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**Research and
Information Center**

Representation of Women in the Israeli Academia

–Compilation of Data–

**Submitted to the Committee on
the Status of Women and Gender
Equality**

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Preface

This document was prepared for a discussion in the Committee on the Status of Women and Gender Equality, regarding the representation of women in academia. It contains data about women's participation in academia: as students and as senior faculty members. Discussion of obstacles that may explain the gender gaps evident in the data below regarding fields of study, policy measures to counter such obstacles, and implementation of these measures in Israel were not included within the narrow scope of this document.

The document presents, among others, the following points:

- 59% of students in academic institutions in Israel in 2016/17 were women: 58% of BA students, 63% of MA students, and 53% of PhD students. Women constitute the majority of the students in all types of academic institutions, but they compose a particularly high percentage of the students in teachers colleges—79%. Women constituted a majority of students, also when categorized by population groups.
- The two fields of study in universities in which women are most represented are education and teacher training (79%–83% of BA, MA, and PhD students) as well as paramedical studies (81%–85%). On the other hand, the fields of study with the lowest representation of women are physical sciences (36%–38%); mathematics, statistics, and computer science (26%–33%); and engineering and architecture (27%–31%). Note that in colleges, a similar picture with regards to BA studies; however as to MA studies, the gender gaps are larger than in the universities.

Note that the gender breakdown in the various fields of study is not unique to Israel, and the rate of female students in the various fields is generally similar between Israel and the OECD countries.

- In the background to the fields of study women choose in higher education, it is worth noting the rate at which women take *bagrut* matriculation exams in selected subjects at the 5 study-unit level (the highest possible). It appears that more boys than girls take the *bagrut* examinations in scientific subjects, with the exception of biology and chemistry. The biggest gaps between boys and girls are in physics and computer science.



- We further note in this context that 7% of Jewish women who graduated high school in 2007 and who started their studies in institutions of higher education within ten years, study STEM subjects (Science, Technology, Engineering, and Mathematics). This rate rises to 32% when considering those of the aforementioned women who completed mathematics and English studies at the 5 study-unit level. Similarly, 3% of Muslim women who graduated high school in 2007 and who started their studies in institutions of higher education within ten years, study STEM subjects. However, 21.5% of these women who also completed mathematics and English studies at the 5 study-unit level study STEM subjects.
- The chart which will be presented further on in the document, also indicates that among PhD holders, too, women constitute a considerable majority in education, teacher training (78%) and paramedical studies (69%). Conversely, the fields of study in which women constitute less than a third of the students are engineering (33%), mathematics and computer science (27%).
- In the 2015/16 academic year, women composed 32% of the senior faculty members of universities. In the 2014/15 academic year, women composed 43% of the senior faculty members of funded academic colleges. The percentage of women among senior faculty members decreases the higher the faculty rank. The percentage of women among the highest-ranking faculty members—tenured professors—was 17% in universities and 15% in colleges. The percentage of women among senior faculty members in universities increased by seven percentage points between the 2002/3 and 2015/16 academic years.
- Between the 2002/3 and 2014/15 academic years, the number of senior faculty members increased by some 6%. But whereas the number of male senior faculty members declined by some 2% during this period, the number of women experienced an increase of some 28%—an annual average growth of some 2%.
- In most of the universities, the percentage of women among the senior faculty members in 2014/15 was 27%–33%, close to the average rate of female senior faculty members of all universities—30%. The Open University and the University of Haifa had a relatively high rate of women among the senior



faculty members—46% and 42%, respectively—while the Technion had a relatively low proportion of women—17%.

- In 2014/15 women constituted approximately one-third (34%) of the senior faculty members in engineering colleges and colleges of arts, and approximately half (51%) of the senior faculty members in general studies colleges.
- Between 2010/11 and 2013/14, 34% of the new senior faculty members hired by universities were women.

Between 2011 and 2015, 51% of new senior faculty members hired by general colleges were women, as were 44% of the new hires in colleges of arts, and 33% of the new hires in engineering colleges.

- There is significant variation in the percentage of women working as senior faculty members between different fields of study. Women constitute the majority of senior faculty members in two fields of study: paramedical studies (63%) and education (55%). The percentage of female senior faculty members is lowest in physics, engineering, mathematics, and computer science (15%, 14%, and 12%, respectively).

1. Data on higher education among women

The data that appear in this section is derived from two main sources—the Council for Higher Education (CHE) and the Central Bureau of Statistics (CBS). This data present the most updated information on women's higher education, some of which is updated to the most recent academic year (2016/17)—and some to the prior year—2015/16.

According to CBS data, **312,700 students studied in universities (including the Open University),¹ colleges, and teacher education colleges in Israel in the (2016/17) academic year. . Of those, 183,900 (59%) were women.² Note that while the number of women who started their BA studies within six years of graduating from high school increased by 15% in recent years and reached**

¹ Note that the Open University is usually treated separately from the other institutions because of its unique characteristics: the lack of admission requirements for BA studies, flexibility in choosing a course of study, and duration of studies.

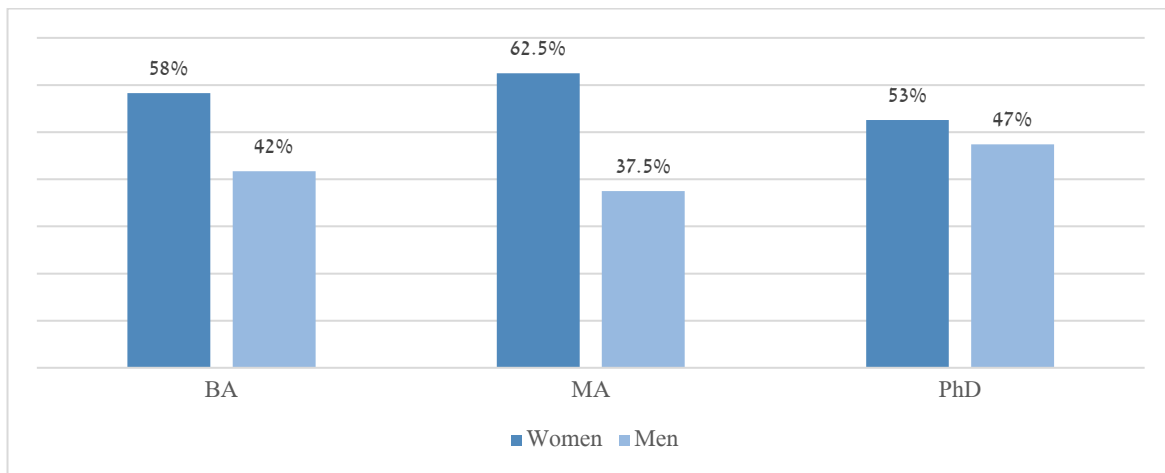
² Central Bureau of Statistics, "[Collected Data for International Women's Day 2017](#)," 6 March 2018 [Hebrew].



