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# The Effects of Flexible Work Practices on Employee Attitudes: Evidence from a Large-Scale Panel Study in Germany

Claudia Kröll and Stephan Nüesch

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German Socio-Economic Panel (SOEP)  
DIW Berlin  
Mohrenstrasse 58  
10117 Berlin, Germany

Contact: [soeppapers@diw.de](mailto:soeppapers@diw.de)



# **The Effects of Flexible Work Practices on Employee Attitudes: Evidence from a Large-Scale Panel Study in Germany**

Claudia Kröll and Stephan Nüesch\*

*Business Management Group, University of Münster, Münster, Germany*

Georgskommende 26, 48143 Münster. Correspondence concerning this article should be addressed to [claudia.kroell@uni-muenster.de](mailto:claudia.kroell@uni-muenster.de)

\*[stephan.nueesch@wiwi.uni-muenster.de](mailto:stephan.nueesch@wiwi.uni-muenster.de)

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# The Effects of Flexible Work Practices on Employee Attitudes: Evidence from a Large-Scale Panel Study in Germany

We explore the effects of flexible work practices (FWPs) on the work attitudes (job satisfaction and turnover intention) and non-work attitudes (leisure satisfaction and perceived health) of employees based on representative large-scale German panel data. Because unobserved individual characteristics can easily act as confounders, we estimate both pooled OLS models and individual fixed-effects models. Controlling for time-constant individual heterogeneity, we find that the three considered FWPs—flexitime, sabbaticals and working from home—significantly increase job satisfaction and that sabbaticals and working from home (but not flexitime) significantly decrease turnover intention. In addition, sabbaticals but not flexitime or working from home significantly increase leisure satisfaction. The effects of FWPs on health are mostly weak and statistically insignificant. Models that do not control for such individual heterogeneity either underestimate the positive effects of FWPs or find detrimental effects. Our findings indicate that organizations in Germany can increase job satisfaction and decrease employee turnover intention by offering FWPs.

Keywords: flexible work practices, job satisfaction, turnover intention, leisure satisfaction, health, fixed effects

## Introduction

Globally, organizations are increasingly implementing flexible work practices (FWPs) (e.g., Leslie, Manchester, Park, & Mehng, 2012). Hill et al. (2008) define FWPs as policies that enable employees to decide when (e.g., *flexitime*), where (e.g., *working from home*), and for how long (e.g., *sabbaticals*) they engage in work-related tasks. *Flexitime* allows employees to vary the times when they start and finish work. Moreover, employees can mostly self-

determine their daily working hours as long as their weekly, monthly or yearly numbers of required hours of work are fulfilled according to their contracts of employment. *Working from home* enables employees to work from a location outside their central workplace (Gajendran & Harrison, 2007). *Sabbaticals* are defined as paid leaves from the work environment (Carr & Tang, 2005; Davidson et al., 2010).

The high prevalence of FWP (e.g., Leslie, Manchester, Park, & Mehng, 2012) is hardly surprising given their potential benefits. Whereas some scholars (e.g., Golden, 2012; Zeytinoglu, Cooke & Mann, 2009) argue that organizations implement FWPs primarily to improve organizational efficiency by attracting and holding motivated employees with desired talents, others emphasize more the employee-related advantages of FWPs such as increased job satisfaction (Baltes, Briggs, Huff, Wright, & Neuman, 1999; Gajendran & Harrison, 2007). This study investigates the effects of *voluntary* FWPs on the employee work attitudes (job satisfaction and turnover intention) and non-work attitudes (leisure satisfaction and perceived health) while still arguing that improved labor conditions may also positively affect long-term organizational efficiency, creating a win-win situation for both employees and the organization<sup>1</sup>.

We use representative German data to test our predictions. Several national laws and initiatives in Germany promote FWPs. In 1998, a new law (“Gesetz zur sozialrechtlichen Absicherung flexibler Arbeitszeitregelungen”) took effect that regulates lifetime working-time accounts and also awards social security to people taking a sabbatical. The “codetermination act” (entered into law on May 4, 1976) also gives employees a voice concerning FWPs in large organizations. In the European Union, the “flexicurity” initiative has been started recently. An important component of “flexicurity” is to formulate policies that facilitate both flexible and reliable contractual arrangements (Bekker & Wilthagen, 2008). A cross-country comparison shows that Germany is one of the countries in which FWPs are most prevalent, directly after

Denmark and Sweden (Plantenga & Remery, 2010). For instance, 54.7% of men and 49.6% of women in Germany have access to flexitime. Due to the high prevalence of FWPs in Germany, knowing the effects of FWPs is important for policymakers, practitioners and researchers.

The cumulative findings of research from other countries regarding the effects of FWPs are mostly inconsistent. FWPs have been found to increase job satisfaction in some studies (e.g., Baltes et al., 1999). Other studies, however, have found no relationship between FWPs and job satisfaction (e.g., Hicks & Klimoski, 1981) or have even found that FWPs decrease job satisfaction (e.g., Saltzstein, Ting & Saltzstein, 2001). Furthermore, while Igarria and Guimaraes (1999) show that working from home decreases turnover intention, Kossek, Lautsch and Eaton (2006) find that working from home does not affect turnover intention. While Batt and Valcour (2003) find that flexitime decreases turnover intention, Casper and Harris (2008) find that flexitime does not affect turnover intention. There may be several reasons for the inconsistency such as endogeneity, unobserved heterogeneity, different institutional settings, unrepresentative data and different research designs.

Recently, experimental methods have been applied to test the effects of FWPs. Bloom, Liang, Roberts, and Ying (2015) randomly assigned call center employees of a Chinese travel agency either to work from home or in the office. They find that working from home leads to a 13% performance increase. Dutcher (2012) shows that students who were randomly assigned to work in the lab performed better with dull tasks and worse with creative tasks than students who were randomly assigned to work outside the lab. Hunton and Norman (2010) show that medical coders in a large health care company who were randomly assigned to work from home were more committed to the organization than a control group of coders. While such experiments can solve endogeneity issues, the experimental evidence is typically based on unrepresentative student samples and/or based on specific settings. The transferability of these results to the rest of the population is therefore questionable.

