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Temporal Consistency of the Impact of Companies' Alignment with Social and Environmental Goals on Job Satisfaction

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ABSTRACT:
This article aims to analyze the relationship between companies' social and environmental goal orientation and employee job satisfaction, with particular attention to the temporal consistency of this relationship. We assume that concern for sustainability issues, particularly social and environmental ones, constitutes a significant determinant of job satisfaction. Furthermore, this study uniquely investigates whether this relationship remains stable over time, thus addressing the issue of temporal consistency. To achieve the study's objective, microdata from the German labor market were used. These data were collected in three waves (2018/19, 2020/21, and 2024) of the Linked Personnel Panel study. The dataset was limited to individuals who participated in each wave of the study, resulting in longitudinal data. A multinomial ordered logit models were used. The obtained results indicate that the higher the level of companies' implementation of social and environmental goals, the higher the chances of higher job satisfaction.

Keywords: sustainability, job satisfaction, multinomial ordered logit model, longitudinal data, temporal consistency

1. Introduction

Sustainability orientation presented by companies is analysed in the literature in the context of institutional environment, resources, capabilities, and practices, attitudes, marketing, innovation, supply chain, performance, and employees' reaction (Tardin et al., 2024). Sustainability orientation implies that environmental and social criteria must be considered by company along with economic criteria, which together constitute the three sustainability dimensions known as the Triple Bottom Line (TBL) concept (Bhaskaran, 2023; Türkay et al., 2016). While organizational sustainability has been widely researched from investors, consumers, and performance perspectives, much less is known about employees' views (Moilanen & Toikka, 2023).

In this study, we analyse organizational sustainability orientation (OSO) together with the Social Exchange Theory (SET) from an employee-centered perspective. Considering the conceptual framework of OSO proposed by Tardin et al. (2024), the outcome of sustainability companies' alignment is job satisfaction (Tardin et al., 2024). In turn, based on SET, which suggests that positive organizational actions tend to elicit

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positive employee responses, this study examines job satisfaction as a reaction to companies' alignment with social and environmental goals (Cropanzano et al., 2017).

Despite the growing literature on the benefits of applying sustainability, a critical research gap remains regarding temporal consistency. Most studies offer a "snapshot" in time, and therefore do not establish whether the relationship between a company's social and environmental goal orientation and employee job satisfaction remains observable across successive periods (Madison et al., 2025). In this study, we distinguish between synchronous effects, where job satisfaction responds to a company's sustainability orientation measured in the same survey wave, while lagged effects refer to the relationship between the company's orientation measured in the previous wave and employee job satisfaction measured in the subsequent wave. The lagged perspective allows us to capture the long-term 'relational contract' emphasized in SET, whereby consistent sustainability actions foster enduring employee reciprocity. Given the dynamic character of social exchange, lagged effects may be present but weaker than synchronous responses. If sustainability is truly a long-term strategic commitment rather than a one-off initiative (Avidan et al., 2026), its influence on employee attitudes should persist across time.

Accordingly, this research has two primary objectives:

- Analyze the significance of companies' social and environmental goal orientation influencing job satisfaction in the context of SET.
- To evaluate the temporal consistency of the relationship between companies' social and environmental goal orientation and job satisfaction over time.

By using multinomial ordered logit models and data from the Federal Employment Agency in Nuremberg, this paper contributes to the literature by demonstrating that sustainability orientation is not merely a symbolic gesture or signaling tool, but should be a vital component of the internal value proposition resulting in long term outcomes. By fostering reciprocity, where the company`s commitment to 'people and planet' is mirrored by increased job satisfaction, companies can strengthen their internal employee value proposition. The article adopts the perspective of private sector companies with at least 50 employees in the manufacturing and service industries in Germany.

This study contributes to the literature in three main ways:

1. It provides longitudinal evidence on how companies' social and environmental goal orientation influences job satisfaction, addressing a gap dominated by cross-sectional designs.
2. It empirically tests temporal consistency by estimating synchronous and lagged effects through multinomial ordered logit models.
3. It integrates Organizational Sustainability Orientation (OSO) with Social Exchange Theory (SET) in a dynamic rather than static framework, showing how sustainability-related signals generate both immediate and enduring employee responses.

2. Theoretical background

Organizational sustainability orientation (OSO) reflects a strategic commitment to integrating environmental, social, and economic dimensions into core business operations (Ketprapakorn & Kantabutra, 2022). Grounded in the TBL concept, this orientation requires companies to preserve natural and social capital while pursuing

economic viability (Carmine & De Marchi, 2023). Orientation toward people and planet belongs to long-term objectives of the companies (Rahman et al., 2023). Sustainability is, by definition, a long-term endeavor rather than a one-off investment (Avidan et al., 2026). Sustainability orientation is becoming not only moral obligation but also a strategic requirement (Alshukri et al., 2024). Because OSO reflects a long-term strategic orientation, its effects on employee attitudes may extend across time rather than being limited to immediate reactions.