20,907 students in 2017, the number of men dropped by 12% and reached 8,289 students in 2017.³

This section will present various data that reflect the extent to which women are represented across higher education degree programs, broken down by the following categories: degree type, population group, institution type, and field of study (including an international comparison). The chart below presents the percentage of female students in BA, MA, and PhD programs:

Chart 1: Students at institutions of higher education in Israel, by gender and degree, (2016/17)⁴



The chart indicates a gap of 17 percentage points and 25 percentage points between the number of men and women in BA and MA programs, respectively. The difference between the number of men and women in PhD programs is smaller, and it stands at five percentage points.

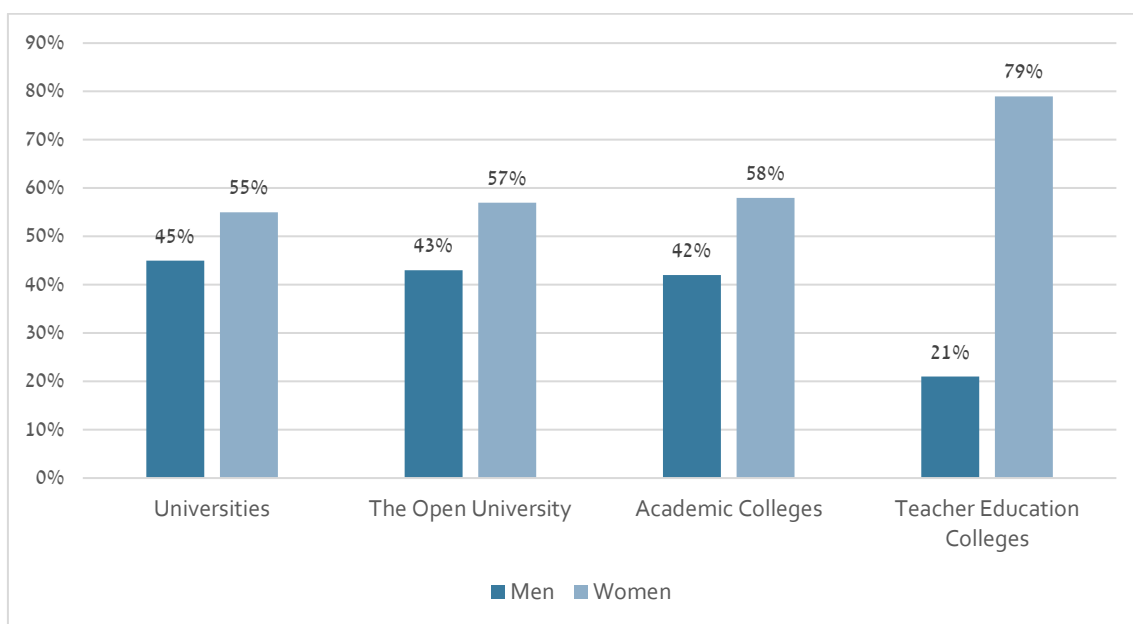
The following chart presents the distribution of students (in all degrees) among institutions of higher education, by gender.

³ Aviel Krentzler, "[Trends in Higher Education in Israel](#)," Central Bureau of Statistics, April 2018 [Hebrew].

⁴ Central Bureau of Statistics, "[Collected Data for International Women's Day 2017](#)."



Chart 2: Students in institutions of higher education in Israel, by gender and institution, (2016/17)⁵



These data indicate that women constitute a majority of all students across all types of institutions of higher education. Note that this state of affairs has remained stable since the (1999/2000) academic year.⁶ While the gap between the percentage of men and the percentage of women is the lowest among university students (10 percentage points), the gap is the highest in teacher education colleges (58 percentage points).

The following chart presents the percentage of men and women who started their academic studies within ten years of graduating high school, categorized by population group.⁷

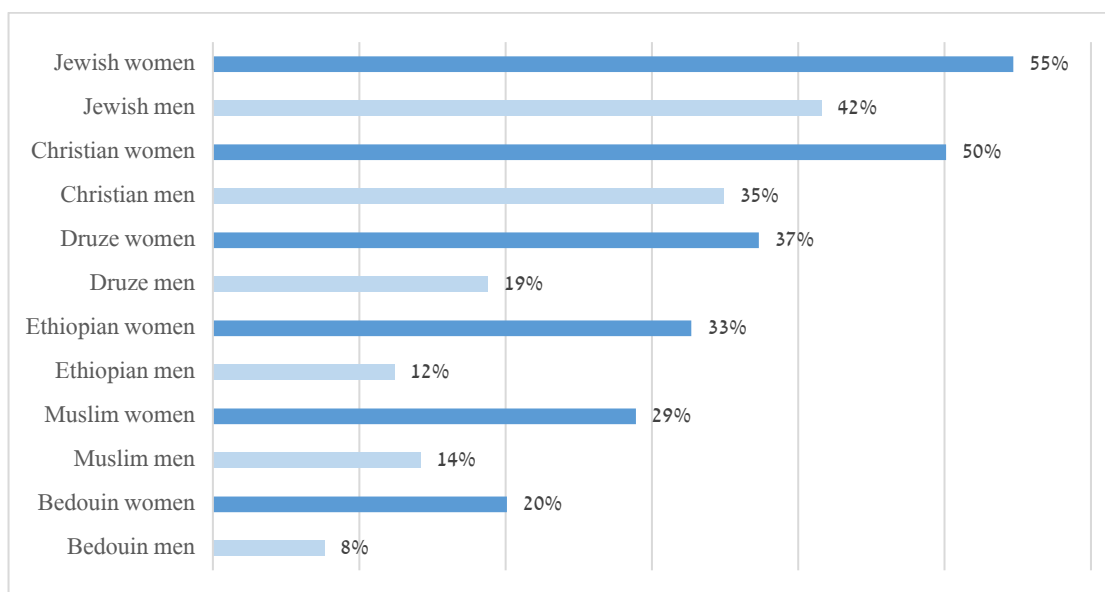
⁵ Ibid. For the list of institutions, see Council for Higher Education, "[List of Academic Colleges](#)," accessed 3 June 2018 [Hebrew].

⁶ Central Bureau of Statistics, [Higher Education 5777 2016/17](#), Statistilite 168, May 2018 [Hebrew]. (ליניק תינקן)

⁷ Note that the category "Jewish women" includes Ethiopian immigrants, as well, and the category "Muslim women" includes Bedouin women, as well.



