University of Essex

Research Methods and Professional Practice

Unit 7: Literature Review

What is the gender pay gap in the technology sector in Germany?

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Introduction

The gender pay gap is defined as the difference between the average gross earnings of women and men. This difference is given as a percentage of the average gross earnings of men (Statistische Bundesamt, 2022).

While at the Fourth UN World Conference on Women in 1995 a resolution was passed by 189 states, including Germany, in which the states committed themselves to promoting gender equality in all areas of society, wage differences between women and men are still being observed worldwide today (Deutscher Bundestag, 2016). Although the Federal Republic of Germany is trying to eliminate the gender pay gap through various measures such as the minimum wage, the law to promote transparency in the pay structure and the law on equal participation of women and men in management positions, Germany is in fifth place among the countries with the largest gender pay gap in Europe (Beckert, 2020; Bundesministerium für Familie, Senioren, Frauen und Jugend, 2022; Eurostat, 2022).

This brings the question into focus of which reasons and factors lead to the gender pay gap in Germany and to what extent these can be found in the technology sector.

The gender pay gap in Germany and in a European comparison

When examining the pay gap between women and men, two indicator approaches are followed, the unadjusted gender pay gap and the adjusted gender pay gap. The unadjusted gender pay gap generally compares the average earnings of all employees with each other. The calculation of the unadjusted average gross hourly earnings not only includes information from full-time employees, but also the earnings of employees in part-time work, marginal part-time employees, trainees and interns

(Statistische Bundesamt, 2022). This means that part of the difference in earnings that is caused, for example, by different occupations or career levels is also recorded. The adjusted gender pay gap, on the other hand, measures the difference in earnings between men and women with comparable qualifications, jobs and employment histories.

In a European comparison, the unadjusted gender pay gap in Germany was 21.1% in 2018, above the European Union average of 14.6% and is comparable with Austria (20.4%) and the United Kingdom (19.8%) (Eurostat, 2022). While a continuous trend towards a smaller wage gap can be observed, the gender pay gap 2020 in Germany, which is unadjusted at 18.3%, still indicates a need for actions to counteract this inequality. The German state points out that “the requirement of equal pay for women and men for equal work or work of equal value is a question of justice and is essential for the cohesion of our society” (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2019).

It should be noted that in most cases the gender pay gap is to the detriment of women, but there are professional positions and sectors in which women earn more than their male colleagues. On average, women in management positions in German stock corporations, as well as in automotive, aerospace and shipbuilding technology, earn more than men (EY, 2020; Zucco, 2020). It must also be pointed out that with regard to the unadjusted gender pay gap, large parts of the wage differences can be attributed to the choice of occupation (Finke et al., 2017).

In the German technology sector, women earn on average almost 15,000 Euros less per year than their colleagues and the unadjusted gender pay gap is 25%, well above the general gender pay gap in Germany (Kingham, 2018). The fact that this circumstance can be found structurally across nations is illustrated by the comparison

with the United Kingdom. In a 2019 survey in the United Kingdom, 78% of all large organizations reported a gender pay gap in the technology sector, only 14% reported a median pay gap for women and 8% had no pay gap at all (Women in Tech, 2019).

Factors of the wage gap in the technology sector

While the unadjusted gender pay gap in the German technology sector suggests discrimination against women, various factors can be identified that explain the salary differences and thus lead to the adjusted gender pay gap.

A dominant factor for the gender pay gap can be located in the family-related employment interruption of women due to the birth and rising of children. The interruption of a professional career, which is referred to as the child penalty, leads to a significant reduction in promotions and opportunities for advancement with age, so that the gender pay gap increases with age, which has been confirmed in studies (Kelven et al., 2019). Goldin et al. (2017) were able to determine in their study on the wage gap between women and men that the gender pay gap in the technology sector was 3% on average at the time of entry into the workforce, but rose to 32.1% within the following 14 years. Since starting a family occurs in this phase of life, between the ages of 26 and 40, this factor can be seen as having a significant influence on women's employment biographies and salaries (Schrenker & Wrohlich, 2022).

Regional differences in Germany show that child penalty is a social and regional phenomenon. While the general cross-industry unadjusted gender pay gap in 2020 was 19% in western Germany, it was only 6% in eastern Germany (Statistisches Bundesamt, 2022). The reason for this is assumed to be the unequal distribution of childcare work between fathers and mothers, which can be attributed to a different

family structure due to the contrary ideologies of the former communist East Germany and capitalist West Germany (Fuchs et al., 2019).

