ACTIVE TRAVEL STUDIES

Welsch, J. and Rudolph, F. 2026. Company Bikes in Germany – Are they associated with the frequency of bicycle commuting and everyday cycling? *Active Travel Studies: An Interdisciplinary Journal*, 6(1): 1, 1–22. DOI: https://doi.org/10.16997/ats.1774

RESEARCH ARTICLE

Company Bikes in Germany – Are they associated with the frequency of bicycle commuting and everyday cycling?

Janina Welsch and Frederic Rudolph

T3 Transportation Think Tank, DE

Corresponding author: Janina Welsch (janina.welsch@t3-forschung.de)

Company bikes have become popular in Germany in the last decade, yet little is known about company bike users and whether these bicycles are associated with higher levels of cycling. This paper aims to closing this knowledge gap by drawing on a quantitative survey among the German labour force population. With multinomial logit regression models, it explores the association of company bikes and other determinants with bicycle use for commuting trips and in everyday life. The analyses include socio-demographic and economic characteristics, household transport options, attitudes and motives for cycling, as well as weather resistance. Provision of showers and bicycle parking at workplaces and commuting distance are additionally included in a bicycle commuting model. The results show that in comparison to no or very low frequence of bicycle use, the use of a company bike is positively associated with cycling to work occasionally or most of the time but not with the most frequent bicycle commute ('always'). However, there is no indication that the availability of company bikes corresponds with more frequent everyday cycling in general. Owning an e-bike is positively associated with more frequent cycling in both models for commuting and for everyday cycling. In addition, the survey underpins the relevance of other variables associated with more frequent cycling as found in relevant literature, such as cycling-friendly attitudes and motives, weather resistance and shorter distances between home and work. These findings add to the existing body of knowledge on factors associated with frequent cycling commutes and everyday bicycle use.

Keywords: cycling; active travel; commute; company bike; e-bike

Introduction

Cycling has grown in recent years in Germany. According to the annual survey of "German Mobility Panel," the trip-based cycling modal share stagnated at around 12% during the 2010s but increased to 17% in 2021 and 2022 (Ecke *et al.*, 2023; Eisenmann *et al.*, 2018). According to the national travel survey "Mobility in Germany," the cycling share by number of trips was 12% both in 2017 and 2023, whereas its share by distance travelled increased from 3% to 4% (Follmer, 2025). Cycling growth has occurred mainly in the larger cities of

the country (Follmer, 2025; Konietzka and Neugebauer, 2023) and is currently considered an unequal growth, driven mainly by highly educated people in cities (Hudde, 2022).

Currently, little is known about company bike users and their contribution to the German cycling modal share. In 2012, a favourable taxation for company bikes was introduced, leading to an increase in the adoption of company bikes (Synek and Koenigstorfer, 2018). This taxation was further reduced in 2019 to incentivise the use of company bicycles.

Although employees in Germany have been allowed to use company bikes for private purposes under this scheme since 2012, it is still unknown how much this policy encourages people to use bicycles for commuting and everyday travel. This study therefore set out to analyse company bike users and associations of the availability and usage of company bikes with cycling behaviour. It thereby adds another piece to the puzzle of what factors support cycling to work. It does so by analysing a survey among company bike users and non-users in Germany in November 2023. The cross-sectional survey was conducted online and the respondents answered the questionnaire via a web interface.

The paper is structured as follows: The next section summarises the company bike taxation rules in Germany and defines the research objective. In the subsequent literature review section, we discuss these taxation incentives in relation to other factors influencing to commute by bicycle and provide an overview of measures associated with increasing cycling behaviour in Germany. The section concludes with two hypotheses concerning the relationship between company bikes and cycling in the country. The subsequent sections describe the material and methods used to verify these hypotheses and present the results of descriptive statistics as well as bi- and multivariate analyses. In the final section, we discuss these results in the context of recent mobility behaviour in Germany and conclude with recommendations for the future of company bikes.

Background information

In 1989, the German government introduced a flat-rate taxation for company cars, known as the *1%-rule*. This rule allows employers and employees to assess the non-cash benefit of the private use of a company car at a flat rate of 1% of the vehicle's gross domestic list price per month. This flat-rate rule is intended to simplify accounting, as it replaces the time-consuming process of keeping a logbook for private use. In 2012, this rule was extended to company bikes to apply equal tax treatment. On 1 January 2019, the government introduced a reduced flat-rate taxation for electric cars at a monthly 0.25% of the manufacturer's list price to incentivise their market access. In response, the taxation of company bikes was also reduced to a monthly 0.25% of the manufacturer's recommended retail price.

While the market expanded, in parallel, the e-bike market grew rapidly. The German bicycle industry estimated the e-bike fleet in Germany at 11 million vehicles in 2023, a growth from only 1.6 million vehicles in 2013 (ZIV, 2024). According to a market survey among bicycle leasing providers, employees in Germany acquired 230,000 new company bikes in 2019. In 2023, this number increased to 790,000 new bicycles, including e-bikes and cargo bikes, and corresponds to an annual market growth of 37%. The total fleet in December 2023 was estimated at 1.9 million leased vehicles, about 80% of those company bikes are e-bikes (Deloitte and Zukunft Fahrrad e.V. 2024).

A company bike is leased through salary conversion (before taxation), applying an unusual high leasing factor, however, acknowledged by the financial authorities. The tax savings plus the gross salary conversion make the price for a company bike much more favourable compared to a direct purchase. From the employee's point of view, it is cheaper to use a company bike (leased by the employer) for 3 years and then buy it at the end of the period

by paying the residual value. The tax benefit applies for income tax, which has an increasing rate with gross salary. In consequence, the benefit increases with increasing salary. From the consumer's perspective, the effective price is lower since their net income is reduced to a lesser extent. Moreover, the higher the recommended retail price of the bicycle, the higher the savings. Company bikes are considered a fringe benefit and may equally be used for business trips, commuting and in everyday life.

This mechanism applies to both company cars and company bikes. As the amount of savings depends on the tax class, tax-exempt amount and income level of the employee. They achieve maximum savings when they have high taxable income and receive expensive vehicles. Consequently, analyses confirm the extensive use of company cars in Germany (Metzler, Humpe and Gössling, 2019). According to bike leasing providers and the bicycle lobby, company bikes are intended to facilitate the transition towards sustainable mobility by promoting the replacement of car trips with bicycle trips. Yet, empirical evidence on this substitution effect remains scarce. The objective of this paper, therefore, is to explore to what extent company bike usage is associated with higher cycling frequencies.

Literature review

As the emergence of company bicycles is a rather new phenomenon, their relation to mobility behaviour has hardly addressed in the literature. To date, the German company bicycle taxation has only been analysed from an innovation diffusion perspective. Employees of companies participating in leasing programmes were asked about adoption drivers and barriers to cycling to work. It turned out that, out of five characteristics that can affect the adoption of innovations, only "compatibility" influenced commuting by bicycle. However, employees change their commuting behaviour more towards cycling when the company bicycle fits very well with their values, lifestyle and needs (Synek and Königstorfer, 2019). This finding is in line with other literature about e-bikes, considering the high share of electrically assisted bikes among company bikes. In Poland, there are groups of highly committed e-cyclists who love this rather new and innovative mode of transport for being practical and trendy, namely "gadget lovers," "cautious explorers" and "open traditionalists." However, much more numerous groups of people remain unconvinced and do not see any positive features, which the authors attribute to the lack of a cycling culture in the country (Biegańska, Grzelak-Kostulska and Kwiatkowski, 2021).

Besides this, the investment costs of an e-bike are a major reason for not purchasing one and, thus, not changing commuting behaviour. It is therefore concluded that "pilot programs could consider the potential of incrementally purchasing an e-bike over a longer period of time, instead of at once, to increase e-bike adoption rate" (Ton and Duives, 2021, p. 134). The German company bike taxation scheme appears to be such an incentive programme.

