ESSA
Education Sub Saharan Africa

Policy Brief

Faculty First: Strengthening Tanzania's Universities

September 2024/DAF-EAC- PB-005

1. Introduction

This Policy Brief draws insights from the Demographics of African Faculty (DAF) in the East African Community (EAC) study, conducted in Tanzania and five other EAC partner states, specifically Burundi, Kenya, Rwanda, South Sudan, and Uganda between 2021 and 2023. This study, a joint endeavour by the Inter-University Council for East Africa (IUCEA), Education Sub Saharan Africa (ESSA), Association of African Universities (AAU), and the Population Reference Bureau (PRB), is the first to systematically document the status of higher education faculty in the EAC, following a prior examination of the DAF in Ghana. The DAF-EAC study provides a comprehensive analysis of the state of higher education faculty in the six EAC partner states and forecast demand through 2030.

The primary objectives of the DAF-EAC study were to:

1. Conduct an extensive desk literature review and gather data on the higher education policy landscape and faculty status at both national and institutional levels.
2. Utilise the DAF model to forecast future faculty supply and demand based on gender, discipline, policy norms[1], and turnover rates.

The DAF-EAC report provides accurate and consolidated data on faculty in higher education. This data is crucial for making effective policy decisions, planning, and securing the investment required to enhance the quality of education in East Africa. The report's target audience encompasses education sector leaders in government entities, private sector organisations, civil society organisations and international development institutions.

2. Overview of university education in Tanzania

The Tanzanian education system is structured around a 2-7-4-2-3+ framework. This translates to two optional years of pre-primary education, followed by seven compulsory years of primary schooling. Students then progress to four years of ordinary secondary education, often called Ordinary Level (O-Level). This is succeeded by two further years of advanced secondary education, known as Advanced Level (A-Level), which prepares students for university studies. Finally, tertiary education, encompassing universities, vocational training, and teacher training colleges, offers programmes lasting at least three years, depending on the field of study.

University education represents the pinnacle of the educational hierarchy in the country, offering Bachelor's degrees, Postgraduate certificates, Postgraduate Diplomas, Master's degrees, and Doctoral degrees across public and private universities. As of February 2024, Tanzania boasts 34 fully fledged universities (12 public and 22 private) and 15 University colleges (seven public and eight private), totalling 49 university institutions (19 public and 30 private).

[1] Policy Norms are set specific targets or limitations related to numbers, such as student-teacher ratios, class sizes, or minimum qualifications for educators.

Currently, the policy for education in Tanzania is the Education and Training Policy of 2014, which aims to improve the quality of education and training and put in place structures and procedures that will enable the country to educate Tanzanians who are longing to continue learning to add value in achieving national development goals. The education policy aligns with Tanzania's National Development Vision 2025 and Five-Year National Development Plans. There is no specific policy for higher education; instead, the Tanzania Commission for Universities (TCU) issues guidelines to universities from time to time. The TCU is a regulatory authority established on 1st July 2005 under the Universities Act 2005 (Chapter 346 of the Laws of Tanzania), with the mandate to oversee institutional management processes in all universities in Tanzania to foster a harmonised higher education management system and regulate quality aspects. The Universities Act also mandates the TCU to accredit universities and programmes. Across the 49 accredited universities in the country, there is a total of 17[2] clusters of programmes that guide student admissions.

3. Methodology

The study adopted a mixed-methods approach that involved data collection at various national offices, including the Ministry of Education Science and Technology, TCU and various degree-granting universities. Additionally, desktop reviews were conducted to gather background information on university education practices in Tanzania, encompassing policy norms, academic staff mobility trends, and student enrolment statistics. Key informant interviews were also conducted with individuals within these institutions, enriching the quantitative data with valuable qualitative insights. Furthermore, the study employed the Demographics of African Faculty (DAF) model to forecast future faculty supply and demand within the Tanzania university education system. The DAF model is an MS Excel-based quantitative model that projects faculty needed to meet policy norms using data on various indicators, including current period student enrolment, projected student enrolment, number of faculty in the current period, faculty exit rates and policy norms.

