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Is there an LGB Training Gap? Participation of Lesbian, Gay, and Bisexual People in Further Training in Germany

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1. Introduction & Background

The increasing demands for specialized training, technological skills, and digital literacy have made lifelong learning essential for career success in many professions. Accordingly, in many countries participation in further training has been increasing in the past years (Grund & Martin, 2012; OECD, 2020). Further training is an important factor in individual professional success and a way for employers to educate their staff and improve their company's image, performance, and productivity. Yet these advantages are unequally distributed, and further training participation depends on a range of organizational-level and individual-level factors.

However, a large body of literature argues that labor-market-related disadvantages and inequalities largely reflect discriminatory behaviour . While discrimination by gender has been subject of empirical investigation for many decades, more recent research has identified also differences in earnings, occupational status, leadership, and occupational segregation by sexual orientation (Drydakis, 2021b; Badgett, Carpenter & Sansone, 2021; Valfort, 2017; for Germany, see Kroh et al., 2017; de Vries et al., 2020; de Vries & Steinmetz, 2023). One main and well researched finding is that gay and bisexual men earn less than heterosexual men (Drydakis, 2021b). Field experiments document found substantial discrimination of LGB people in hiring processes (Neumark, 2018; Flage, 2020). However, empirical results about educational attainment of LGB people is mixed (Valfort, 2017) and little is known about the participation of LGB people in further training.

Contributing to the existing literature on both further training participation and labor market inequalities by sexual orientation, this paper examines the further training participation of LGB people compared to that of heterosexual people. Based on the human capital approach (Becker 1970) and discrimination against LGB peple based on heteorsexism (Herekt 1990) it aims to determine whether sexual orientation affects the further training participation of employees in Germany. The analyses are based on seven pooled waves of the German Socio-Economic Panel (SOEP), which integrated a boost sample of 477 households with LGB(T+) people (SOEP-Q) in 2019. Using a pooled dataset with N = 63,198 heterosexual and N = 1,337 LGB adult observations, this study examines the probability of participation in further training by sexual orientation.

2. Data and methods

To investigate further training participation by sexual orientation, this study used data from the Socio-Economic Panel (SOEP). The SOEP is a representative German household panel including detailed questions about individuals' occupational and family situations. The SOEP was started in 1984 and now surveys nearly 15,000 households and 30,000 individuals yearly (Goebel et al., 2019). Here, the SOEP data from 2013-2019 were used as a pooled dataset because the number of LGB respondents per wave is relatively small. In 2019, a boost sample of 477 LGB(T+) households was integrated into the SOEP, which substantially increased the number of LGB observations since 2019 (de Vries et al., 2021; Fischer et al., 2021). Because SOEP respondents are asked whether they participated in any further training within the last year *(t),* information about further training participation from the subsequent year *(t+1)* was used. Due to this restriction, the analytical sample only includes people who participated in the SOEP at least in two consecutive waves.

Further training participation as the dependent variable is measured in the SOEP survey with the question "Did you take part in any further vocational training programs in [prior year]?". The binary variable further training participation (y/n) indicates whether respondents participated in any kind of further vocational training within the last year (t), so I used the information from the subsequent year (t+1). Overall, 31.5 percent of the unweighted sample and 30.1 percent of the weighted sample participated in further training in the prior year. Moreover, I used the dependend variables number of further training programs, days in further training and financing of further training. The SOEP offers different methods to measure the independent variable of sexual orientation (household composition and direct questions in 2016 and 2019) and combines these into one SOEP-generated indicator. This information was used to build a variable that distinguishes between probably heterosexual and probably homosexual or bisexual individuals (Kroh et al., 2017; Kühne, Kroh & Richter, 2019; SOEP Group, 2018; Fischer et al., 2021). Further, socio-demographic and occupational control variables were included.

