Women's participation in Higher Education in Southern Africa: A study of STEM, leadership and enrolment

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Thank you

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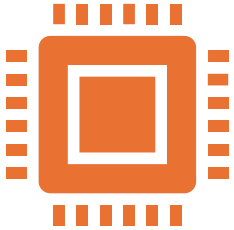
- National Commissions and Universities

Aims of the Report



Examine women's participation in higher education institutions (HEIs), particularly STEM (science, technology, engineering and mathematics), in nine countries : Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe

Present data from a 2022 survey of 38 institutions in the nine countries and discuss data in relation gender and higher education

Draw out some key issues and areas for future investigation

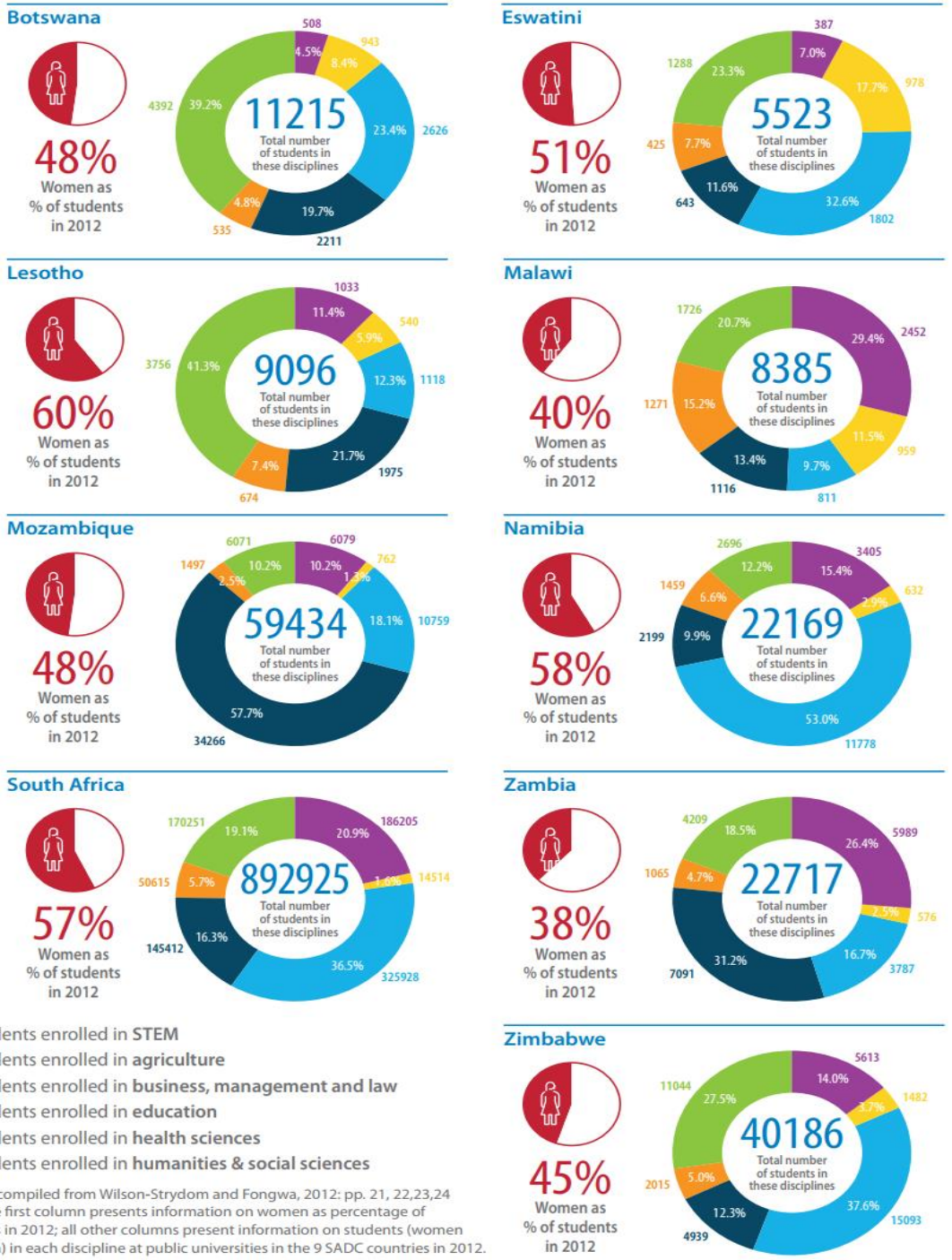
Background: Changing picture of GPI in secondary and tertiary enrolments, 2000-2020

Table 1: Gender parity index[2] (GPI) of gross enrolment rate (GER) of secondary and tertiary education in 2000, 2010, and 2020 (or nearest year)

