

THE GENDER PAY GAP IN THE W-PAYROLL AT THE UNIVERSITY OF GÖTTINGEN: EXECUTIVE SUMMARY

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1. SUMMARY

Despite a highly regulated system of performance-related pay, descriptive analyses show a significant gender pay gap to the disadvantage of female professors, even within the W-Payroll system. This study investigates which factors influence the gender pay gap at the University of Göttingen in order to contribute to reducing it. Empirical results show a gender pay gap of 5.2% after adjusting for various influencing factors (faculty and year fixed effects as well as employment, performance, third-party funding, and socio-demographic factors). In addition, our analysis shows that the difference is primarily driven by comparatively lower performance-based pay and a lower retention bonus for female professors.

2. DATA

The analyses are based on the salary histories of 312 professors at the University of Göttingen for the years 2013 to 2021.¹ The data includes information on gender, faculty affiliation, amount of third-party funding, appointment date, applications for special performance-related pay, payroll group, external appointments and other socio-demographic factors. As our data set is an unbalanced panel, the number of data points in the individual figures may vary depending on the time points used as a basis.

3. DESCRIPTIVE DIFFERENCES

- The proportion of women in W2 professorships is substantially higher than in the average higher-paid W3 professorships (see Figure 1a). None of the significantly higher-paid Humboldt professorships in Göttingen are held by women.
- Professors who have switched from the old C-payroll system to the W-payroll system introduced in 2002 receive a higher salary on average over the years. As the proportion of fe-

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¹In our data set, there are no people who describe themselves as diverse or did not specify their gender.

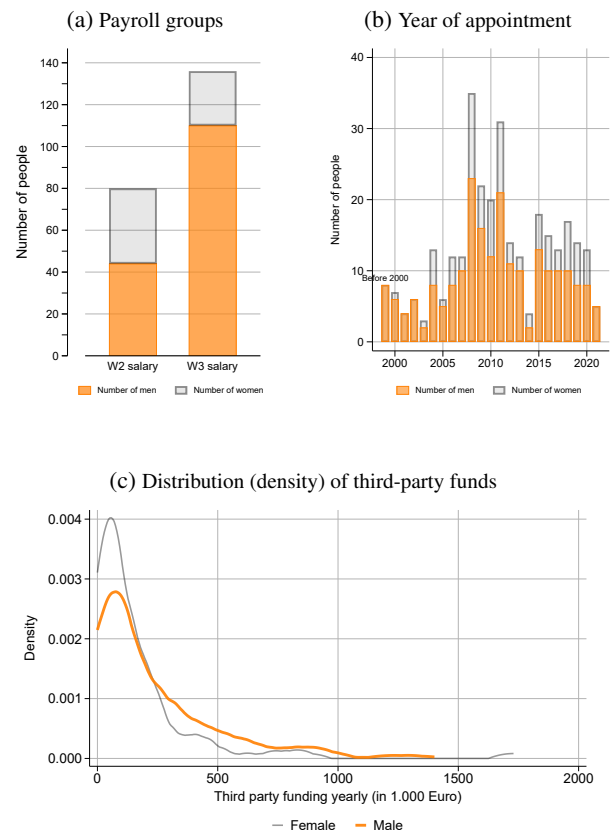


Abb. 1: Number of female and male professors by payroll group and time since appointment as well as distribution of annually approved third-party funding by gender.

male professors has increased over time (see Figure 1b), such cohort effects also contribute to gender-specific salary differences.

- On average, female professors attract slightly less external funding (see Figure 1c). As this is reflected in performance-based pay over time, it could also influence the gender pay gap. However, if the different third-party funding levels of individual faculties and W2 and W3 professorships are taken into account, there is no statistically significant gender diffe-

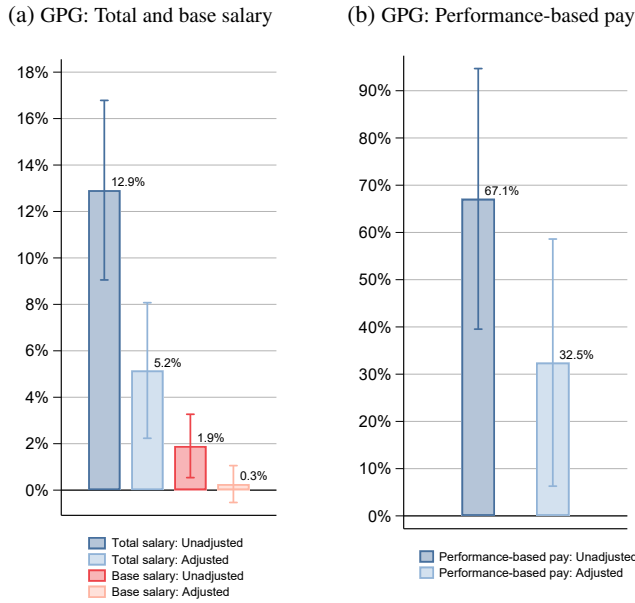


Abb. 2: The bars represent the gender gap in total monthly salary, base salary and performance-based pay (each in percent). The displayed confidence intervals cover the true value with a probability of 95%.

rence in third-party funding.

