

Precarious Working Conditions: Does Gender Really Matter?

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Summary

Increasingly precarious working conditions are a common phenomenon among young scientists at universities in Germany. Less than 20% of PhDs are working in a permanent full-time contract, while 77% work in fixed-term contracts. During this PostDoc phase the six years specialist training for Physicians for a medical career and “habilitation” for an academic career take place. These are the key hurdles on the path to leadership positions for women in the field of medicine. We performed a quantitative study on the working conditions for Scientists and Physicians at the Medical Faculty Dusseldorf. The average age of the employees in our study was about 35 years. At that age family formation usually takes place as well as the specialist training and “habilitation”.

- contract duration (VLZ)
- weekly working hours (WAZ)
- tariff classification/pay grade (TV-L 14-15 scientific staff, Ä1-3 physicians)
- age and
- sex.

Results

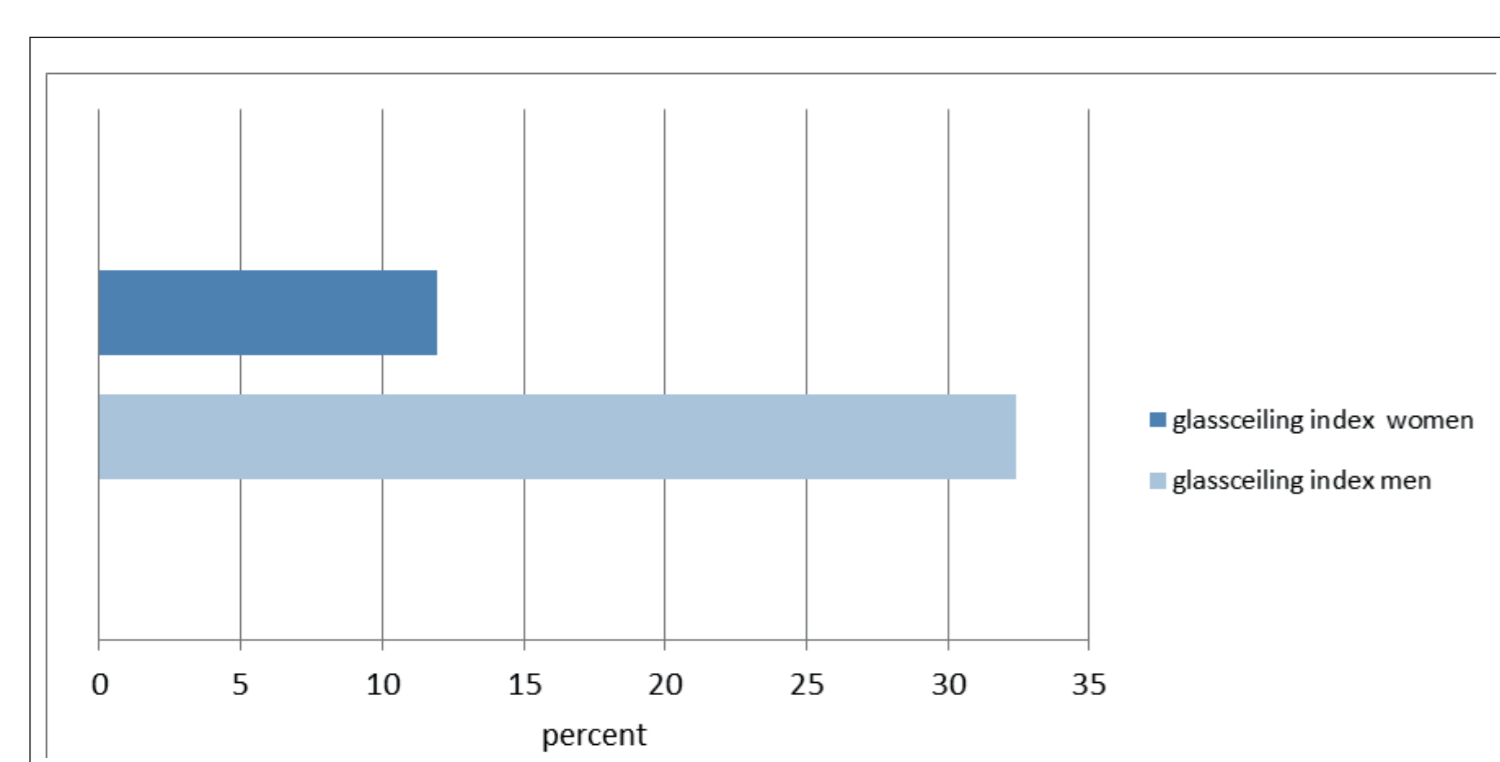
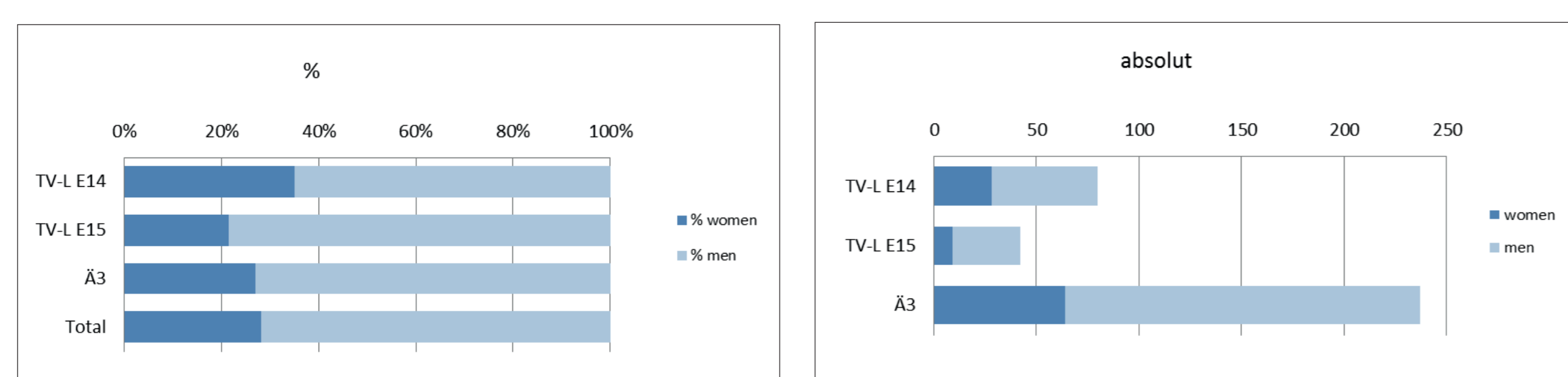
MANOVA for fixed-term contracts (<70 months)