	Secondary school enrolment (gross), gender parity index (GPI)			Tertiary school enrolment (gross), gender parity index (GPI)		
	2000	2010	2020	2000	2010	2020
Botswana	1.06	1.09 (2008)	1.11 (2021)	0.88	1.18 (2014)	1.36 (2020)
Eswatini	1.01	0.95	0.99 (2016)	0.9	1.04 (2011)	0.94 (2013)
Lesotho	1.29	1.39	1.24 (2019)	1.33	1.32 (2012)	1.35 (2018)
Malawi	0.73	1.39	1.24 (2019)	0.38	0.59	0.59 (2018)
Mozambique	0.61	0.8	0.93	0.33	0.65	0.81 (2018)
Namibia	1.1	1.14 (2007)	No data	0.82 (2001)	1.4 (2014)	1.47
South Africa	1.12	1.06	1.09	0.92 (1994)	1.29 (2012)	1.36
Zambia	0.6 (1988)	No data	No data	0.47 (1999)	0.37 (2011)	0.74 (2012)
Zimbabwe	0.88	0.95 (2012)	0.96 (2013)	0.48 (1992)	0.73	1.17 (2017)

Source: World Bank (secondary enrolment data): https://data.worldbank.org/indicator/SE.ENR.SECO.FM.ZS and World Bank (tertiary enrolment data): https://databank.worldbank.org/source/gender-statistics/Series/SE.ENR.TERT.FM.ZS

Comparing enrolments by subject: the historical picture (2012)



Source: compiled from Wilson-Strydom and Fongwa, 2012: pp. 21, 22,23,24 & 25; the first column presents information on women as percentage of students in 2012; all other columns present information on students (women and men) in each discipline at public universities in the 9 SADC countries in 2012.

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SADC regional initiatives on higher education

- Expanding opportunities in secondary schooling
- Expansion of public and private HEIs
- Financial support for students
- SADC Protocol on Education and Training (1997)
- SADC Protocol on Gender and Development (2008, revised 2016)
- Student and staff mobility – qualifications framework for SADC
- African Union Continental Education Strategy for Africa: 2016-2025
- SADC policy and initiatives for women in STEM
- FAWoVC projects to support women in STEM

Themes emerging from academic literature on gender and HEIs across the region

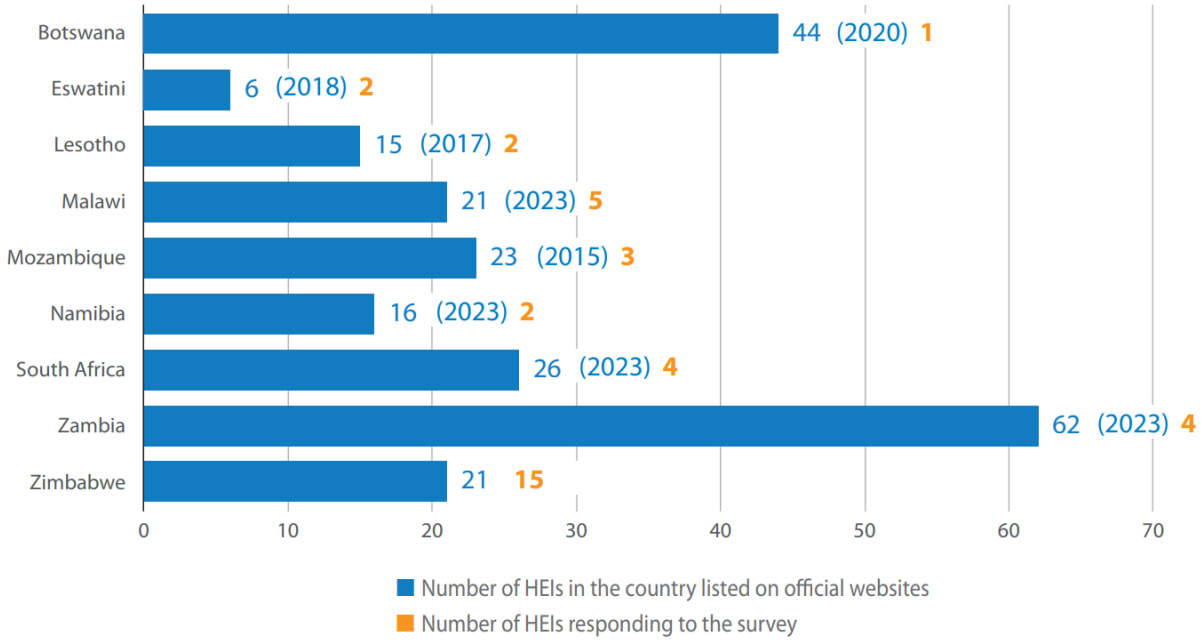
Key issues:

- Concerns about gender and women's rights
- Violence and discrimination against women
- Absence of women from leadership of HEIs; impact of gender norms despite women's high aspirations
- Low enrolment of women in STEM

