Analysing female competencies and skills entering the employment market:
A case study of engineering graduates under gender perspective from Ethiopia

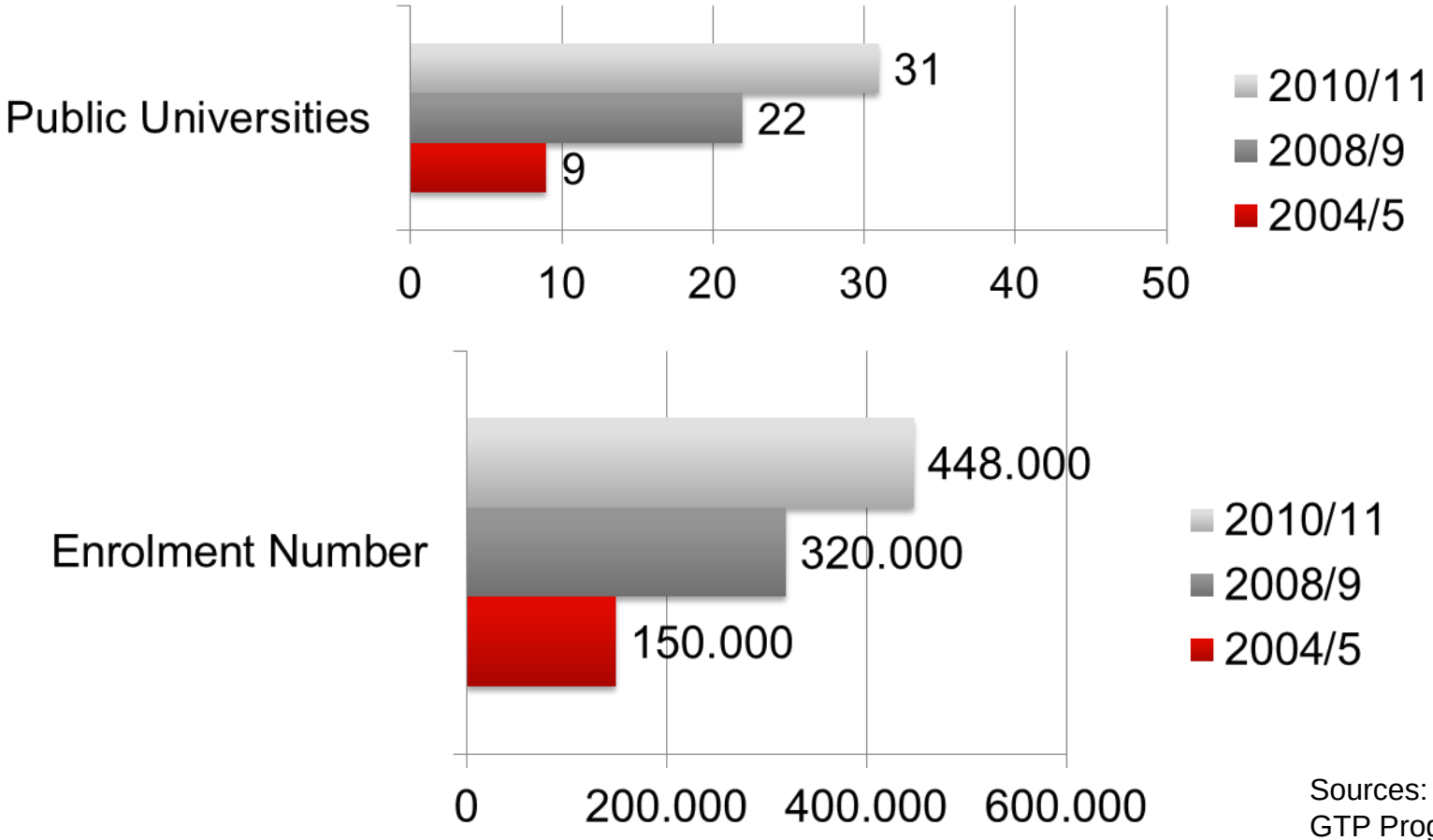
Content

I. The Ethiopian Higher Education Sector: A brief insight
II. Conducting Tracer Studies: A joint initiative of different partners
III. Results of the 2011/12 cohort on a gender perspective
IV. Conclusions and Next Steps

Facts and Figures: Ethiopian Investment in HE

- Almost 14% of the national budget is spend in education (out of this over 20% are invested in the Higher Education sector)
- Expansion in the Higher Education sector: increasing of student numbers from 0,2% in 1990 to almost 6% in 2012 (african average)
- Establishment of 22 new public universities since 2009
- Implementation of 70/30 strategy (70% engineering and natural science students and 30% human and social science students)

Extension of the Tertiary Sector



Sources: ESDP IV (2010),
GTP Progress Report (2012)

Facts and Figures: The other side…

- More than 50% of all engineering academic staff are qualified on Bachelor level or even lower (only about 6 of the lecturers are PhD holders)
- Practice-orientation in teaching and learning is still missing and especially engineers are lacking practical skills
- 20-25% of female students are enroled but only about 1-10% of the academic staff are female

Strategies of the Ethiopian Government in the Sector

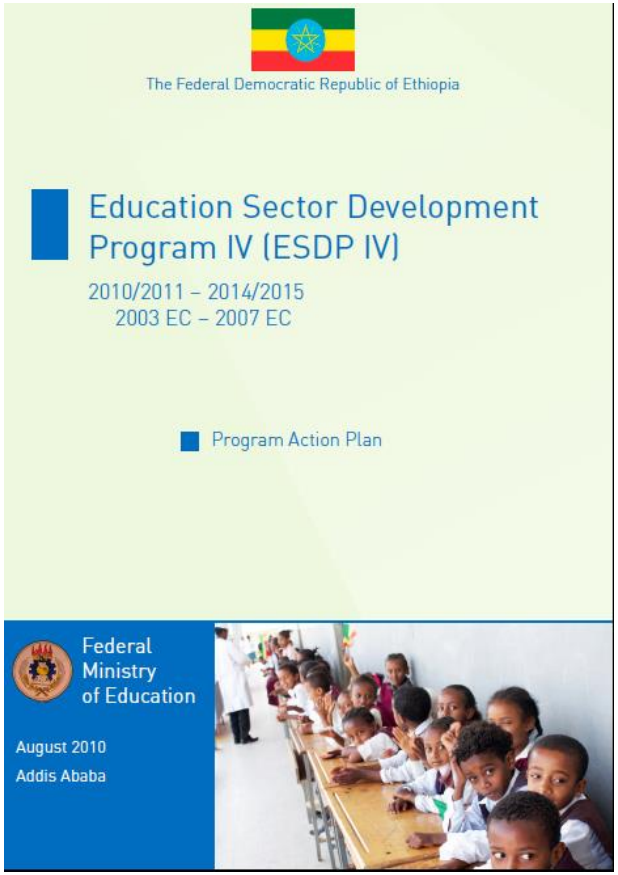
Progressive Programme in the education sector developed in cooperation with different donors is steering the reforms

Strategy

- Focus on focal programmes in three subsectors: genderal education, vocational training and higher education
- Additional targeted programmes in cross-cutting areas: quality, equality, improved management, HIV/Aids, environment, nutriotion and health

Main aim in the Higher Education Sector

- Highly qualified graduates that are demand based educated and contribute to the economic development of the country
- Focus on engineering and technology based research in cooperation with industry (technology transfer)



Setting of the Tracer Studies

ecbp

Ministry of Education

GIZ/ German Development Cooperation

Ministry of Civil Service

GIZ Education Programme

Institutes of Techno-logy (IoTs)