Gender and age have no effect on contract duration and weekly working hours in fixed-term contracts. The main effect of contract type affects both the variable contract period ($F(1/1007) = 72,821, p < .001, \eta^2 = .067$) as well as the variable weekly working hours ($F(1/1007) = 6.774, p = .009, \eta^2 = .007$). In general, new hires have a longer contract term ($M = 25,459, SD = .811$) and a longer weekly working hours ($M = .823, SD = .013$) as employees with extension contracts (Contract Period: $M = 16,508, SD = .646$; weekly working hours: $M = .78, SD = .01$).

MANOVA for indefinite contracts (>70months)

Only a main effect of the factor sex was found ($F(2/50) = 4.934, p = .011, \eta^2 = .165$). Contract type (initial contract or extension) and age have no effect on contract duration and weekly working hours in fixed-term contracts. The main effect of gender affects only the variable weekly working hours ($F(1/51) = 9.885, p = .003, \eta^2 = .162$). In general, men have a longer weekly working hours ($M = .981, SD = .023$) than women ($M = .85, SD = .035$).

Chi-Quadrat Goodness-of-fit test: In both groups a significant gender effect can be found (deviation from equal distribution). In the pay grade group E14/15 (Scientific staff) the effect is greater than in the pay grade group Ä3 (physicians).



Glass Ceiling Index

Discussion

These statistical tests show that the given conditions of career of women in universities in Germany need to be improved drastically in order to give the women a fighting chance to be truly emancipated in areas of career. Our tests show, that, contrary to popular belief, this is not the case. In order to achieve lasting results, a structured process and gender-sensitive procedures in recruiting permanent employees must be realized. Does gender really matter? Yes, it does!

Methods

We analysed 1068 contracts from the years 2011-2013. Two MANOVAs were conducted with the test statistic Wilks' lambda and the factors gender, type of contract (initial contract or extension) and age. Dependent variables were contract duration and weekly working time.

We divided the contracts into two groups based on the variable contract period (A: contract period < 70 months (1012 employees, 594 female and 418 male); B: contract duration >70 months (56 employees, 19 female and 37 male).