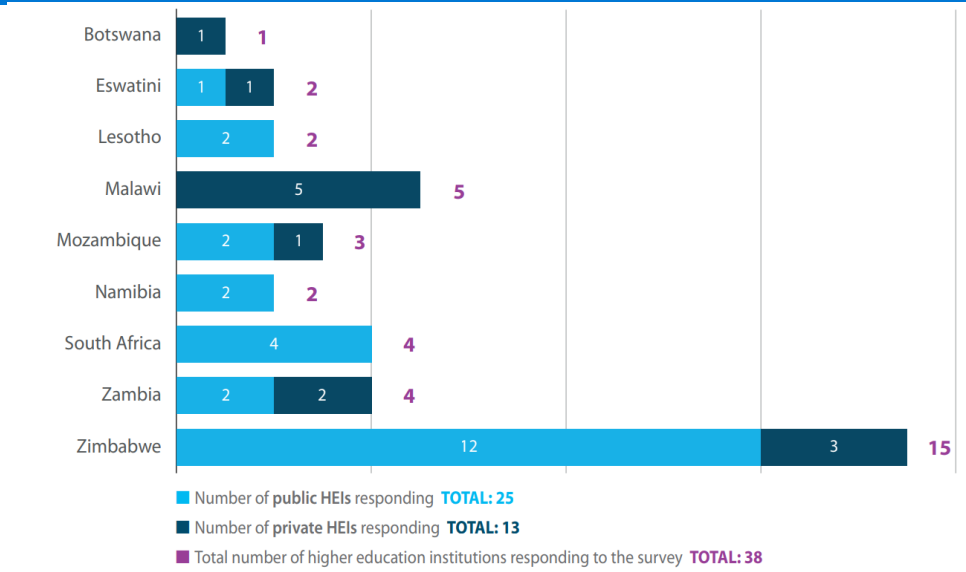
Promising initiatives:

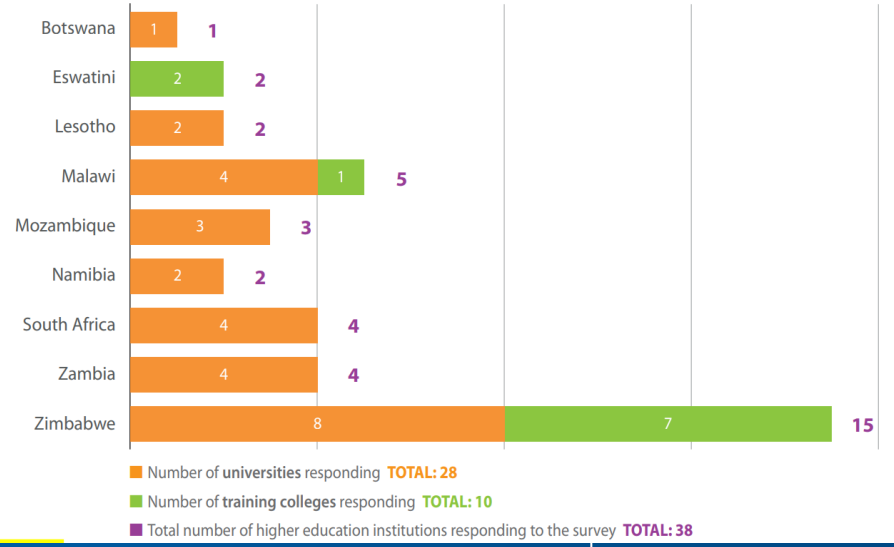
- GBV and safety on campus policies
- Support for women as early career researchers
- Regional information sharing & expertise networks
- Higher education curriculum and pedagogic reform, and disciplinary expansion

Data collection (2022) and sample



The graph above depicts number of HEIs responding to survey in each country reflecting data on public and private universities and technical training colleges provided by official sources such as the Ministry of Education or a regulatory body such as a council on higher education.





Issues surveyed and used to frame analysis

a) Women and men in leadership and decision-making positions
b) Women and men in leadership and decision-making positions in STEM areas
c) Employment of women and men, including in STEM areas
d) Respondents' views on working conditions of women, and some of the barriers
e) Enrolment and progression of female and male students in STEM areas

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Gender and leadership in surveyed HEIs

Only Botswana where data is from one institution has more than 50% of women in senior management roles