It should be noted that the child penalty is just one aspect of the differences between the gender pay gap in western and eastern Germany, but there are many other factors to consider, such as different average salaries and other industry focuses (Fuest & Immel, 2019). Since the majority of the technology companies are located in western Germany, the child penalty is therefore an important factor for the technology sector (Müller et al., 2017).

Furthermore, the technology sector has a disproportionate working time-wage gap (Zucco, 2019). A full-time employment is therefore paid better per hour worked than just part-time. For example, the average hourly wage in the technology sector is 13 Euros for an employment relationship of 15 hours per week, whereas a position with more than 25 hours per week leads to an average remuneration of 27 Euros (Zucco, 2020). According to government data, 47% of all employed women are employed on a part-time basis, while this applies to only 11% of men (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2022). This gender-specific difference in employment, combined with disproportionately long-time pay in the technology sector, leads to unequal pay levels between men and women.

It should also be noted that the particularly large proportion of women in part-time employment also influences the access of women to management positions (Holst & Marquardt, 2018). The low presence of women in managerial positions, known as the glass ceiling effect, which also contributes to a gender pay gap, can on the one hand be assessed as a structural disadvantage when accessing key positions (Wippermann, 2010). On the other hand, it is noted that the two central factors, family-related career breaks, as well as part-time employment, contribute significantly

to reducing the opportunities for women to obtain managerial positions (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2019).

Current state of research and unconsidered research areas

It can be stated that the two mutually interfering factors of family-related career breaks for women and the resulting child penalty, as well as the disproportionate payment of long working hours in the technology sector, in combination with the high proportion of women at 47% on a part-time basis contribute significantly to the unadjusted gender pay gap. 76% of the unadjusted gender pay gap found in the technology sector can be explained by the factors mentioned, while the remaining 24%, which make up a net adjusted gender pay gap of 6%, can be attributed to other unaccounted factors (Zucco, 2020).

It should be noted that the remaining wage difference of the adjusted gender pay gap in the technology sector is to be understood as an upper limit for earnings discrimination (Statistisches Bundesamt, 2022). Further research is therefore necessary to gain a better understanding of the reasons and factors behind the gender pay gap in the technology sector and to prevent possible discrimination. Further potential factors can be identified, which are currently insufficiently investigated and therefore need to be validated.

One such factor is the under-representation of women in leadership positions. This factor should be considered in terms of two dimensions. On the one hand, the adjusted gender pay gap in management positions outside of Germany's largest stock corporations is an average of 11% (Holst & Marquardt, 2018). This wage difference, which is almost twice as high as the average adjusted gender pay gap in

the technology sector, could have a significant impact on the overall gender pay gap. In the context of the glass ceiling, it must be taken into account that women who can get into such a position are more willing to demand lower salaries (Arulampalam et al., 2007).

On the other hand, the question of what influence female managers have on company structures and employees' salaries needs to be examined. While it has already been shown that gender diversity in management positions increases a company's profitability by 3% to 8%, effects can also be observed in employee salaries (Topalova et al., 2016). Hirsch (2013) found that women in leadership positions have a positive impact on reduction of the gender pay gap. The gender pay gap in companies with female managers fell by 1.1%. However, contrary to expectations, this effect was not observed through an increase in female salaries but through a reduction in male salaries.

This results in psychological aspects which should also be considered as potential factors. Studies suggest that another reason for the gender pay gap is that women often negotiate lower wages, which on the one hand could be due to the fact that women try to avoid bargaining (Kulik & Olekalns, 2012). On the other hand, experiments have shown that women who demand higher wages are judged more negatively than men, which can lead to unsuccessful negotiations or avoidance strategies (Bowles et al., 2007).

Furthermore, especially in the context of the regional differences in the gender pay gap, the question arises as to which socio-economic and social factors can lead to the salary disparities. It was found out that in the German social perception the man is perceived as the breadwinner and this is accompanied by an average salary increase of 8% (Lang & Groß, 2020).

It can therefore be stated that there are other factors beyond the adjusted gender pay gap of 6% that can continue to explain the existing pay gap. However, it must be noted that it is not currently possible to quantify the effects on the gender pay gap, so that in-depth research should be carried out in the context of the other factors noted and factors that have not yet been taken into account.

Conclusion

In summary, the unadjusted gender pay gap in the technology sector is with 25% higher than the current average gender pay gap of 18.3%. However, taking into account the key factors of family-related career breaks and the disproportionate remuneration of long working hours in the technology sector, the adjusted gender pay gap drops to 6%.

The fact that women interrupt their careers for family reasons reduces promotion and advancement opportunities, so that the gender pay gap increases with age. Due to the comparatively high part-time employment of women at 47%, women are negatively affected by the disproportionately long working hours. Including these two factors accounts for 76% of the unadjusted gender pay gap found in the technology sector, leaving 24% currently unexplained. However, it should be noted that the adjusted gender pay gap is to be regarded as the upper limit of earnings discrimination, since other factors that were not taken into account or currently unknown influences were not sufficiently examined.