In addition, the links between other incentives and cycling to work have been widely reported. Cycling to workplace can typically be supported through workplace travel plans which include elements such as supportive transport infrastructure, organisational commitment and governance, information and campaigns and parking management. Research agrees that promotion of cycling with such mobility management measures is most effective when supportive measures coincide with restrictions towards motorised mobility (De Groote, van Ommeren and Koster, 2019; Petrunoff, Rissel and Wen, 2017; Sulikova and Brand, 2022; Xiao *et al.*, 2022). Similar patterns are observed with employer-provided fringe benefits. Tchervenkov, Balać, and Axhausen (2021) report, for Switzerland, that the availability of showers at the workplace is associated with a modest decrease in car commuting and a modest increase in bicycle commuting. Comparable associations have also been documented

in US cities, although such effects are offset when free car parking is provided (Bueno *et al.*, 2017; Hamre and Buehler, 2014).

Demand for secure parking spaces increases with the value of the bike. Owners of higher-value bicycles, including e-bikes, show a preference for secure parking options such as covered racks and bicycle parking stations. Insufficient secure parking options deter e-bike users from undertaking trips that involve leaving their bikes unattended in unfamiliar or unsecured locations (Edberg, 2023; Heinen and Buehler, 2019; Kohlrautz and Kuhnimhof, 2025).

The number of people travelling by bike, including for commuting to work, has been increasing steadily in Germany, independent of the temporary effects of the Covid-19 pandemic (Konietzka and Neugebauer, 2023). Compared to other trip purposes, bicycles are already used disproportionately often on journeys to work. However, around one third of the population uses bicycles at least once a week for various other purposes. Given that many car trips in Germany cover distances of <5 km, there is high potential to shift these trips to cycling (Nobis, 2019). E-bike owners cycle longer distances per day and have an increased cycling range because their cycling behaviour is less affected by distance (Kohlrautz and Kuhnimhof, 2024).

For trips to work, the distance or journey time plays a decisive role in the choice of bicycle (Ton and Duives, 2021). Also, the existing cycling infrastructure and the speed of motor vehicles have a significant influence on the feeling of comfort and safety when commuting by bike (Plazier, Weitkamp and van den Berg, 2017; Rérat, 2021). Possible adverse weather conditions such as rain, snow or heat have long been discussed as barrier to cycling, especially with regards to recreational activities (Böcker, Dijst and Prillwitz, 2013; Haustein, Hunecke and Manz, 2007). However, perceptions of adverse weather vary substantially and seems to be linked to individual attitudes, or more general to mobility culture, and possibly also due to related differences in the quality of infrastructure (Goldmann and Wessel, 2021; Hudde, 2023). Interestingly, there is evidence that some individuals are more likely to use e-bikes than traditional bicycles under adverse weather conditions, specifically individuals with strong intention or commitment to e-bike use as well as households with only one car, which appear to rely on e-bikes as a practical transport option (Kruijf *et al.*, 2021).

Attitudes, perceptions and personal motives also play a role in motivating people to use bicycles and also determining how frequently individuals choose cycling to work (Casier and Witlox, 2022; Francke *et al.*, 2019; Gao *et al.*, 2019; Haustein and Møller, 2016; Hunecke, Heppner and Groth, 2022).

Many employees commuting by bicycle or e-bike is based on the perceived health benefits, as shown in several studies (Edge *et al.*, 2018; Hoj *et al.*, 2018; Page and Nilsson, 2016). E-bikes, in particular, are perceived beneficial for replacing short car journeys (Edge *et al.*, 2018) and are shown to be faster than other modes such as walking, traditional cycling or public transport. Several studies also found significant changes in commuting behaviour with the availability of e-bikes, including reductions in car use starting from 20% to 37% (Cairns *et al.*, 2017; Söderberg f.k.a. Andersson, Adell and Winslott Hiselius, 2021; Ton and Duives, 2021). Nevertheless, Biegańska, Grzelak-Kostulska and Kwiatkowski (2021) argue that the perception of e-bikes differs, within the population, partly because of the belief that they do not contribute to health as much as traditional bicycles.

Various European studies discuss barriers to using a bicycle for commuting. These include poor (perceived) safety and road conditions (Page and Nilsson, 2016), adverse winter weather, the need to carry heavy loads and the transport of goods or people (Edge *et al.*, 2018; Flynn *et al.*, 2012; Söderberg f.k.a. Andersson, Adell and Winslott Hiselius, 2021).

Based on the literature review, there should be a measurable association between availability of company bikes and cycling behaviour. According to that our two hypotheses are as follows: (1) Company bikes contribute to increased cycling to work because (a) they are similar to other employer programmes to foster cycling to work which tend to be effective and (b) they incentivise the acquisition of e-bikes, a mode of transport that has been shown to be effective in increasing commuting by bicycle. (2) As company bikes can be used without restrictions for any trip purpose, and as they are predominantly e-bikes, we assume that company bikes also contribute to increasing cycling beyond commuting, that is, in everyday life.

Material and methods

Survey procedure

The data were collected in autumn 2023 through an online survey conducted in three different waves with the help of a market research institute. The first and second waves used an existing online-access panel (Payback). The survey targeted the German labour force population who potentially have access to a company bike. Therefore, the first and second waves involved only people who were currently employed or self-employed. The first wave was, a random sample, conducted between 20 October and 8 November, and the second wave was conducted between 20 and 30 November. To boost the number of participants with a company bike, a random sample of people was recruited (according to background information, two-thirds with and one-third without a company bike). The third wave (24 November–4 December) was open to general public through snowballing, websites, social media and a newsletter from JobRad GmbH, one of the biggest company bike leasing providers.

The three samples were initially weighted separately to better represent the German labour force. Weighting factors were calculated according to the distributions of age groups, gender and educational/vocational qualification levels reported in the 2021 German micro-census data (Destatis, 2025). Afterward, the datasets were combined and the weights were applied throughout the analyses.

The sample we use in this paper includes only participants who reported the use of any transport mode for commuting. Individuals who were not currently working (e.g., due to parental leave) and who did not have a commute (e.g., work and home at the same location) were excluded. Also, the cases with missing values in variables under analysis were excluded. In addition, the gender category "divers" was omitted due to its very low number of cases. The total weighted sample consists of $N = 3685$ participants.

Survey instruments

The questionnaire was designed to provide detailed information on company bike users and contains of six different sections:

1. Company bike offers by employer, their uptake (if available), and reasons for refusing.
2. Household and personal mobility options, like driving licence, number of cars, bicycles and related availabilities.
3. Bicycle capabilities, transport mode uses and attitudes on transport modes uses.
4. Information on whether employer offer good conditions for cycling storage and different aspects regarding company bikes and their usage.
5. Motives and attitudes towards cycling.
6. Socio-demographics and socio-economics characteristics.

To complete the questionnaire required approximately 9–13 min (mean: 11.2). The following section describes the variables used in our analyses.

Company bike users were classified into three categories based on combined information about employer's provision and individual's usage of company bikes. The first category comprises participants who accepted their employer's offer and use at least one company bike within their household. The second category comprises those who declined the offer and the third consists of those who did not receive one.

The transport mode uses was measured with two different five-point ordinal scales: General mode use in everyday life was measured with the same scale as the 2017 national travel survey "Mobility in Germany," ranging from *(almost) never, less than monthly*, *1–3 days per month*, and *1–3 days per week* to *(almost) daily* (Nobis, 2019). Given that commuting today rarely follows a strict and regular daily or weekly pattern, the corresponding scale ranges from *(almost) never*, *seldom*, *occasionally*, *mostly* to *always*.

Socio-demographic variables are age (summarised into 18–29, 30–44, 45–59 and 60–76 years), gender (male and female), household size and whether children below the age of 18 are present in the household [yes (≥1) and no]. Personal net income in EUR was assessed in eight categories, which were subsequently aggregated into three groups: low (<€2000), middle (€2000–€3999) and high (≥€4000). Household equipment was represented by the number of cars and bicycles in the household. In addition, the number of electrical bicycles was recoded into a dichotomous variable (yes, at least one e-bike and no).