We performed a Chi-Quadrat Goodness-of-fit test comparing the given data of the tariff groups E 14/15 and Ä 3 with a uniform distribution. The pay grades E14/15 and Ä3 can only be achieved by promotion, wherein other pay grades are granted automatically. We hypothesise, that these pay grades will show the gender gap in an extreme manner, because the selection of employees is not automated and can therefore be influenced by different factors.

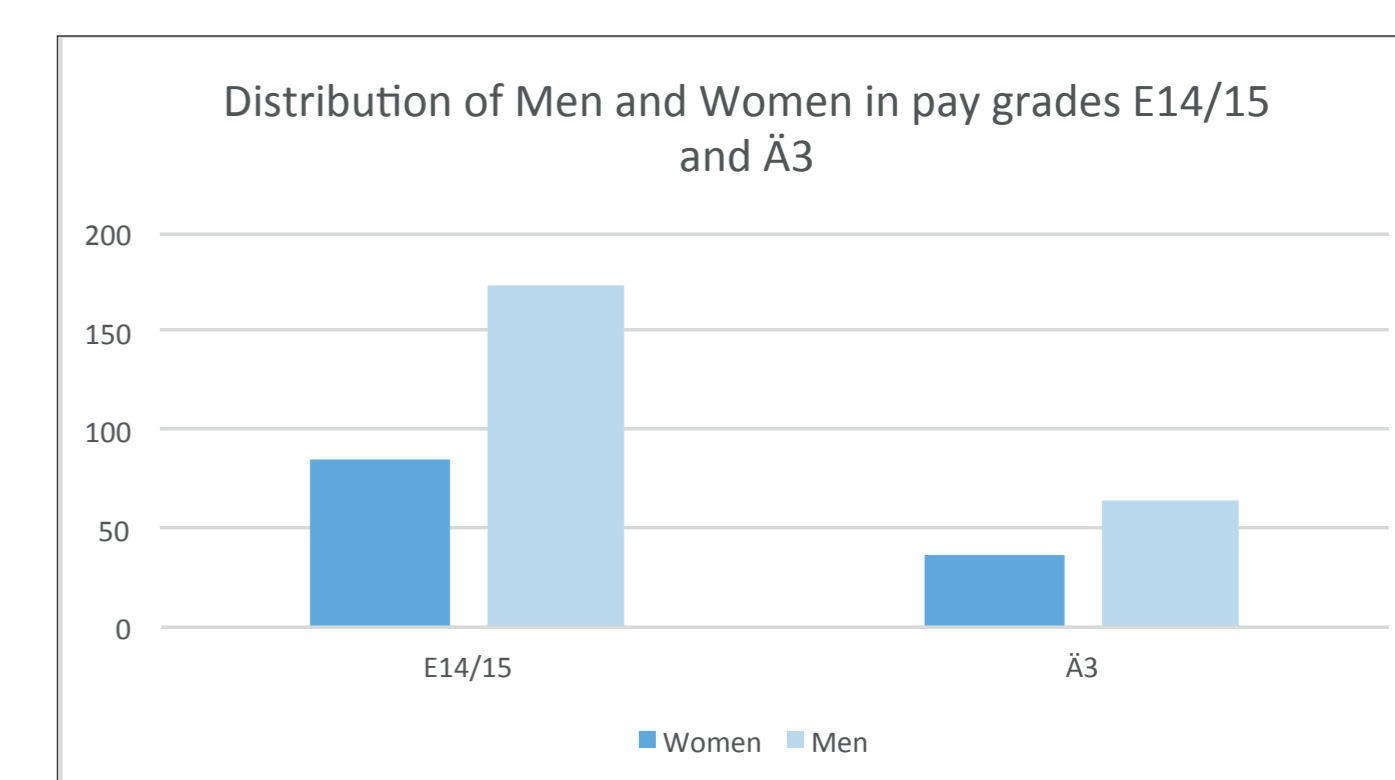
In the pay grades E14 and E 15, there are 64 women and 173 men. Chi-Quadrat (1) = 50,131, $p < .001$.

In the pay grade Ä3, there are 37 women und 85 men; Chi-Quadrat (1) = 18,885, $p < .001$.