Country	Number of institutions reporting on Council structure (% of women in this structure)	Number of institutions reporting on a Senate structure (% of women in this structure)	Number of institutions reporting on a Central Management Team (% of women in this team)	Number of institutions reporting on Deans or equivalent structure (% of women in this team)	Number of institutions reporting on STEM faculty management positions or equivalent structure (% of women in this team)
Botswana	1 65%	1 83%	1 80%	1 83%	1 25%
Eswatini	1 40%	1 50%	2 63%	2 25%	2 20%
Lesotho	1 36%	1 31%	2 60%	2 31%	1 29%
Malawi	5 34%	5 42%	5 41%	5 48%	4 26%
Mozambique	3 39%	1 40%	2 24%	3 40%	2 20%
Namibia	2 33%	2 35%	2 41%	2 31%	2 44%
South Africa	4 36%	3 43%	3 50%	4 42%	2 41%
Zambia	3 25%	4 21%	4 28%	4 31%	4 30%
Zimbabwe	14 38%	11 34%	12 34%	15 39%	14 29%

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Women and men in surveyed HEIs by level of seniority

The HEIs in Mozambique reported about one-third or less of senior staff are women (representative of other countries)

Country (number of HEIs respondents)[11]	Women as a percentage of professors at the respondent HEIs		Women as a percentage of associate professors at the respondent HEIs		Women as a percentage of senior lecturers / middle rank staff at the respondent HEIs		Women as a percentage of junior lecturers / teaching staff at the respondent HEIs	
	2018	2021	2018	2021	2018	2021	2018	2021
Botswana (1)	50%	0%	None reported	None reported	59%	71%	50%	46%
Eswatini (2)	None reported	None reported	None reported	None reported	25%	33%	33%	31%
Lesotho (1)	0%	0%	0%	0%	100%	100%	36%	50%
Malawi (5)	36%	29%	40%	40%	39%	38%	38%	35%
Mozambique (3)	41%	29%	33%	33%	30%	30%	7%	7%
Namibia (1)	12%	No data	33%	No data	43%	No data	48%	No data
South Africa (3)	29%	33%	42%	47%	50%	53%	56%	57%
Zambia (4)	0%	0%	None reported	0%	50%	33%	41%	42%
Zimbabwe (12)	12%	26%	33%	26%	31%	32%	38%	35%

Note: "No data" means that none of the respondent HEIs in the country answered the survey questions about employment by level of seniority; "None reported" means that the respondent HEIs reported zero women and zero men employed at the level of seniority.

The HEIs in South Africa reported the highest percentages of women in some senior roles (but not as professors)

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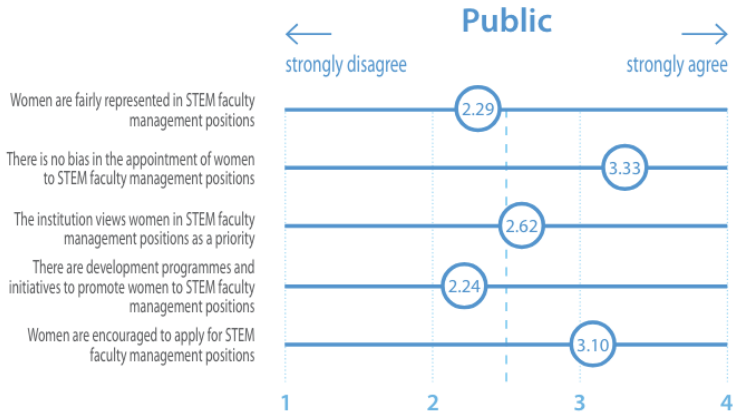
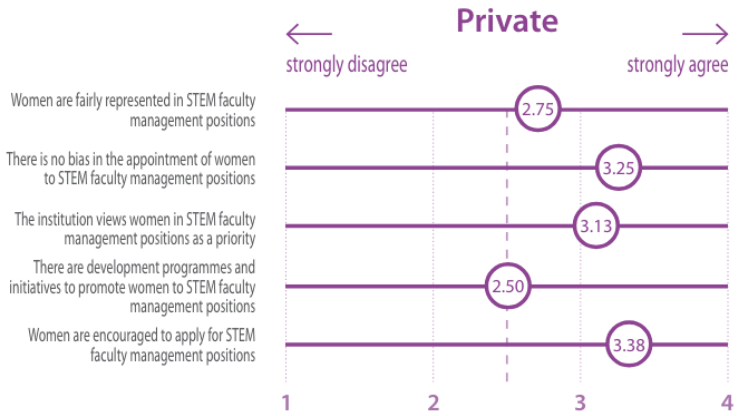
Women and men employed in STEM by level of seniority in surveyed institutions