Chart 3: Percentage of students who began studies at institutions of higher education within ten years of graduating from high school (2007), by population group and gender⁸



The chart indicates that among the students who started their studies within a decade of graduating from high school, women consisted the majority, across various population groups. **The most significant gaps between men and women were found among Ethiopian immigrants (some 21 percentage points) followed by the Druze sector (18 percentage points). The remaining groups exhibit gaps that are similar and vary from 12–15 percentage points.⁹**

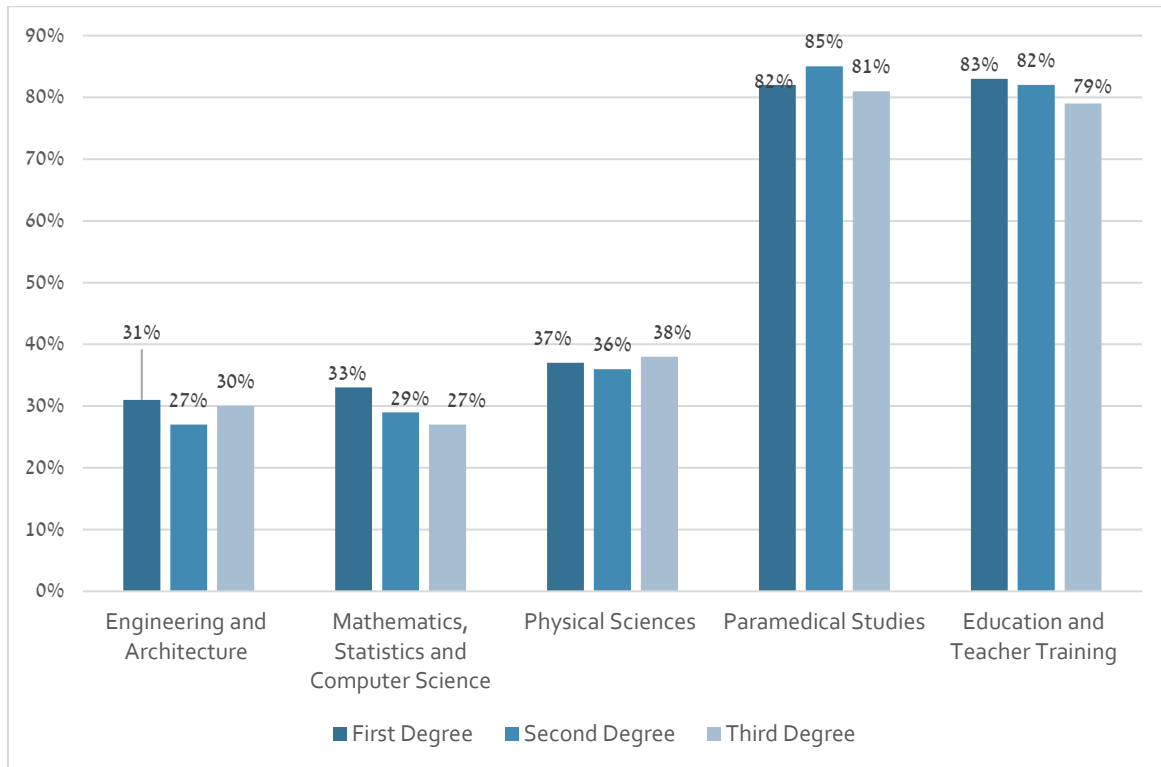
The following chart presents the percentage of women among university students by degree and by field of study. Note that the fields of study presented in this chart are those found on the extremes (high representation or low representation), and that the chart presents the percentage of women as a share of all the students (i.e., both men and women) in each field of study.

⁸ Krentzler, [Higher Education Trends in Israel](#), Central Bureau of Statistics, April 2018.

⁹ Krentzler, [Higher Education Trends in Israel](#), Central Bureau of Statistics, April 2018.



Chart 4: Percentage of women among university students, by degree and selected fields of study (those with the highest and lowest percentage of women), (2016/17)¹⁰



The chart indicates that the two subjects in universities with the highest percentage of female students are education and teacher training¹¹ and paramedical studies.¹² In contrast, the fields with the lowest percentage of women are physical sciences;¹³ mathematics, statistics, and computer science;¹⁴ and engineering and architecture.¹⁵

¹⁰ Krentzler, [Higher Education Trends in Israel](#), Central Bureau of Statistics, April 2018.

¹¹ Teacher education and training includes: education, education and research in education, didactics, educational administration, educational counseling, special education, educational psychology, technology and science instruction, humanities and social sciences instruction, Jewish education, language education, and language instruction.

¹² Paramedical studies include: pharmacology, communication disorders, public health, occupational health, community mental health, nursing, gerontology, emergency medicine, occupational therapy, art therapy, physical therapy, dietetics, medical laboratory sciences, optometry.

¹³ Physical sciences include: chemistry, organic chemistry, physical chemistry, industrial chemistry, physics, mathematical physics, nuclear physics, nanoscience and nanotechnology, geophysics, geology, oceanography, hydrology, climatology, earth science, marine geology, sciences.

¹⁴ Mathematics, statistics and computer science include: mathematics, mathematics-computer science, statistics, computer science, bioinformatics, management information systems.

¹⁵ Engineering and architecture include: civil engineering, structural engineering, geotechnical engineering, transportation engineering, environmental engineering, hydro-engineering, geodetic engineering, mechanical engineering, mechanics, electrical engineering, computer engineering-electrical, computer engineering-computer science, communication systems engineering, aeronautical engineering, chemical engineering, food engineering and biotechnology, industrial and management engineering, data systems engineering, systems engineering, content and manufacturing process engineering, safety management and engineering, architecture and urban construction, urban and regional planning,



We emphasize that the biological sciences are distinct from physical sciences and have a high percentage of women.

The chart further indicates that the differences between the degree programs, with regards to the representation of women, are minor - both in the fields with a high percentage of women and those with a low percentage of women.

Note that when it comes to academic colleges, our data points to a rather similar picture to the universities with regards to BA studies. However, when it comes to MA studies, data from (2016/17) point to larger gaps. In education and teacher training, as well as paramedical studies, the percentage of women exceeds 90%, while women make up for only 23% of engineering and architecture MA students and for 16% of MA students in mathematics, statistics, and computer science.¹⁶

In the background to the percentage of women who study the sciences at the BA level, it is worth noting the percentage of girls who study these subjects in high school. This data is not presented to suggest causality between the two figures but merely to suggest a potential background to the higher education figures.

Table 1: Percentage of pupils taking bagrut matriculation examinations in selected subjects at the 5 study-unit level, 2016¹⁷

Subject studied at advanced level	Percentage of pupils examined at the 5 study-unit level out of all the examinees in the matriculation examinations	
	Boys	Girls
Biology	13%	19%
Math	17%	12%

landscape architecture, industrial design, materials engineering, nuclear engineering, biomedical engineering, engineering sciences, biotechnology engineering, bioengineering, energy engineering.

¹⁶ Central Bureau of Statistics, Table 2.22 – [Students at Academic Colleges by Degree, Subject of Study and Sex and Gender, 2016/17](#) [Hebrew].

¹⁷ Idem, [Table 8.21 Matriculation Examinees at the Level of 5 Study Units in Selected Subjects, by Selected Characteristics, 2016](#) [Hebrew].