We performed a gender analysis for all employees of the Medical Faculty examining tariff classification and weekly working hours. Furthermore we performed an age structure analysis of all permanent employees.

factor:	sex	type of contract	interaction	age
< 70 months	VLZ	X	$p < .001$	X
	WAZ	X	$p = .009$	X
	gesamt	X	$p = .052$	$p = .001$
> 70 months	VLZ	X	$p = .852$	X
	WAZ	X	$p = .003$	X
	gesamt	X	$p = .011$	X

VLZ: contract period, WAZ: weekly working time, p: α -error probability, green: significant effect, red: not significant, blue: due to the non-significant effect of the multivariate tests are not to be interpreted



Chi-Quadrat Goodness-of-fit test

Gender Analysis

The proportion of women in the medical staff on the level assistant doctors (Ä1) is at 53%. In the level of medical specialists (Ä2) the proportion of women increased by 18% to 51%. At the level of senior physicians (Ä3) proportion of women (64 of 237) increased slightly to about 27%

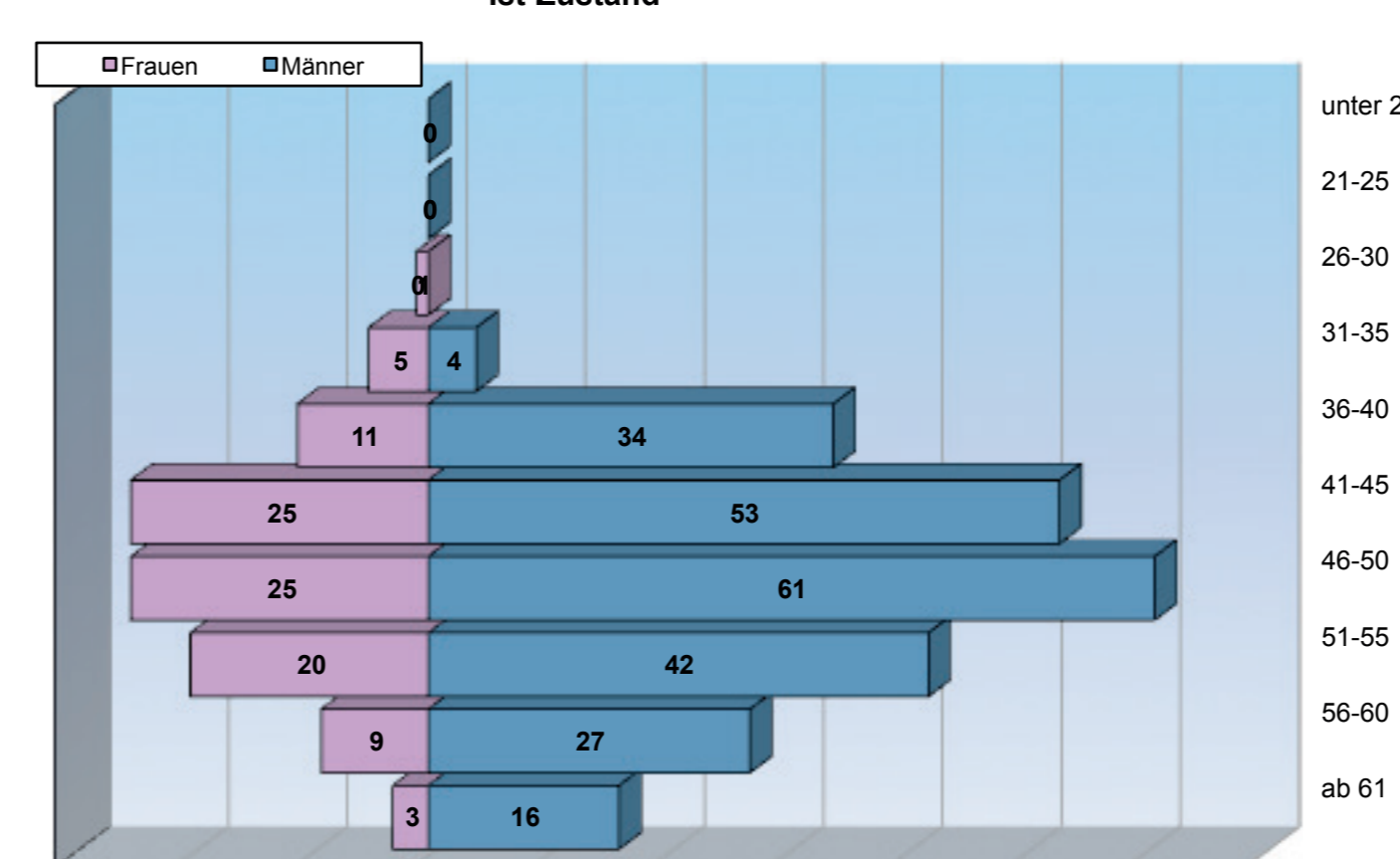
Glass ceiling Index: The proportion of women in the salary grade TV-L E14 is 35% (28 of 80) at the current grade E15 in only 21.4% (9 of 42), which shows that even with an academic background, few women manage to achieve leadership positions. There are only 12% women (101 of 845 women) in middle management (TV-L E14, E15, AE3), while the proportion of male employees is at 32.4% (258 of 796 men).

