

HELENA



**Higher Education Global
Efficiency Analysis**

Gender Diversity in German Higher Education System

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Agenda

- 1. Introduction**
- 2. Statistical analysis of gender differences in Germany**
- 3. DEA Method & Teaching efficiency Analysis**
- 4. Discussion**

1. Introduction

Background

- The Role of women in development of knowledge and technology
- The report of GWK (Gemeinsame Wissenschaftskonferenz)

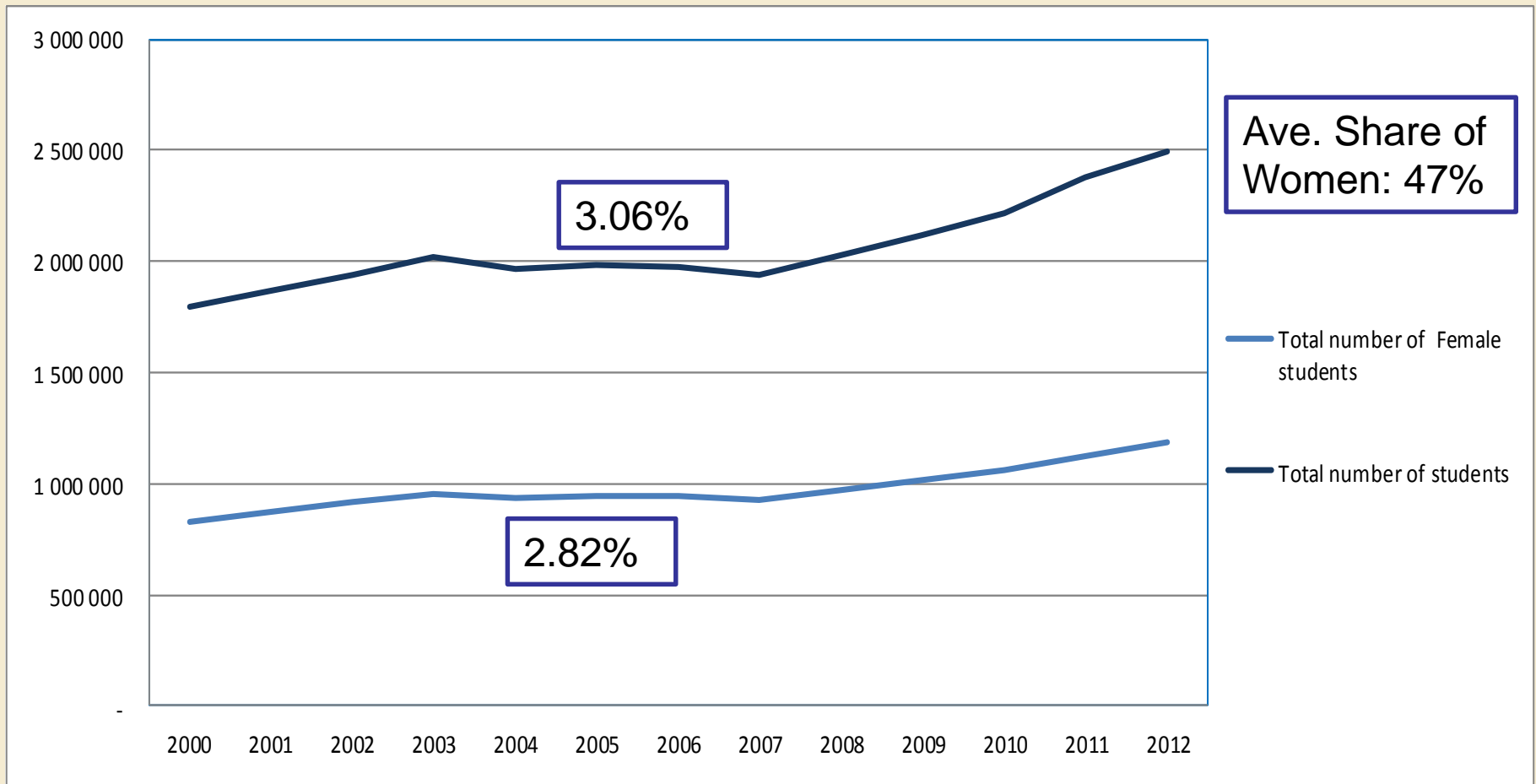
Alternative Hypothesis

The following hypothesis will be defined and examined:

Equal presentation of women and men; utilization of the society's full potential, regardless of gender, shall lead to the growth and development of higher education levels as well as higher efficiency of universities.