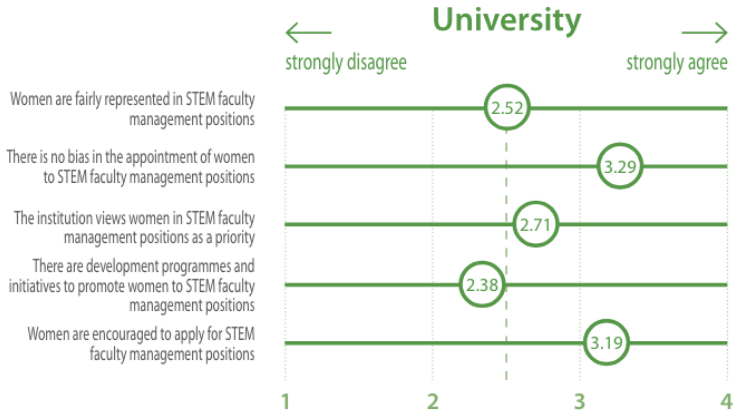
Country (number of HEIs respondents)[12]	Women (men) as a percentage of professors in science	Women (men) as a percentage of professors in technology	Women (men) as a percentage of professors in engineering	Women (men) as a percentage of professors in mathematics	Women (men) as a percentage of all STEM professors across all STEM faculties
Botswana (0)	No data	No data	No data	No data	No data
Eswatini (2)	None reported	None reported	None reported	None reported	None reported
Lesotho (2)	45% Women 55% Male	18% Women 82% Men	None reported	33% Women 67% Men	32% Women 68% Men
Malawi (2)	100% Men	None reported	None reported	None reported	100% Men
Mozambique (3)	42% Women 56% Men	41% Women 59% Men	16% Women 84% Men	37% Women 63% Men	32% Women 68% Men
Namibia (0)	No data	No data	No data	No data	No data
South Africa (3)	35%Women 65% Men	28% Women 72% Men	21% Women 79% Men	30% Women 70% Men	31% Women 69% Men
Zambia (2)	100% Men	Reported none (0)	100% Men	100% Men	100% Men
Zimbabwe (10)	26% Women 74% Men	31%Women 69% Men	27% Women 73% Men	27% Women 73% Men	29% Women 72% Men

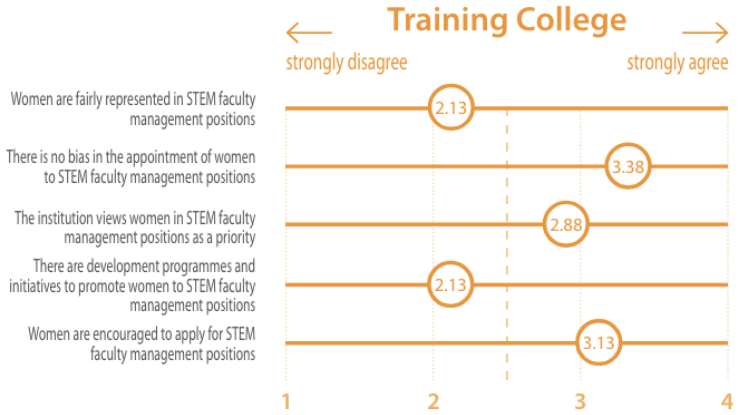
Note: "No data" means that none of the respondent HEIs in the country answered the survey questions about professors in STEM subjects; "None reported" means that the respondent HEIs reported zero women and zero men employed as professors in the STEM subject.

Views on measures needed to increase women in STEM leadership









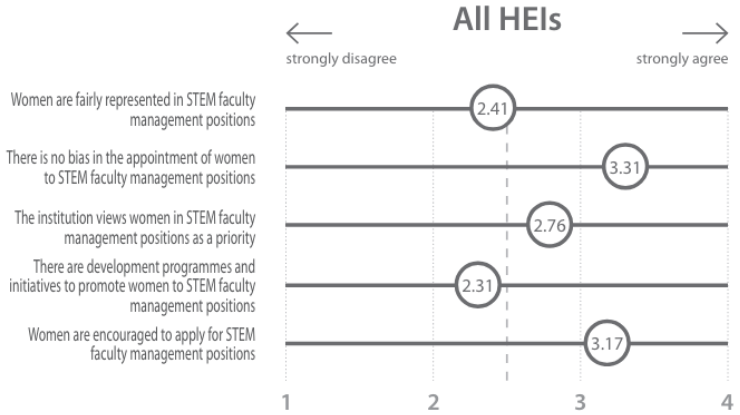


Table reports arithmetic mean of responses from 1 to 4 (1= strongly disagree; 2= disagree; 3= agree; and 4= strongly agree).

On the survey, 29 HEIs responded to the question concerning perceptions of women in STEM faculty management positions. Results are disaggregated by HEI type: Public (21) and Private (8) as well as University (21) and Training College (8).