In the group of post-doctoral employees (TV-L and Ä) 8.1% of men and 35.4% of women work part-time.

79% of female Postdocs and 56.8% of the male Postdocs are working in temporary jobs.

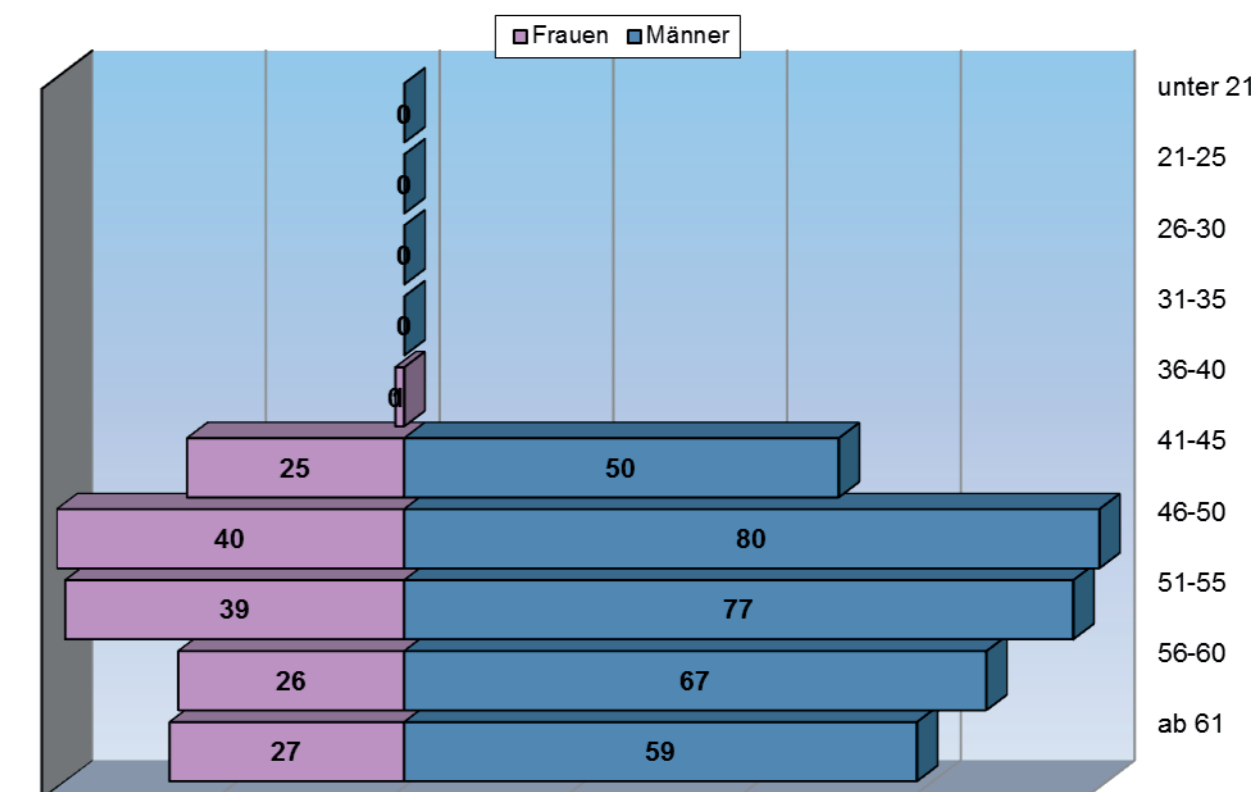
Age structure analysis shows the age and gender distribution of an aging workforce with a gender imbalance.

Anzahl unbefristeter MitarbeiterInnen pro Altersgruppe und Geschlecht



The Age Structure Analysis shows the age and gender distribution of an aging workforce with a gender imbalance.

Anzahl Mitarbeiter pro Altersklasse und Geschlecht 2025



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