices between engaging in further studies or family matters.

#### 4.3 Rank, Age and Sex Distribution of Academics

The age distribution of academics at SUA (Table 3) shows that 55.7% (41.42% M & 14.29% F) of all staff were 45 years of age or below. Senior academics (senior lecturer, associate professor or professor) who were at the active working age (36-55 years) comprised nearly a quarter (23.4%) of all academic staff. About 16% of all academicians had retired (above 60 years) but employed on a contract basis and most were at the level of full or associate professors. This means that of the 17.25% of all professors at SUA, 10.7% (9.6% male and 1.1% female) were above 60 years and 3.9% (all males) of associated professors were above 60 years.

The aging workforce for academic tenure has been reported to have mixed implications for the respective institutions. On the positive side, [19] argued that aging academic staff certainly ought to be an asset to the institution due to the vast knowledge and experience in their areas of specialization. These aged staff can play the role of mentoring as well as attracting research funds. On the other hand, there are a number of challenges associated with aging faculty particularly in terms of salary and health benefits [19] while at the same time limiting the employment opportunities for new staff in the institution. The aging workforce boom at SUA is attributed to the past recruitment plan and failure to have a succession plan on employment for some years.

Although the working environment requires staff to reach the highest level of career, such movement is not automatic as assumed by the pipeline model. While the academic progression from the lower level to the higher academic rank

**Table 1. Male and female academic staff by levels for the academic year 2015/2016**

Ranks	Male		Female		Total	
	No of staff	%	No of staff	%	No of staff	%
Professor	81	15.03	12	2.23	93	17.26
Associate professor	76	14.10	10	1.86	86	15.96
Senior lecturer	47	8.72	23	4.27	70	12.99
Lecturer	99	18.37	33	6.12	132	24.49
Assistant lecturer	98	18.18	25	4.64	123	22.82
Tutorial assistant	26	4.82	9	1.67	35	6.49
<b>Total</b>	<b>427</b>	<b>79.22</b>	<b>112</b>	<b>20.78</b>	<b>539</b>	<b>100</b>

follows prescribed criteria, the fulfillment of the criteria may serve as a stumbling block for junior staff to climb the academic ladder. Many (46.5%) academics were at the junior ranks of (Tutorial assistants, assistant lecturer or lecturer) of which 27% are aged between 36 and 45 years. This academic environment requires concerted efforts for training and overall staff development program to speed up the pace of moving to the senior levels.