In-depth research is required in order to investigate possible discrimination and to meet the demands of the German state of gender-independent equal pay of equal value, which is considered necessary for social cohesion. Further research

approaches can include the consequences of under-representation of women in leadership positions, the influence of gender-specific salary negotiation strategies, and socio-economic and societal perceptions of gender roles.

References

Arulampalam, W., Booth, A. L., & Bryan, M. L. (2007) Is There a Glass Ceiling over Europe? Exploring the Gender Pay Gap across the Wage Distribution. *Industrial and Labor Relations Review* 60(2): 163–186. Available from: https://doi.org/10.1177/001979390706000201 [Accessed 3 January 2023].

Beckert, F. (2020) Gender Diversity in der Tech-Branche: Warum Frauen nach wie vor unterrepräsentiert sind. *Verlag Babara Budrich*. Available from: https://library.oapen.org/handle/20.500.12657/43312 [Accessed 27 December 2022].

Bowles, H. R., Babcock, L. & Lai, L. (2007) Social incentives for gender differences in the propensity to initiate negotiations: Sometimes it does hurt to ask. *Organizational Behavior and human decision Processes* 103(1): 84-103. Available from: https://www.sciencedirect.com/science/article/pii/S0749597806000884 [Accessed 4 January 2023].

Bundesministerium für Familie, Senioren, Frauen und Jugend (2019) Bericht der Bundesregierung zur Wirksamkeit des Gesetzes zur Förderung der Entgelttransparenz zwischen Frauen und Männern. Available from: https://www.bmfsfj.de/bmfsfj/service/publikationen/bericht-der-bundesregierung-zur-wirksamkeit-des-gesetzes-zur-foerderung-der-entgelttransparenz-zwischen-frauen-und-maennern-137226 [Accessed 27 December 2022].

Bundesministerium für Familie, Senioren, Frauen und Jugend (2022) Lohngerechtigkeit. Available from: https://www.bmfsfj.de/bmfsfj/themen/gleichstellung/frauen-und-arbeitswelt/lohngerechtigkeit/lohngerechtigkeit-80398 [Accessed 27 December 2022].

Deutscher Bundestag (2016) Sachstand Gender: Begriff, Historie und Akteure. Available from: https://www.bundestag.de/resource/blob/425662/d6f1279b77bec6f5770c31b6a4319725/WD-9-025-16-pdf-data.pdf [Accessed 26 December 2022].

Eurostat (2022) Gender pay gap in unadjusted form. Available from: https://ec.europa.eu/eurostat/databrowser/view/sdg_05_20/default/table?lang=en [Accessed 27 December 2022].

EY (2022) Große Gehaltssprünge für deutsche Vorstände – Frauen verdienen deutlich mehr als Männer. Available from: https://www.ey.com/de_de/news/2022-pressemitteilungen/11/grosse-gehaltsspruenge-fuer-deutsche-vorstaende [Accessed 27 December 2022].

Finke, C., Dumpert, F., Beck, M. (2017) Verdienstunterschiede zwischen Männern und Frauen. Available from: https://www.destatis.de/DE/Methoden/WISTA-Wirtschaft-und-Statistik/2017/02/verdienstunterschiede-022017.html [Accessed 27 December 2022].

Fuchs, M., Rossen, A., Weyh, A. & Wydra-Somaggio, G. (2019) Unterschiede in der Lohnlücke erklären sich vor allem durch die Betriebslandschaft vor Ort. Available from: https://doku.iab.de/kurzber/2019/kb1019.pdf [Accessed 30 December 2022].

Fuest, C. & Immel, L. (2019) Ein zunehmend gespaltenes Land?–Regionale Einkommensunterschiede und die Entwicklung des Gefälles zwischen Stadt und Land sowie West-und Ostdeutschland. *ifo Schnelldienst 72*(16): 19-28. Available from: https://www.econstor.eu/handle/10419/206905 [Accessed 30 December 2022].

Goldin, C., Kerr, S. P., Olivetti, C., & Barth, E. (2017) The expanding gender earnings gap: Evidence from the LEHD-2000 Census. *American Economic Review 107*(5): 110-14. Available from: https://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.p20171065 [Accessed 29 December 2022].

Hirsch, B. (2013) The impact of female managers on the gender pay gap: Evidence from linked employer–employee data for Germany. *Economics Letters* 119(3): 348-350. Available from: https://www.sciencedirect.com/science/article/pii/S0165176513001304 [Accessed 3 January 2023].