Students by gender on graduate and postgraduate programmes

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Figure 14: Total number of bachelor's degree students enrolled and graduated in 2018 and 2021 across the HEIs responding to the survey (by % female and male students)

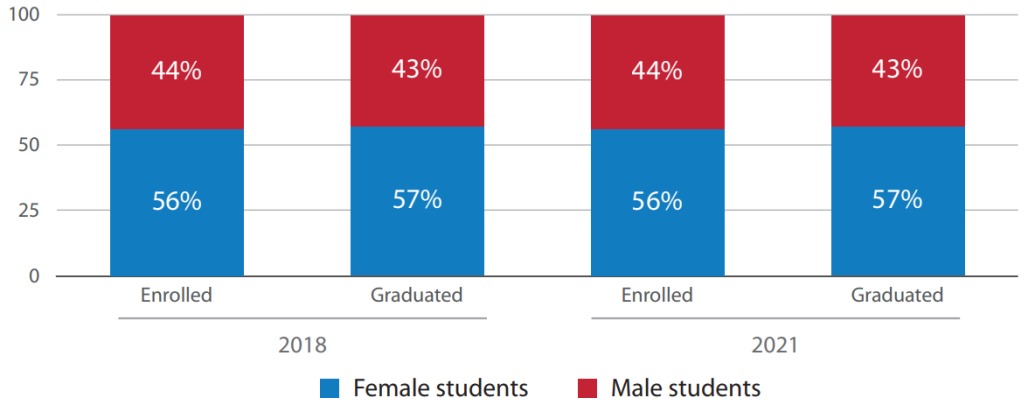


Figure 16: Total number of postgraduate students enrolled and graduated in 2018 and 2021 across the HEIs responding to the survey (by % women and men)

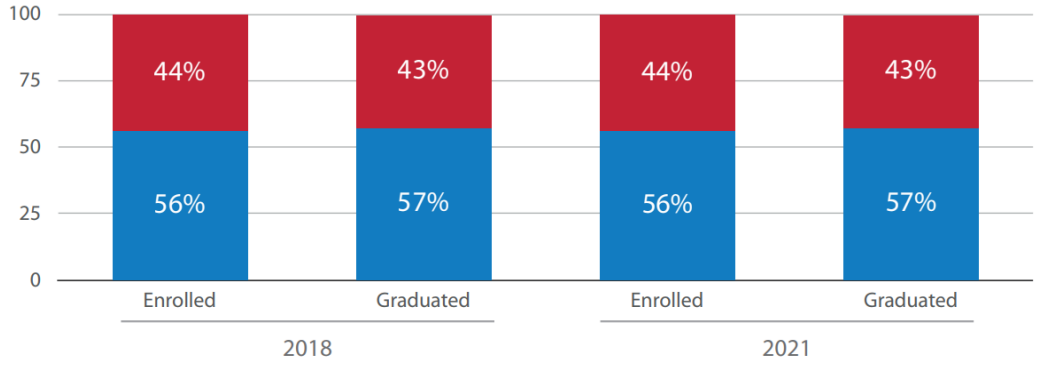
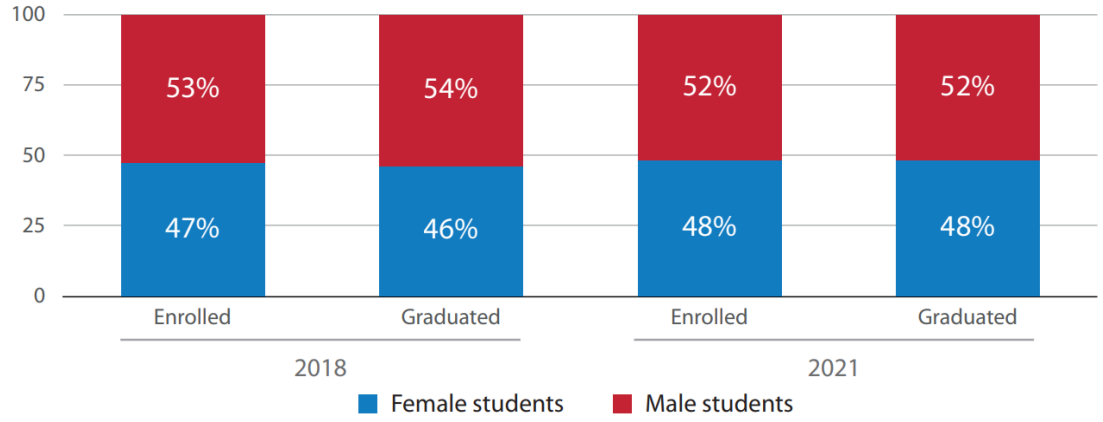


Figure 18: Total number of doctoral and postdoctoral students enrolled and graduated in 2018 and 2021 across the HEIs responding to the survey (by % female and male students)



STEM students by gender (undergraduate and postgraduate) at responding HEIs

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Figure 19: Total number of female and male students in STEM subjects in 2018 and 2021 across the HEIs responding to the survey