2008
First Sample at Addis Abeba University

2009
3 IoTs at Addis and Bahir Dar

2011
4 IoTs at Addis, Hawassa, Arba Minch

2012
7 IoTs at Addis, Hawassa, Jimma, Mekelle, Bahri Dar and UST Adama

Development Focal Area Education

+

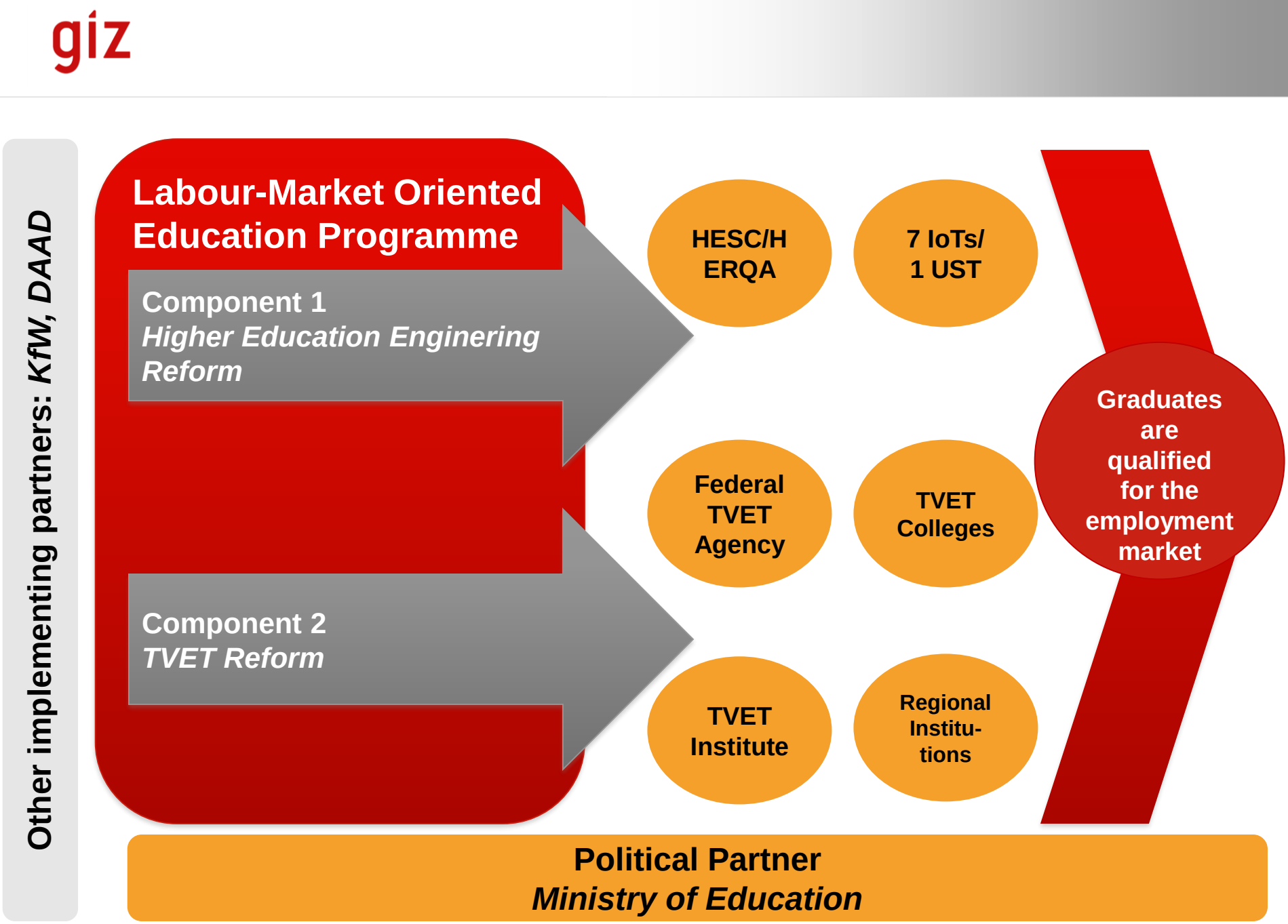
Technical Cooperation
6 Mio +
10 Mio Financial contribution to the partner (MoE)

GIZ

Financial Cooperation
22 Mio for new project phase
App. 8 Mio for old project phase

KfW

≈ 46 Mio Overall Budget


Other implementing partners: KfW, DAAD
Labour-Market Oriented Education Programme
Component 1
Higher Education Enginering Reform
Component 2
TVET Reform
HESC/H ERQA
7 IoTs/ 1 UST
Federal TVET Agency
TVET Colleges
TVET Institute
Regional Institu-tions
Graduates are qualified for the employment market
Political Partner
Ministry of Education

Institute of Textile Engineering
Garment Development
Garment Production
Fashion/Textile Design
Textile Finishing
Textile Production

Institute of Technology (IoT BDU)
Electrical and Computer Engineering
Mechanical and Industrial Engineering
Civil and Water Resource Engineering
Chemical and Food Proc. Engineering

Ethiopian Institute of Technology (EIT)
Civil Engineering
Industrial Engineering
Electrical and Computer Engineering
Mechanical Engineering
Architecture and Urban Planning
Computing and Information Science
Chemical Engineering

Addis Ababa Institute of Technology (AAIT)
Chemical Engineering
Civil Engineering
Electrical and Computer Engineering
Energy Technology
Mechanical Engineering

Adama University of Science and Technology (AUST)
School of Agriculture (SoA)
School of Business Administration, Management and Trade (SoB)
School of Engineering and Information Technologies (SoE)
School of Health (SoH)
School of Humanities and Natural Sciences (SHN)
School of Pedagogic and Vocational Teacher Education (SoP)

Ethiopian Institute of Architecture, Building Construction and City Development (EiABC)
Architecture and Architecture Design
Building Technology and Structural Design
Project and Construction Management
City Development, Housing and Urban Design
Environmental Planning and Design
Theory, History and Conservation of Cultural and
Arch. Heritage

Jimma Institute of Technology (JIT)
Electrical and Computer Engineering
Mechanical Engineering
Bio-Medical Engineering
Civil Engineering
Information Science Engineering
Water Resources and Environmental Engineering

Institute of Technology
Architecture and Urban Planning
Civil and Urban Engineering
Computer Science
Electrical Engineering
Hydraulis and Water Resource Engineering
Mechanical Engineering
Water Resources and Irrigation Engineering
Water Supply and Environmental Engineering

Hawassa Institute of Technology (HioT)
Civil and Urban Engineering
Construction Technology and Management
Irrigation and Water Resource Engineering
Electrical and Computer Engineering
Mechanical and Industrial Engineering

Newly established IoTs, not supported by GIZ

IoTs with international management (DAAD)

Approach

- **2 questionnaires are conducted:**
  - 1st interview takes place at the time of graduation
  - 2nd interview by phone one year after graduation
- Only undergraduate students in engineering are interviewed at selected Institutes of Technology
- The instrument used has be changed last year. In 2011 the standard instrument developed at Kassel has been adapted.
- **Additional:** Tracer Studies are also conducted in the TVET sector and an employer survey has been established since 2008.