Holst, E. & Marquardt, A. (2018) Die Berufserfahrung in Vollzeit erklärt den Gender Pay Gap bei Führungskräften maßgeblich. *DIW Wochenbericht* 30:669-678. Available from: https://www.diw.de/de/diw_01.c.595023.de/publikationen/wochenberichte/2018_30_3/die_berufserfahrung_in_vollzeit_erklaert_den_gender_pay_gap_bei_fuehrungskraeften_massgeblich.html [Accessed 2 January 2023].

Kingham, S. (2018) Women in Tech: How does Germany compare to the rest of Europe? *Honeypot*. Available from: https://blog.honeypot.io/women-in-tech-germany/ [Accessed 27 December 2022].

Kleven, H., Landais, C., & Søgaard, J. E. (2019) Children and gender inequality: Evidence from Denmark. *American Economic Journal: Applied Economics 11*(4): 181-209. Available from: https://www.aeaweb.org/articles?id=10.1257/app.20180010 [Accessed 27 December 2022].

Kulik, C. T. & Olekalns, M. (2012) Negotiating the gender divide: Lessons from the negotiation and organizational behavior literatures. *Journal of Management* 38(4): 1387-1415. Available from: https://journals.sagepub.com/doi/full/10.1177/0149206311431307 [Accessed 2 January 2023].

Lang, V. & Groß, M. (2020) The just gender pay gap in Germany revisited: The male breadwinner model and regional differences in gender-specific role ascriptions. Research in Social Stratification and Mobility 65: 100473. Available from: https://www.sciencedirect.com/science/article/pii/S0276562420300020 [Accessed 4 January 2023].

Müller, S., Dettmann, E., Fackler, D., Neuschäffer, G., Slavtchev, V., Leber, U. & Schwengler, B. (2017) *Produktivitätsunterschiede zwischen West-und Ostdeutschland und mögliche Erklärungsfaktoren: Ergebnisse aus dem IAB-Betriebspanel 2016.* IAB-Forschungsbericht. Available from: https://www.econstor.eu/handle/10419/182172 [Accessed 30 December 2022].

Schrenker, A. & Wrohlich, K. (2022) Der Gender Pay Gap ist in den letzten 30 Jahren fast nur bei Jüngeren gesunken. DIW Berlin. Available from: https://www.diw.de/de/diw_01.c.836567.de/publikationen/wochenberichte/2022_09_3/gender_pay_gap_ist_in_den_letzten_30_jahren_fast_nur_bei_juengeren_gesunken.html [Accessed 29 December 2022].

Statistisches Bundesamt (2022) Pressemitteilung Nr. 088 vom 7. März 2022. Available from: https://www.destatis.de/DE/Presse/Pressemitteilungen/2022/03/PD22_088_621.html [Accessed 26 December 2022].

Topalova, P., Christiansen, L. E., Pereira, M. J., Lin, M. H. H., & Turk, R. (2016) *Gender Diversity in Senior Positions and Firm Performance: Evidence from Europe* . Available from: https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Gender-Diversity-in-Senior-Positions-and-Firm-Performance-Evidence-from-Europe-43771 [Accessed 3 January 2023].

Wippermann, C. (2010) Frauen in Führungspositionen: Barrieren und Brücken. *BMFSFJ, Sinus Sociovision: Heidelberg*. Available from: https://www.sinus-institut.de/fileadmin/user_data/sinus-institut/Dokumente/downloadcenter/Soziales_und_Umwelt/Zusammenfassung_Frauen_in_Fuehrungspositionen.pdf [Accessed 3 January 2023].

Women in Tech (2019) Women in Tech Survey. Available from: https://www.womenintech.co.uk/doc/Women-in-Tech-Survey.pdf [Accessed 2 January 2023].

Zucco, A. (2019) Große Gender Pay Gaps in einzelnen Berufen hängen stark mit der überproportionalen Entlohnung von langen Arbeitszeiten zusammen. DIW Wochenbericht 10: 127 – 136. Available from: https://www.diw.de/de/diw_01.c.616035.de/publikationen/wochenberichte/2019_10_1/grosse_gender_pay_gaps_in_einzelnen_berufen_haengen_stark_mi___rproportionalen_entlohnung_von_langen_arbeitszeiten_zusammen.html [Accessed 2 January 2023].

Zucco, A. (2020) Der Gender Pay Gap in IT-Berufen. Expertise für den Dritten Gleichstellungsbericht der Bundesregierung. Available from: https://www.dritter-gleichstellungsbericht.de/de/article/222.gender-pay-gap.html [Accessed 28 December 2022].