4. THE GENDER PAY GAP

- For the period from 2013 to 2021, we find an **unadjusted gender pay gap (GPG) of 12.9%** (see Figure 2a). Accordingly, male professors in Göttingen receive an average total salary that is 12.9% higher than that of female professors.
- After adjusting for changes over time, faculty-specific differences, employment history and structure, performance variables, third-party funding, and socio-demographic factors, **an adjusted (unexplained) gender pay gap of 5.2%** remains.
- This adjusted gender pay gap is no smaller among professors who have been appointed in the last ten years.
- This difference is not driven by base salaries, but exclusively to variable performance-related pay (see Figure 2b): After adjusting for all observable factors, a gender pay gap in performance-based pay of approx. 32.5% remains.

5. NEGOTIATIONS AND “SPECIAL PERFORMANCE-BASED PAY”

- Salary improvements for professors occur over time through external appointments and additional stay negotiations, as well as through a system that allows an application for “special performance-based pay” every three years at the University

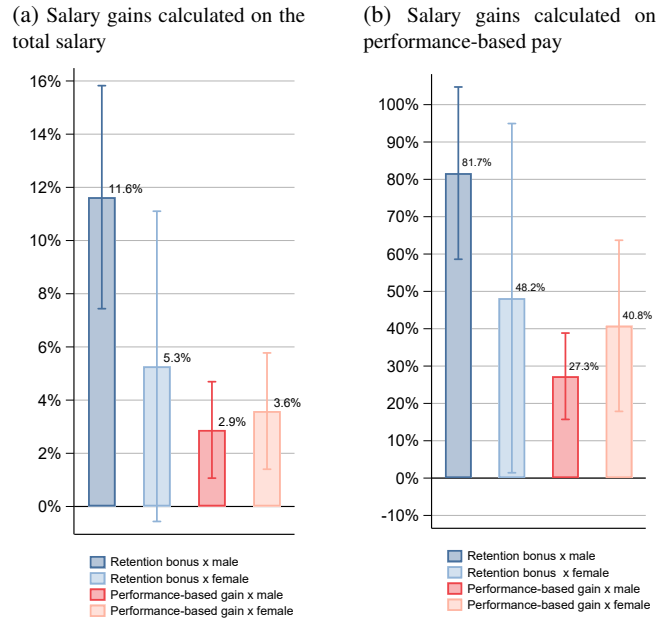


Abb. 3: Salary gain from a additional stay negotiation (blue tones) and from an application for performance-based pay (red tones) for men and women. The displayed confidence intervals cover the true value with a probability of 95%.

of Göttingen. When analyzing the gains from additional stay negotiations, it should be noted that our data set only contains information on people who did not accept the external offer.

- Each **additional stay negotiation** increases a male professor’s total salary by an average of 11.6% and performance-based pay by 81.7% (see Figure 3).

In terms of total salary, however, female professors on average achieve lower and statistically insignificant salary gains through additional stay negotiations (see Figure 3a, light blue bar).

If only the gains in performance-based pay are considered, female professors receive on average 33.5 percentage points less than male professors (see Figure 3b, difference between dark and light blue bar).

- Each additional **application for “special performance-based pay”** increases a male professor’s monthly salary by 2.9% on average (adjusted); this is driven by the average increase in performance-based pay of 27.3%. Although the corresponding values for female professors are slightly higher, as they start from a lower base on average, there is no statistically significant difference between the genders.

6. RECOMMENDATIONS FOR ACTION

- Our analysis shows that, against the background of existing social structures at our university, there are systematic diffe-

rences in wages between male and female professors that cannot be fully explained by the factors considered in our analyses. (For a complete list of all control variables used, see the methodological appendix).