Chemistry	6%	8%
Physics	15%	6%
Computer science	13%	5%

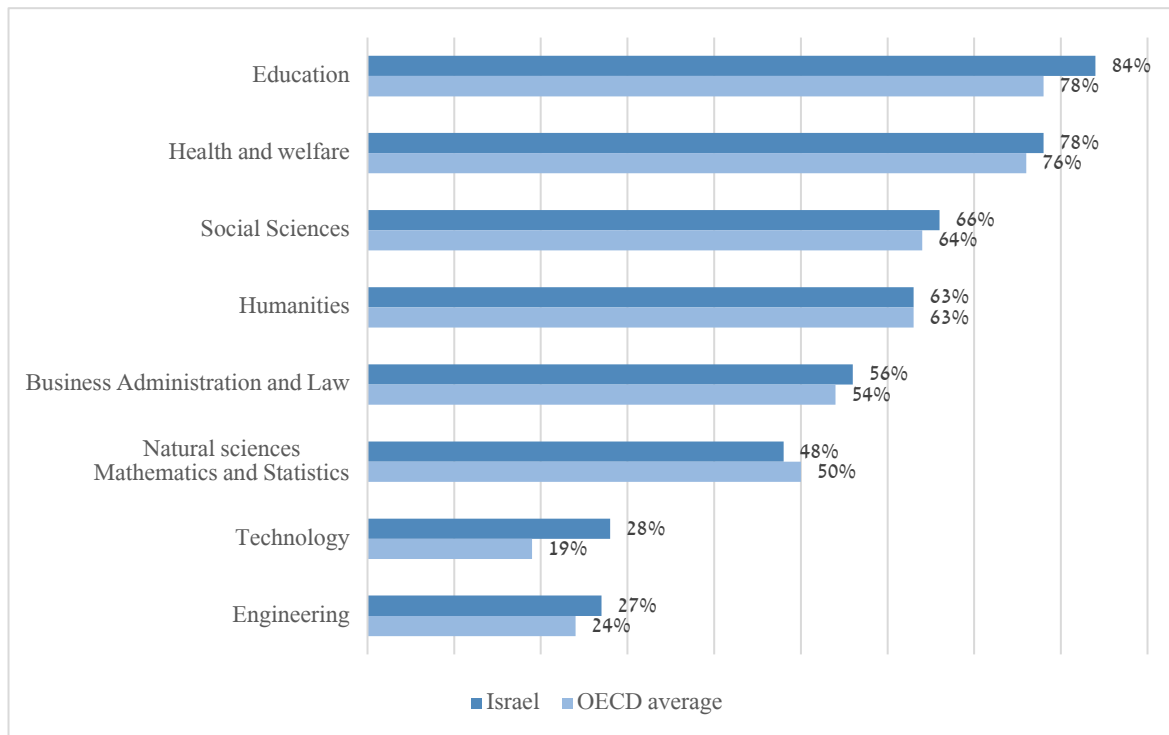
The table indicates that in the sciences, with the exception of chemistry and biology, a higher percentage of boys than of girls took matriculation exams at the 5 study-unit level. The significant gaps between the genders are in physics and computer science; 15% of boys took the physics exam at the 5 study-unit level (compared to 6% among girls), while 13% of boys took the in computer science exam at the 5 study-unit level (compared to 6% of their female counterparts). As for mathematics, while a higher percentage of boys take the exam, the rate of female examinees has increased moderately in recent years.

In this context, we note further that 7% of Jewish women who graduated high school in 2007 and began studies in institutions of higher education within ten years, study STEM subjects (Science, Technology, Engineering, and Mathematics). However, this rate increases to 32% when considering those women who studied mathematics and English at the 5 study-unit level during high school. Similarly, 3% of Muslim women who graduated high school in 2007 and started their studies in institutions of higher education within ten years, study STEM. Of these women, 21.5% of those who also completed mathematics and English at the 5 study-unit level study STEM subjects.

The following chart compares the percentage of women beginning BA studies in different fields as compared with OECD countries.



Chart 5: Percentage of women among students beginning BA studies, by field of study, Israel and OECD average, 2015¹⁸



The chart indicates that the gender division in different fields of study is not unique to Israel and, in general, a similar percentage of female students in Israel and the OECD countries enter the various fields of study.¹⁹

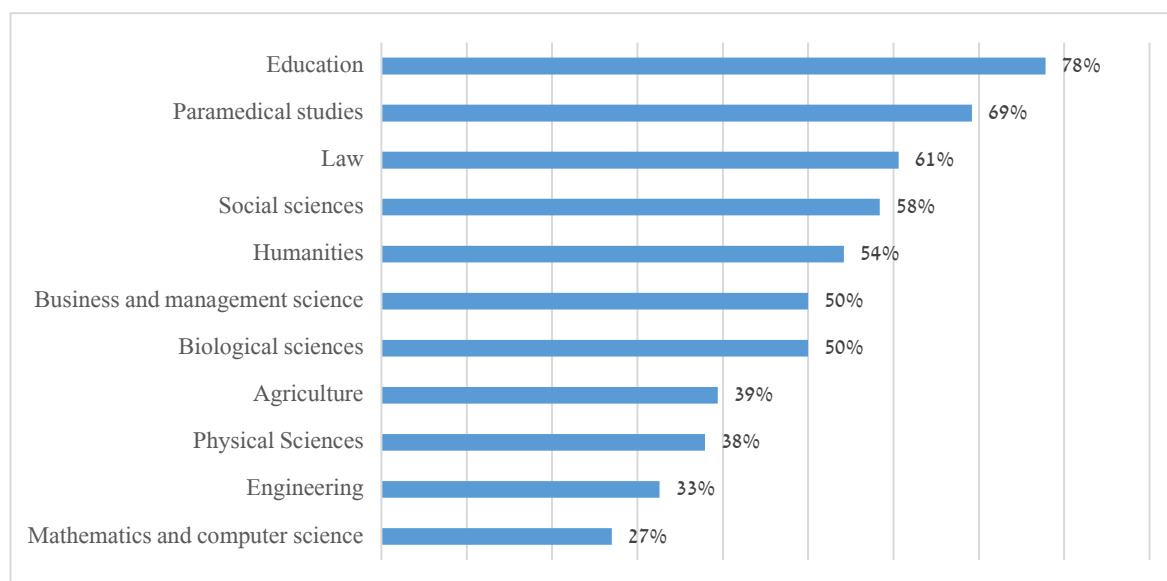
As mentioned above, the percentage of women among BA and MA students exceeds that of men by 16 percentage points and 25 percentage points, respectively. The gaps appear to be smaller among PhD students. The following chart presents the percentage of female recipients of doctoral degrees by field of study.

¹⁸ OECD, [Education at a Glance, 2017: OECD indicators, Table C3.1, pp 282](#)

¹⁹ "Technology" (the T in STEM) refers to information and communication technologies.



Chart 6: Percentage of women among doctorate recipients by field of study, (2015/16)²⁰



The chart indicates that even among doctorate recipients, the fields of study in which women constitute a significant majority are education and teacher training and paramedical studies. Conversely, the fields of study in which women are granted less than a third of the Phds, are engineering, mathematics and computer science.