4. Key findings of the assessment of faculty demographics in Tanzanian universities

4.1 Policy norms

In addition to its regulatory role, the TCU promotes gender equality in admissions to various degree programmes. However, it does not dictate a specific gender equality ratio for universities. Instead, it emphasises that each university should develop affirmative action strategies to strive for at least 50% gender parity (TCU Standard 1.13, page 34). This places the responsibility for achieving gender equality on individual universities. The TCU's 2019 Handbook for Standards and Guidelines for University Education in Tanzania spells out the policy norms for the accreditation and operation of all universities in Tanzania. While the Handbook does not establish national enrolment, personnel, or financial norms, it stipulates teacher-student and technical staff-student ratios for some disciplines, as outlined in Table 1.

[2] The clusters of programmes are Agriculture, Architecture and Planning, Business, Education, Engineering, Environmental Science or Studies and Forestry, Humanities and Arts, Information and Communication Technology or Engineering. Others are Journalism, Media Studies and Communication, Law, Library, Archives and Museum Studies, Life Sciences, Medicine and Health Sciences, Mining and Earth Sciences, Physical Sciences and Mathematics, Social Sciences and Tourism and Hospitality Studies.

Table 1: Teacher-Student Ratio by institution type and programme

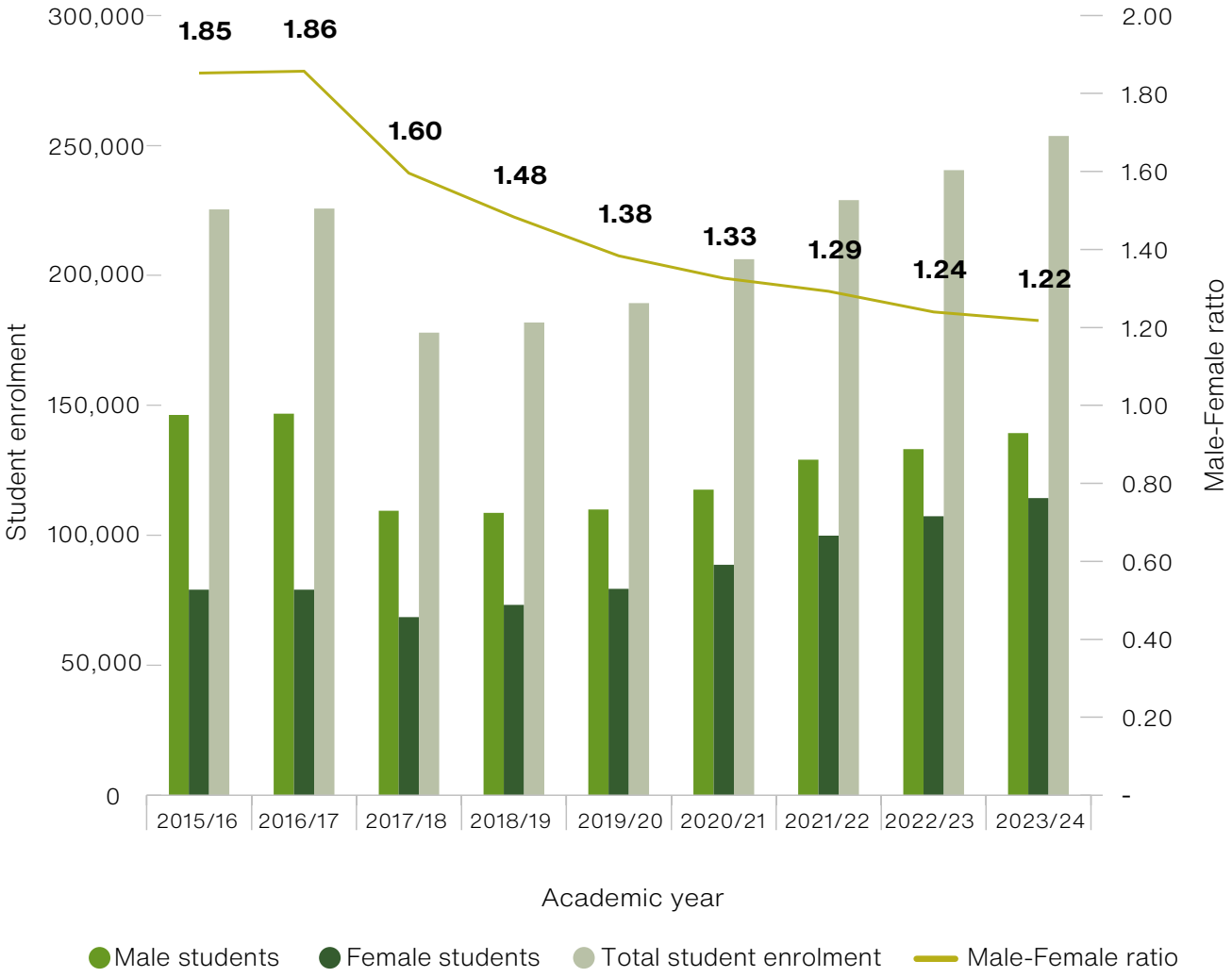
	Conventional University	Open and Distance Learning (ODL) University
Staff-Student Ratios per Institution type and Programme		
Arts, Social Sciences and Humanities	1:50	1:120
Science and Technology	1:30	1:50
Health Science	1:25	1:30
Health Science (Clinical Sciences)	1:10	1:10
Engineering	1:25	1:30
Technical Staff-Student Ratios per Institution type and Programme		
Arts, Social Sciences and Humanities	1:100	1:100
Science and Technology	1:60	1:60
Health Science	1:50	1:50
Engineering	1:50	1:50