2. Statistical analysis of gender differences in Germany

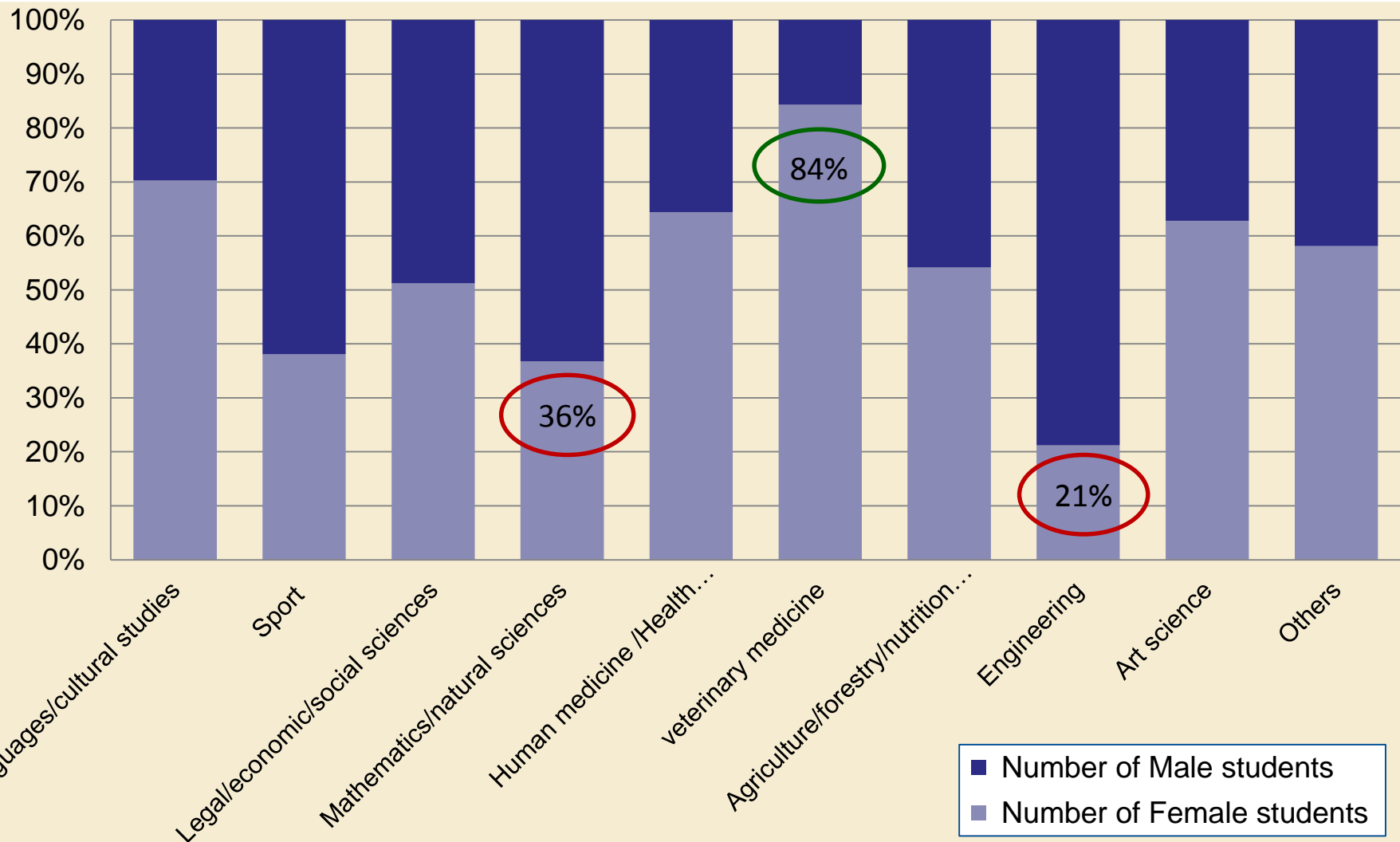
General trend = increase in female participation in higher Education