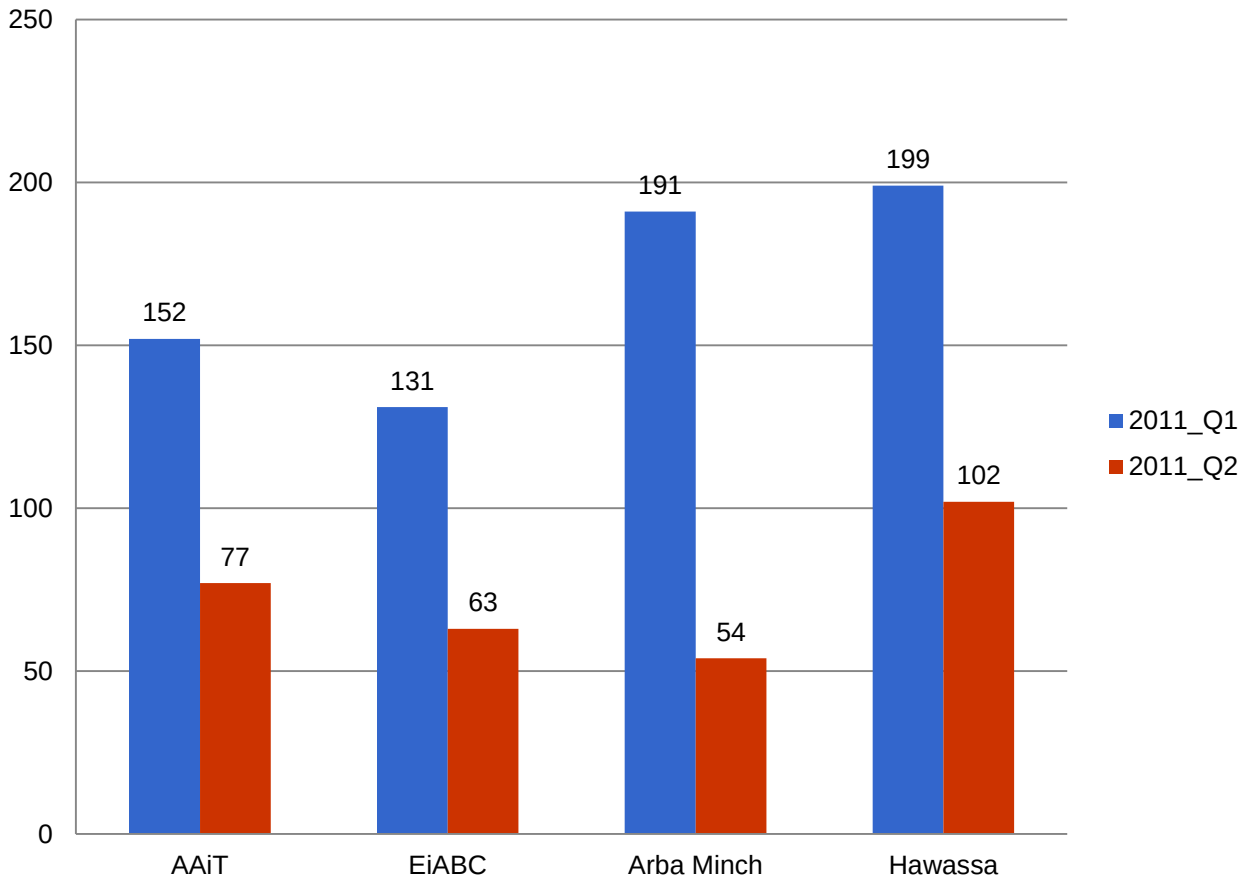
Data Overview

University	Cohort 2008		Cohort 2009		Cohort 2010		Cohort 2011		Cohort 2012	
	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2
AAU – AaiT	204	74	32	18			153	77	149	
AAU – EiABC							131	63	56	
Bahir Dar - IoT			72	36	-	-			328	
Bahir Dar - IoTex					-	-			77	
Mekelle			26	12	-	-			242	
Jimma									245	
Adama									171	
Hawassa							200	102	206	
Arba Minch							192	54	-	
Total	**204**	**74**	**130**	**66**			**676**	**296**	**1474**	
Recontact Rate		36%		51%				44%		

Note: Grey shading indicates reform cohorts without graduates.

In all questionnaires (Q1 and Q2) between 14-18% females have been participated

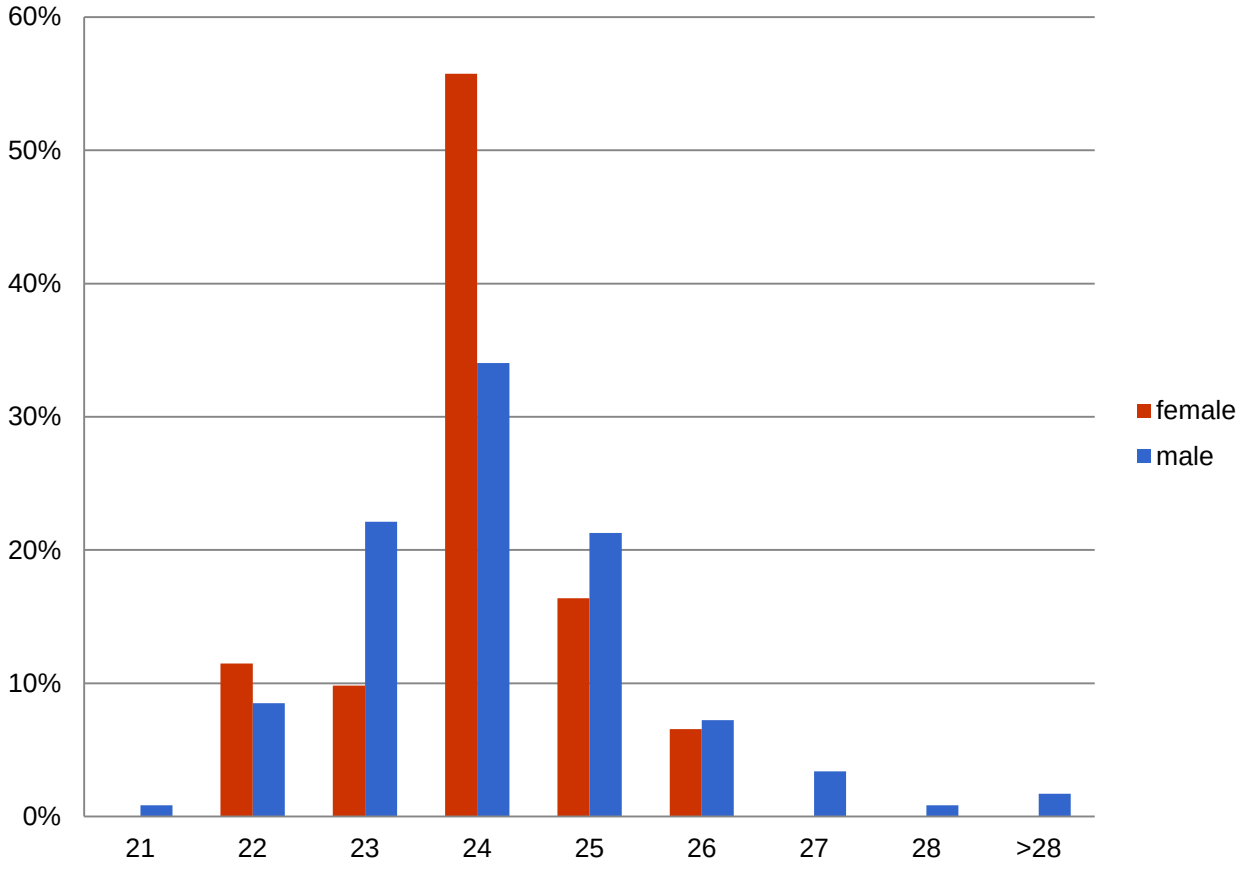
2011/12 Cohort



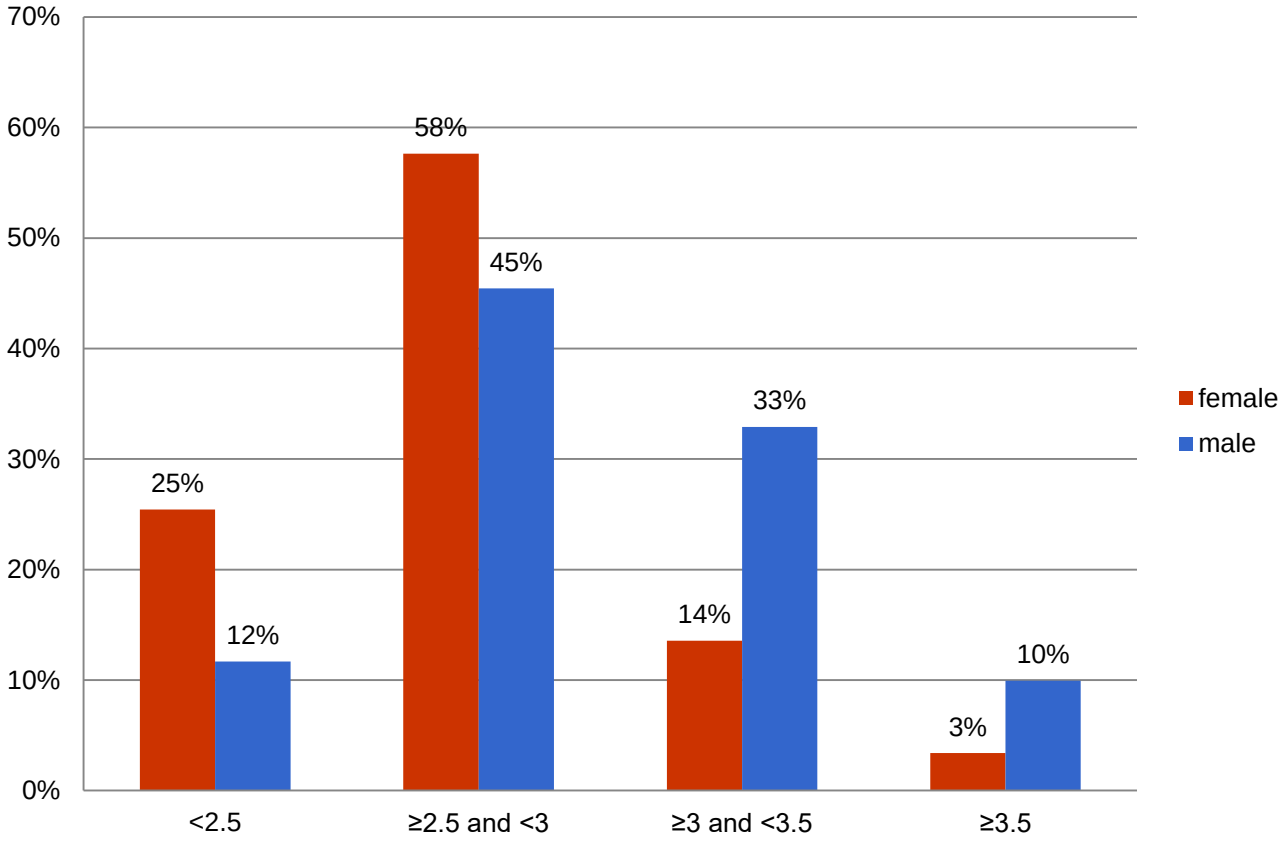
Altogether:
For Q1: 546 male and 127 female students