Cycling-related attitudes and motives often correlate with peoples' cycling behaviour. Whether people like the use of transport mode was measured by agreement on a non-symmetric four-point scale (*fully disagree*, *disagree*, *agree* and *fully agree*), taken from the national travel survey "Mobility in Germany" (Nobis, 2019). For bicycle it states *I like cycling in everyday life*. Due to small numbers for the option *fully disagree*, the variable was recoded into a binary variable and reflects either disagreement or agreement.

In addition, agreement to several attitudinal and motivational statements were measured on a symmetrical five-point scale ranging from total disagreement to total agreement. These items and related factors were adapted from existing literature (Francke *et al*., 2019; Francke, Anke and Lißner, 2018; Haustein and Møller, 2016; Hunecke, Heppner and Groth, 2022). Factors were constructed from multiple items, with reliability tests indicating acceptable to good values for Cronbach's α, which assesses covariation among items. Self-identification as a cyclist was measured as a single item (see **Table 1**).

Analysis methods

To start with, we conducted descriptive analyses of the sample to summarise the study variables. Mean, range and standard deviation (SD) are reported for continuous variables, while frequencies and proportions (%) are presented for categorical variables (**Table 2**). Users of company bikes completed a series of items addressing changes in bicycle ownership and usage, for which descriptive analyses were conducted to explore participants' perceptions (**Table 3**). We also present bivariate associations between company bike use and both dependent variables (**Table 4**). Bivariate associations for other independent variables were tested to identify most important independent factors to be used in the further analyses.

To analyse whether company bike use is positively associated with more frequent bicycle use, and to examine the role of other independent variables and their associations to cycling frequencies (dependent variables: cycling in everyday life and commuting by bicycle), also two multinomial logit regression models were conducted (for detailed information concerning multinomial or discrete choice modelling, see Ben-Akiva and Lerman, 1985; Hosmer and Lemeshow, 2000; Train, 2003). Multicollinearity was tested and all values for variance inflation factors (VIF) were below 3.5. The multivariate analyses examine the impact of multiple independent variables simultaneously; results are presented in **Tables 5** and **6**.

Table 1: Cycling related attitudes and motivations.

	Items*	Cronbach's α
Ease of cycling in everyday life	If I want to, it is easy for me to use my bicycle on my journeys	0.911
	I can get everywhere by bicycle	
	I can organise my everyday life very well by bicycle	
	I can do what I want to do by bike	
	I can reach many important destinations by bicycle	
Instrumental motivation	I cycle because it gives me flexibility when travelling	0.778
	I cycle because I am usually faster with it than with other means of transport	
	By cycling, I can save money	
	By cycling, I make a contribution to my health	
	By cycling, I make a contribution to the environment and the climate	
Symbolic motivation	As a cyclist, I am part of a group	0.663
	Many people around me cycle	
	It is important to me that others know that I am a cyclist	
Self-identification as cyclist	I see myself as a cyclist	

*Scale: totally disagree (1), disagree (2), neither agree nor disagree (3), agree (4), totally agree (5).

Multinomial logit regression was chosen because the assumption of proportional odds required for ordinal logistic regression models was not met. To keep the models simple but meaningful and to reduce cells with zero frequencies, some responses categories were aggregated. Given the similarity of results across a series of binary logistic regression models representing the ordinal thresholds, the two lowest categories of bicycle use were merged, as were the two middle categories. The remaining three categories (low, middle and high frequent use of bicycle for commuting and in everyday life) were used in our analyses. Generally, a multinomial logit model addresses more than two categories which are treated as discrete alternatives. In both models, we used the lowest frequency category as the reference group against which the probabilities of the middle and high frequency categories of bicycle use were compared.

Similar to binary logistic regression, an association between the dependent variable and a group of independent variables is established and the logit-transformed probability (P) of being in the respective frequency category is calculated as a linear relationship. The logistic transformation ensures that estimated probabilities fall within the range of 0 and 1. The estimated regression coefficient (β) reflects the sign (positive or negative) and magnitude of every independent variable on the logit variable while all the other independent variables are held constant. The odds range from zero to positive infinity and reflect the ratio of the estimated probabilities for occurrence of the event, that is, middle respective high bicycle use frequency ($Y = 1$) and the opposite event (low use, $Y = 0$).

Odds ratio (OR) describe the strength of association, that is, the change in the odds of the event occurring. For example, to what extent the odds of using the bicycle in the given frequency category increase (or decrease) if the independent variable is increased by one unit in comparison to low use reference group. For dummy variables like gender, or for category variables like age groups, the change is described in comparison to the reference category. Positive associations or an increase in probability are indicated by OR >1, negative ones by OR <1.

Results

Descriptive statistics

Table 2 presents an overview of the sample characteristics. Almost half of the respondents reported taking up their employer's offer and currently use a company bike. Most respondents agree that they enjoy cycling. Almost half of the participants seldom or (almost) never cycle to work, while about 14% reported commuting always by bicycle. In everyday life, independent of trip purposes, nearly about one fifth of the sample participants cycle less than monthly or (almost) never, while nearly one third cycle (almost) daily. Participants are between 18 and 76 years old, and the average age is 44 years. The majority of the respondents belongs to the middle-income group.

Compared to the average number of 2.5 persons per household, households own a rather high number of cars and bicycles with an average of 1.5 and 3.2, respectively. More than half of the respondents have at least one e-bike at home. While the vast majority generally enjoy cycling, only about one fifth state that they cycle in bad weather. Instrumental motivational aspects and ease of cycling in everyday life show the highest agreements. About half of the participants indicated that they have a shower and high-quality bicycle parking facilities at their workplace. About 37% live within a cycling distance of <10 km to their workplace.

All survey participants reported that they are able to ride a bicycle. On average, respondents learned to cycle at the age of 5, with 85% learned to ride a bike at the age of 6 or younger. Less than 3% state that they do not have personal access to any bicycle. Most participants have a car driving licence (96%) and always or sometimes a car available for personal use (92%). These variables and other with (very) low variance with regards to cycling frequencies were not included in further analyses.

Table 2: Sample characteristics ($N = 3685$)

Variable	Categories	
Company bike user	No offer by employer	30.7%
	Offer by employer not taken	21.0%
	Offer by employer taken and use of company bike	48.2%
Commute by bicycle – frequency	Low: (almost) never or seldom	48.4%
	Middle: occasionally or mostly	37.2%
	High: always	14.4%
Everyday bicycle use – frequency	Low: (almost) never or less than monthly	20.4%
	Middle: 1–3 days per month or 1–3 days per week	49.4%
	High: (almost) daily	30.2%

(Contd.)

Variable	Categories	
Gender	Female	48.0%
Age (years)	Range	18–76
	Mean (SD)	43.6 (12.7)
Age group	18–29 years old	16.8%
	30–44 years old	34.3%
	45–59 years old	38.5%
	60–76 years old	10.4%
Household size (persons)	Range	1–10
	Mean (SD)	2.50 (1.2)
Household with at least one child ≤17 years old	Yes	29.2%
Personal income (net, €)	Low (<2000)	16.8%
	Middle (2000–3999)	46.3%
	High (≥4000)	22.5%
	No answer	14.3
Bicycle in household (number)	Range	0–18
	Mean (SD)	3.24 (2.1)
E-bike in household	At least one e-bike	54.6%
Car in household (number)	Range	0–9
	Mean (SD)	1.47 (1.0)
Resilience to bad weather	Resilient (no change or more cycling)	23.5%
I like cycling in everyday life	Agree or totally agree	84.8%
Ease of cycling in everyday life	Mean (SD)	3.49 (1.0)
Instrumental motivation	Mean (SD)	3.83 (0.8)
Symbolic motivation	Mean (SD)	2.78 (0.9)
Self-identification as cyclist	Mean (SD)	3.47 (1.3)
Shower provided by employer	Yes	50.8%
Bicycle parking high quality	Yes: Enough places, barrier free near to entrance, with roof/dry	44.8%
Distance: home to workplace (km)	<2.5	7.1%
	2.5–4.9	8.8%
	5.0–9.9	21.1%
	10.0–14.9	15.3%
	≥15.0	41.4%
	Several or changing workplaces	6.3%

SD, standard deviation.