We reexamine the effects of FWPs on employee attitudes using the *German Socio-Economic Panel* (SOEP), which is a representative panel survey of German individuals. Panel data enable us to run fixed-effects regressions that control for time-constant individual heterogeneity such as stable personality, which is likely to influence cross-sectional estimates. Personality is likely to influence both job selection and thus the availability of FWPs (e.g., Clark, Karau & Michalisin, 2012) and employee attitudes such as satisfaction (Costa & McCrae, 1980; Smith, Patmos & Pitts, 2015), turnover intention (e.g., Jenkins, 1993) and perceived health (e.g., Roysamb, Neale, Tambs, Reichborn-Kjennerud & Harris, 2003). Because personality is widely considered to be a stable concept (e.g., Ferguson, 2010), individual fixed effects largely eliminate the confounding influence from personality traits. While large-scale panel data and fixed-effects models have been used to test the effects of commuting time on psychological wellbeing (Roberts, Hodgson & Dolan, 2011) or the influence of paid overtime work on job satisfaction (Hunt, 2013), we are the first to use representative large-scale panel data and fixed-effects models to test the influence of FWPs on employee attitudes.

### ***The Consequences of FWPs***

According to the *conservation of resources (COR) theory* (Hobfoll, 1989), employees want to obtain, retain, foster and protect their resources. Resources include, for example, energies such as time and knowledge (Grandey & Cropanzano, 1999). Energy resources are restricted resources for which both work and non-work domains compete (Allen et al., 2013). Because FWPs allow employees a largely self-determined allocation of their working time and place, FWPs can help to protect resources (Hall et al., 2006).

### *Job Satisfaction*

Job satisfaction is defined as a positive emotional state resulting from the appraisal of one's job or job experiences (Locke & Latham, 1990). FWPs provide employees with a great amount of autonomy, which increases job satisfaction (e.g., Baltes et al., 1999; Scandura & Lankau, 1997; Evans, 1973; Almer & Kaplan, 2002; Golden, 2006; McNall, Masuda & Nicklin, 2010). Flexitime, for example, enables employees to have flexibility in choosing when they will start work. Employees who take a sabbatical usually also have high amounts of discretion in determining its purpose and timing (Carr & Tang, 2005). And working from home gives employees more control over breaks, clothing and lighting (e.g., Gajendran & Harrison, 2007). In line with the COR theory, FWPs help to protect employee resources and positively affect job satisfaction due to the increase of perceived autonomy (Hackman & Oldham, 1976).

*Hypothesis 1a:* Flexitime increases job satisfaction.

*Hypothesis 1b:* Sabbaticals increase job satisfaction.

*Hypothesis 1c:* Working from home increases job satisfaction.

### *Turnover Intention*

Turnover intention is defined as an employee's conscious and carefully considered plan to leave the organization (Tett & Meyer, 1993). The COR theory argues that when employees perceive their resources to be inadequate for handling work demands, they try to change their situation (Hobfoll, 1989; Grandey & Cropanzano, 1999). By giving employees increased autonomy over when and how to carry out work, FWPs provide employees with the means to manage their resources (Hall et al., 2006), alleviating the need to quit their jobs to protect these resources. Prior studies support this assumption, as they show that FWPs decrease turnover intention (e.g., Igbaria & Guimaraes, 1999; Batt & Valcour, 2003; Stavrou & Kilaniotis, 2010;



Almer & Kaplan, 2002). Grund (2013) shows that self-initiated job changes increase the perceived ability of employees to regulate their working hours, indicating that the regulation of work hours is valuable for employees.

*Hypothesis 2a:* Flexitime decreases turnover intention.

*Hypothesis 2b:* Sabbaticals decrease turnover intention.

*Hypothesis 2c:* Working from home decreases turnover intention.

### *Leisure Satisfaction*

Leisure is defined as a domain of freedom and self-determined experiences (e.g., Westman & Eden, 1997). The greater flexibility in working conditions that FWP provide also presents employees with more freedom in the non-work domain, and therefore, with more opportunities for the pursuit of leisure. Flexitime, for example, enables employees to start their working days earlier to participate in leisure activities in the afternoon. When taking a sabbatical, employees can largely self-determine its purpose, such as to learn a new language or to travel around the world (Carr & Tang, 2005). Working from home eliminates or reduces commuting time and so offers employees more leisure time. We therefore assume that FWPs increase leisure satisfaction.

*Hypothesis 3a:* Flexitime increases leisure satisfaction.

*Hypothesis 3b:* Sabbaticals increase leisure satisfaction.

*Hypothesis 3c:* Working from home increases leisure satisfaction.

### *Health*

Health consists of a physical (e.g., cardiovascular status) and a mental (e.g., perceived stress) component. Health is defined as a “state of complete physical [and] mental ... well-being and

not merely the absence of disease or infirmity” (p. 100, World Health Organization, 1948). As employees perceive their work as increasingly stressful, a growing number of employees report impaired health statuses (Leiter, 2014). In light of the COR theory, the impaired health status is the consequence of an actual resource loss, a perceived threat of resource loss or a failure to receive an expected resource gain (Hobfoll, 1989). Because FWPs give employees the opportunity to act largely autonomously, employees are better equipped to protect their resources (Hall et al., 2006). Flexitime and working from home, for example, improve health by giving employees control over their work schedules (Baltes et al., 1999, Gajendran & Harrison, 2007). Sabbaticals help employees to disconnect from work, which facilitates general recovery. Furthermore, sabbaticals engender new perspectives, renewed vigor and better health (Davidson et al., 2010). We therefore argue that FWPs result in better health.