For Q2: 235 male and 61 female graduates

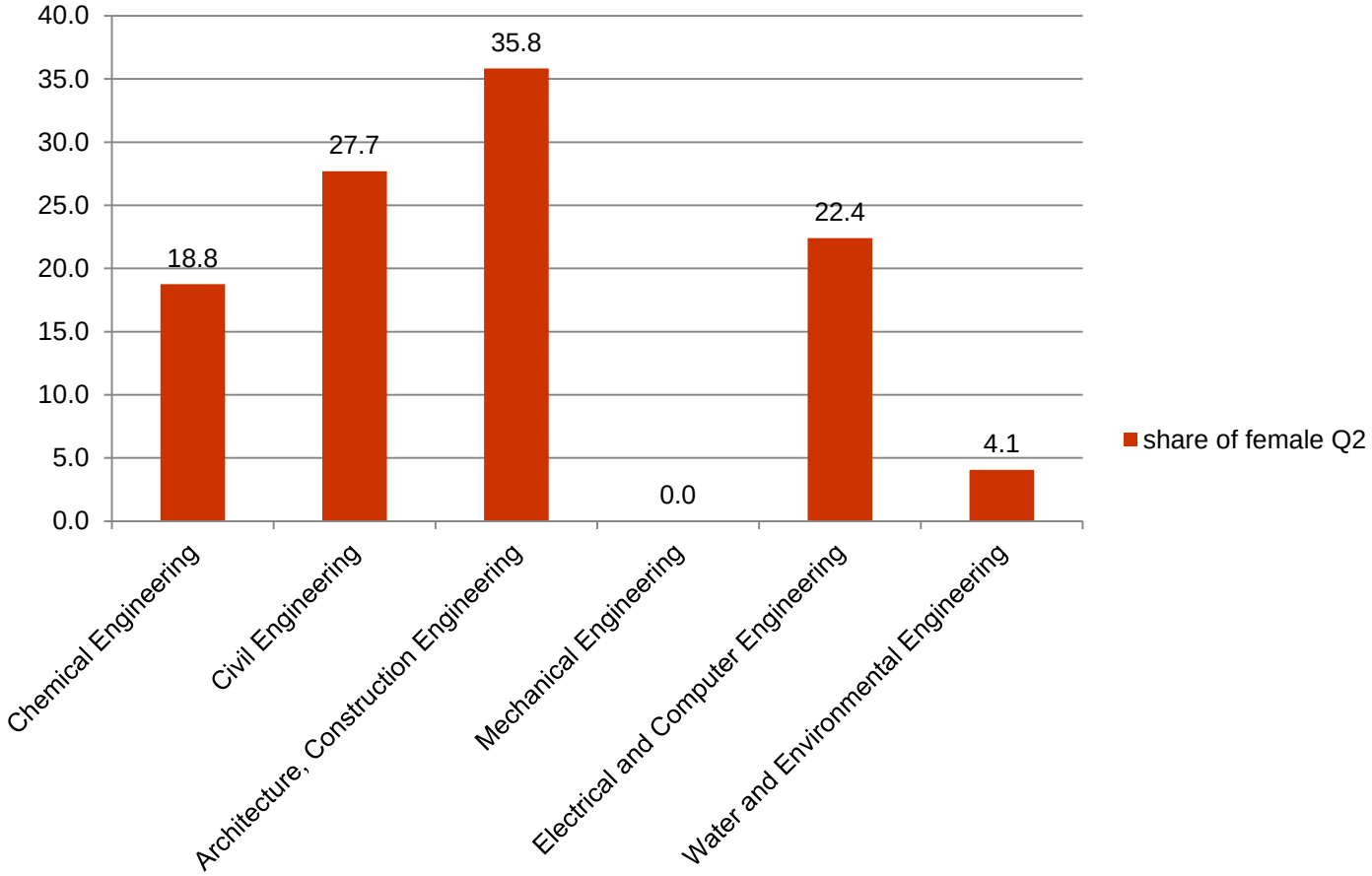
Age of the graduates (Q2)



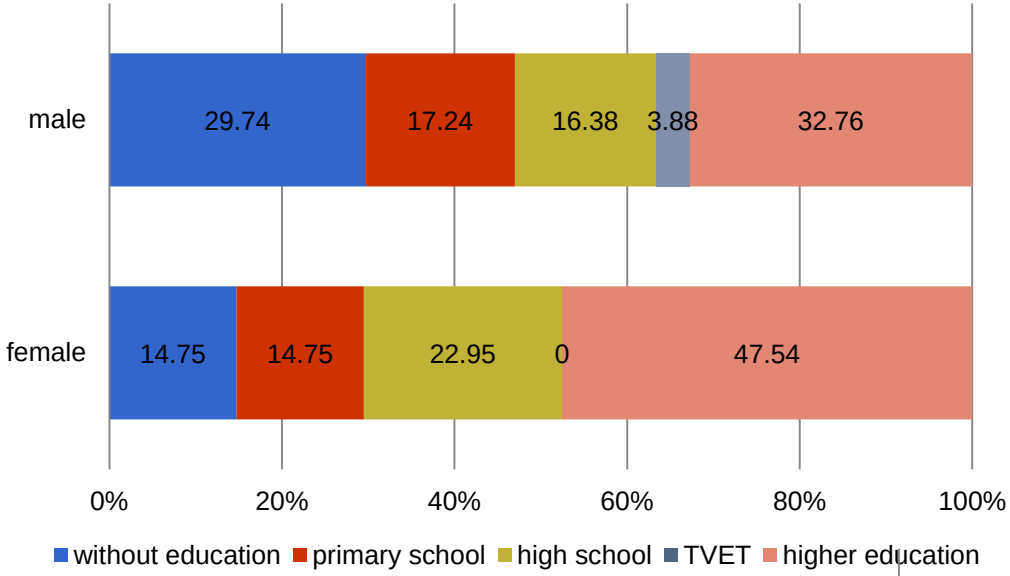
GPA distribution by gender (Q2)



Share of females in the study programmes (Q2)