Survey participants who reported having a company bike (N = 1778) were asked about potential behavioural changes and shifts to bicycle use since receiving it. The majority indicated that they now use a more expensive bike, owns an e-bike, cycles more frequently and longer distances since taking up a company bike (**Table 3**). Of those who have a company bike and own at least one e-bike, more than two-thirds report cycling more frequently or over longer distances compared with 40% and 44% of those with traditional bicycles.

Table 3: Proportion of company bike users agreeing with statements on changes since taking up a company bike (N = 1778).

Since I got my company bike, ...	%
... I use a more expensive bicycle	75.8
... I use an e-bike	72.7
... I cycle more frequently	64.5
... I cycle longer distances	63.1

Bivariate analyses

Chi-square tests were significant for both bivariate analyses with cross table comparisons of the shares of company bike user categories in relation to cycling frequencies in everyday life and for commuting. A higher proportion of individuals who cycle with a middle or high frequency (commuting or in everyday life) are found among the category of those who took the offer of a company bike. However, the Cramer-V values show only a moderate association (**Table 4**).

Table 4: Distribution of company bike user categories by frequency of bicycle use for commuting and everyday travel (N = 3685).

		Company bike user (%)		
		No offer by employer	**Offer by employer not taken**	**Offer by employer taken and use of company bike**
Commute by bicycle[a] (%)	Low: (almost) never or seldom	38.1	26.8	35.1
	Middle: occasionally or mostly	21.8	15.5	62.7
	High: always	29.0	16.2	54.8
Everyday bicycle use[b] (%)	Low: (almost) never or less than monthly	46.5	34.6	18.9
	Middle: 1–3 days per month or 1–3 days per week	27.0	18.9	54.1
	High: (almost) daily	26.2	15.4	58.5

[a] $\chi 2$ (4, N = 3685) = 249.9, $p < 0.001$, (Cramer-V = 0.184).
[b] $\chi 2$ (4, N = 3685) = 334.0, $p < 0.001$, (Cramer-V = 0.213).

Multivariate analyses

To arrive at a more nuanced understanding, we present the results of two multinomial logit regression models. These models show the association of independent variables – such as company bike use, sociodemographic characteristics, household vehicle ownership and motives/attitudes – with cycling frequency. For commuting, cycling frequency was categorized as occasionally, mostly or always compared to the reference category of low use [(almost) never or seldom, **Table 5**]. Similarly, for everyday cycling the association with using the bicycle either monthly to weekly or (almost) daily were compared to the low use [(almost) never or less than monthly, **Table 6**]. Due to few mandatory questions and the listwise deletion in the regression analyses, the weighted sample comprised $N = 3685$. **Tables 5** and **6** provide the regression coefficient B (reg. coeff. β), level of significance (p) and odds ratio (OR) with 95% confidence interval (95% CI OR).

The model for commuting to work by bicycle (**Table 5**) was statistically significant [χ^2 (54, $N = 3685$) = 3085.36, $p < 0.001$] explaining 66% of the variance (Nagelkerke's R^2) and correctly classified 73% of the cases (low: 84%, middle: 65% and high: 61%).

Table 5: Parameter estimates for commuting to work by bicycle [cycling frequencies middle and high compared to the reference group low: (almost) never or seldom].

Predictor	Middle: occasionally or mostly			High: always		
	Coeff. β	*p*	OR (CI 95%)	Coeff. β	*p*	OR (CI 95%)
Company bike user (ref. no offer by employer)						
Offer by employer not taken	0.085	0.566	1.089 (0.814–1.457)	–0.192	0.429	0.826 (0.513–1.327)
Offer by employer taken and use of company bike	0.429	0.002	1.536 (1.74–2.009)	–0.124	0.557	0.884 (0.585–1.335)
Gender (ref. male)						
Female	–0.189	0.073	0.828 (0.674–1.018)	–0.169	0.296	0.844 (0.615–1.159)
Age group (ref. 60–76 years old)						
18–29 years old	–0.321	0.113	0.726 (0.488–1.079)	0.392	0.240	1.479 (.770–2.843)
30–44 years old	0.366	0.043	1.442 (1.011–2.056)	0.694	0.018	2.001 (1.129–3.548)
45–59 years old	0.139	0.409	1.149 (0.826–1.599)	0.001	0.997	1.001 (0.578–1.735)
Household size (no. of persons)	0.112	0.111	1.119 (0.975–1.284)	0.179	0.073	1.196 (0.984–1.454)

(Contd.)

Predictor	Middle: occasionally or mostly			High: always		
	Coeff. β	*p*	OR (CI 95%)	Coeff. β	*p*	OR (CI 95%)
Household with at least one child ≤17 years old (ref. no child)						
At least one child	–0.333	0.032	0.717 (0.528–0.972)	–0.275	0.249	0.760 (0.476–1.212)
Personal net income (€) (ref. high ≥4000)						
Middle 2000–3999	0.256	0.044	1.291 (1.007–1.656)	0.356	0.080	1.428 (0.958–2.129)
Low <2000	–0.055	0.755	0.947 (0.672–1.334)	0.138	0.608	1.147 (0.679–1.939)
No answer	–0.015	0.927	0.985 (0.714–1.359)	0.191	0.495	1.210 (0.699–2.096)
Bicycle in household (number)	0.063	0.039	1.065 (1.003–1.131)	0.155	<0.001	1.168 (1.075–1.268)
E-bikes in household (ref. no e-bike)						
At least one e-bike	0.863	<0.001	2.370 (1.855–3.029)	1.235	<0.001	3.439 (2.377–4.976)
Car in household (number)	–.203	0.001	0.817 (0.722–0.924)	–0.412	<0.001	0.662 (0.539–0.813)
Resilience to bad weather (ref. not resilient, less or no cycling)						
Resilient, no changes or more cycling	0.668	<0.001	1.951 (1.467–2.593)	2.540	<0.001	12.677 (8.803–18.256)
I like cycling in everyday life (ref. disagree or totally disagree)						
Agree or totally agree	1.514	<0.001	4.547 (2.974–6.952)	3.929	0.021	50.841 (1.788–1445.3)
Ease of cycling in everyday life	0.771	<0.001	2.161 (1.817–2.571)	1.326	<0.001	3.767 (2.729–5.199)
Instrumental motivation	0.294	0.006	1.342 (1.089–1.655)	1.126	<0.001	3.083 (2.111–4.503)
Symbolic motivation	–0.304	<0.001	0.738 (0.639–0.851)	–0.393	<0.001	0.675 (0.548–0.831)
Self-identification as cyclist	0.460	<0.001	1.584 (1.418–1.768)	0.925	<0.001	2.522 (2.030–3.134)

(Contd.)