- Central to the emergence of income differences are appointment and additional stay negotiations. Therefore, the dynamics of these negotiations should be critically scrutinized by all actors involved in order to enable female professors to negotiate successfully.
- Even if our analyses did not reveal any gender-specific differences in the application for and awarding of special performance-based pay, the procedures for applying for special performance-based pay should be made as transparent as possible. For example, it was found that female and male professors who do not have German citizenship submit significantly fewer applications for special performance-based pay on average. Greater transparency can be achieved, for example, by regularly sending out information material and by holding targeted information events and career coaching sessions, especially for female professors and/or newly appointed professors.
- The status quo of the gender pay gap should be reviewed through regular monitoring in order to track developments and also to be able to assess whether implemented recommendations for action are resulting in improvements. Our analyses can provide the basis for this monitoring.

Appendix: Glossary

- Gender pay gap: The difference in pay between women and men. A distinction is often made between the observed gender pay gap (without taking control variables into account) and the adjusted gender pay gap. The latter takes into account, for example, different salaries in different specialist cultures, which, in combination with the unequal gender distribution in the specialist groups, can be responsible for parts of the observed gender pay gap.
- C-payroll system: The C-payroll system was the standard payroll system for professors from 1975 to 2002 and included, among other things, an experience-based increase in salary. The system is currently being phased out.
- W-payroll system: The W-payroll system replaced the C-payroll system in 2002 and does not provide automatic salary increases based on experience. Instead, salary increases are achieved through “special performance-based pay”, which can be awarded for performance on application. Accordingly, the W salary is made up of a fixed base salary and performance-related salary components. In addition, appointment and additional stay bonuses contribute to the salary, which is awarded as part of appointment and additional stay negotiations.

- W2/W3 professorship: The W-payroll system recognizes two different payroll groups for professors in a civil servant relationship for a fixed term or for life, which have different base salaries.

- (Special) performance-based pay: “Special performance-based pay” is awarded on application for special achievements in research, teaching, promotion of junior researchers or other categories. The decision on the award is made by the Presidential Board, which is advised by a committee of experts (W-Commission). The University of Göttingen has a separate guideline for this purpose, which defines the frequency and criteria for such applications.

- Additional stay negotiation: If a professor receives an external offer, for example from another university or from the private sector, additional stay negotiations are usually conducted with the current university in order to improve the facilities of the professorship as well as the professor’s own salary.

- Additional stay bonuses: Additional stay bonuses refer to the additional payments granted as part of additional stay negotiations.

- Unbalanced panel: The panel data contains annual observations for the same persons and thus also records their salary history. If each person is observed for the same number of years, this is referred to as a balanced panel. Our panel, on the other hand, is unbalanced, as new appointees are only included in later years. This results in different numbers of observations for different people.

- Data basis: We look at the salary history of a total of 312 professors who were working at the University of Göttingen as of June 30, 2021. Professors who left the University in the period 2013 to 2021 or only started in Göttingen after 2021 are not included in our analyses.

Appendix: Method

To investigate whether there is a gender pay gap among university professors at the University of Göttingen, we use individual-level panel data and estimate variations of the following pay equation:

$$Y_{ift} = \alpha + \beta_1 Female_i + \lambda X_{ift} + \gamma_f + \omega_t + \epsilon_{ift}$$

The outcome variable Y_{ift} is one of two wage measures for the person i employed in the faculty f , measured in the year t : (i) logarithm of total pay (deflated), (ii) logarithm of particular performance-based pay (deflated). Deflated values allow a direct comparison of gross wages, as they are adjusted for inflation and thus the change in purchasing power.

We use the variable $Female_i$ as a dichotomous characteristic, which is defined as one if the person considers themselves to be female and as zero otherwise. There are no individuals in our dataset who describe themselves as diverse

or who did not specify their gender. Our main coefficient of interest, β_1 , captures the estimated conditional/adjusted wage gap by gender. By using the different wage measures as outcomes, we can not only examine whether there are gender differences in overall wages, but also shed light on differences in particular performance-based pay.

X_{ift} is a vector of control variables. These are divided into:

- Employment controls: W3 professorship (0/1) compared to W2 professorship, years at the University of Göttingen, Humboldt professorship (0/1), started in the W-payroll system (0/1) compared to transferred from the C system, first appointment at the University of Göttingen (0/1).
- Performance measures: Rank position in the appointment procedure, number of additional stay negotiations up to the year t , number of applications for “special performance-based pay” up to the year t .
- Third-party funding controls: Logarithm of average DFG and EU third-party funding up to the previous year of t , logarithm of other third-party funding up to the previous year of t .

The model also contains temporal fixed effects that capture changes in salaries over time that are the same for all professors, ω_t , and faculty-specific fixed effects, γ_f , which eliminate faculty-specific average salary differences that are constant over time.

A detailed description of the methodology and further analyses will be provided in a scientific article.