2. Statistical analysis of gender differences in Germany

Women in German higher Education System	percentage of women		
	2010	2011	2012
Students	47.8	47.3	47.4
Graduates	51.4	50.7	50.7
PhD. Students	44.1	44.9	45.4
Postdoctoral qualification	24.9	25.5	27.0
Total Staff of universities	51.7	51.8	51.9
Academic staff	39.6	40.2	40.7
Professors	19.2	19.9	20.4
total population	51.0	50.9	50.9

2. Statistical analysis of gender differences in Germany



2. Statistical analysis of gender differences in Iran

Women in Iran higher Education System	percentage of women	
	2011	2012
Students	49.8	48.2
Graduates	40.2	38.5
PhD. Students	36.9	38.1
Academic staff	21.6	24.2
Professors	15.6	16.28

3. DEA Method & Teaching efficiency Analysis

Role of women in enhancing the efficiency of faculties

Efficiency analysis–Case Study:

4 universities



45 Faculties

- University of Duisburg-Essen
- University of Bielefeld
- University of Frankfurt
- University of Düsseldorf

Input

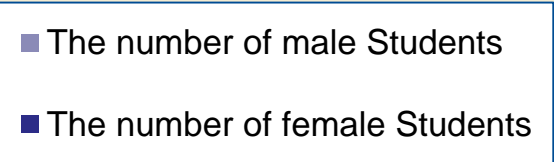
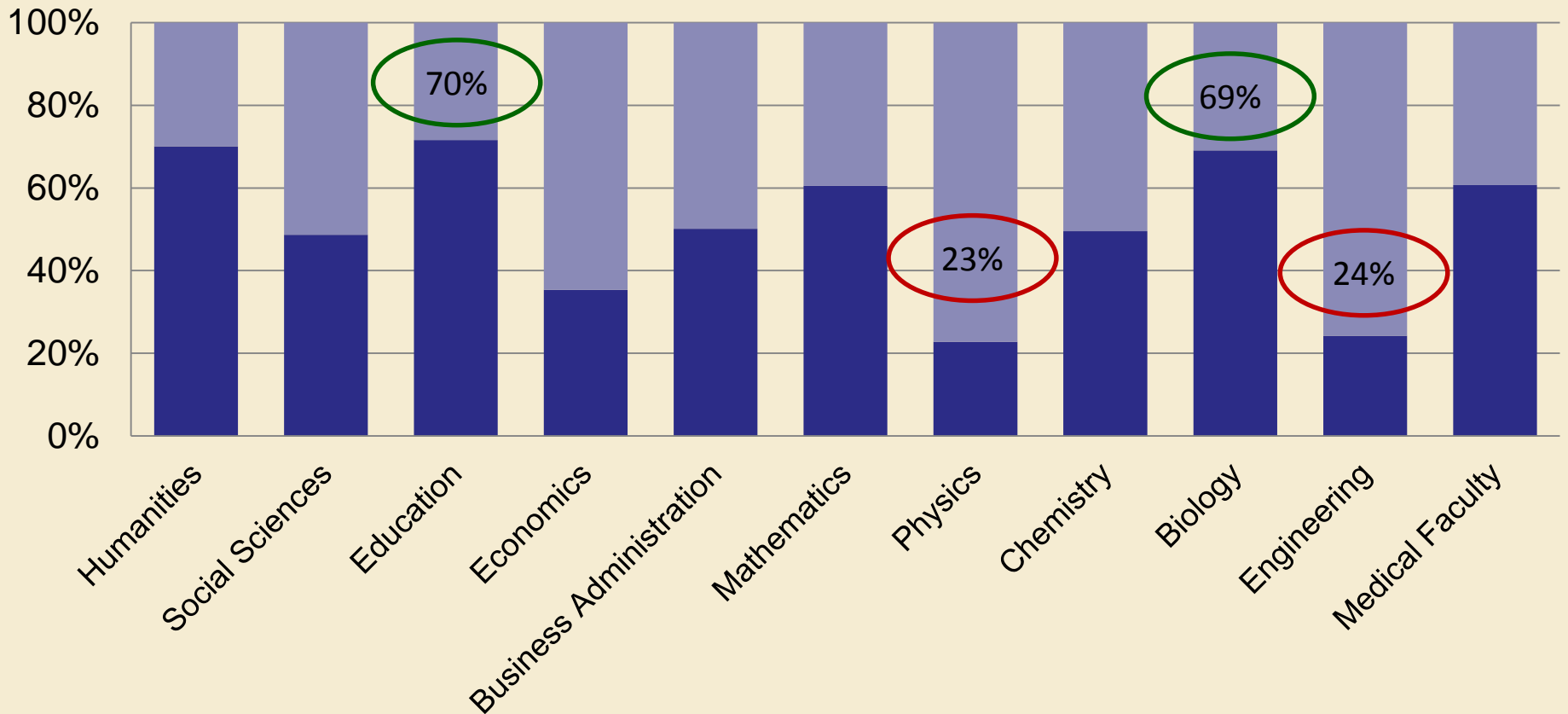
- ✓ Total Budget
- ✓ Number of total Students