2. Data on women in senior faculty positions at universities²¹

The following data relate to female senior faculty members in universities. The data, which were provided to the Knesset Research and Information Center by the Council for Higher Education (CHE), only refer to senior faculty members—permanent faculty members at the rank of lecturer, senior lecturer, associate professor, and full professor. The CHE does not have full, processed data about non-permanent lecturers in institutions of higher education—external teachers and members of the junior faculty (including teaching assistants).²² The data refer to full-time equivalent positions (FTE) and not to people (i.e., two faculty members each working half-time are counted as one faculty member in the data). The data presented will cover universities and academic colleges funded by the Planning and Budgeting

²⁰ Central Bureau of Statistics, [Table 3.12 Recipients of a Third Degree from Universities in Selected Subjects of Study, by Sex and Institution, 5776 \(2015/16\)](#) [Hebrew].

²¹ Unless stated otherwise, the source of data: Ari Stone, Director of Faculty and Research Products, Planning and Policy Division, Council for Higher Education, e-mail, 28 May 2018; Tamar Kravitz, Senior Coordinator, Academic Division (CHE) and Nina Ostrozhko, Senior Coordinator, Finance Division (PBC), "Gender Equity in Higher Education in Israel: Looking Towards the Future," presented at the Azrieli Foundation Seminar, 15 February 2018, sent via e-mail by Nina Ostrozhko, Senior Coordinator of Research Budgeting, Finance Division, CHE, 30 May 2018.

²² Email from Ari Stone, 28 May 2018.



Committee (PBC) but not colleges for education funded by the Ministry of Education or non-funded institutions. Most of the data are updated to the (2014/15) academic year. Data on senior faculty members in all universities and data on the hiring of senior faculty members in universities are updated to the (2015/16) academic year. The following chart presents data about the percentage of senior faculty positions in universities and colleges held by women.

Chart 7: Percentage of women in senior faculty positions (FTEs) at universities, by rank, (2015/16)

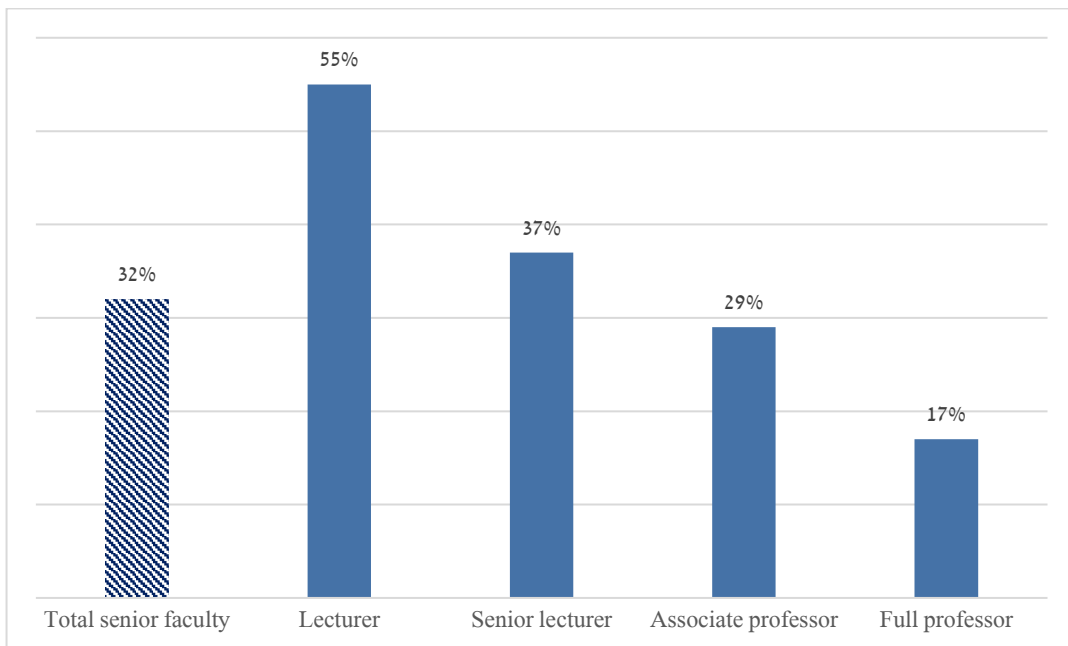
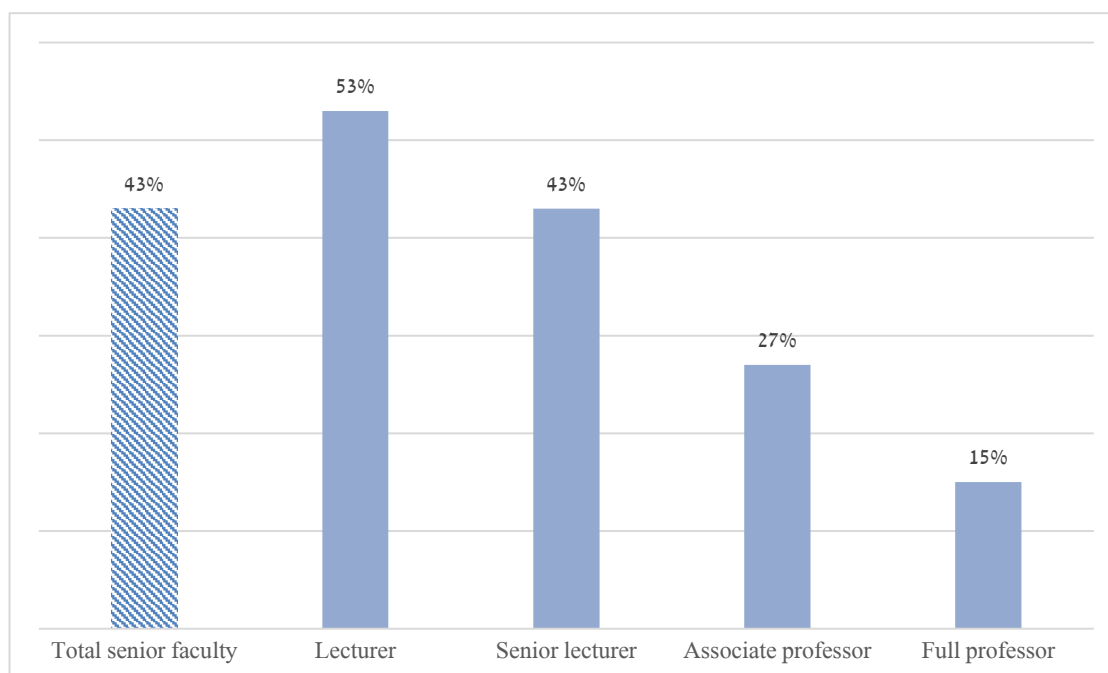


Chart 8: Percentage of women in senior faculty positions (FTEs) at publicly funded academic colleges, by rank, (2014/15)