Source: Handbook for Standards and Guidelines for University Education in Tanzania, 2019

4.2 Student enrolment

Student enrolment has grown significantly over the years, particularly after the liberalisation of university education in 1996 which allowed for the operation of private universities. **Figure 1** shows the steady increase in student enrolments in the recent past. Enrolment grew from an estimated 225,330 students in the academic year 2015/16 to about 253,700 in the academic year 2023/24, an increase of about 28,400 students or 12.6% growth in enrolment. Even though male student dominates enrolments, the number of female students has steadily risen; for instance, female students accounted for 45% of enrolments in the academic year 2023/25 compared to 35% in the academic year 2015/16.

Figure 1: Student enrolments by gender



Data source. TCU, Vital Stats on University Education in Tanzania (2021-2024)

4.3 Faculty distribution

Analysis of faculty revealed that (93.9%) of faculty at full-fledged universities are full-time lecturers. This means only 6.1% of faculty positions at these universities are filled by part-time, contract, visiting, or volunteer lecturers. Similarly, university colleges recorded a higher proportion of full-time faculty (89.8%).

Table 2 provides a detailed breakdown of the number of faculty by employment status and gender across all full-fledged universities and university colleges in Tanzania. As shown in the table, there are more male faculty members than female faculty members across all employment categories.

Table 2: Faculty distribution by employment status and gender

	Full-fledged universities			University colleges		
Employment status	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
a) Full-time	1,609	4,851	6,460	239	745	984
b) Part-time	29	203	232	24	80	104
c) Contract	26	150	176	-	8	8
d) Volunteer	3	7	10	-	-	-
e) Visiting lecturer	2	3	5	-	-	-
Total	**1,669**	**5,214**	**6,883**	**263**	**833**	**1,096**

Data source: DAF-EAC Report (2023)

4.4 DAF model projections[3]

The DAF analysis produced projections for student enrolment and additional faculty needed by 2030. With the assumption that student enrolment grows at the same rate as the population ages 18 – 21, the age group typically associated with higher education, the DAF model used the projected population growth rates produced by the UNPD. The model projected that students' enrolment in 2030 would be 297,987, an increase from 229,049 in 2021, representing a 30.1% growth. However, the additional faculty needed after ten years will be 33,291 (**see Table 6**).