Output

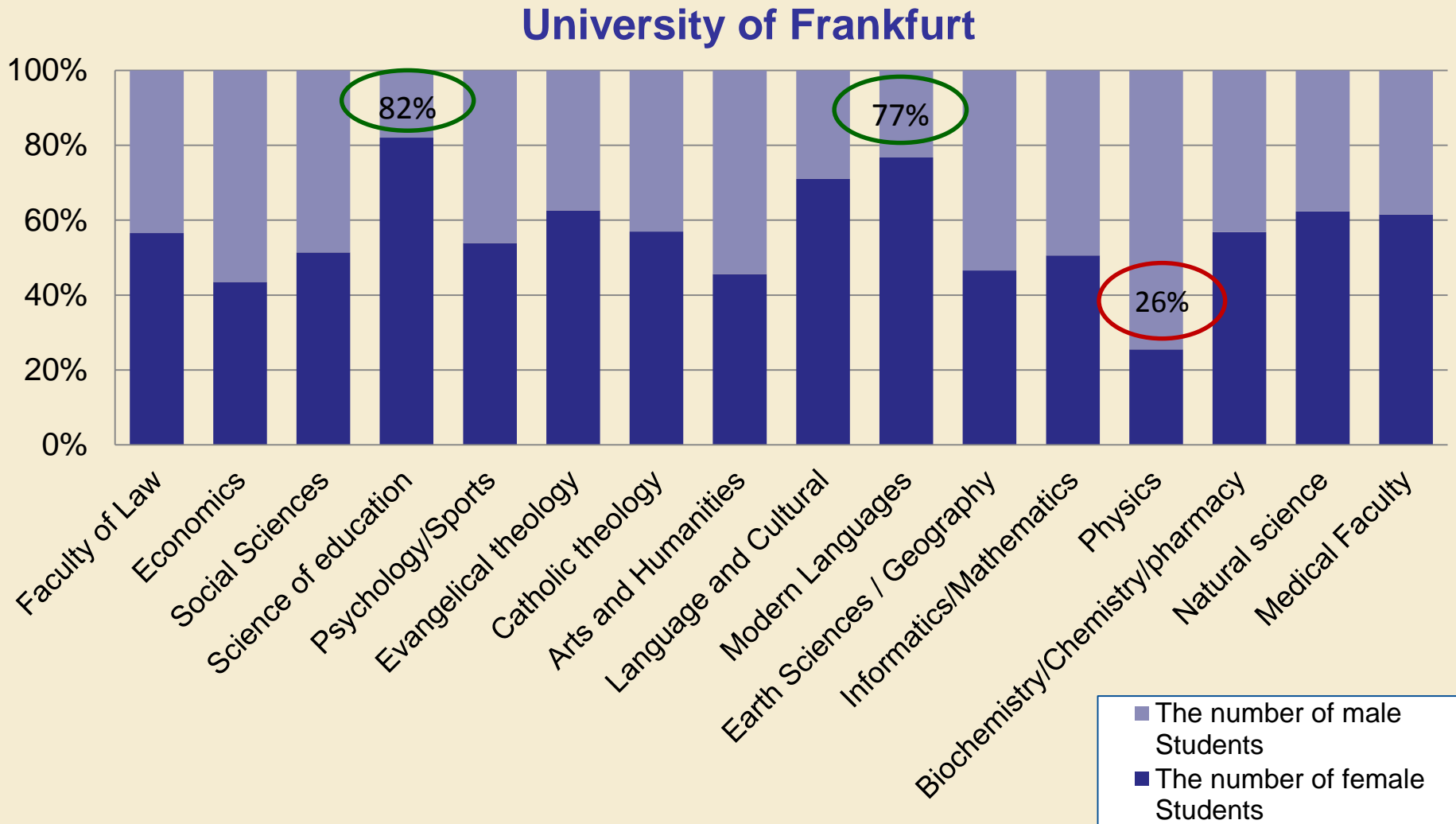
- ✓ Number of total graduates

3. DEA Method & Teaching efficiency Analysis

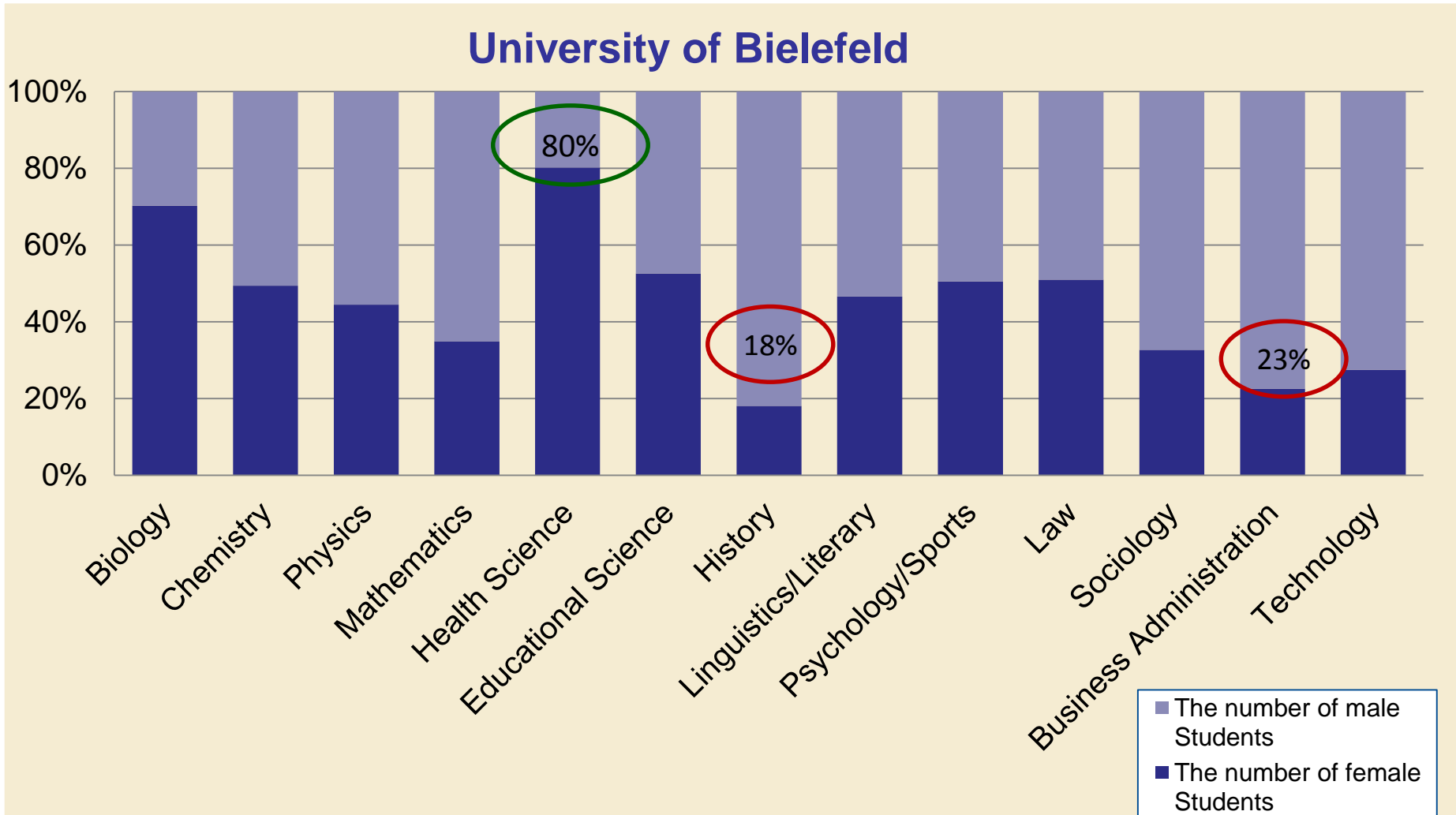
University of Duisburg-Essen



3. DEA Method & Teaching efficiency Analysis

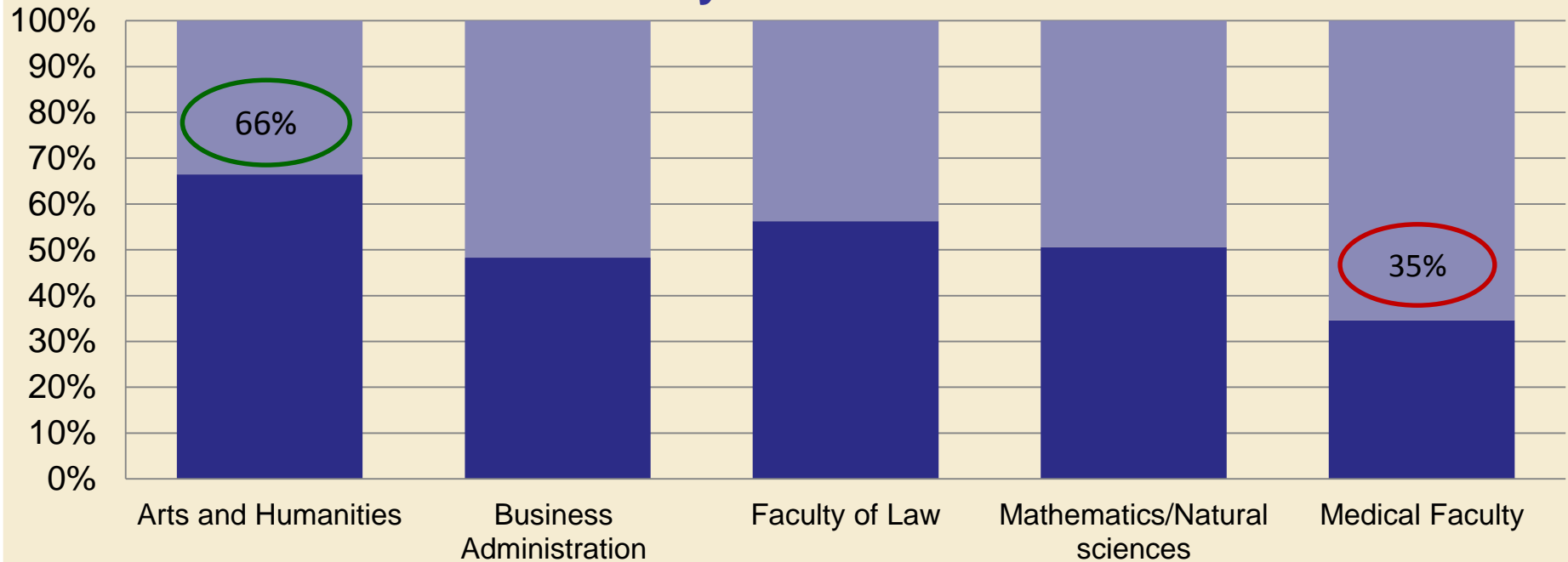


3. DEA Method & Teaching efficiency Analysis



3. DEA Method & Teaching efficiency Analysis

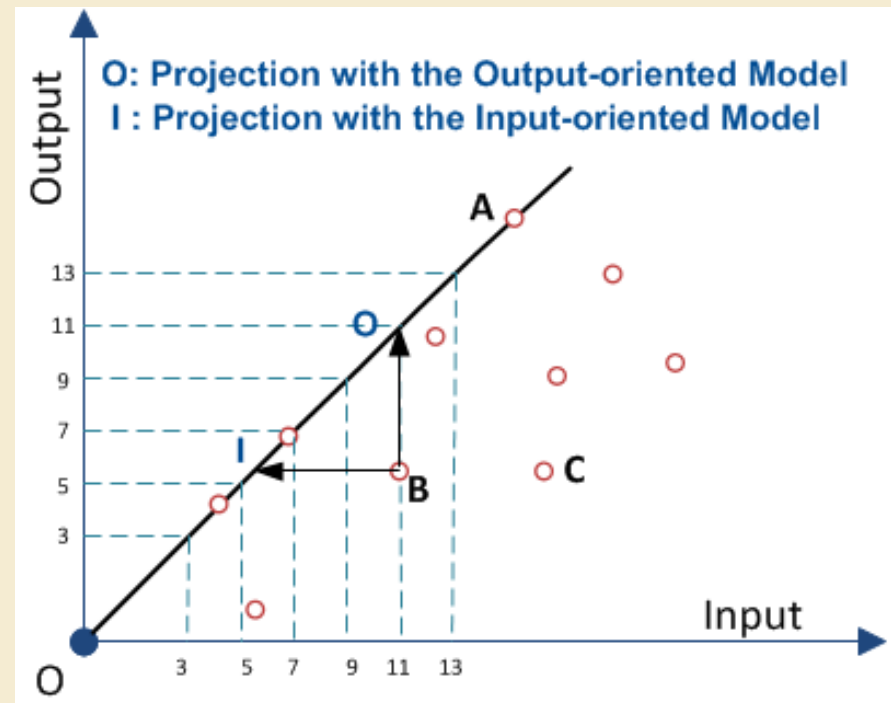
University of Düsseldorf



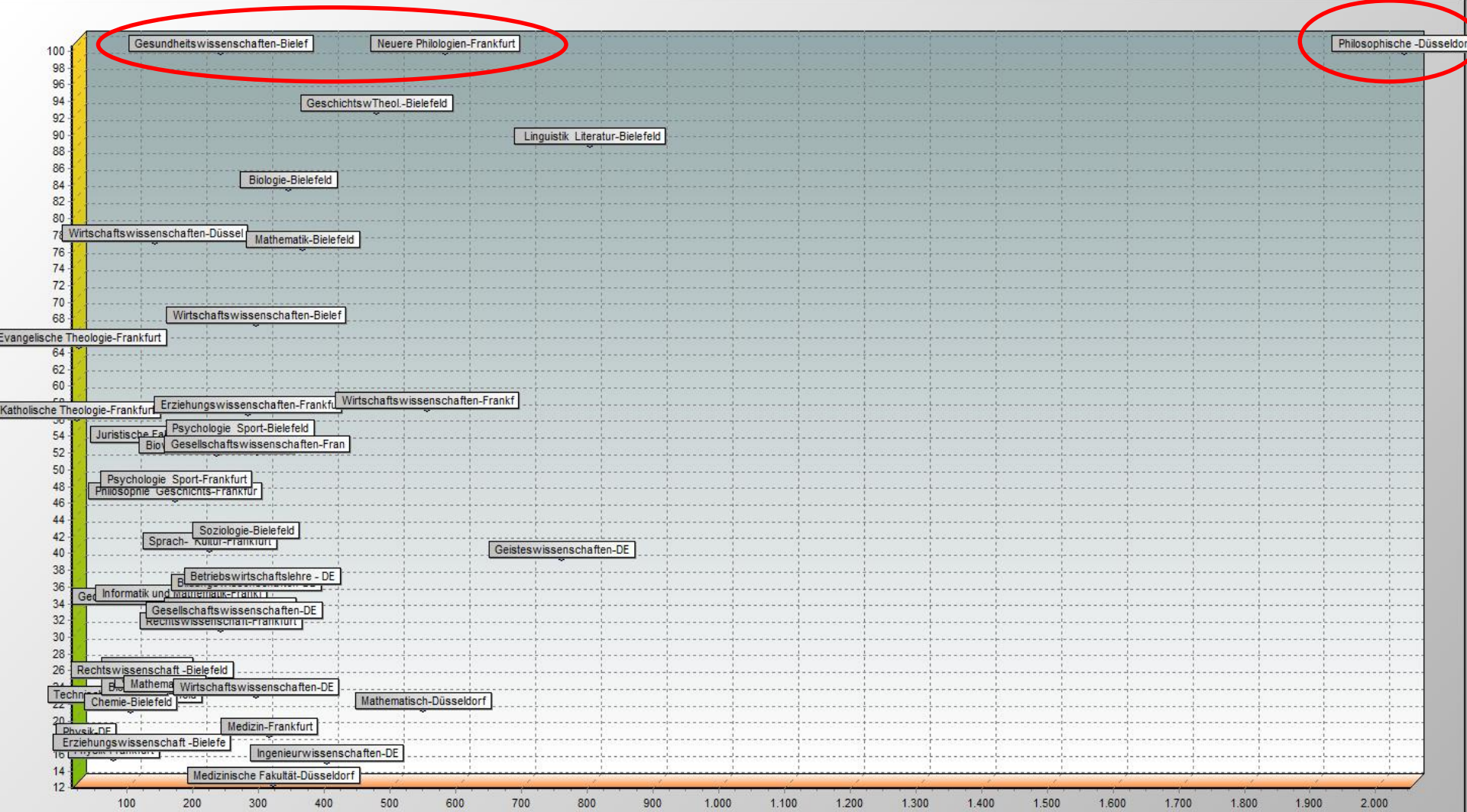