Predictor	Middle: occasionally or mostly			High: always		
	Coeff. β	*p*	OR (CI 95%)	Coeff. β	*p*	OR (CI 95%)
Distance: home to workplace (km) (ref. < 2.5)						
2.5–4.9	0.902	0.001	2.466 (1.448–4.199)	1.055	0.003	2.872 (1.434–5.753)
5.0–9.9	0.538	0.013	1.712 (1.118–2.621)	0.189	0.530	1.208 (0.671–2.174)
10.0–14.9	−0.308	0.162	0.735 (0.477–1.131)	−1.165	<0.001	0.312 (0.166–0.586)
≥15.0	−1.642	<0.001	0.194 (0.129–0.290)	−2.451	<0.001	0.086 (0.048–0.155)
Several or changing workplaces	−0.040	0.876	0.961 (0.578–1.596)	−1.022	0.016	0.360 (0.157–0.825)
Bicycle parking high quality (ref. no or no high quality)						
High quality bicycle parking	0.014	0.890	1.041 (0.829–1.242)	0.294	0.072	1.342 (0.975–1.847)
Shower provided by employer (ref. no shower or do not know)						
Shower	0.168	0.099	1.183 (0.969–1.444)	0.150	0.347	1.162 (0.850–1.589)
Intercept	−6.631	<0.001		−18.774	<0.001	
Log likelihood	4271.23					
Nagelkerke's R^2	0.656					
McFadden's R^2	0.419					
Number of observations	3685					
AIC (Akaike information criterion)	4383.23					
BIC (Schwarz's Bayesian information criterion)	4731.10					

Coeff. β, regression coefficient B; p, level of significance; OR, odds ratio; CI, confidence interval.

We found a significant positive association between company bike users and cycling frequency when controlling for additional independent factors, but only for the middle- compared to low-frequency category. Relative to the reference group (no offer by employer), the odds are increased by a factor of 1.54 with the middle frequency. No significant difference was observed for the ones who did not take up the offer. Also, no significant association was found for high-frequency cyclist. For the other independent variables, similar patterns are largely observed for both frequency categories, but the OR show some differences in the strength of the association.

Table 6: Parameter estimates for everyday bicycle use (cycling frequencies middle and high compared to the reference group low ((almost) never or less than monthly).

Predictor	Middle: 1–3 days per month or 1–3 days per week			High: (almost) daily		
	Coeff. β	*p*	OR (CI 95%)	Coeff. β	*p*	OR (CI 95%)
Company bike user (ref. no offer by employer)						
Offer by employer not taken	–0.263	0.080	0.769 (0.573–1.031)	–0.398	0.064	0.671 (0.441–1.023)
Offer by employer taken and use of company bike	0.058	0.735	1.060 (0.757–1.485)	–0.136	0.528	0.873 (0.572–1.332)
Gender (ref. *male*)						
Female	–0.607	<0.001	0.545 (0.426–0.698)	–0.893	<0.001	0.409 (0.298–0.561)
Age group (ref. *60–76 years old*)						
18–29 years old	–0.506	0.037	0.603 (0.375–0.969)	0.026	0.935	1.026 (0.553–1.903)
30–44 years old	–0.284	0.214	0.753 (0.481–1.178)	–0.049	0.871	0.954 (0.539–1.689)
45–59 years old	–0.024	0.914	0.914 (0.629–1.514)	0.282	0.317	1.325 (0.763–2.301)
Household size (persons)	0.047	0.603	1.048 (0.877–1.252)	0.081	0.468	1.084 (0.872–1.349)
Household with at least one child ≤ 17 years old (ref. *no child*)						
At least one child	–0.561	0.004	0.571 (0.390–0.835)	–1.044	<0.001	0.352 (0.217–0.571)
Personal net income (€) (ref. *high ≥4000*)						
Middle 2000–3999	–0.280	0.080	0.769 (0.551–1.035)	–0.034	0.867	0.967 (0.649–1.440)
Low <2000	–0.033	0.880	0.968 (0.632–1.482)	0.461	0.092	1.586 (0.927–2.714)
No answer	–0.607	0.002	0.545 (0.371–0.802)	–0.387	0.137	0.679 (0.408–1.131)
Bicycle in household (number)	0.293	<0.001	1.340 (1.213–1.481)	0.535	<0.001	1.708 (1.525–1.912)
E-bikes in household (ref. *no e-bike*)						
At least one e-bike	0.858	<0.001	2.357 (1.750–3.177)	0.722	< 0.001	2.058 (1.415–2.994)

(Contd.)

Predictor	Middle: 1–3 days per month or 1–3 days per week			High: (almost) daily		
	Coeff. β	*p*	OR (CI 95%)	Coeff. β	*p*	OR (CI 95%)
Car in household (number)	–0.190	0.012	0.827 (0.713–0.959)	–0.335	0.001	0.716 (0.591–0.866)
Resilience to bad weather (ref. *not resilient, less or no cycling)*						
Resilient, no changes or more cycling	–0.308	0.172	0.735 (0.472–1.143)	1.078	<0.001	2.938 (1.832–4.713)
I like cycling in everyday life (ref. *disagree or totally disagree*)						
Agree or totally agree	1.859	<0.001	6.417 (4.784–8.607)	2.528	<0.001	12.531 (5.191–30.247)
Ease of cycling in everyday life	0.381	<0.001	1.464 (1.210–1.770)	1.275	<0.001	3.580 (2.738–4.679)
Instrumental motivation	0.224	0.058	1.251 (0.993–1.576)	0.661	<0.001	1.937 (1.402–2.676)
Symbolic motivation	0.085	0.392	1.089 (0.896–1.323)	0.065	0.576	1.068 (0.849–1.343)
Self-identification as cyclist	0.545	<0.001	1.725 (1.502–1.980)	1.149	<0.001	3.155 (2.630–3.784)
Intercept	–4.049	<0.001		–14.100	<0.001	
Log likelihood	4310.63					
Nagelkerke's R^2	0.678					
McFadden's R^2	0.434					
Number of observations	3685					
AIC (Akaike information criterion)	4394.63					
BIC (Schwarz's Bayesian information criterion)	4655.53					

Coeff. β, regression coefficient B; p, level of significance; OR, odds ratio; CI, confidence interval.

Significant associations were also found for variables related to participants socio-demographic or household characteristics, transport options and attitudes/motives as well as home–workplace distance. Compared to the older age group, being in middle age was positively associated with cycling to work. Similarly, having a middle personal income (compared to high) significantly increases the odds of cycling with middle frequency. Having at least one child in the household was negatively associated with cycling in both categories, but only significant in the middle-frequency group. Household transport options are also relevant, the most significant one is the ownership of at least one e-bike and, to a lesser extent, the increase in numbers of bicycles, while every additional car in the household is negatively associated with bicycle commuting. Resilience to bad weather increases the odds of cycling to

work in both categories significantly, the OR is particular high for the group who cycle always. Attitudes and motives have also significant association, especially the pro-cycling attitude (I like cycling in everyday life) increases the probability of cycling in the high-frequent cycling category. Also, ease of cycling and self-identification as a cyclist are positively associated with higher cycling frequencies and more so in the high frequency, whereas symbolic motivation has a negative association. In addition, distance between home and workplace is an important variable. Compared with very short distances below 2.5 km, distances up to 5 km and 10 km are positively associated with cycling to work, while longer distances of 15 km or more are negatively associated. No significant association for high-quality bicycle parking or showers provided by the employer.

In addition, we analysed other independent factors associated with more frequent general bicycle use in everyday life. We compared the monthly or weekly use (middle) as well as the (almost) daily use (high) to the lower use category [(almost) never or less than monthly, **Table 6**]. Again, we analysed the association of company bike and other variables related to socio-demographic, household vehicle ownership and motives/attitudes towards cycling frequency. The model was statistically significant [χ^2 (40, N = 3685) = 3308.22, $p < 0.001$]. The model explained 68% (Nagelkerke's R^2) of the variance in everyday bicycle use frequency and correctly classified 75% of the cases (low: 66%, middle: 80% and high: 72%).