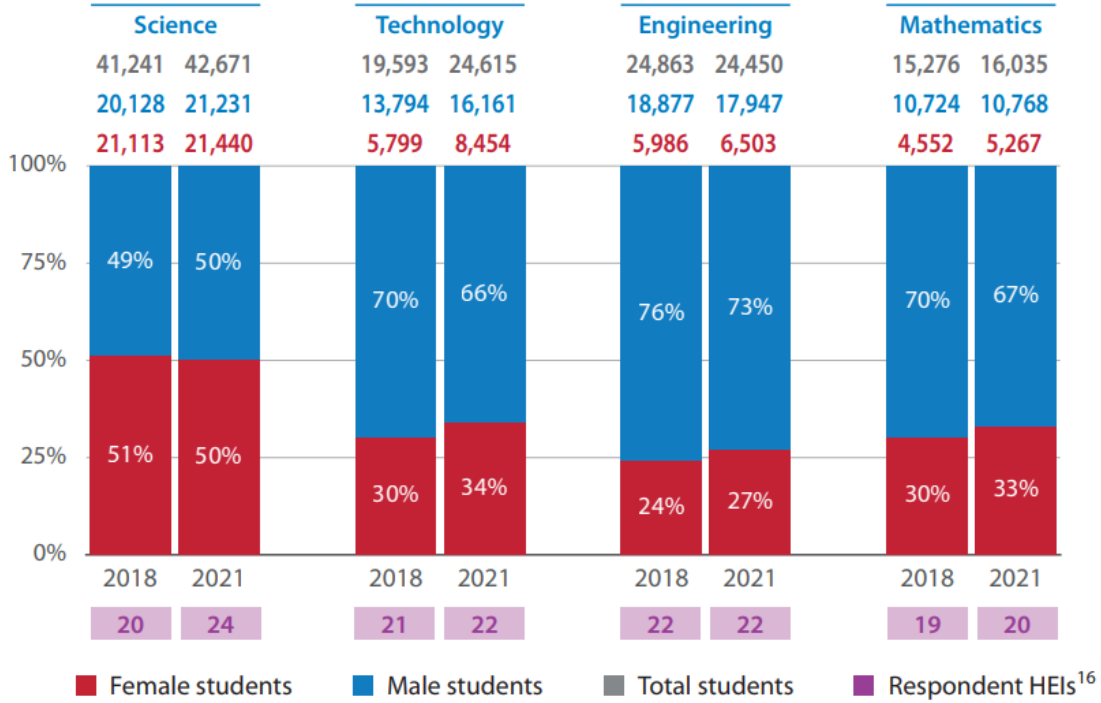
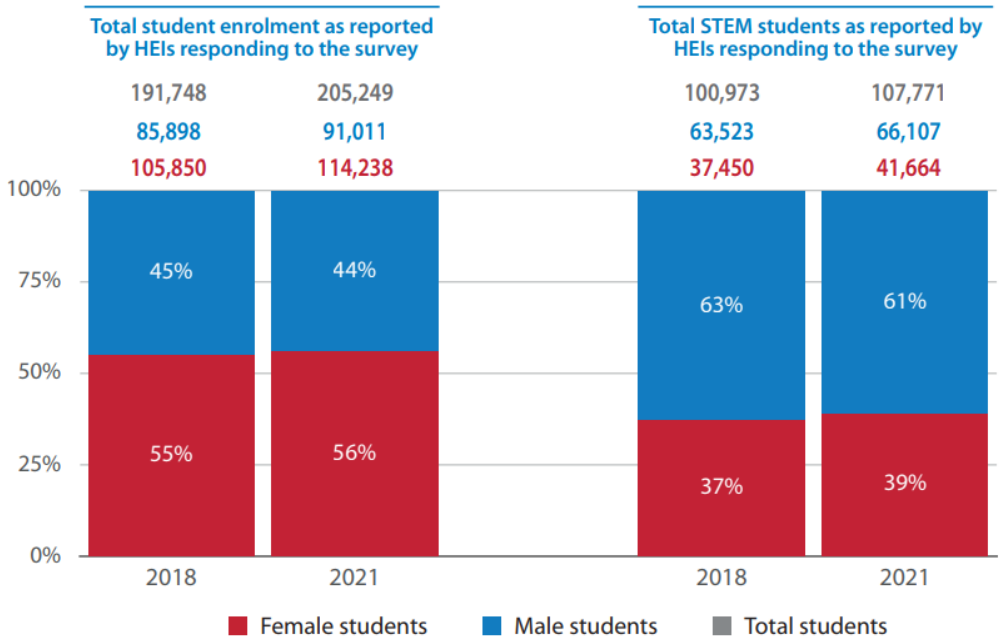


Figure 20: Total number of students enrolled and total number of students enrolled in STEM subjects in 2018 and 2021 in HEIs responding to the survey



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Trends emerging from the data