■ The number of female Students
■ The number of male Students

3. DEA Method & Teaching efficiency Analysis

- DEA is a mathematical programming technique that produces a single aggregate measure for each DMU in terms of its utilization of inputs to produce desired outputs (Kao and Hung, 2008).
- DEA offers two main possible orientations in efficiency analysis (*Charnes et al 1994*):
 - **Input-oriented models**
 - **Output-oriented models**



3. DEA Method & Teaching efficiency Analysis



3. DEA Method & Teaching efficiency Analysis

Rank	University Name	Share of Female Students	Efficiency Score
1	Faculty of Health Science -Bielefeld	80%	100
2	Faculty of Modern Languages-Frankfurt	77%	100
3	Faculty of Arts and Humanities -Düsseldorf	66%	100
4	Faculty of History-Bielefeld	18%	93
5	Faculty of Linguistics and Literary -Bielefeld	47%	89
6	Faculty of Biology-Bielefeld	70%	84
7	Faculty of Business Administration -Düsseldorf	48%	77

39	Faculty of Chemistry -Bielefeld	49%	21
40	Faculty of Medicine -Frankfurt	62%	18
41	Faculty of Physics -DE	22.76%	18
42	Faculty of Education -Bielefeld	53%	17
43	Faculty of Physics -Frankfurt	26%	16
44	Faculty of Engineering –Duisburg-Essen	24.25%	15
45	Medical Faculty -Düsseldorf	35%	13

4. Discussion

Conclusion

- Analysis results indicate that hypothesis could not be rejected. Not only the most efficient faculties have a high share of female students, but inefficient Faculties have had the lowest share of female students. In other words, lack of sufficient utilization of educational potential of women has led to Faculties' inefficient performance.

Suggestions for further research

- Considering more participants and universities and accordingly a larger scale
- Considering publication as Output in Efficiency analysis

Thank you for your attention!

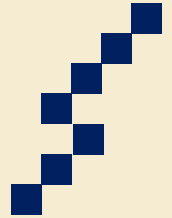


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