For everyday bicycle use, no significant association was found with company bike users while controlling for additional independent factors for both categories. For those who did not take up the offer, there appears to be a tendency towards lower odds compared with the reference group (no employer offer). Nevertheless, there are other significant associations, such as women are less likely to use the bicycle in everyday life in middle or high frequency. To a similar extend, having at least one child below the age of 18 is negatively associated with frequent cycling. Compared to the older age group no significant associations in the younger age groups are generally present. However, in the middle-frequent category, the youngest age group (18–29 years old) is significantly less likely to cycle in everyday life. Household transport options are relevant variables for everyday cycling. Having an e-bike and additional bicycles increase the odds of cycling in both categories in a similar way. An increase in the number of cars in households decreases the odds of more frequent cycling. Stronger positive associations can be found in weather resistance only in the high-frequent cycling category, while attitudes or motives partially differ in their association. Ease of cycling and self-identification as cyclist similarly positively associated with both cycling frequencies, while the instrumental motivation is only positively associated with high cycling frequency in a significant positive way. The agreement to the pro-cycling attitude has the strongest positive association with more frequent everyday cycling.

Discussion and conclusions

The bivariate analyses show a correlation between higher cycling frequencies and a higher share of those who use a company bike, whereas the results of the multivariate analysis present a mixed picture. The results mainly confirm the first hypothesis of bicycle use frequency on the way to work. The German company bike taxation and the corresponding employees' uptake of employer offers to lease a company bike have positive association with commuting by bicycle. But this is only in the case of those participants who cycle to work occasionally or mostly, that is, the middle-frequency categories. Here, the odds for cycling to work compared to the low frequency group increase significantly for beneficiaries of the company bike scheme. For those bicycle users, who state to always commute by bicycle, taking up or declining the offer does not have a significant odds ratio change compared to those who are not offered a company bike at all. This seems plausible because many participants in the group

of frequent bicycle commuters may already be accustomed to cycling to work. Having a company bike would only change the type and price of the bicycle, thereby enhancing comfort, but it does not increase further cycling frequency (in addition to other variables).

The survey results therefore align with relevant literature on workplace travel plans, which finds positive associations with cycling when the employer implements certain measures (De Groote, van Ommeren and Koster, 2019; Sulikova and Brand, 2022). Company bikes can be seen as an additional benefit for the employees and are part of the organisational commitment to support commuting by bike, similar to information and campaigns, or supportive infrastructure at the workplace. In the survey sample, employees offered a company bike are also more likely to be offered with safe and barrier-free bicycle parking as well as showers and lockers (Rudolph, Welsch and Chaatouf, 2024).

In addition, controlling for the likelihood of more frequent cycling with a company bike, having at least one e-bike in the household is significantly associated with higher odds of commuting by bicycle. Apparently, company bikes incentivise the acquisition of e-bikes, which in turn also leads to more commuting by e-bike. In the sample, 73% chose an electrically assisted variety when deciding to lease a company bike, compared to 80% as stated by Deloitte and Zukunft Fahrrad e.V. (2024). The results also align with literature on the positive association of e-bikes acquisition with higher cycling levels. Changes in commuting behaviour are also noted in the evaluation of several e-bike trials (Cairns *et al.*, 2017; Söderberg f.k.a. Andersson, Adell and Winslott Hiselius, 2021; Ton and Duives, 2021). Interestingly, only 58% of participants who always cycle to work have used an e-bike since taking up the company bike offer, whereas more than two thirds of those with lower current cycling frequencies report e-bike use. This may indicate that a higher proportion of regular cyclists either already owned an e-bike prior to the offer or prefer to rely on a traditional bicycle. The German company bike taxation could therefore be considered as an innovative way to overcome the barrier of acquisition costs for an e-bike, and it equally increases the frequency to commute by e-bike.

Interestingly, the second hypothesis cannot be confirmed. We assumed that company bikes also are associated with more frequent cycling in everyday life, which is not unambiguously the case. Employees might perceive a company bike as a means that should mainly be used in professional life. A company bike is owned and provided by the employer, and it is taxed similarly to a company car. These circumstances may play a role in the user assessments of its purpose and their actual mode of choice. In the survey, non-users consequently often times pointed to practical challenges to use a bicycle on their way to work when asked about the reasons to refrain from the fringe benefit. The survey included an open question to non-users about their reasons to do without a company bike and 24% of answers referred to such challenges (Rudolph, Welsch and Chaatouf, 2024). The perception of the company bike as a dedicated commuting means is partly counterintuitive, because company bike leasing providers openly advertise that the company bikes can be used for all private trips, similar to many company cars which can be used without constraints by the employees in everyday life.

In both regression models, most variables show the same sign and similar magnitudes, which suggest similar associations. Due to differences in independent variables used for each model, figures cannot be compared directly. Nevertheless, it can be pointed out that attitudes have a particular significant positive association with cycling to work and with cycling in everyday life. However, the explanatory power of this study may be limited because the sample includes many cycling enthusiasts. This leads to (very) high mean values for answers about cycling attitudes or motives. We find a mean of around four for the factor *Ease of cycling in everyday life*. This indicates that most of the survey participants have confidence in their abilities to manage their everyday activities by using the bicycle. In addition, most

of survey participants (84%) state that they agree or totally agree to the statement *I like cycling in everyday life*, compared to the shares of 63%–66% employees who agree with this statement in the national travel survey "Mobility in Germany" (BMVI, 2018). However, the multivariate analyses control for the variables related to cycling enthusiasts. Interestingly, we find that the latter statement has a very strong positive association with the highest frequency category, especially, for always commuting by bicycle. Identification as a cyclist is associated more strongly with those who cycle almost daily in general. A higher agreement with regards to weather resistance has a stronger correlation with high frequency cycling, again most strongly with regards to commuting. Surprisingly, the age groups mostly do not differ significantly. Possibly, our reference group of older employees (60+) might also contain more enthusiastic cyclists than expected.

In general, our findings support the notion that measures enhancing cycling, make it more enjoyable or increase the easiness of using the bicycle in everyday live could contribute to a higher share of cycling. One reason people did not take the company bike offer was the lack of safe infrastructure (Rudolph, Welsch and Chaatouf, 2024). Also, other studies highlight the importance of perceived safety and infrastructural measures (Francke, Anke and Lißner, 2018). Therefore, a potential strategy is the improvement of cycling infrastructure to accommodate people who are not cyclist enthusiasts or not familiar cyclists.

In the long term, the German company bike taxation and the increasing number of companies who offer those bikes to their employees may lead to more everyday cycling. Commuting remains among the most important trip purposes and therefore could be the starting point of more everyday cycling. This study could not explore such potential effects due to the relatively new nature of taxation and its cross-sectional design. However, the motorisation rates of company bike users currently tend to be comparatively high. Among company bike users in the sample, there are fewer people who do not have a car and more people who have more than one car, as compared to non-company bike users. This is consistent with existing literature which finds that e-bike ownership is not associated with a lower car ownership (Arning and Kaths, 2025). High motorisation does generally not increase the likelihood of cycling in everyday life (BMVI, 2018).

This study contributes to existing literature that highlights the relevance of offers for alternative transport options to shift away from the private car but also points to the limitations of such so-called pull-measures. The survey design did not include questions on potential restrictive "push measures" regarding car parking by employers or municipalities. However, the pull-effects of company bikes are likely to be stronger when complemented by such measures, as they reduce car travel and tend to increase the use of other, particularly, active modes of transport (Cairns, Newson and Davis, 2010; De Gruyter *et al.*, 2018; Petrunoff, Rissel and Wen, 2017; Rye *et al.*, 2023).

We find that everyday cycling is lower in the group of respondents who are offered a company bike but do not take up the offer than in the group of non-users without such offer. This could be an indication that those who actively decide against a company bike need more convincing service and a more bike-friendly infrastructure to decide in favour of a company bike. This could also partly be a result of inappropriate infrastructure or unsafe cycling conditions perceived by these respondents. The questionnaire, however, did not query the quality of the local cycling infrastructure and topography. Future research could investigate the relationship between appropriate infrastructure and the uptake of company bicycles, and the importance of push measures to encourage the use of company bicycles for commuting. In addition, high-quality longitudinal intervention studies, which include trip diaries or app-based data collection before and after such interventions, could capture the real-live influences of company bike usage with regards to commuting frequences and changes in

commuting distances by bicycles in a reliable and more detailed way and thus would close the existing knowledge gaps. These studies could also examine changes in motivation to cycle to work or attachment to employers who offer company bikes, compared to other measures that support the transition to sustainable modes of transportation.