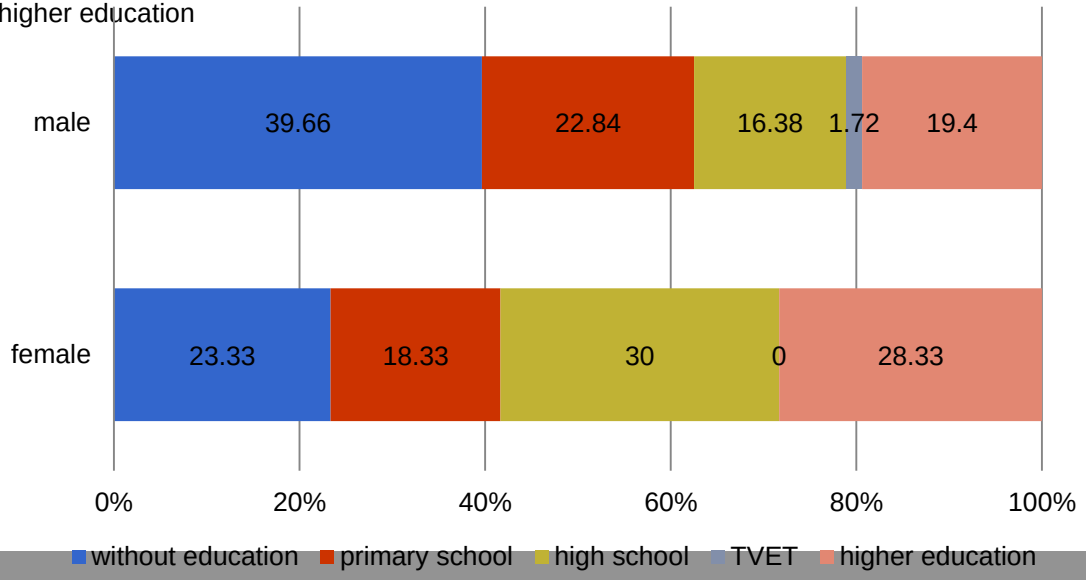


Relationship between fathers educational level and graduate‘s gender

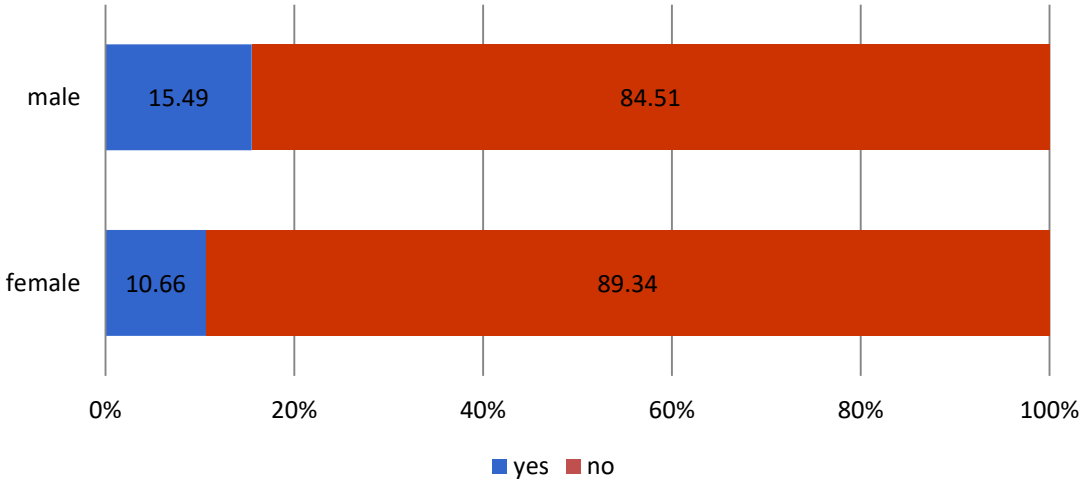


Father

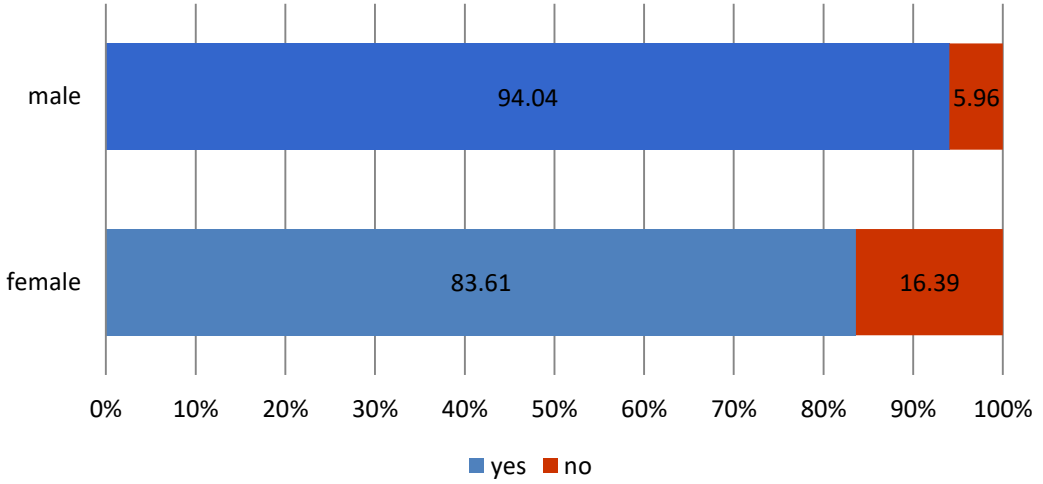
Mother



Employment at the time of graduation Q1



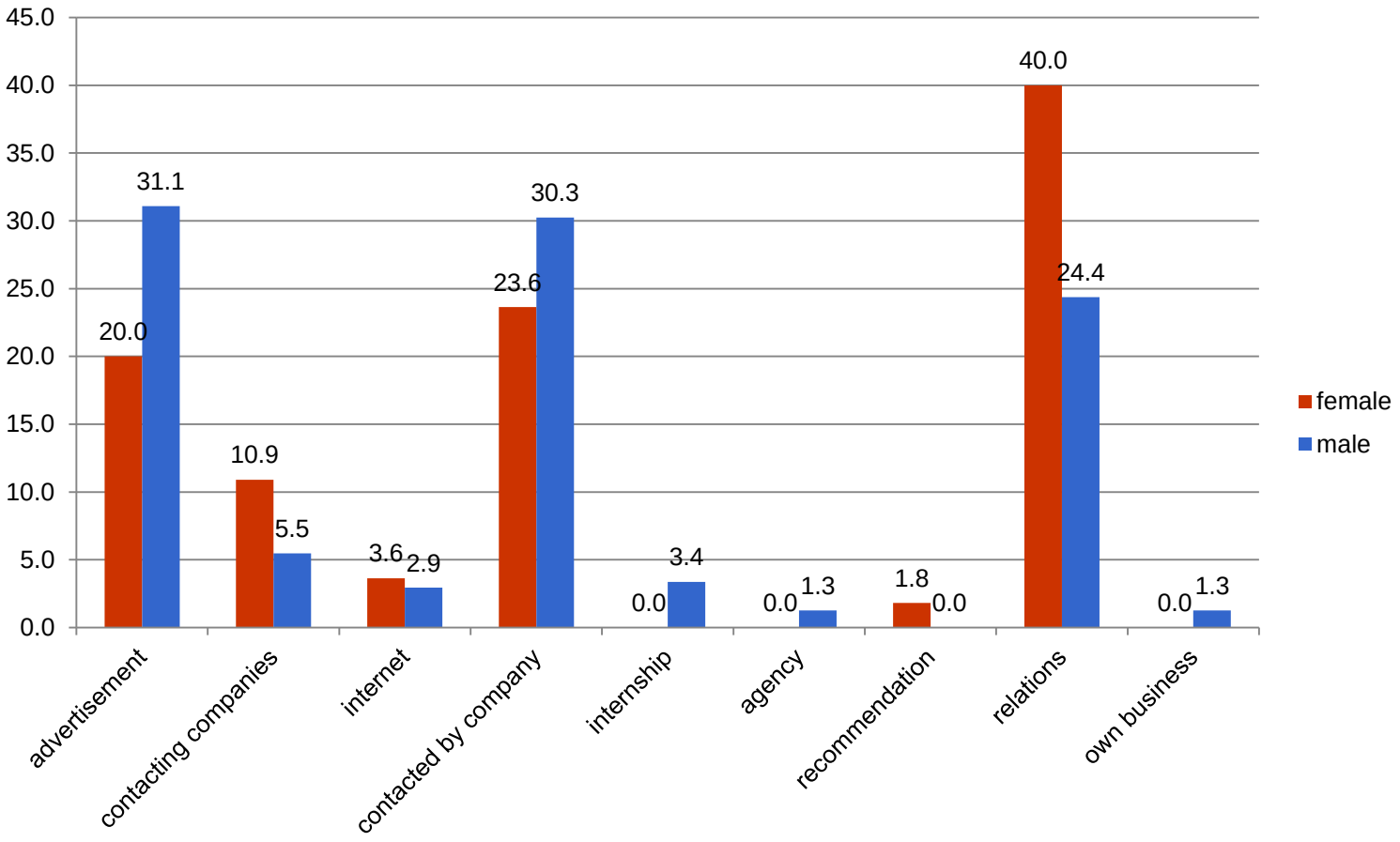
Employment one year after graduation Q2



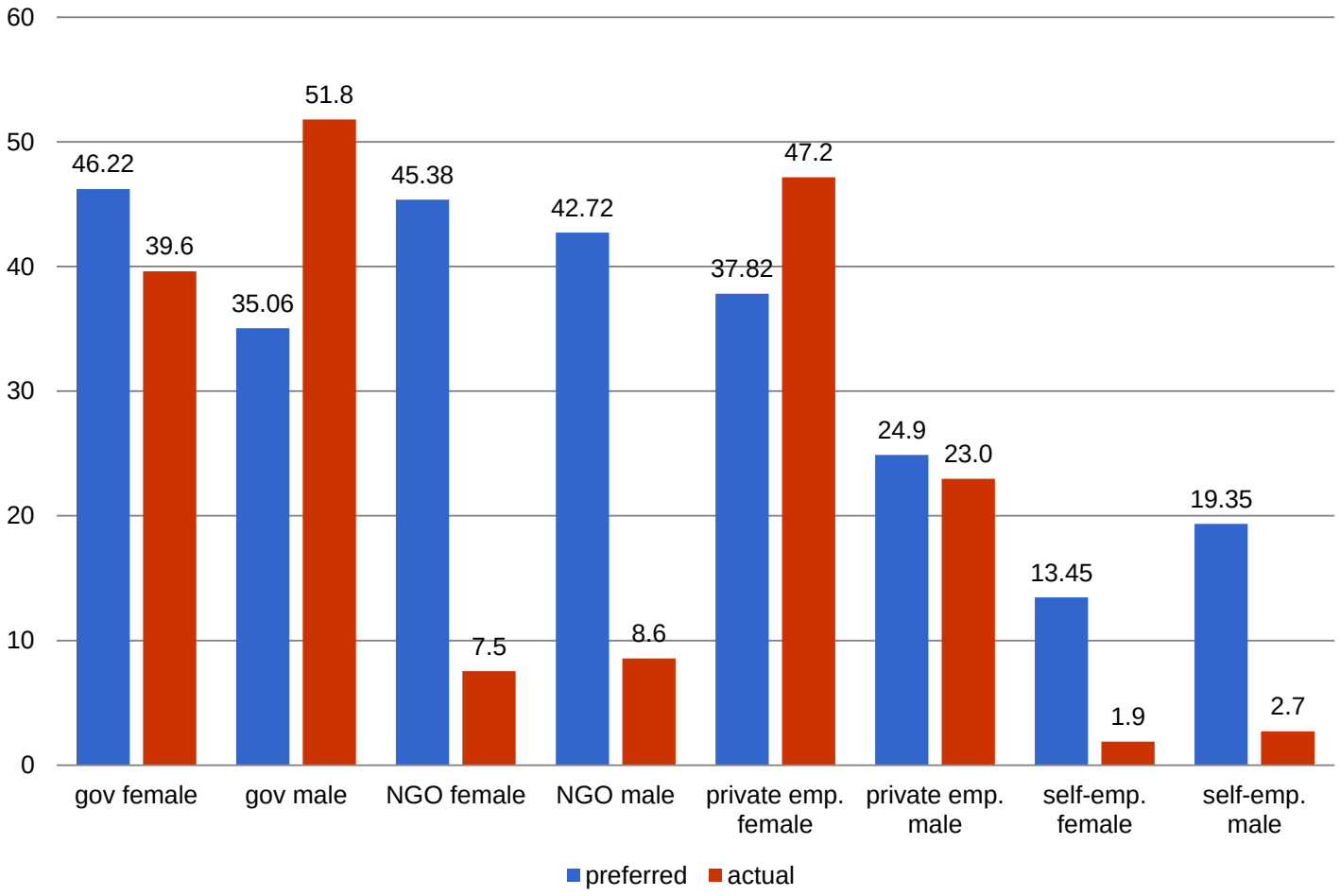
Searching…

	How did you …			
	Search for Jobs		Find the first Job	
	Q1	Q2	Q1	Q2
Public advertisement	72.8%	71.3%	39.3%	30.6%
Contacting companies directly	57.1%	28.0%	35.7%	6.8%
I checked through the internet	54.2%	56.3%	35.7%	3.2%
I was contacted by the company	18.1%	22.7%	33.3%	30.6%
I contacted a commercial working agency	9.1%	8.4%	13.1%	1.1%
I found my job during internship			6.0%	2.9%
Relations (e.g. parents, relatives, friends)	22.1%	35.0%	17.9%	28.8%
I established my own business	21.8%	2.1%	17.9%	1.1%
Other:	2.5%	4.5%	4.8%	6.8%
N	651	286	95	278