4.4.1 Estimated number of faculty needed to meet STR goals in the baseline year (2021)

The DAF analysis employed student enrolment and faculty data, disaggregated by discipline, to estimate the faculty shortage in Tanzania's universities. Using 2021 as the baseline year, the study revealed a significant discrepancy between actual student-teacher ratios (STRs) across all disciplines and national policy norms (see Table 3). In the Arts and Humanities category, the national average STR in 2021 was 1:36, falling short of the policy target by nearly half. The Education discipline presents an even more significant challenge, with a ratio roughly four times higher than the desired level. However, the study also found that Tanzania had achieved a commendable faculty-gender ratio of approximately 2:1, which is consistent with benchmark policy goals (see **Table 4**)

[3] Even though Tanzania has policy norms for STRs, they are not disaggregated by discipline in a way that is comparable with UNESCO's International Standard Classification of Education Fields which were used as categories in the analysis. Given the lack of these goals specific to Tanzania, the analysis adopted the goals from Kenya for the STR and faculty-gender ratio from its Commission for University Education as benchmarks.

Table 3: Policy Norms versus Actual STR by Discipline in 2021

Discipline categories	Student enrolment	Number of faculty	Actual STRs	Policy goals for STRs
Arts and Humanities [a]	106,910	2,938	36:1	18:1
Education	56,183	835	67:1	18:1
Health and Welfare	26,574	1,285	21:1	7:1
Natural Sciences and Mathematics [b]	30,863	2,157	14:1	10:1
Agriculture, Forestry, Fisheries, and Veterinary	8,519	603	14:1	10:1

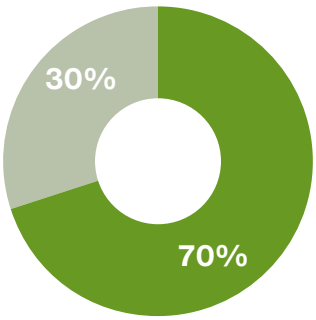
Note: The policy goals are adopted from Kenya.

[a] Arts and Humanities – comprise the arts and humanities, social sciences, journalism and information, business administration, law and services

[b] Natural Sciences and Mathematics comprise natural sciences, mathematics and statistics, engineering, manufacturing, construction and ICTs

Data source: DAF-EAC Report (2023)

Table 4: Policy Norm Versus Reality for Faculty-Gender Ratio (Male-to-Female Ratio) in 2021



Male faculty
5,933

Female faculty
2,523

Actual male-to-female Ratio
2:1

Policy goal for male-to-female ratio
2:1

Note: The policy goal is adopted from Kenya.

Data source: DAF-EAC Report (2023)

The DAF projections indicated a shortfall of about 9,000 faculty members needed to achieve the benchmark STR policy norms in the baseline year (see **Table 5**). The analysis further highlights the distribution of the required additional faculty members across disciplines. To achieve policy-mandated STRs in 2021, about 33% of this additional faculty would have been needed in the Arts and Humanities category. Similarly, about 28% were necessary for the Health and Welfare category, while the Education category would have required about 25%

Table 5: Additional faculty needed in 2021 (Baseline year)

Description	Faculty needed
Panel A: Total	
Additional faculty needed to meet STR goals	8,977
Additional faculty needed to replace the ones projected to exit during the year*	1,621
Additional faculty needed to account for overestimation**	391
Total	**10,989**
Panel B: Breakdown of the additional faculty needed to meet STR goals by discipline	
Arts and Humanities	3,001
Education	2,286
Health and Welfare	2,511
Natural Sciences and Mathematics	929
Agriculture, Forestry, Fisheries, and Veterinary	249
Total	**8,977**

Notes: *Assumption: 5% of professors and 10% of other teaching staff exit each academic year and need a replacement; **Overestimation of faculty can result from having faculty who are on the payroll but are absent from the universities for some reason e.g., faculty may lecture in private universities and have a post in public universities. The assumption is that the faculty is overestimated by 5%.