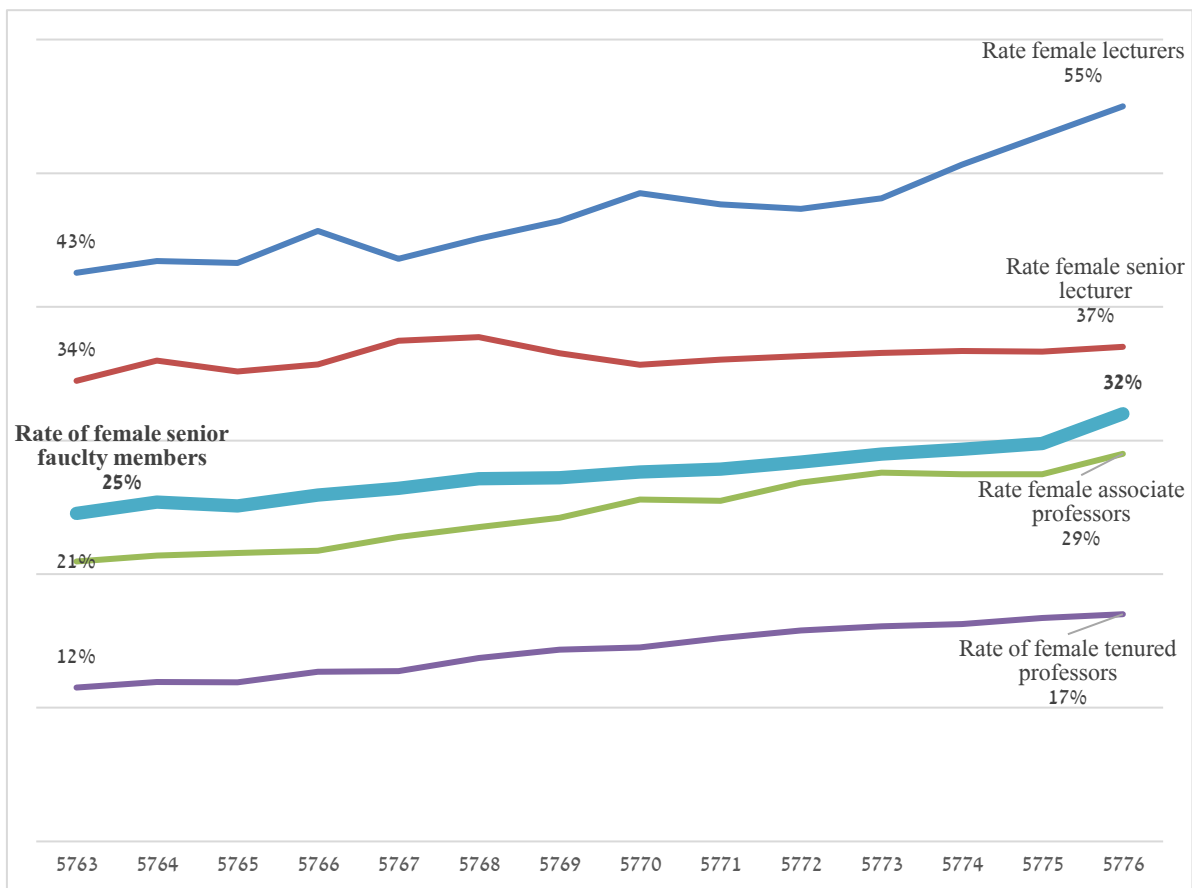


The charts indicate that women constituted less than a third (32%) of all senior faculty members of Israeli universities in the 2015/2016 academic year, and 43% of the faculty members of publicly funded colleges in the 2014/2015 academic year. In both universities and colleges, **the rate of women among senior faculty members decreases the higher the faculty rank**. Thus, women constituted over half (55% in universities and 53% in colleges) of lecturers, over a third (37% in universities and 43% in colleges) of senior lecturers, over a quarter (29% in universities and 27% in colleges) of associate professors, and less than a fifth (17% in universities and 15% in colleges) of full professors.

The following chart presents the changing rate of female senior faculty members in universities since (2002/3):



Chart 9: Percentage of senior faculty positions (FTEs) at universities²³ held by women, by rank, (2002/03)–(2015/16)



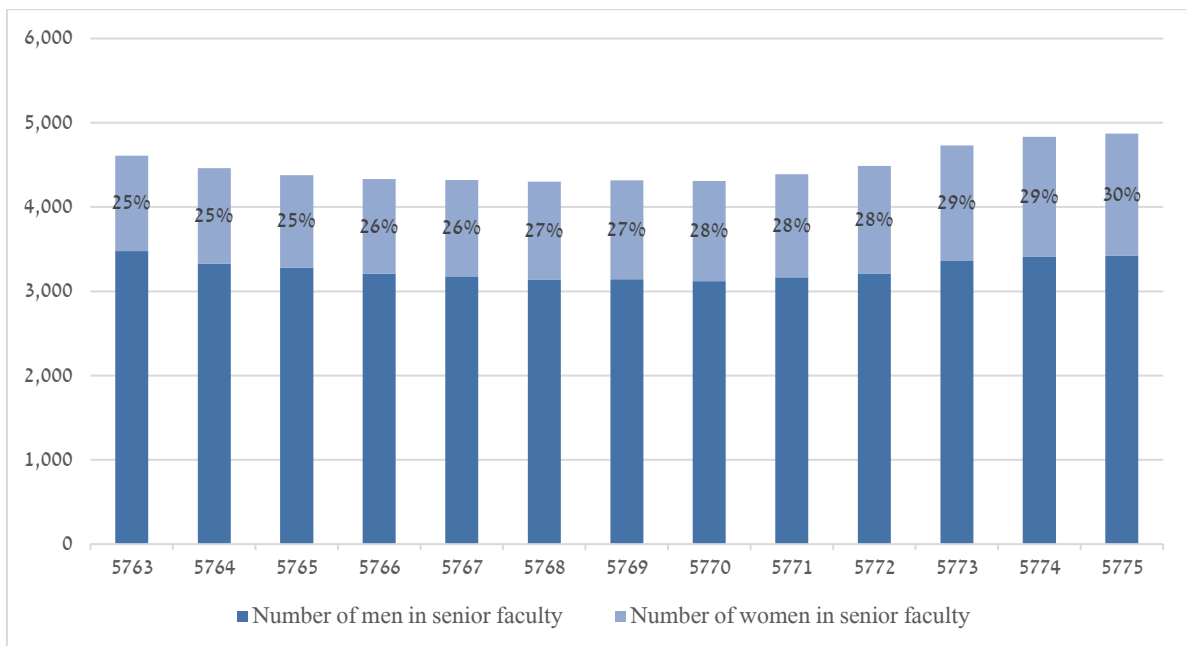
The rate of female senior faculty members grew by seven percentage points between 2002/2003 and 2015/2016. **However, the upward trend was not identical across the different academic ranks.** The rate of female lecturers increased by 12 percentage points, that of female senior lecturers by three percentage points, of female associate professors by eight percentage points, and that of tenured female professors by five percentage points.