- Women less than half of membership of all decision-making and leadership bodies; significantly less than half of STEM faculty management
- Yet widespread agreement that no bias in recruitment and conditions of work viewed as equitable
- General agreement about inadequate developmental programmes to support women employees and cultural norms that position women as caregivers
- Many reported unfair treatment or scrutiny of women in leadership
- Good presence of women undergraduates but not in STEM; most male students selecting STEM, most female students selecting non-STEM
- Men remain majority at doctoral and post-doctoral levels
- Increasing number of women enrolling and graduating; good proportion of women enrolled go on to graduate (but not in STEM)
- Indicators for gender inequality are needed; inequalities emerge before HE and require addressing at school level and broader society

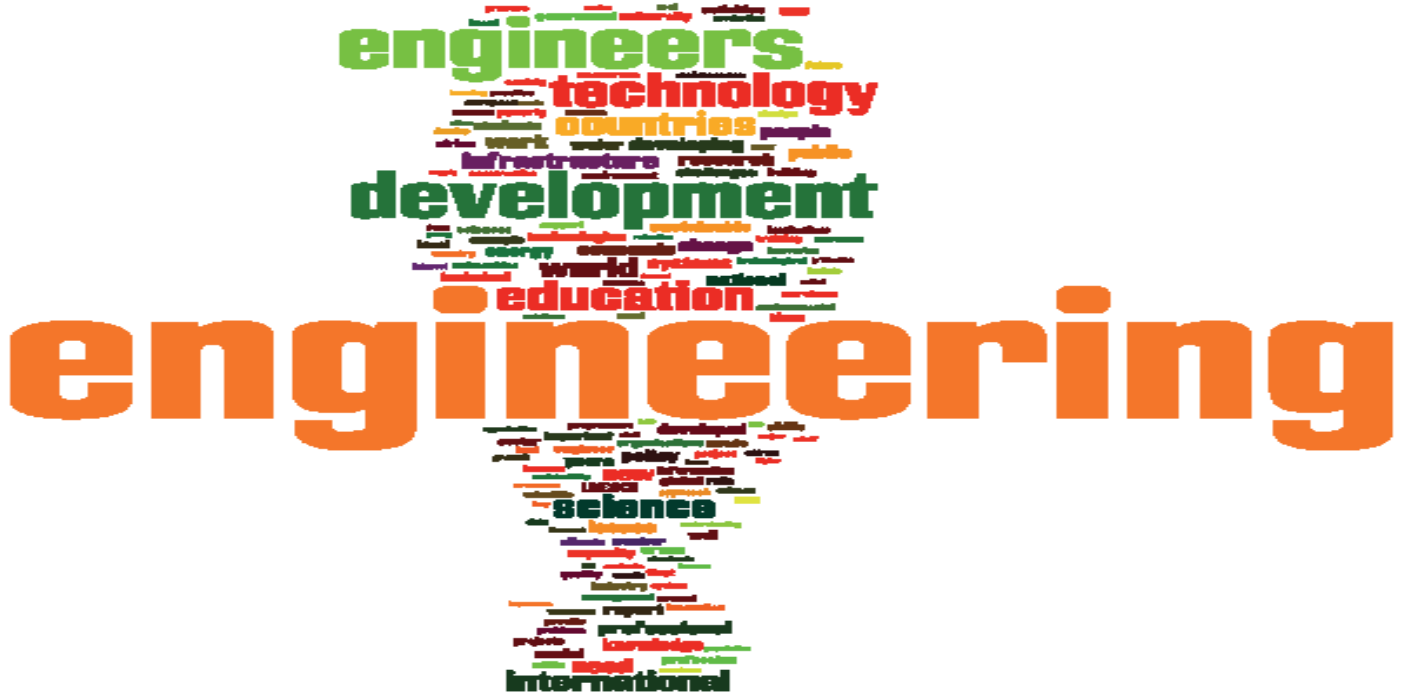
Key Findings

- Women in minority among senior staff
- Women comprise majority of students enroled in and graduating from UG and PG courses; this reverses at doctoral and postdoctoral levels; it is also not evident in STEM subjects
- Mixed opinions on whether women are supported and fairly represented in leadership in STEM
- Inadequate developmental programmes for women, negative cultural norms, attitudes and perceptions, harassment
- Importance of mentoring and supporting women for leadership and decision-making roles

Recommendations

- **Gender and fields of study:** need for consistent, regular collecting, synthesising and analysing enrolment, progression and completion data for women and men at national and institution levels
- **Gender and barriers to promotion:** requires identification and analysis of barriers in context as well as promising practices and initiatives, especially in disciplines dominated by men
- **Network building:** not explored in this research but other studies highlight significance of networks for supporting processes of change
- **Campaigns in secondary schools to promote women in STEM**
- **Financial support to women students at all levels**
- **Institutional policies to promote gender equality in recruitment**
- **Gender responsive training and mentorship**
- **Gender awareness campaigns in institutions**
- **Measures to promote co-responsibility in child care**
- **Improvements in data on women in HE**

THANK YOU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