*Hypothesis 4a:* Flexitime increases health.

*Hypothesis 4b:* Sabbaticals increase health.

*Hypothesis 4c:* Working from home increases health.

## **Methods**

### ***Data***

The data for our analyses are drawn from employee responses to the *German Socio-Economic Panel* (SOEP)<sup>2</sup>, a large, representative panel survey of private households in Germany (SOEP, 2015). Because data on FWPs were not collected each year, we have to use different subsamples. More precisely, the analyses of flexitime are based on data from every second year from 2003 to 2009, the analyses of sabbaticals are based on data from every year from 2002 to 2013, and the analyses of working from home are based on data from the years 1999 and 2009.

To avoid biases relating to apprenticeship and early retirement, we restricted our sample to employees between the ages of 20 and 60. Moreover, we dropped self-employed participants because they by definition have higher autonomy and flexibility at work than other types of employees (Hundley, 2001). In addition, we limited our sample to employees who answered at least once to all three FWP questions in the considered years. Thus, even though the sample size is different across the three different FWPs, the pool of employees is always the same.

### *Measures*

All FWPs are measured dichotomously and equal 1 if FWPs are available. The predictor *flexitime* is measured through the question, “Do you have access to flexitime and a working-time account, and a certain control of daily working time within this framework?” *Sabbaticals* are measured with the question, “Can overtime hours flow into a so-called working-time account that you can equalize within a year or more with time off?” *Working from home* is derived from the question, “Do you ever carry out your work activity at home?”

The SOEP collects data about *job satisfaction* and *leisure satisfaction* based on a rating scale from 0 (totally unhappy) to 10 (totally happy) with the question: “How satisfied are you today with your job?” and “How satisfied are you today with your leisure time?”, respectively. The variable *turnover intention* is derived from the question “How likely is it that you will look for a new job on your own initiative within the next two years?” Respondents estimate the probability of their turnover intention according to a scale from 0 (very unlikely) to 100 (very likely). Information about perceived *health* is taken from the question “How would you describe your current health?”, with the following possible answers: 1) “Very Good,” 2) “Good,” 3) “Satisfactory,” 4) “Poor” or 5) “Bad.” We dichotomize these categories for our analyses due to the questionable interval scale. The new binary indicator *health* equals 1 if the employees perceive their health to be at least satisfactory and 0 otherwise. However, the results

would not change in any significant way when using other threshold levels for dichotomization or when using health as a metrical variable.

Because the meta-analytic results by Carsten and Spector (1987) show that unemployment is correlated with job satisfaction and turnover intention, we include years of unemployment as a control variable in our analyses. Based on prior literature (e.g., Griffeth, Hom & Gaertner, 2000), we also control for the following socioeconomic and demographic characteristics that are likely to covary with our dependent variables: *a*) age, *b*) gender *c*) stipulated working hours, *d*) organizational size, *e*) tenure, *f*) logged hourly gross wage, *g*) type of workers (hourly paid vs. salaried), *h*) number of persons in household, *i*) children under the age of 16 in household, *j*) commuting distance, *k*) hours of overtime, *l*) hours of undertime, *m*) experience in part-time work and *n*) if a job change took place.

### ***Statistical Methods***

Because personality traits significantly affect self-reported measures such as job satisfaction (e.g., Costa & McCrae, 1980) and because personality traits are largely considered to be stable<sup>3</sup> (e.g., Ferguson, 2010), we use fixed-effects modeling to estimate the influence of FWPs.<sup>4</sup> Fixed-effects modeling only uses within-person changes over time and controls for time-invariant unobserved heterogeneity (Allison, 2006). To test the potential influence of unobserved time-constant confounders, we compare the results of the fixed-effects models to the results of pooled ordinary least squares (OLS) regressions.

We run fixed-effects linear probability models (LPM) when estimating our binary health variable rather than fixed-effects logit models for two reasons. First, observations with no within-variation in the dependent variables are dropped from a fixed-effects logit model, which would change the interpretation and the generalizability of the results (e.g., Caudill, 1988). Second, unlike linear models, logit estimates cannot be directly compared with those

from a fixed-effects model because including fixed effects in a logit model would change the estimates even if fixed effects were independent of the variables of interest (e.g., Norton, 2012).

## Results

### *Descriptive Statistics*

Table 1 shows descriptive statistics of all the considered variables, categorized by FWPs. Our *flexitime* sample includes 8,325 employees and 21,428 person-year observations. The *sabbaticals* sample includes 7,585 employees and 19,198 person-year observations. The *working from home* sample includes 6,132 employees and 7,126 person-year observations.

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 Insert Table 1 about here  
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### *Results of Hypotheses Testing*

#### *Job Satisfaction*

Table 2 shows the pooled OLS (column 1) and the fixed-effects results (column 2) of FWPs on job satisfaction. Focusing on fixed-effect results, we find that flexitime ( $b = .05$ ,  $SE = .03$ ,  $p < .10$ ), sabbaticals ( $b = .08$ ,  $SE = .02$ ,  $p < .001$ ) and working from home ( $b = .21$ ,  $SE = .11$ ,  $p < .05$ ) significantly increase job satisfaction. Thus, we find support for Hypotheses 1a, 1b and 1c. When comparing the fixed-effects results in column (2) with the pooled OLS results in column (1), we see that the pooled OLS results are negatively biased. The significantly positive effects of sabbaticals and working from home on job satisfaction are larger in the fixed-effects models than in the OLS models. The effect of flexitime even becomes significantly negative if we do not control for individual heterogeneity.