Competing Interests

The authors have no competing interests to declare.

References

Arning, L. and **Kaths, H.** (2025) 'Just another bike? Modelling the interdependence of conventional and electric bicycle ownership and the influence of topography using large-scale travel survey data from Germany', *PLoS One*, 20(5), p. e0322291. Available at: https://doi.org/10.1371/journal.pone.0322291

Ben-Akiva, M.E. and **Lerman, S.R.** (1985) *Discrete choice analysis: Theory and application to travel demand* (Series in Transportation Studies, 9). Cambridge: MIT Press.

Biegańska, J., Grzelak-Kostulska, E. and **Kwiatkowski, M.A.** (2021) 'A typology of attitudes towards the e-bike against the background of the traditional bicycle and the car', *Energies*, 14(24), p. 8430. Available at: https://doi.org/10.3390/en14248430

Böcker, L., Dijst, M. and **Prillwitz, J.** (2013) 'Impact of everyday weather on individual daily travel behaviours in perspective: A literature review', *Transport Reviews*, 33(1), pp. 71–91. Available at: https://doi.org/10.1080/01441647.2012.747114

Bueno, P.C. et al. (2017) 'Understanding the effects of transit benefits on employees' travel behavior: Evidence from the New York-New Jersey region', *Transportation Research Part A: Policy and Practice*, 99, pp. 1–13. Available at: https://doi.org/10.1016/j.tra.2017.02.009

Bundesministerium für Verkehr und digitale Infrastruktur (BMVI) (2018) *Mobilität in Deutschland – MiD (2017)*. Bonn. Available at: https://www.mobilitaet-in-deutschland.de/archive/pdf/MiD2017_Tabellenband_Deutschland.pdf (Accessed: 20 December 2024).

Cairns, S. et al. (2017) 'Electrically-assisted bikes - Potential impacts on travel behaviour', *Transportation Research Part A: Policy and Practice*, 103, pp. 327–342. Available at: https://doi.org/10.1016/j.tra.2017.03.007

Cairns, S., Newson, C. and **Davis, A.** (2010) 'Understanding successful workplace travel initiatives in the UK', *Transportation Research Part A: Policy and Practice*, 44(7), pp. 473–494. Available at: https://doi.org/10.1016/j.tra.2010.03.010

Casier, C. and **Witlox, F.** (2022) 'Analysis of trip preferences among e-bike users in commuting: Evidence from an online choice-based conjoint experiment', *European Journal of Transport and Infrastructure Research*, 22(1), pp. 17–41. Available at: https://doi.org/10.18757/ejtir.2022.22.1.5971

De Groote, J., van Ommeren, J. and **Koster, H.R.** (2019) 'The effect of paid parking and bicycle subsidies on employees' parking demand', *Transportation Research Part A: Policy and Practice*, 128, pp. 46–58. Available at: https://doi.org/10.1016/j.tra.2019.07.007

De Gruyter, C. et al. (2018) 'Travel plans for new developments: a global review', *Transport Reviews*, 38(2), pp. 142–161. Available at: https://doi.org/10.1080/01441647.2017.1322643

Deloitte and Zukunft Fahrrad e.V. (2024) Der deutsche Dienstradleasing-Markt. Available at: https://www.deloitte.com/content/dam/assets-zone2/de/de/docs/industries/consumer/2024/Deloitte_x_Zukunft_Fahrrad-Deutscher_Dienstradleasing-Markt_2024.pdf.

Ecke, L. et al. (2023) *Deutsches Mobilitätspanel (MOP) – Wissenschaftliche Begleitung und Auswertungen Bericht 2022/2023: Alltagsmobilität und Fahrleistung*.

Edberg, K. (2023) 'Special issue: Electric micromobility futures', *Active Travel Studies*, 3(1). Available at: https://doi.org/10.16997/ats.1192

Edge, S. et al. (2018) 'Exploring e-bikes as a mode of sustainable transport: A temporal qualitative study of the perspectives of a sample of novice riders in a Canadian city', *The Canadian Geographer/Le Géographe Canadien*, 62(3), pp. 384–397. Available at: https://doi.org/10.1111/cag.12456

Eisenmann, C. et al. (2018) *Deutsches Mobilitätspanel (MOP) – Wissenschaftliche Begleitung und Auswertungen Bericht 2016/2017: Alltagsmobilität und Fahrleistung*.

Flynn, B.S. et al. (2012) 'Weather factor impacts on commuting to work by bicycle', *Preventive Medicine*, 54(2), pp. 122–124. Available at: https://doi.org/10.1016/j.ypmed.2011.11.002

Follmer, R. (2025) *Mobilität in Deutschland – MiD*. Studie von infas, DLR, IVT und infas 360 im Auftrag des Bundesministers für Digitales und Verkehr (FE-Nr. VB600001). Bonn, Berlin. Available at: https://www.mobilitaet-in-deutschland.de/pdf/MiD2023_Kurzbericht.pdf (Accessed: 21 May 2025).

Francke, A. et al. (2019) 'Are you an ambitious cyclist? Results of the cyclist profile questionnaire in Germany', *Traffic Injury Prevention*, 20(sup3), pp. 10–15. Available at: https://doi.org/10.1080/15389588.2019.1702647

Francke, A., Anke, J. and **Lißner, S.** (2018) 'Sag mir, wie du radelst und ich sag dir, welche Infrastruktur du dir wünschst – Darstellung erster Ergebnisse einer Radfahrtypologie', in J. Schönberger, and S. Nerlich (eds.) *26. Verkehrswissenschaftliche Tage an der Technischen Universität Dresden: Tagungsband : 14 und 15. März 2018.* Dresden: TU Dresden Fakultät Verkehrswissenschaften "Friedrich List", pp. 139–152.

Gao, J. et al. (2019) 'Travel mode attitudes, urban context, and demographics: Do they interact differently for bicycle commuting and cycling for other purposes?' *Transportation*, 46(6), pp. 2441–2463. Available at: https://doi.org/10.1007/s11116-019-10005-x

Goldmann, K. and **Wessel, J.** (2021) 'Some people feel the rain, others just get wet: An analysis of regional differences in the effects of weather on cycling', *Research in Transportation Business & Management*, 40(1), p. 100541. Available at: https://doi.org/10.1016/j.rtbm.2020.100541

Hamre, A. and **Buehler, R.** (2014) 'Commuter mode choice and free car parking, public transportation benefits, showers/lockers, and bike parking at work: Evidence from the Washington, DC region', *Journal of Public Transportation*, 17(2), pp. 67–91. Available at: https://doi.org/10.5038/2375-0901.17.2.4

Haustein, S., Hunecke, M. and **Manz, W.** (2007) 'Verkehrsmittelnutzung unter Einfluss von Wetterlage und -empfindlichkeit', *Internationales Verkehrswesen*, 59(9), pp. 392–396.