[a] Arts and Humanities – comprise the arts and humanities, social sciences, journalism and information, business administration, law and services

[b] Natural Sciences and Mathematics comprise natural sciences, mathematics and statistics, engineering, manufacturing, construction and ICTs

Source: DAF-EAC Report (2023), DAF Model results

4.4.2 Projected faculty needed to meet growth in student enrolment by 2030

The analysis revealed that about 2,400 additional faculty members will be required by 2030 to accommodate projected increases in student enrolment driven by population growth, even if the enrolment ratio remained at the level observed in 2021 (Table 6, Panel A). Table 6, Panel B details the distribution of these additional faculty across disciplines. The most significant proportion (38%) will be needed in the Arts and Humanities category, followed by the Natural Sciences and Mathematics category at 23%.

Table 6: Additional faculty needed to meet increased student enrolment by 2030

Description	Faculty needed
Panel A: Total	
a) Additional faculty needed to meet the increased enrolment due to population growth*	2,418
b) Additional faculty needed to meet STR goals, considering population growth	11,614
c) Additional faculty needed to replace the ones projected to exit during the year**	18,868
d) Additional faculty needed to account for overestimation***	391
Total	**33,291**
Panel B: Breakdown of the additional faculty needed to meet the increased enrolment due to population growth by discipline	
Arts and Humanities	911
Education	272
Health and Welfare	444
Natural Sciences and Mathematics	550
Agriculture, Forestry, Fisheries, Veterinary	241
Total	**2,418**
Panel C: Breakdown of the additional faculty needed to meet STR goals by discipline, given population growth	
Arts and Humanities	3,878
Education	2,954
Health and Welfare	3,210
Natural Sciences and Mathematics	1,308
Agriculture, Forestry, Fisheries, Veterinary	265
Total	**11,614**

Notes: *Assumption: student enrolment grows annually at the rate of the population of age 18–21 projected by UNPD. **Assumption: 5% of professors and 10% of other teaching staff exit each academic year and need replacement. ***Overestimation of faculty can result from having faculty who are on the payroll but are absent from the universities for some reason, e.g., faculty may lecture in private universities and have a post in public universities. The assumption is that the faculty is overestimated by 5%.

[a] Arts and Humanities – comprise the arts and humanities, social sciences, journalism and information, business administration, law and services

[b] Natural sciences and mathematics comprise natural sciences, mathematics and statistics, engineering, manufacturing, construction and ICTs

Source: DAF-EAC Report (2023), DAF Model results

4.4.3 Projected faculty needed to meet STR goals by 2030

Focusing on achieving established STR goals by 2030, the analysis identified the need for approximately 11,600 additional faculty members (see Table 6 Panel C). This significant figure (based on policy norms adopted from Kenya) suggests that Tanzania would need to significantly increase the number of faculty observed during the baseline year to meet these goals. The distribution of required additional faculty by discipline to bridge the identified faculty shortfalls by 2030 shows that the Art and Humanities category requires the highest proportion (33%), followed by the Health and Welfare category (28%), Education category (25%), the Natural Sciences and Mathematics category (11%), and Agriculture, Forestry, Fisheries, and Veterinary category (2%).

4.4.5 Addressing the faculty-gender disparity

To achieve gender parity among faculty by 2030, the DAF model projects a requirement for around 5,125 additional female faculty members. This implies that of the estimated 11,600 faculty needed by 2030 to meet STRs, about 44% must be female.

Table 7: Female Faculty Needed to Meet Policy Norms for the Faculty-Gender Ratio

Assumption: The 2030 faculty projections will reflect the same gender ratio as in the baseline year and that an additional increase in female hiring is needed to meet the policy norm for the faculty-gender ratio rather than decreasing the number of male faculty.

Source: DAF-EAC Report (2023), DAF Model results

5. Conclusion and policy recommendations

The study confirmed the existence of university education policies addressing faculty qualifications and STRs by discipline, even though gender ratios were not available. The results revealed that while universities have achieved the national faculty-gender ratio of 2:1, they fell short of STR benchmarks across various disciplines. This means that universities require additional faculty members to meet the recommended STRs.