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 Insert Table 2 about here  
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### *Turnover Intention*

Table 3 shows that sabbaticals ( $b = -.04$ ,  $SE = .02$ ,  $p < .10$ ) and working from home ( $b = -.28$ ,  $SE = .11$ ,  $p < .05$ ) significantly decrease turnover intention, whereas the negative effect of flexitime on turnover intention is not statistically significant ( $b = -.04$ ,  $SE = .03$ , *ns.*). Hence, the data support Hypotheses 2b and 2c, but not Hypothesis 2a. Here again, the pooled OLS results are quite different: flexitime and working from home do not decrease but significantly increase turnover intention when not controlling for individual heterogeneity.

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 Insert Table 3 about here  
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### *Leisure Satisfaction*

Table 4 shows that sabbaticals significantly increase leisure satisfaction ( $b = .06$ ,  $SE = .02$ ,  $p < .01$ ), whereas the effects of flexitime ( $b = .01$ ,  $SE = .03$ , *ns.*) and working from home ( $b = -.01$ ,  $SE = .10$ , *ns.*) are small and statistically insignificant. The data support Hypothesis 3b, but not Hypotheses 3a and 3c. Regarding leisure satisfaction, the pooled OLS models lead to virtually the same results as the fixed-effects models.

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 Insert Table 4 about here  
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### *Health*

Table 5 shows that flexitime ( $b = -.02$ ,  $SE = .01$ , *ns.*), sabbaticals ( $b = -.01$ ,  $SE = .01$ , *ns.*) and working from home ( $b = .02$ ,  $SE = .05$ , *ns.*) do not have a significant effect on health when controlling for individual heterogeneity. Hence, the data do not support Hypotheses 4a, 4b or 4c. In the pooled OLS models, however, the negative effect of flexitime on health is highly significant at the 0.1% level, and the negative effect of sabbaticals and the positive effect of working from home on health are marginally significant at the 10% level.

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Insert Table 5 about here  
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## **Discussion**

### ***Contribution to the Literature***

Fixed-effects analyses show that FWPs increase *job satisfaction*, which is in line with prior literature (e.g., Baltes et al., 1999; McNall et al., 2010) and the COR theory. Through FWPs, employees have more flexibility in determining the timing and location of their work, which helps them to protect important resources such as time (Grandey & Cropanzano, 1999).

We also find that sabbaticals and working from home decrease *turnover intention*. Whereas the negative effect of working from home is large and highly significant, the negative effect of sabbaticals is smaller and marginally significant, and the negative effect of flexitime is marginally insignificant. The significant findings are in line with prior literature (e.g., Halpern, 2005) and the COR theory. Through increased autonomy via FWPs, employees can better protect their resources, which results in lower turnover intention. Contrary to our expectations, we could not find a significant effect of flexitime on turnover intention. One explanation may be that flexitime fails to protect resources due to highly unstructured and often-changing daily schedules (e.g., Brummelhuis, Haar, & van der Lippe, 2010). Moreover, unlike working from home and sabbaticals, flexitime does not provide additional time for work and non-work domains.

Whereas sabbaticals significantly increase *leisure satisfaction*, flexitime and working from home yield no significant effects. Sabbaticals allow employees to compensate overtime with extended periods of time off and thus enable employees to pursue private goals and desires such as travelling, doing further education, and learning a language. The opportunity to compensate overtime in the future may increase leisure satisfaction because employees are

likely to anticipate the positive experiences of doing a sabbatical in the future. In contrast to our expectations, we could not find a significantly positive effect of flexitime and working from home on leisure satisfaction. Through flexitime and working from home, the boundary of work and non-work domains may become more permeable. Heijstra and Rafnsdottir (2010) show that working from home turns home into a place of work, which seems to hinder these employees from enjoying their leisure time. As employees who work from home aim to maintain good relations with their colleagues and supervisors, they often believe they have to be continually available for work. Thus, employees who work from home invest more of their resources into the work domain, which tends to defeat the positive effects of having to spend less time commuting.

FWPs have no significant effect on *health*. FWPs seem to have both positive and negative effects on health, which balance each other out. On the one hand, FWPs increase the frequency of role changes, process losses and perceived cognitive complexity (e.g., Kossek & Lautsch, 2012), which may have detrimental effects on health. On the other hand, FWPs improve employee coping mechanisms, which helps them to protect health-relevant resources (e.g., Hall et al., 2006).

### ***Methodological Contribution***

A comparison of the pooled OLS and fixed-effects results shows that the pooled OLS effects of FWPs on job satisfaction are negatively biased, while on turnover intention, these results are mostly positively biased. Thus, FWPs appear to have far less positive and often even detrimental effects on work attitudes if we do not control for time-constant individual heterogeneity. The observable variables reveal that the availability of FWPs is positively correlated with tenure ( $r = .09, p < .001$ ), hourly wage ( $r = .06, p < .001$ ) and working hours ( $r = .06, p < .001$ ), which indicate that jobs with FWPs are typically white-collar and managerial-level jobs (e.g., Golden, 2001, Golden, 2012; Zeytinoglu et al., 2009). Moreover, our results



and prior literature (e.g., Griffeth et al., 2000) show that longer tenure ( $r = -.03, p < .001$ ) and working hours ( $r = -.03, p < .001$ ) are related to lower job satisfaction.

Because the provision of FWP depends on firm characteristics such as firm size and industry (Kotey & Sharma, 2015; Zeytinoglu et al., 2009) and because individuals apply for jobs with or without FWPs based on their own attitudes and personalities (Giannikis & Mihail, 2011), the availability of FWPs is not random. For example, Clark et al. (2012) show that individuals with high neuroticism tend to prefer working from home. At the same time, such individuals generally show higher turnover intention (Houkes, Janssen, de Jonge & Nijhuis, 2001) and decreased satisfaction (Judge, Heller & Mount, 2002). Thus, results from models that do not control for unobserved individual heterogeneity such as stable personality (e.g., Ferguson, 2010) are likely to be biased. Panel data and fixed-effects models offer an easy way to control for unobserved but stable personality traits.