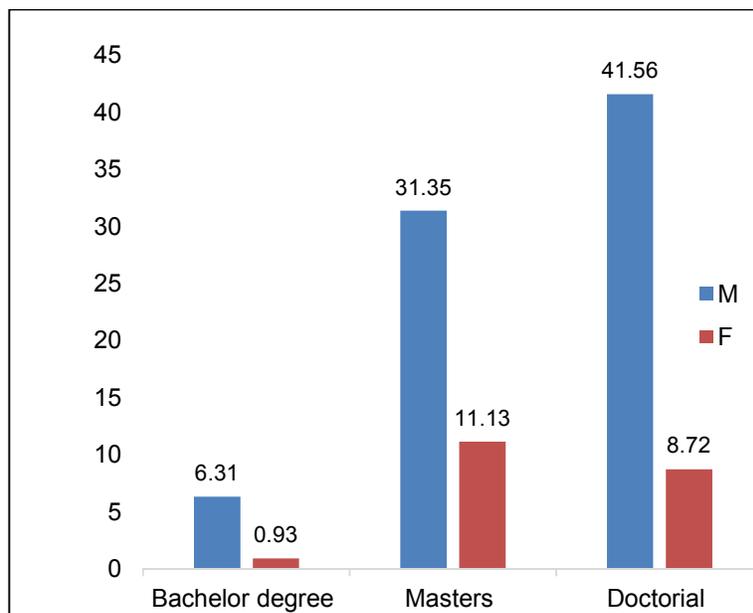
**4.4 Publication Productivity**

Although most universities have three core functions namely training, research, and consultancy (outreach), the research component takes the larger share in career advancement in terms of staff promotion. The research performance of individual staff is normally measured through the number of publications produced per specified period of time. As shown in Fig. 2, the study compared an average number of publications of each individual staff who were employed in the same year. The publication productivity per employment cohorts from 1985 to 2011 at SUA indicates a wide gender disparity. The average number of publications for females was lower than the group average for almost all years except for the cohort of the years 1985, 2003, 2007 and 2008. In these three years' cohort, women had a higher average publication than their male counterparts.

**Table 2. Percentage of academic staff growth for the past fifteen years**

Years	% of all staff by sex in each year	
	M	F
2000/01	94.7	5.3
2001/02	93.2	6.8
2002/03	87.2	12.8
2003/04	88.1	11.9
2004/05	87.9	12.1
2005/06	87.5	12.5
2006/07	86.5	13.5
2007/08	85.8	14.2
2008/09	82.0	18.0
2009/10	81.5	18.5
2010/11	80.7	19.3
2011/12	81.7	18.3
2012/13	81.4	18.6
2013/14	83.5	16.5
2014/15	80.1	19.9

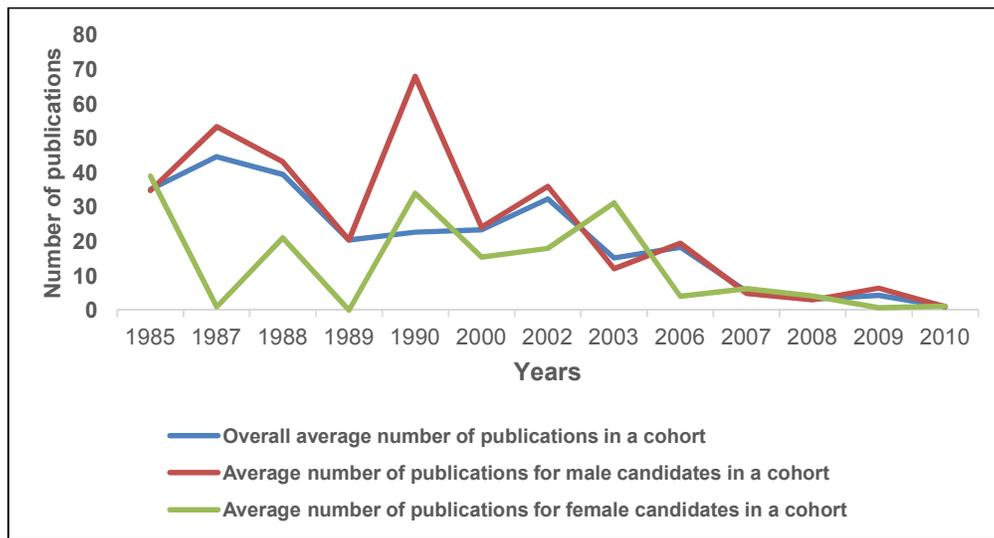
Apart from the disparity between men and women, the difference in publication productivity existed among the same cohort. In almost all years, there was a very high difference between the maximum and a minimum number of publications in the same cohort (Fig. 3). For example, while the maximum publication for the cohort of 1989 is 106 in the same cohort there is a staff who had a total of nine [9] publications only. The difference in a number of publications has an influence on advancement in a staff