Based on the dichotomous nature of the dependent variable 'further training participation', logistic regression models were used to test the hypotheses (Best & Wolf, 2015). However, the models controlled for survey years and used cluster robust standard errors for respondents' ID to control for the fact that respondent years as the observational units are not independent of each other due to the panel design of the SOEP and the use of a pooled dataset. For all models, average marginal effects are presented. To counteract the different labor market situations of men and women, all results are presented for men (N = 32,443) and women (N = 32,092) separately. However, three models are presented for all analyses: a) models that include only the independent variable and survey year, b) models that include additional socio-

demographic control variables, and c) models that include additional occupational and family control variables.

3. First results

Table 1 shows the probability of further training participation by sexual orientation for women and suggest no statistical significant differences between LGB and heterosexuel women.

Table 1: Results of Binary Logistic Regression Models on the Probability of Further Training Participation (Average Marginal Effects) for Women

	M1a		M1b		M1c	
	AME	SE	AME	SE	AME	SE
Homosexual and bisexual	0.051	(0.027)	0.025	(0.025)	0.028	(0.023)
Observations (individuals)	32,092 (8,930)		32,092 (8,930)		32,092 (8,930)	

Notes: Clustered robust standard errors (by ID of respondents); Control variables:
survey year (M1a), age, age², migration background, western Germany,
years of education (M1b & M1c), fixed-term contract, industry sector, working hours, tenure,
job change, firm size, partner, children (M1c);
Significance levels: * p < 0.05, ** p <0.01, *** p < 0.001
Source: Socio-Economic Panel v37.1; pooled 2013-2019; unweighted; own calculations.

Table 2 shows the average marginal effects on the probability of further training participation by sexual orientation for men. There are no statistically significant differences in further training participation for men without the integration of control variables (Model 2a). When controlling for socio-demographic factors, the effect turns significant. Gay and bisexual men have a 6 percentage point lower probability of further training participation compared to heterosexual men (Model 2b). This statistically significant difference remains stable even if the model also controls for occupational status and family characteristics (Model 2c). One main factor in the differences in significance levels is the integration of years of education, which in all models have a positive effect on further training participation (also for female respondents).

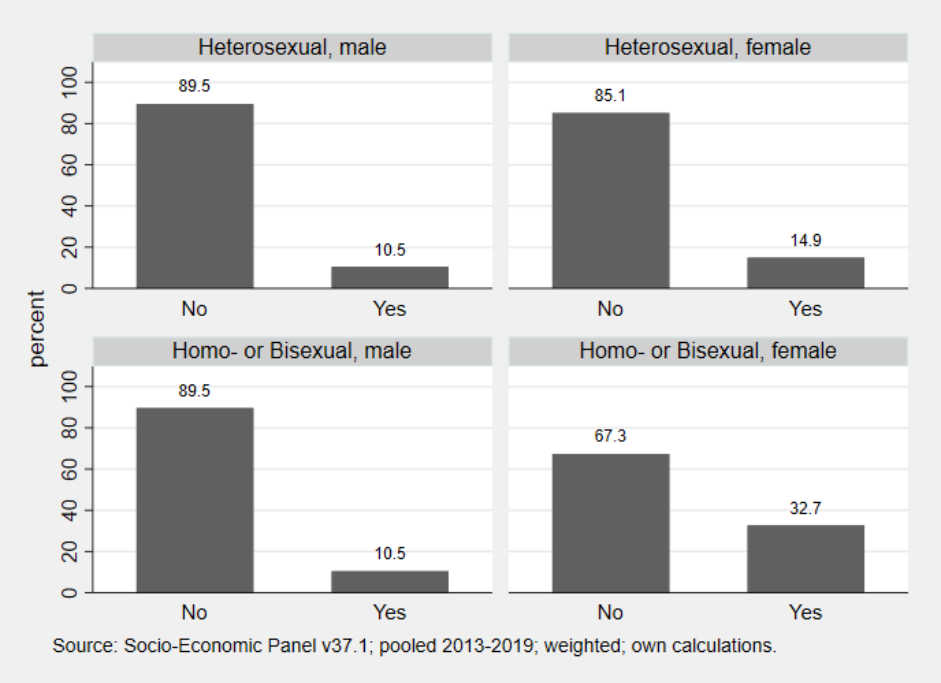
Table 2: Results of Binary Logistic Regression Models on the Probability of Further Training Participation (Average Marginal Effects) for Men