### ***Limitations and Directions for Future Research***

Some limitations are based on the data itself. Information about working from home is only available from two years, which leads to a relatively low cases-to-variables ratio and hence low statistical power in the fixed-effects models. However, a low cases-to-variables ratio does not lead to biased estimates itself, although it increases standard errors, which makes significant results less likely. We still find significant results of working from home on both job satisfaction and turnover intention.

In addition, the study is also limited by the operationalizations of flexitime, working from home and sabbaticals. The operationalization of flexitime is based on the presence of working-time accounts. If working hours can be saved up over a longer period of time, flexitime resembles sabbaticals. Working from home is measured by the question of whether the employee sometimes works at home, which includes employees who work at home for entire days but also persons who, for example, respond to work emails in the evening if

necessary. To eliminate the confounding influence of a high workload, we control for overtime hours. Sabbaticals are measured rather vaguely. Panel subjects were only asked whether the employees are allowed to use their overtime hours for time off within a year or more. Hence, we do not know if employees can take only one day, several days or even months off from work.

Because the variables we use in our analysis are only offered as single-item questions, we could not examine their reliability. We therefore encourage further panel studies that analyze the effects of FWPs based on multiple-item measurements. The substantial differences between the pooled OLS and the fixed-effects results suggest that unobserved heterogeneity factors such as personality influences attitudes. We thus encourage using panel data and fixed-effects regressions also in other contexts in which unobserved but stable factors act as confounders.

Our analysis is based on a specific case in Germany; hence, we cannot generalize our findings. Raghuram, London and Larsen (2001) and Kossek and Ollier-Malaterre (2013) highlight the importance of national context when analyzing the effects of FWPs. Similarly, Masuda et al. (2012) stress the importance of examining the impact of socio-cultural factors such as collectivism on FWPs and their effects. We therefore encourage future replication studies to test the transferability of our results to other countries with other legal and institutional backgrounds. The effects of FWPs on employee attitudes may be less beneficial in countries in which the legal and institutional background is less employee-friendly than in Germany. As the body of literature about FWPs is growing, meta-analyses could also explicitly include institutions as moderating or intervening variables into their models.

We further encourage future studies to examine the interplay between work and non-work domains. Sonnentag (2003) shows that non-work aspects can influence how one feels and behaves at work. Because we find that sabbaticals increase leisure satisfaction, sabbaticals

may also increase work aspects beyond job satisfaction and turnover intention such as organizational attachment.

### *Implication for Practice*

This study demonstrates that FWPs have a significantly positive influence on employee work attitudes. Hence, organizations benefit from offering FWPs for three reasons. First, flexitime, sabbaticals and working from home significantly increase job satisfaction. Job satisfaction is an important work attitude, as it is linked to increased job performance (e.g., Judge, Bono, Thoresen & Patton, 2001) and organizational commitment (e.g., Brunetto, Teo, Shacklock & Farr-Wharton, 2012). Moreover, employees who are more motivated may share their positive attitudes with their coworkers and so improve their working atmospheres (Grover & Crooker, 1995).

Second, offering sabbaticals and working from home significantly decrease turnover intention. Because turnover is very costly (e.g., Halpern, 2005), offering FWPs saves organizations from the costs of hiring and training new employees. Furthermore, employees who intend to leave their organizations typically reduce their productivity, which results in lower organizational performance, even when the employees do not officially quit their jobs (Halpern, 2005).

Third, organizations should offer sabbaticals not only because they increase job satisfaction and decrease turnover intention but also because they increase leisure satisfaction and because positive non-work attitudes tend to have positive spillovers into work attitudes. Employees who are satisfied with their non-work domains show higher work engagement and proactive behavior (Sonnentag, 2003). Whereas offering to allow employees to work from home and to have flexitime is not feasible for certain jobs such as assembly line work, offering sabbaticals is feasible for all types of jobs.

Our results indicate that FWPs do not significantly improve the health of employees. However, there may be interventions that more specifically focus on health improvement, such as stress management trainings, and may have a significant impact on employee health (e.g., Richardson & Rothstein, 2008).

## **Conclusion**

The world-wide research on the effects of flexible work practices (FWPs) has produced conflicting results. We reexamined the effects of voluntary FWPs on employee attitudes using representative large-scale panel data from Germany. The results from individual fixed-effects models show that flexitime, sabbaticals and working from home significantly increase job satisfaction, that sabbaticals and working from home significantly decrease turnover intention and that sabbaticals significantly increase leisure satisfaction. Moreover, we show that it is important to control for individual unobserved heterogeneity, such as stable personality traits.

## **Notes**

1. The effects of FWPs on employee attitudes are likely to be less beneficial when the use of FWPs is mandatory, and FWPs therefore do not increase flexibility (e.g., employees who have to work from home). Thorsteinson (2003) shows, for example, that employees who voluntarily work part-time are more satisfied with their jobs than employees who have to work part-time.
2. The data are provided from the German Institute for Economic Research (DIW Berlin).
3. Our data show that four out of the five personality traits (e.g., McCrae & Costa, 1987) do not significantly differ from the mean per person over time.

4. Except in three models that include working from home as predictor, the Hausman specification test (Hausman, 1978) is statistically significant at a 5% significance level, supporting the use of fixed-effects modeling. In the three models with an insignificant Hausman specification test, the results with random effects modeling are virtually the same.