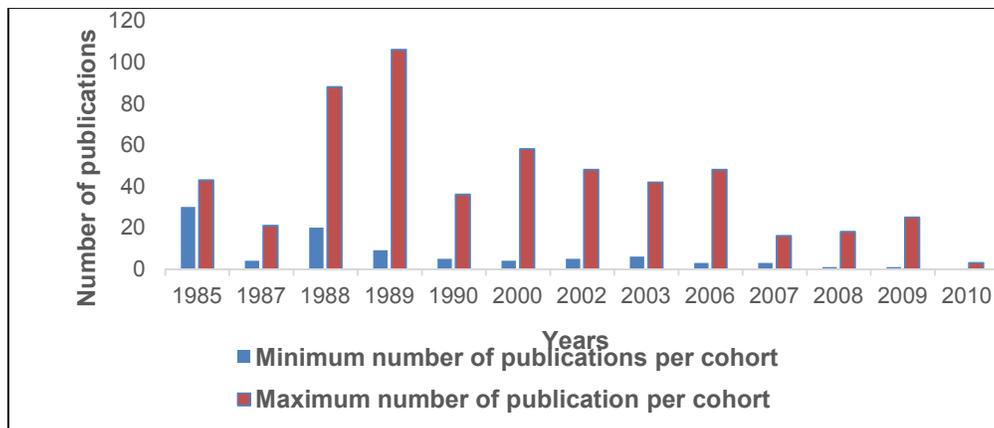
**Fig. 1. Qualifications of academic staff by sex**

**Table 3. Percentage proportion of academic's staff rank by age and sex**

Academic ranks	Percentage proportion by age and sex									
	<36		36-45		46-55		56-60		>60	
	M	F	M	F	M	F	M	F	M	F
Professor	0	0.0	0.2	0	1.9	0.6	3.3	0.6	9.6	1.1
Associate professor	0	0.0	1.5	0	7.4	1.1	1.3	0.7	3.9	0.0
Senior lecturer	0	0.6	3.9	2.4	3.5	0.9	0.7	0.0	0.6	0.4
Lecturer	1.7	1.9	14.1	3.9	2.2	0.4	0.4	0.0	0.0	0.0
Assistant lecturer	7.8	2.6	6.7	1.3	3.7	0.7	0	0	0	0
T/assistant	3.7	1.7	1.1	0	0	0	0	0	0	0
<b>Total</b>	<b>13.17</b>	<b>6.68</b>	<b>27.46</b>	<b>7.61</b>	<b>18.74</b>	<b>3.71</b>	<b>5.75</b>	<b>1.30</b>	<b>14.10</b>	<b>1.48</b>



**Fig. 2. Publication productivity per cohort by sex**



**Fig. 3. Minimum and maximum number of publications per cohort**

career. Given the fact that the staff who are in the same cohort were employed the same year and having the same working experiences, the findings imply the existence of some challenges

that limit staff pace in scientific publications. The decrease in the number of publications by years shown in Fig. 3 is obvious since the years connote the time one has stays at the university

since his/her employment time. It is expected that the staff who was employed in the year 1985 to have more publications than staff who was employed later on.

The existence of gender disparities in publication productivity in universities is often attributed to various factors like family, personal and work-related ones. Literature shows the factors to affect more women than men. For example, even when women do recognize the weight that journal publications carry as a promotion criterion, they do not necessarily accept the high value that it is accorded [20]. The masculine nature of work or institutional environment tends to exclude women from male-dominated academic networks. For example, cultural practices of gendered exclusion, such as the practices of sexual harassment, still prevent women from making and using the networks that would assist them in their research and publication endeavors [9].

## 5. CONCLUSION

The study concludes that despite various efforts to close the gender gap in academic staff employment and retention at SUA, the disparity still exists. There is a clear disparity between male and female staff based on age, academic qualifications, ranks and publication productivity. The gender disparity in academic rank and age is revealed in the aging academic population where the majorities of associate and full professors are at the age of retirement or already retired. This has implications for the institutional succession plan in terms of having experienced mentors for junior staff who are the majority. It is also concluded that female staff reveals low scientific publication productivity in comparison to their counterpart in the same cohort hence implying the existence of obstacles that limit women advancement. Therefore, the study recommends the university to devise a mechanism that will increase female staff recruitment, devise affirmative actions and provide support in advancing in their career. The study recommends further study to collect views from academic staff on challenges limiting the speed in scientific publications and recommend actions to rectify the situation.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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