Haustein, S. and **Møller, M.** (2016) 'Age and attitude: Changes in cycling patterns of different e-bike user segments', *International Journal of Sustainable Transportation*, 10(9), pp. 836–846. Available at: https://doi.org/10.1080/15568318.2016.1162881

Heinen, E. and **Buehler, R.** (2019) 'Bicycle parking: A systematic review of scientific literature on parking behaviour, parking preferences, and their influence on cycling and travel behaviour', *Transport Reviews*, 39(5), pp. 630–656. Available at: https://doi.org/10.1080/01441647.2019.1590477

Hoj, T.H. et al. (2018) 'Increasing active transportation through e-bike use: Pilot study comparing the health benefits, attitudes, and beliefs surrounding e-bikes and conventional bikes', *JMIR Public Health and Surveillance*, 4(4), p. e10461. Available at: https://doi.org/10.2196/10461

Hosmer, D.W. and **Lemeshow, S.** (2000) *Applied logistic regression*, 2nd ed. Wiley. Available at: https://doi.org/10.1002/0471722146

Hudde, A. (2022) 'The unequal cycling boom in Germany', *Geographies of Passenger*, 98(1), p. 103244. Available at: https://doi.org/10.1016/j.jtrangeo.2021.103244

Hudde, A. (2023) 'It's the mobility culture, stupid! Winter conditions strongly reduce bicycle usage in German cities, but not in Dutch ones', *Geographies of Passenger*, 106(5), p. 103503. Available at: https://doi.org/10.1016/j.jtrangeo.2022.103503

Hunecke, M., Heppner, H. and **Groth, S.** (2022) 'Fragebogen zu psychologischen Einflussfaktoren der Nutzung von Pkw, ÖPNV und Fahrrad (PsyVKN)', *Diagnostica*, 68(1), pp. 3–13. Available at: https://doi.org/10.1026/0012-1924/a000277

Kohlrautz, D. and **Kuhnimhof, T.** (2024) 'E-bike ownership and usage: An analysis of Germany', *Sustainable Transport and Livability*, 1(1), p. 731. Available at: https://doi.org/10.1080/29941849.2024.2336912

Kohlrautz, D. and **Kuhnimhof, T.** (2025) 'Cyclists' heterogeneous parking preferences and their implications for bicycle parking facilities', *Transportation Research Part A: Policy and Practice*, 191, p. 104298. Available at: https://doi.org/10.1016/j.tra.2024.104298

Konietzka, D. and **Neugebauer, L.** (2023) 'Less car, more bicycle? Generation Y as pioneers of changing everyday mobility in Germany', *European Transport Research Review*, 15(1), p. 2. Available at: https://doi.org/10.1186/s12544-023-00575-4

Kruijf, J. de et al. (2021) 'Integrated weather effects on e-cycling in daily commuting: A longitudinal evaluation of weather effects on e-cycling in the Netherlands', *Transportation Research Part A: Policy and Practice*, 148, pp. 305–315. Available at: https://doi.org/10.1016/j.tra.2021.04.003

Metzler, D., Humpe, A. and **Gössling, S.** (2019) 'Is it time to abolish company car benefits? An analysis of transport behaviour in Germany and implications for climate change', *Climate Policy*, 19(5), pp. 542–555. Available at: https://doi.org/10.1080/14693062.2018.1533446

Nobis, C. (2019) *Mobilität in Deutschland – MiD Analysen zum Radverkehr und Fußverkehr*. Studie von infas, DLR, IVT und infas 360 im Auftrag des Bundesministeriums für Verkehr und digitale Infrastruktur (FE-Nr. 70.904/15). Berlin/Bonn. Available at: https://www.mobilitaet-in-deutschland.de/publikationen2017.html.

Page, N.C. and **Nilsson, V.O.** (2016) 'Active commuting – Workplace health promotion for improved employee well-being and organizational behavior', *Frontiers in Psychology*, 7, p. 1994. Available at: https://doi.org/10.3389/fpsyg.2016.01994

Petrunoff, N., Rissel, C. and **Wen, L.M.** (2017) '"If you don't do parking management. Forget your behaviour change, it's not going to work.": Health and transport practitioner perspectives on workplace active travel promotion', *PLoS One*, 12(1), p. e0170064. Available at: https://doi.org/10.1371/journal.pone.0170064

Plazier, P.A., Weitkamp, G. and **van den Berg, A.E.** (2017) '"Cycling was never so easy!" An analysis of e-bike commuters' motives, travel behaviour and experiences using GPS-tracking and interviews', *Geographies of Passenger*, 65, pp. 25–34. Available at: https://doi.org/10.1016/j.jtrangeo.2017.09.017

Rérat, P. (2021) 'The rise of the e-bike: Towards an extension of the practice of cycling?' *Mobilities*, 16(3), pp. 423–439. Available at: https://doi.org/10.1080/17450101.2021.1897236

Rudolph, F., Welsch, J. and **Chaatouf, M.** (2024) *Dienstradleasing 2023/2024 – Status Quo, Einsichten und Perspektiven*. Available at: https://t3-forschung.de/wp-content/uploads/2024/05/DRL_briefing.pdf (Accessed: 20 December 2024).

Rye, T. et al. (2023) *Reducing car use through parking policies: an evidence review*. Available at: https://era.ed.ac.uk/bitstream/handle/1842/41037/cxc-reducing-car-use-through-parking-policies-august-2023.pdf (Accessed: 20 December 2024).

Söderberg f.k.a. Andersson, A., Adell, E. and **Winslott Hiselius, L.** (2021) 'What is the substitution effect of e-bikes? A randomised controlled trial', *Transportation Research Part D: Transport and Environment*, 90, p. 102648. Available at: https://doi.org/10.1016/j.trd.2020.102648

Statistisches Bundesamt (Destatis) (2025) *Mikrozensus*. Available at: https://www-genesis.destatis.de/datenbank/online/statistic/12211/details (Accessed: 27 May 2025).

Sulikova, S. and **Brand, C.** (2022) 'Do information-based measures affect active travel, and if so, for whom, when and under what circumstances? Evidence from a longitudinal case-control study', *Transportation Research Part A: Policy and Practice*, 160, pp. 219–234. Available at: https://doi.org/10.1016/j.tra.2022.03.021

Synek, S. and **Koenigstorfer, J.** (2018) 'Exploring adoption determinants of tax-subsidized company-leasing bicycles from the perspective of German employers and employees', *Transportation Research Part A: Policy and Practice*, 117, pp. 238–260. Available at: https://doi.org/10.1016/j.tra.2018.08.011

Synek, S. and **Königstorfer, J.** (2019) 'Health effects from bicycle commuting to work: Insights from participants of the German company-bicycle leasing program', *Journal of Transport & Health*, 15, p. 100619. Available at: https://doi.org/10.1016/j.jth.2019.100619

Tchervenkov, C., Balać, M. and **Axhausen, K.W.** (2021) The impact of employer fringe benefits on commuting to work by car in Switzerland. Zürich (Arbeitsberichte Verkehrs- und Raumplanung 1648).

Ton, D. and **Duives, D.** (2021) 'Understanding long-term changes in commuter mode use of a pilot featuring free e-bike trials', *Transport Policy*, 105, pp. 134–144. Available at: https://doi.org/10.1016/j.tranpol.2021.03.010

Train, K.E. (2003) *Discrete choice methods with simulation*. Cambridge: Cambridge University Press. Available at: https://doi.org/10.1017/CBO9780511753930

Xiao, C. et al. (2022) 'Shifting towards healthier transport: Carrots or sticks? Systematic review and meta-analysis of population-level interventions', *The Lancet. Planetary Health*, 6(11), pp. e858–e869. Available at: https://doi.org/10.1016/S2542-5196(22)00220-0

ZIV – Die Fahrradindustrie/Zweirad-Industrie-Verband e.V. (ZIV) (2024) *Market data – Bicycles & e-bikes 2023*. in cooperation with VSF. Available at: https://www.ziv-zweirad.de/wp-content/uploads/2024/03/ZIV_Market_Data_Presentation_2024_for_2023.pdf (Accessed: 28 November 2024).

How to cite this article: Welsch, J. and Rudolph, F. 2026. Company Bikes in Germany – Are they associated with the frequency of bicycle commuting and everyday cycling? *Active Travel Studies: An Interdisciplinary Journal*, 6(1): 1, 1–22. DOI: https://doi.org/10.16997/ats.1774

Submitted: 29 December 2024 **Accepted:** 03 September 2025 **Published:** 25 April 2026

Active Travel Studies: An Interdisciplinary Journal is a peer-reviewed open access journal published by University of Westminster Press.