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Table 1. Descriptive Statistics

Variables		Flexitime <sup>1</sup>		Sabbaticals <sup>2</sup>		Working from Home <sup>3</sup>	
		M	SD	M	SD	M	SD
<i>Dependent Variables</i>							
Job Satisfaction	Overall	6.99	1.93	6.95	1.93	6.92	1.97
	Within		1.14		1.13		.59
Turnover Intention	Overall	21.23	29.40	21.86	29.31	22.97	30.17
	Within		16.86		17.08		8.99
Leisure Satisfaction	Overall	6.57	2.05	6.50	2.05	6.53	2.07
	Within		1.12		1.11		.62
Health <sup>a</sup>	Overall	.57	.49	.56	.50	.56	.50
	Within		.29		.29		.15
<i>Predictors</i>							
Flexitime	Overall	.27	.44				
	Within		.20				
Sabbaticals	Overall			.67	.47		
	Within				.25		
Working from Home	Overall					.15	.36
	Within						.10
<i>Controls</i>							
Male <sup>a</sup>	Overall	.52	.50	.54	.50	.53	.50
	Within		.00		.00		.00
Age	Overall	43.26	9.98	43.61	9.87	42.63	10.24
	Within		1.93		2.58		2.64
Salaried Workers <sup>a</sup>	Overall	.73	.44	.75	.43	.71	.45
	Within		.13		.13		.07
Tenure <sup>c</sup>	Overall	12.35	10.05	12.60	10.05	11.77	9.99
	Within		2.24		2.75		2.41
Children <sup>a</sup>	Overall	.36	.48	.35	.48	.37	.48
	Within		.20		.22		.18
Persons in Household	Overall	2.83	1.21	2.79	1.21	2.85	1.21
	Within		.41		.45		.33
Number of Observations		21.428		19.198		7.126	
Number of Individuals		8.325		7.585		6.132	

Note: M = mean; SD = standard deviation; <sup>1</sup>Years 2003, 2005, 2007, 2009; <sup>2</sup>Years 2002-2013; <sup>3</sup>Years 1999, 2009; <sup>a</sup>Dummy variables; <sup>b</sup>Included imputed values, deflated to the basic year 2010; <sup>c</sup>In years.

Table 1. (Continued)

Variables		Flexitime <sup>1</sup>		Sabbaticals <sup>2</sup>		Working from Home <sup>3</sup>	
		M	SD	M	SD	M	SD
<i>Controls</i>							
Full Time <sup>a</sup>	Overall	.77	.42	.79	.40	.78	.41
	Within		.15		.14		.10
Stipulated Working Hours	Overall	34.98	8.26	35.67	7.51	35.26	8.12
	Within		2.73		2.50		1.72
Real Working Hours	Overall	38.96	10.45	40.47	9.75	39.20	10.33
	Within		3.77		3.61		2.27
Overtime	Overall	4.02	5.28	4.84	5.36	4.00	5.33
	Within		2.61		2.71		1.44
Married <sup>a</sup>	Overall	.68	.47	.68	.47	.67	.47
	Within		.15		.16		.12
Hourly Wage <sup>b</sup>	Overall	338.80	163.82	347.86	164.67	323.99	157.30
	Within		48.41		47.48		28.49
Large Firm <sup>a</sup>	Overall	.50	.50	.52	.50	.50	.50
	Within		.20		.20		.11
Experience Unemployment <sup>c</sup>	Overall	.45	1.15	.46	1.12	.54	1.30
	Within		.13		.14		.19
Experience Part Time <sup>c</sup>	Overall	2.94	5.52	2.53	5.10	1.92	4.11
	Within		.87		1.01		.57
Commuting Distance <sup>d</sup>	Overall	19.71	30.30	20.53	31.43	22.31	33.38
	Within		13.34		14.38		9.69
Job Change <sup>a</sup>	Overall	.10	.30	.09	.29	.12	.32
	Within		.20		.20		.11
Number of Observations		21.428		19.198		7.126	
Number of Individuals		8.325		7.585		6.132	

Note: M = mean; SD = standard deviation; <sup>1</sup>Years 2003, 2005, 2007, 2009; <sup>2</sup>Years 2002-2013; <sup>3</sup>Years 1999, 2009; <sup>a</sup>Dummy variables; <sup>b</sup>Included imputed values, deflated to the basic year 2010; <sup>c</sup>In years; <sup>d</sup>In kilometers.

Table 2. Effects of Flexible Work Practices on Job Satisfaction

Variables	(1)		(2)		(1)		(2)		(1)		(2)							
	Pooled Model		FE Model		Pooled Model		FE Model		Pooled Model		FE Model							
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE						
<i>Controls</i>																		
Age	-.48	.08	***	-.03	.16	-.62	.09	***	-.26	.15	†	-.38	.11	**	.13	.26		
Age Squared	.41	.08	***	-.11	.15	.56	.08	***	.24	.14	†	.29	.11	**	-.25	.26		
Stipulated Working Hours <sup>a</sup>	-.01	.01		.06	.02	**	-.02	.01	.04	.03		-.02	.02		.03	.05		
Organizational Size	-.02	.02		.04	.03		-.04	.02	†	.05	.03	†	.02	.03	.22	.09	*	
Tenure	-.05	.01	***	-.25	.04	***	-.05	.01	***	-.27	.06	***	-.05	.02	**	-.13	.06	*
Hourly Wage <sup>a, b, c</sup>	.27	.02	***	.23	.04	***	.33	.03	***	.27	.05	***	.22	.03	***	.12	.14	
Salaried Workers	.08	.02	***	.02	.04		.04	.03	†	-.04	.05		.06	.03	*	.21	.14	
Persons in Household	.03	.01	**	-.01	.02		.02	.01	*	.01	.02		.03	.01	*	-.01	.04	
Children under 16	.02	.02		.03	.03		.05	.03	†	.01	.03		.03	.03		.01	.06	
Commuting Distance	-.03	.01	**	.01	.01		-.02	.01	*	.01	.02		-.01	.01		.01	.03	
Overtime	-.05	.01	***	-.01	.01		-.04	.01	***	-.01	.01		-.06	.01	***	-.04	.04	
Undertime	.01	.01		.01	.01		.01	.01		-.01	.01		.01	.01		-.02	.01	
Experiences Unemployment	-.03	.01	**	.11	.07		-.02	.01	†	.32	.09	**	-.03	.01	*	.01	.08	
Experiences Part Time	.02	.01		-.01	.04		-.00	.01		-.01	.05		.04	.01	*	.12	.11	
Job Change	.08	.03	**	.11	.03	***	.10	.03	**	.13	.04	***	.09	.04	*	.20	.08	*
Men	-.01	.02					-.02	.02					.01	.03				
<i>Predictors</i>																		
Flexitime	-.08	.02	***	<b>.05</b>	<b>.03</b>	†												
Sabbaticals							.03	.02	†	<b>.08</b>	<b>.02</b>	***						
Working from Home													.11	.03	**	<b>.21</b>	<b>.11</b>	*
Number of Observations	21.428		21.428		19.198		19.198		7.126		7.126							
Time Fixed Effects	yes		yes		yes		yes		yes		yes							
Control for Imputed Values	yes		yes		yes		yes		yes		yes							
Individual Fixed Effects	no		yes		no		yes		no		yes							