Another facet of the changing trend in the representation of women in faculties can be seen by examining the change over time in absolute numbers. The following chart presents the number of senior faculty members in universities (not including the Open University and Ariel University) since (2002/3).

²³ Not including the Open University and Ariel University.



Chart 10: Number of men and women in senior faculty positions (in FTEs²⁴) at universities,²⁵ (2002/03)– (2014/15)



The number of senior faculty members in universities, in terms of full-time positions (FTEs), increased from some 4,600 in 2002/2003 to some 4,900 in 2014/2015—an increase of some 6%. However, while the number of male faculty members during these years decreased by some 2%, the number of female members increased by some 28%, an average annual increase of 2%.

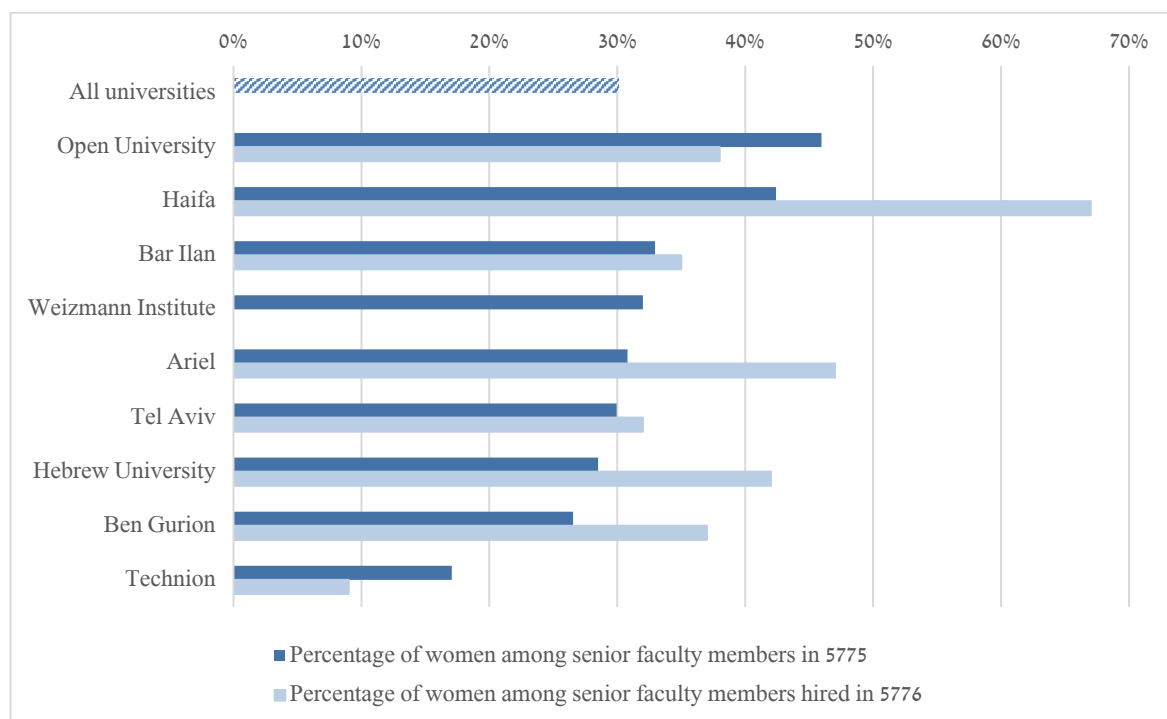
The following chart presents the percentage of women among senior faculty members in each university.

²⁴ As mentioned above, this means that two faculty members each working half-time are counted as one faculty member in these data.

²⁵ Not including the Open University and Ariel University.



Chart 11: Percentage of women in senior faculty positions (FTEs) at universities, (2014/15), and among new senior faculty members hired in (2015/16), by institution



The data indicate that the proportion of female senior faculty members is not identical across the different universities. In most institutions, the rate of female senior faculty members in 2015/2016 was between 27% and 33%, which is close to the figure for all universities—30%. The proportion of female senior faculty members was relatively high at the Open University and the University of Haifa (46% and 42%, respectively), while the proportion was relatively low at the Technion (17%).

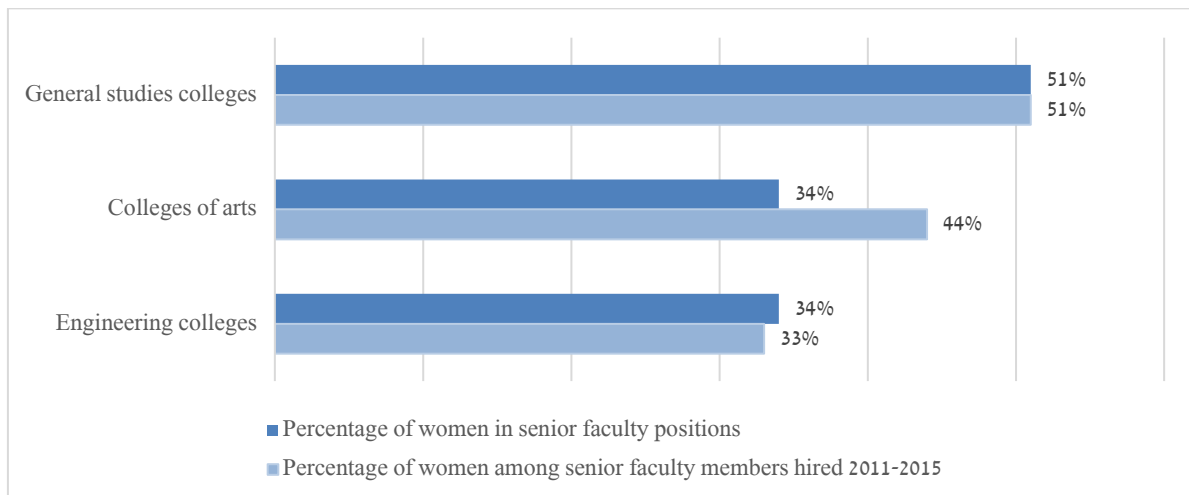
The data further indicate that in most institutions the percentage of women among the new senior faculty members who started working in (2015/16) was higher than the overall rate of women among faculty members. The rate of hiring women is particularly low in the Technion (9%) and Weizmann Institute (0%). We stress that we currently do not have hiring data in absolute numbers; these figures may be low, and therefore the data presented in percentages should be treated with extreme caution. We do not have an updated figure about the proportion of women hired as senior faculty members across all universities, but from (2010/11)– (2013/14), the rate was 34%.²⁶

²⁶ The Committee for the Advancement and Representation of Women in Institutions of Higher Education, [Committee Report](#), July 2015 [Hebrew].



The following chart presents the percentage of women among senior faculty members in publicly funded academic colleges and among the recently hired faculty members at these colleges.