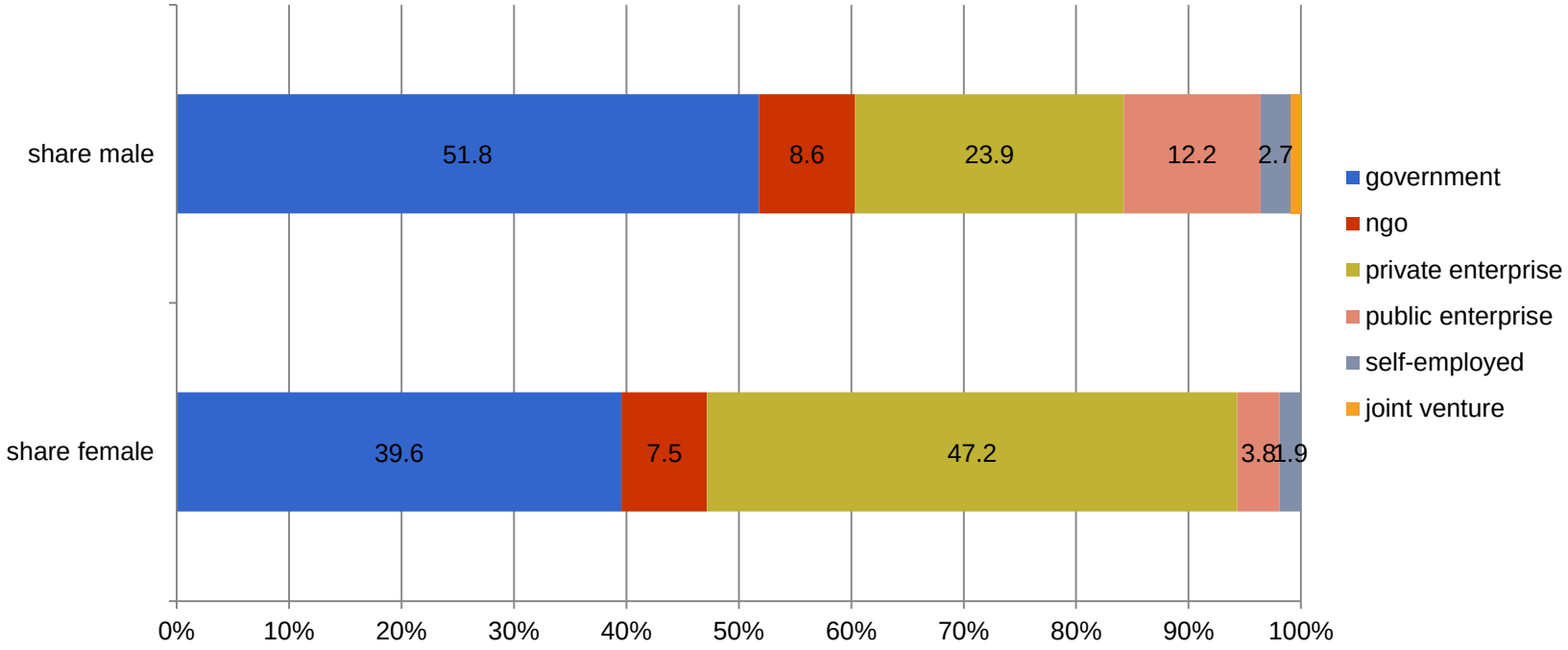
… and finding a job



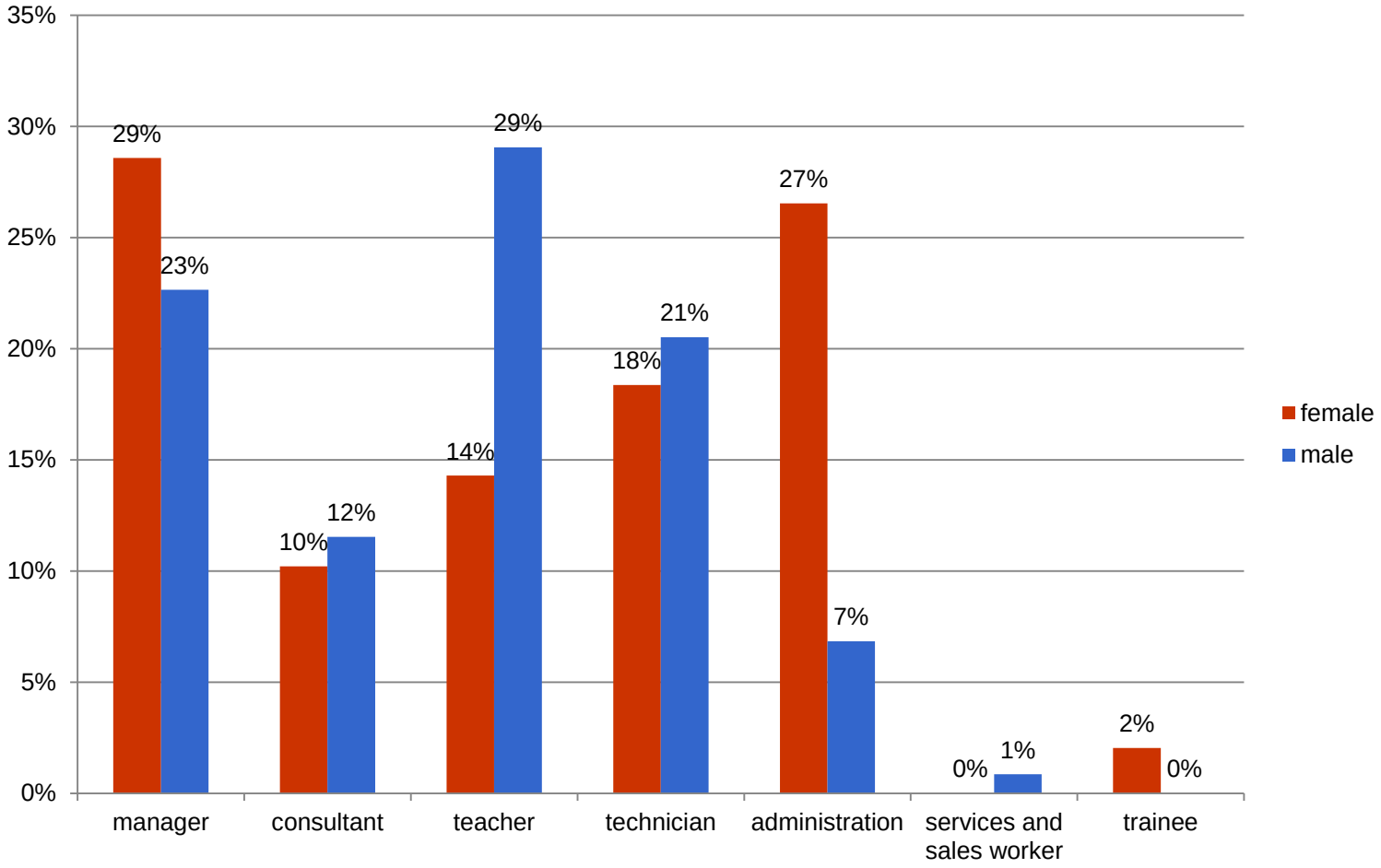
Preferred employer



Kind of employer by gender



Work position by gender

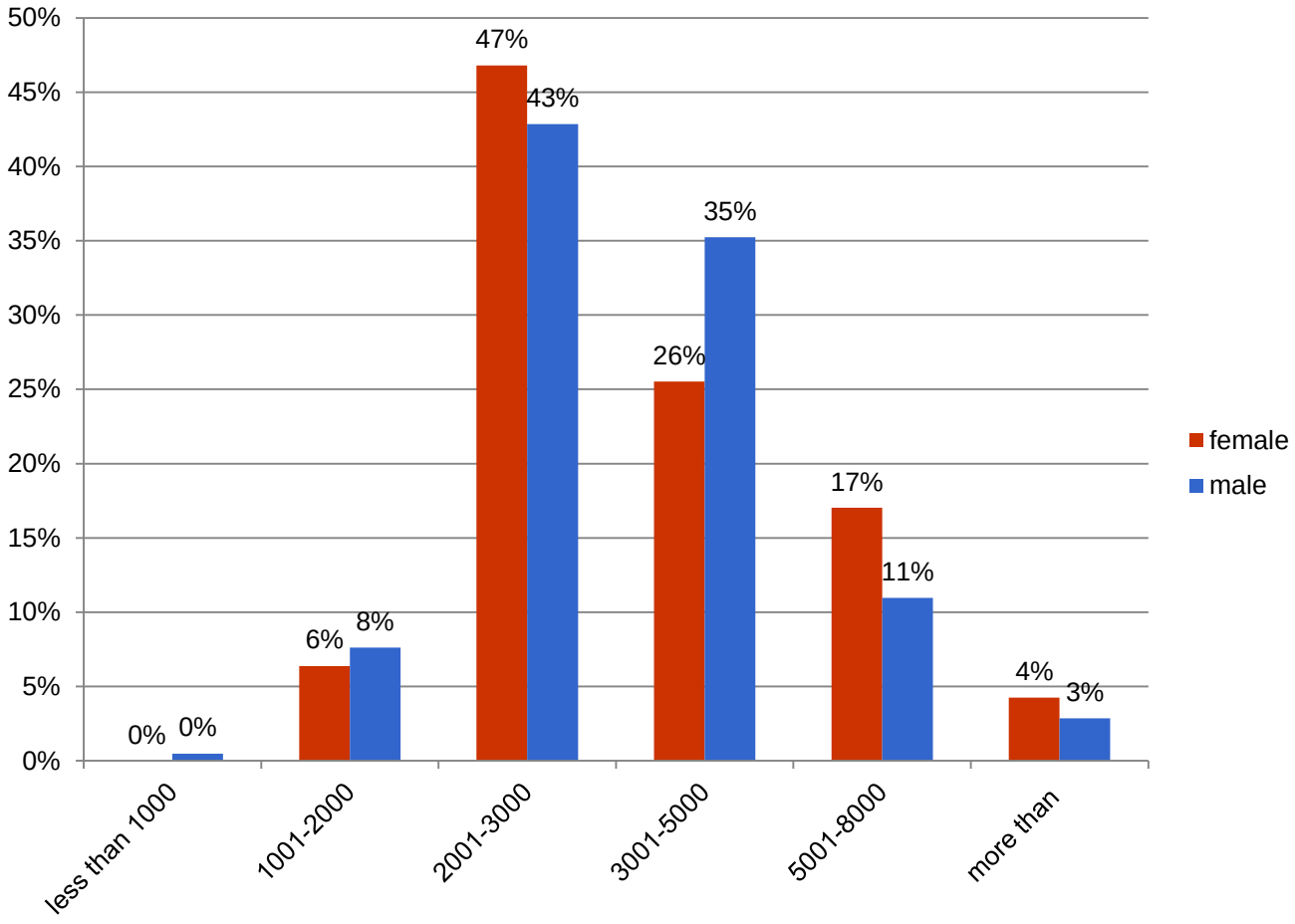


Asking the employer (enterprises)