Note. <sup>a</sup>Data are trimmed at the 99% quantile, <sup>b</sup>adjusted for inflation and logarithmized, <sup>c</sup>in Euros, Columns (1) are pooled OLS regressions, columns (2) are fixed-effects regressions; b = robust estimate; SE = robust standard error; FE = fixed effects; values in bold support hypothesized results.

\*\*\* p <.001; \*\* p <.01; \* p <.05; † p <.10

Table 3. Effects of Flexible Work Practices on Turnover Intention

Variables	(1)		(2)		(1)		(2)		(1)		(2)	
	Pooled Model		FE Model		Pooled Model		FE Model		Pooled Model		FE Model	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
<i>Controls</i>												
Age	.05	.07	-.07	.17	.12	.08	.01	.15	.04	.10	.22	.27
Age Squared	-.29	.07 ***	-.17	.15	-.38	.07 ***	-.33	.13 *	-.27	.10 **	-.36	.25
Stipulated Working Hours <sup>a</sup>	-.05	.01 ***	-.11	.02 ***	-.04	.01 **	-.07	.03 *	-.04	.02 **	-.13	.05 *
Organizational Size	-.02	.02	.03	.03	-.01	.02	.04	.03	-.04	.02 †	-.20	.10 *
Tenure	-.15	.01 ***	.20	.05 ***	-.16	.01 ***	.25	.06 ***	-.16	.01 ***	.08	.07
Hourly Wage <sup>a, b, c</sup>	-.13	.02 ***	-.28	.04 ***	-.10	.02 ***	-.29	.05 ***	-.16	.03 ***	-.39	.16 *
Salaried Workers	.14	.02 ***	-.01	.04	.18	.02 ***	.08	.05	.17	.03 ***	-.01	.13
Persons in Household	-.01	.01	.01	.02	-.01	.01	.01	.01	-.02	.01 †	.01	.04
Children under 16	-.12	.02 ***	-.07	.03 *	-.13	.02 ***	-.05	.03	-.08	.03 *	-.10	.07
Commuting Distance	.05	.01 ***	.03	.02 *	.06	.01 ***	.03	.02 †	.05	.01 ***	.09	.04 *
Overtime	.06	.01 ***	-.01	.01	.05	.01 ***	-.02	.01	.06	.01 ***	.01	.04
Undertime	.02	.01 *	.01	.01	.02	.01	.01	.01	.02	.01	-.01	.01
Experiences Unemployment	.04	.01 **	-.17	.08 *	.03	.01 *	-.19	.12	.04	.01 *	-.06	.10
Experiences Part Time	-.01	.01	-.01	.04	.01	.01	.01	.05	.01	.02	-.26	.10 *
Job Change	.26	.03 ***	.06	.03 †	.24	.03 ***	.02	.04	.19	.05 ***	.23	.11 *
Men	.13	.02 ***			.15	.02 ***			.14	.03 ***		
<i>Predictors</i>												
Flexitime	.10	.02 ***	-.04	.03								
Sabbaticals					-.06	.02 ***	<b>-.04</b>	<b>.02 †</b>				
Working from Home									.13	.03 ***	<b>-.28</b>	<b>.11 *</b>
Number of Observations	21.428		21.428		19.198		19.198		7.126		7.126	
Time Fixed Effects	yes		yes		yes		yes		yes		yes	
Control for Imputed Values	yes		yes		yes		yes		yes		yes	
Individual Fixed Effects	no		yes		no		yes		no		yes	

Note. <sup>a</sup>Data are trimmed at the 99% quantile, <sup>b</sup>adjusted for inflation and logarithmized, <sup>c</sup>in Euros, Columns (1) are pooled OLS regressions, columns (2) are fixed-effects regressions; b = robust estimate; SE = robust standard error; FE = fixed effects; values in bold support hypothesized results.