	M1a		M1b		M1c	
	AME	SE	AME	SE	AME	SE
Homosexual and bisexual	-0.040	(0.029)	-0.059*	(0.025)	-0.059*	(0.025)
Observations (individuals)	32,443 (8,774)		32,443 (8,774)		32,443 (8,774)	

Notes: Clustered robust standard errors (by ID of respondents); Control variables:
survey year (M2a), age, age², migration background, western Germany,
years of education (M2b & M2c), fixed-term contract, industry sector, working hours, tenure,
job change, firm size, partner, children (M1c);
Significance levels: * p < 0.05, ** p <0.01, *** p < 0.001
Source: Socio-Economic Panel v37.1; pooled 2013-2019; unweighted; own calculations.

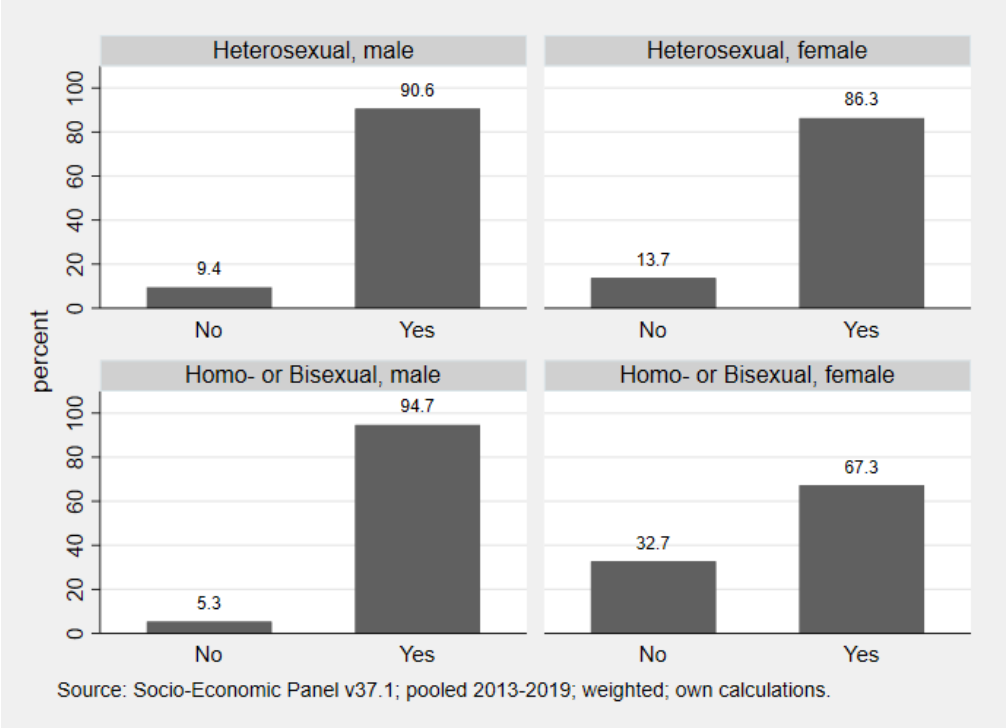
Figure 1 shows the percentage of respondents who participated in self-financed further training by sexual orientation and gender. There are no differences in self-financed further training participation between heterosexual men and gay and bisexual men (11 percent for both). But lesbian and bisexual women participate more than twice as often in self-financed further training than heterosexual women and 22 percentage points more often than men.

Figure 1: Self-Financed Further Training by Sexual Orientation and Gender (in %)



In line with previous research (Burgard, 2012), employer-financed further training is more common than self-financed further training. Men participate more often in employer-financed further training than women. The share for men varies between 91 percent (heterosexual men) and 95 percent (gay and bisexual men) (Figure 2). Heterosexual women have a higher rate of participation in employer-financed further training (86 percent) than lesbian or bisexual women (67 percent).

Figure 2: Employer-Financed Further Training by Sexual Orientation and Gender (in %)



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