Projections indicate that approximately 11,600 additional faculty are needed by 2030 to achieve these policy-mandated STRs. Notably, around 5,100 of these new hires should be female to maintain the constitutional gender parity. Considering rising student enrolment due to population growth, projected annual faculty exits due to retirement, death, or other reasons, and potential overestimation due to faculty holding positions at multiple universities, the findings suggest about 18,800 additional faculty members will be needed by 2030. Overall, the university education system will require over 33,200 additional faculty members by 2030, to meet STR goals and faculty gender ratios and replace faculty member that exit. This critical faculty shortage necessitates immediate action to ensure a well-resourced university education system. To address this challenge, the following recommendations are proposed:

1. **Review and Update Faculty Staffing Norms:** A review of university staffing norms is recommended in light of the dynamic educational landscape, characterised by continuous technological advancements and sustained student enrolment growth. This review should incorporate novel and emerging developments within university education alongside the disaggregation of faculty STRs by discipline category, aligning them with UNESCO's International Standard Classification of Education Fields.
2. **Strengthening Policy Implementation:** The TCU should prioritise the effective implementation of updated university education policies and faculty development strategies undertaken in close collaboration with universities. This collaborative approach will ensure that universities leverage existing frameworks to address the needs of their faculty members optimally.
3. **Enhancing Faculty Recruitment and Retention:** To bridge the ever-widening gap between faculty supply and demand, the TCU and universities should collaborate to develop long-term solutions. Strategies could encompass increased funding allocated to faculty development programmes alongside the implementation of targeted scholarship programmes designed to attract and retain highly qualified individuals, particularly within disciplines experiencing the most critical faculty shortages.

6. Next Steps

The findings of the DAF-EAC study underscore the critical need for a robust and sustained approach to addressing the faculty shortage in Tanzania's universities. To ensure the ongoing relevance and effectiveness of policy interventions, it is imperative to regularly update and refine the data-driven insights generated by this study. A key next step involves undertaking new DAF projections utilising the most recent available data. Policymakers can understand evolving faculty demand and supply trends by periodically recalibrating the model. This will enable more precise forecasting of future faculty needs, facilitating proactive planning and resource allocation.

Acknowledgement

This Policy Brief was prepared by Mr. Daniel Omanyo (ESSA's Research Policy Manager for East Africa). Dr. Pauline Essah (Director of Research and Programmes at ESSA) provided oversight of the process, guidance, and review of the brief. The brief benefited from peer reviews from consortium members, including Dr. Toshiko Kaneda (PRB), Dr. Salome Guchu (IUCEA), Ms. Felicia Kuagbedzi (AAU) and Ms. Joan Iyoha (AAU). Dr. Lucy Heady (Chief Executive Officer of ESSA) also provided invaluable input in developing this brief. Editorial support was provided by Ms. Izel Kipruto (Head of Communications, ESSA), with design expertise from Mr. Daniel Kamau. The preparation of the document was made possible by funding from Carnegie Corporation of New York (grant number G-22-59701).

Suggested Citation

Omanyo, D., Essah, P. (2024). Faculty First: Strengthening Tanzania's Universities. ESSA. Policy Brief. September 2024/DAF-EAC- PB-005.

The brief is based on the comprehensive "Demographics of African Faculty in The East African Community" report produced as a collaborative effort involving the Inter-University Council for East Africa, Education Sub Saharan Africa, the Association of African Universities, and the Population Reference Bureau (funded by Carnegie Corporation of New York grant number G-21-58066). Special recognition is given to Bahati Ilembo and Fatuma Simba, who conducted the research in Tanzania, processed the data, and documented the findings in the original report.

ESSA
Education Sub Saharan Africa

ESSA
3rd Floor, Chancery House
St Nicholas Way
Sutton
SM1 1JB, UK

info@essa-africa.org
@ESSA_Africa
@essa1
www.essa-africa.org