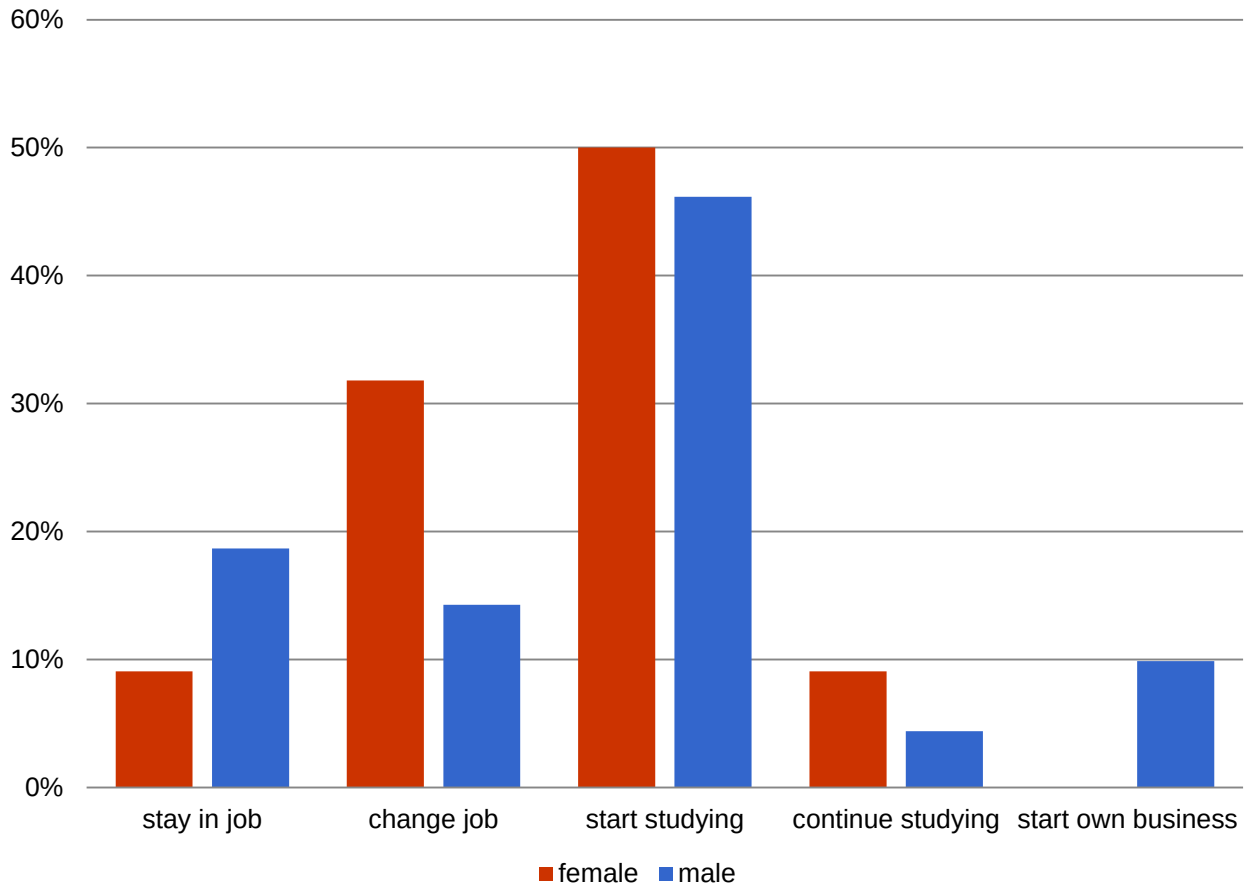
Mean Share of female employees	Management	Support Staff	Production Staff	N
2009	14.05	28.68	47.32	64
2011	19.72	30.68	57.68	50
Total	16.89	29.68	52.5	114

Companies hiring University Engineering Graduates	2009	2011	Total
Share of Companies	32.35	59.18	43.59
Mean Number Hired	14.27	2.61	7.74
Median Number Hired	5	2	3
Mean Share of Females	20.08	31.55	26.5
N	68	49	117

Distribution of main income by gender



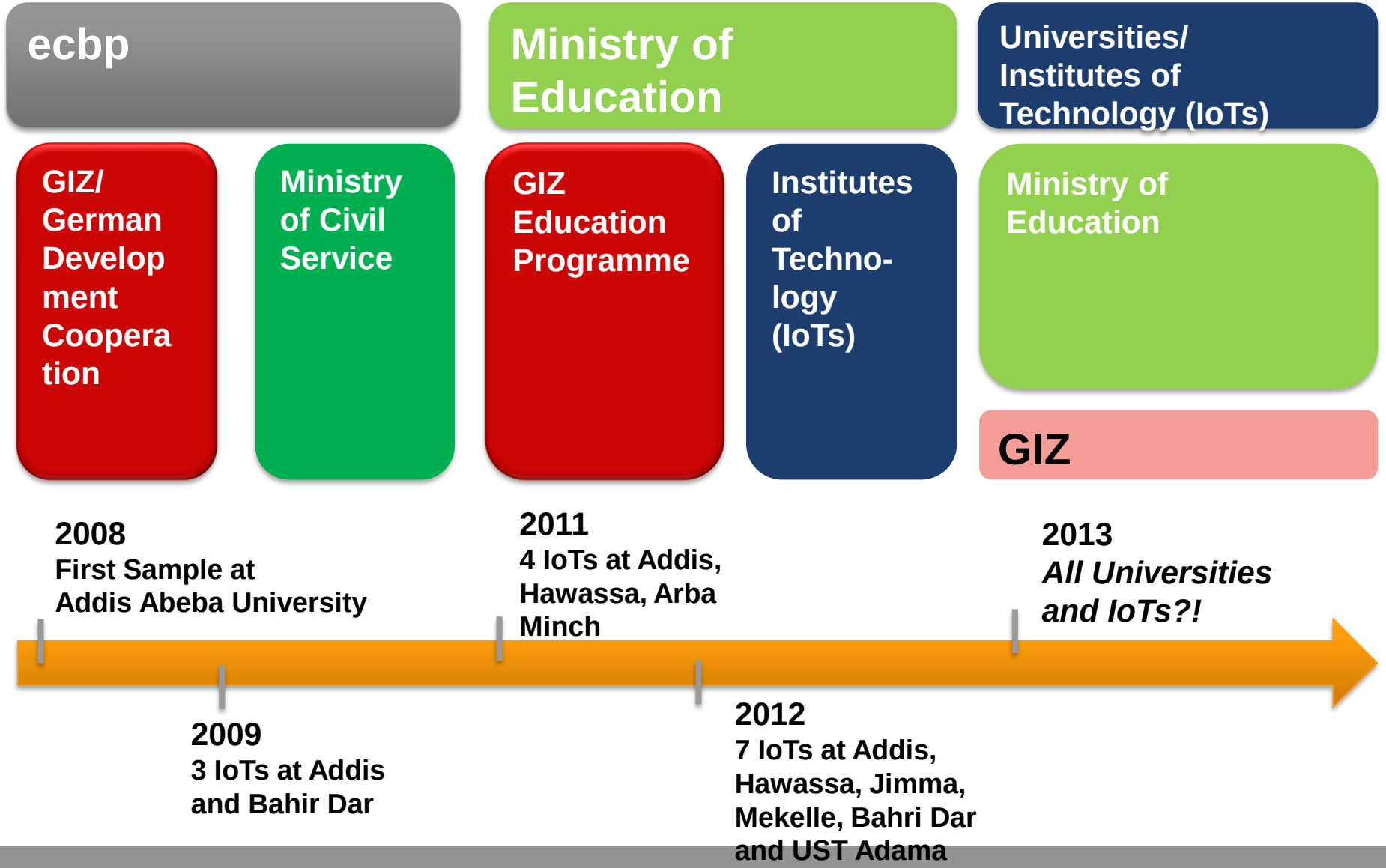
Future plans of the graduates by gender



Conclusions

- We should not only look at differences but also on common areas
- We need to encourage female students during their studies and bring more females into the field of engineering
- Employer have to be informed about the advantage to employ women and men
- Need more detail look on the feedback given to the education (institution)
- Need to get more information about the one’s not finding a job

Setting of the Tracer Studies



Thanks!

www.giz.de/ethiopia

www.moe.gov.et