Chart 12: Percentage of women in senior faculty positions (FTEs) at funded colleges, (2014/15), and among senior faculty members hired between 2011–2015, by field of study



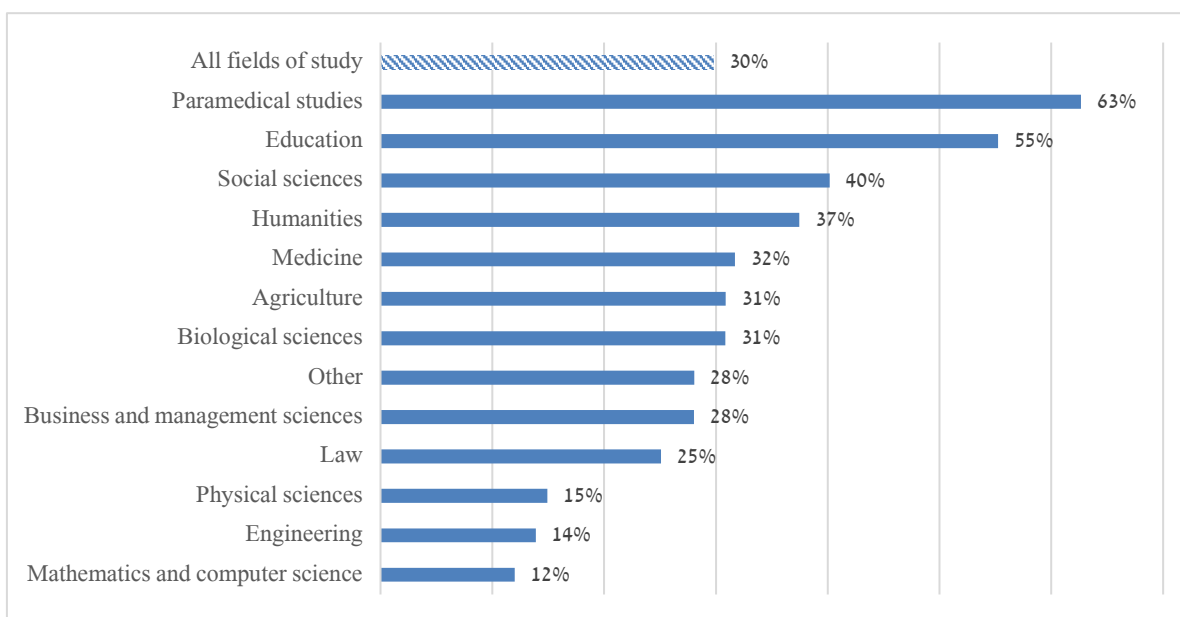
The data indicate that considerable differences also exist between various types of publicly funded colleges with regards to the percentage of women working as senior faculty members. While women constitute only a third (34%) of senior faculty members in colleges of engineering and colleges of arts, they constitute about half (51%) of senior faculty members in colleges of general studies.

The data further show that while in colleges of arts the percentage of women among new senior faculty members (i.e., who began working between 2011 and 2015) is higher than that among all senior faculty members, in colleges of general studies and in colleges of engineering, women represent a similar percentage of newly hired employees and all female senior faculty members.

The following chart presents data about female senior faculty members, divided by fields of study.



Chart 13: Percentage of female senior faculty members (FTEs) at universities, by field of study, (2014/15)

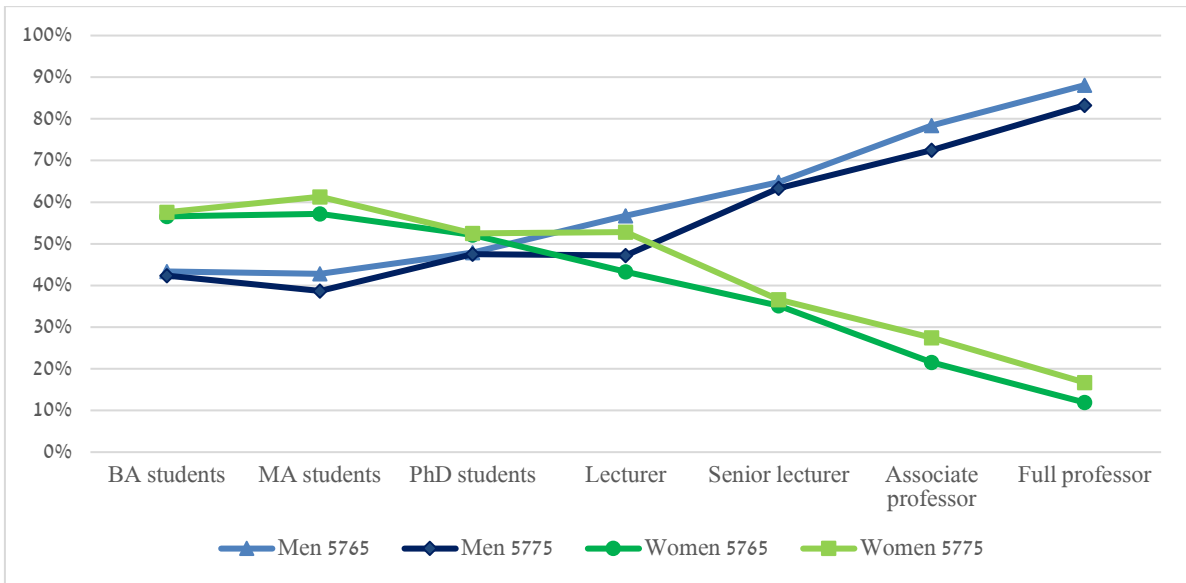


The data indicate that there are large variations across areas of study in terms of the percentage of women among senior faculty members. **Women constitute a majority of faculty members in two fields: paramedical studies (63%) and education (55%).** (Note that in education, women are a majority across all the academic ranks, while in paramedical studies, women are a majority across all ranks except for full professor.) In the social sciences and humanities, women constitute a greater percentage of the faculty, with comparison to other fields of study, while in law, and especially **physics, engineering and math and computer science—the rate of women among faculty members is low—**down to 12% in math and computer science. **As mentioned above, also among students for all degree types (including Phd), women compose a majority in the fields of education and paramedical studies. On the contrary, women compose a minority of the students in the fields of physics, engineering and math, and computer science (see charts 4 and 6).**

To conclude, we present a chart known in professional circles as the "Scissor Curve", which displays the gender distribution across the various stages of the academic track.



Chart 14: The "Scissor Curve"—the rate of men and women in various stages of the academic track, (2004/5) and (2014/15)²⁷



This chart indicates that despite changes that occurred between 2004/2005 and 2014/2015, the two points in time show the same pattern—a female majority during academic studies, which narrows in doctorate studies. A male majority is evident among senior faculty starting from the senior lecturer rank, which only increases with rank.

²⁷ Student data: Central Bureau of Statistics, 2016 Statistical Abstract, [Table 8.56: Students in Universities, Academic Colleges and Colleges of Education, by Degree, Sex, Age, Population Group and District of Residence](#), e-mail, 28 May 2018.

Faculty data: Personal email from Ari Stone, Director of Faculty and Research Products, Planning and Policy Division, Council for Higher Education, e-mail, 28 May 2018.