\*\*\* p <.001; \*\* p <.01; \* p <.05; † p <.10

Table 4. Effects of Flexible Work Practices on Leisure Satisfaction

Variables	(1)		(2)		(1)		(2)		(1)		(2)	
	Pooled Model		FE Model		Pooled Model		FE Model		Pooled Model		FE Model	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
<i>Controls</i>												
Age	-.36	.07 ***	.01	.15	-.42	.08 ***	-.15	.13	-.32	.10 **	-.19	.25
Age Squared	.32	.07 ***	.06	.13	.38	.08 ***	.20	.12 †	.29	.10 **	.35	.24
Stipulated Working Hours <sup>a</sup>	-.08	.01 ***	-.12	.02 ***	-.12	.01 ***	-.13	.02 ***	-.10	.02 ***	-.05	.05
Organizational Size	.01	.02	-.01	.03	-.01	.02	.03	.03	.05	.03 †	-.00	.09
Tenure	.03	.01 **	-.01	.03	.03	.01 †	.03	.04	.03	.02 †	-.07	.07
Hourly Wage <sup>a, b, c</sup>	.12	.02 ***	-.06	.04	.12	.03 ***	-.01	.05	.05	.03	.15	.13
Salaried Workers	-.03	.02	.09	.04 *	.02	.03	.10	.05 *	-.02	.03	.02	.14
Persons in Household	-.01	.01	-.05	.01 ***	-.02	.01 *	-.06	.02 ***	-.02	.01	-.05	.03
Children under 16	-.15	.02 ***	-.03	.03	-.15	.03 ***	-.02	.03	-.16	.03 ***	-.07	.07
Commuting Distance	-.07	.01 ***	-.03	.12 *	-.07	.01 ***	-.02	.01 †	-.07	.01 ***	-.02	.04
Overtime	-.16	.01 ***	-.09	.01 ***	-.16	.01 ***	-.10	.01 ***	-.17	.01 ***	-.11	.04 **
Undertime	.01	.01	.01	.01 †	-.01	.01	.02	.01 †	.01	.01	.02	.01 *
Experiences Unemployment	-.06	.01 ***	-.04	.06	-.06	.01 ***	.08	.09	-.04	.01 **	-.02	.09
Experiences Part Time	.03	.01 **	.03	.04	.02	.01	.01	.05	.01	.02	-.07	.11
Job Change	-.03	.02	-.05	.03 *	-.02	.03	-.03	.03	-.03	.04	-.09	.08
Men	.20	.02 ***			.18	.03 ***			.17	.03 ***		
<i>Predictors</i>												
Flexitime	-.04	.02	.01	.03								
Sabbaticals					.07	.02 ***	<b>.06</b>	<b>.02 **</b>				
Working from Home									.05	.03	-.01	.10
Number of Observations	21.428		21.428		19.198		19.198		7.126		7.126	
Time Fixed Effects	yes		yes		yes		yes		yes		yes	
Control for Imputed Values	yes		yes		yes		yes		yes		yes	
Individual Fixed Effects	no		yes		no		yes		no		yes	

Note. <sup>a</sup>Data are trimmed at the 99% quantile, <sup>b</sup>adjusted for inflation and logarithmized, <sup>c</sup>in Euros, Columns (1) are pooled OLS regressions, columns (2) are fixed-effects regressions; b = robust estimate; SE = robust standard error; FE = fixed effects; values in bold support hypothesized results.

\*\*\* p < .001; \*\* p < .01; \* p < .05; † p < .10

Table 5. Effects of Flexible Work Practices on Health

Variables	(1)		(2)		(1)		(2)		(1)		(2)				
	Pooled Model		FE Model		Pooled Model		FE Model		Pooled Model		FE Model				
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE			
<i>Controls</i>															
Age	-.18	.04	***	-.06	.07	-.23	.04	***	-.08	.09	-.20	.05	***	.14	.12
Age Squared	.06	.04		-.11	.07	.11	.04	**	-.10	.09	.08	.05		-.23	.12 †
Stipulated Working Hours <sup>a</sup>	.01	.01	*	.01	.01	.02	.01	**	.01	.01	.01	.01	†	.02	.02
Organizational Size	-.01	.01		-.00	.01	-.01	.01		.01	.01	-.01	.01		-.08	.04 †
Tenure	-.02	.01	**	-.01	.01	-.02	.01	**	.01	.02	-.02	.01	**	-.04	.03
Hourly Wage <sup>a, b, c</sup>	.09	.01	***	.02	.02	.10	.01	***	.03	.02	.07	.02	***	.02	.06
Salaried Workers	.07	.01	***	.01	.02	.06	.01	***	.01	.02	.05	.01	***	-.01	.06
Persons in Household	.02	.01	**	-.01	.01 †	.01	.01	*	-.02	.01 **	.02	.01	**	-.01	.02
Children under 16	-.01	.01		-.00	.01	-.01	.01		-.01	.02	-.01	.02		.02	.03
Commuting Distance	-.01	.01	**	-.00	.01	-.01	.01	*	.01	.01	-.01	.01	*	.01	.01
Overtime	-.02	.01	***	-.01	.01	-.01	.01	*	-.01	.01	-.02	.01	**	-.02	.02
Undertime	-.00	.01		-.00	.02	.00	.01		-.01	.01	.01	.01		.01	.01
Experiences Unemployment	-.02	.01	**	.03	.03	-.02	.01	**	-.02	.04	-.01	.01	†	-.08	.04 *
Experiences Part Time	.01	.01		-.00	.02	.01	.01		-.01	.02	.01	.01		-.01	.05
Job Change	.02	.01	†	.04	.01 **	.02	.01		.04	.02 *	.04	.02	*	.07	.04
Men	.02	.01				.02	.01				.04	.02	**		
<i>Predictors</i>															
Flexitime	-.04	.01	***	-.02	.01										
Sabbaticals						-.02	.01 †		-.01	.01					
Working from Home											.03	.02 †		.02	.05
Number of Observations	21.428			21.428		19.198			19.198		7.126			7.126	
Time Fixed Effects	yes			yes		yes			yes		yes			yes	
Control for Imputed Values	yes			yes		yes			yes		yes			yes	
Individual Fixed Effects	no			yes		no			yes		no			yes	

Note. <sup>a</sup>Data are trimmed at the 99% quantile, <sup>b</sup>adjusted for inflation and logarithmized, <sup>c</sup>in Euros, Columns (1) are pooled OLS regressions, columns (2) are fixed-effects regressions; b = robust estimate; SE = robust standard error; FE = fixed effects; values in bold support hypothesized results.

\*\*\* p < .001; \*\* p < .01; \* p < .05; † p < .10