As organizations formalize their sustainability efforts, OSO is often operationalized through the environmental, social, and governance (ESG) framework. ESG represents measurable indicators of environmental, social and governance performance, providing concrete evidence of the company's commitment. ESG management signifies a transition from a narrow focus on immediate profits toward ethical management and long-term resilience (Jeong & Chung, 2025). The literature highlights that ESG contributes to the enhancement of firms' long-term value (Fang & Guo, 2025).

According to the conceptual framework of OSO proposed by Tardin et al. (2024), sustainability alignment is a multifaceted concept with various antecedents and outcomes. Institutional environment, resources, attitudes, and beliefs are considered in the group of leading circumstances. Within the group of outcomes, those that go beyond measures like social and environmental performance stand out, as well those related to employee reaction in the form of job satisfaction (Tardin et al., 2024).

Job satisfaction is an attitude reflecting an employee's subjective assessment of their work (Spector, 2022). Job satisfaction may be evaluated as the global construct or aspect of the job (for example nature of work, organizational context, rewards, social environment) (Lee et al., 2022). In the article, overall attitude as global evaluation of a job is considered.

Job satisfaction as the reaction to positive actions may be analyzed within SET framework. Homans (1958) highlights that social behavior is an exchange of goods, but not only material ones but also non-materials, such as approval or values. SET is applied in the literature to understand workplace behavior, including job satisfaction (Ahmad et al., 2023; Rajâa & Mekkaoui, 2025). At the heart of SET is the norm of reciprocity: employees seek to balance their commitment to the organization with the organization's commitment to broader social values (Kim et al., 2016). Positive initiating actions in the form of a company's commitment to social and environmental goals may generate reciprocating responses from employees (Bhrambhatt & Pandey, 2026). Employees reciprocate this organizational commitment with increased job satisfaction (Cheah & Lim, 2024). Employees frequently interpret sustainability initiatives as signals of organizational integrity and care, which strengthens their sense of support and enhances affective reactions such as job satisfaction. Al-Swidi et al. (2026) emphasized that sustainability is becoming a key component of the value proposition for employees. Thus, we propose:

H1: Companies' social and environmental goal orientation in the current survey wave is a significant, positive predictor of employee job satisfaction in the same survey wave (synchronous effect).

Empirical research across various contexts (organizational culture, ESG, CSR) supports this link. Environmental and social initiatives have been shown to improve job satisfaction (Jeong et al., 2025), also in the context of small and medium-sized enterprises

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(Álvarez-Perez & Fuentes-Bracamontes, 2025) or in particular country - Bosnia and Herzegovina (Bajraktarevic, 2025). In turn, Piao et al. (2022) analyzed ESG activities with employee psychological well-being improvement identified that social activities encourage labor-management programs that enhance employees' job satisfaction. Rupp et al. (2006) proposed that employee perception of activities exerting positive social change and environmental sustainability has a positive effect on job satisfaction considered individually relevant outcomes. Bhrambhatt and Pandey (2026) pointed out that employees who perceive that their organizations are truly committed to environmental protection, social responsibility tend to be more satisfied with their job.

A company's true commitment to social and environmental goals may be reflected in the long-term character of its orientation. A critical gap in the literature remains regarding the temporal consistency of these effects. While synchronous associations are well documented, SET suggests that reciprocity can develop as an ongoing exchange relationship in which positive organizational actions generate both immediate and long-term employee responses (Ahmad et al., 2023). Social exchange should therefore be understood as a dynamic rather than a static, one-time response (Madison et al., 2025; Paillé et al., 2023).

In this study, the departure from the "one-time response" takes the form of temporal consistency, which refers to whether the relationship between a company's social and environmental goal orientation and employee job satisfaction is observed across successive survey waves and whether the company's orientation assessed in the previous wave remains relevant to job satisfaction in the subsequent wave. The persistence of this relationship does not imply that its strength remains unchanged over time. Organizational effects may differ in their duration and dynamics and may strengthen, remain stable, or decline as the temporal context changes (Boon et al., 2025). Employees may update their evaluations as they receive new organizational signals and as their experience of company practices changes over time (Piening et al., 2013). Employee evaluations and work attitudes develop under changing organizational conditions rather than in a temporal vacuum (Kim et al., 2020; Rafferty & Griffin, 2006). Changes in management, sustainability priorities, organizational policies, or working conditions may alter employees` current evaluations of the organization and thereby reduce the relevance of an earlier assessment (Cullen et al., 2014). Therefore, the lagged effect is expected to remain positive but to be attenuated relative to the synchronous effect. Accordingly:

H2: A company's social and environmental goal orientation in the previous survey wave remains a significant positive predictor of employee job satisfaction in the subsequent survey wave (lagged effect).

3. Data and methods

3.1. Data

The analysis is based on data on the German labor market. These data were collected as part of the Linked Personnel Panel study (Mackeben et al., 2021, 2023; Ruf et al., 2025). Six editions of the study have been conducted to date (2012/2013, 2014/2015, 2016/2017, 2018/2019, 2020/2021, and 2024). The Linked Personnel Panel dataset is representative of private sector companies with at least 50 employees in the manufacturing

and service industries and provides information at the employer and employee levels. The employee level of the survey includes demographic, qualification, health status, employment, personal and job characteristics. In addition, the dataset includes information on job satisfaction, work-life balance and perceived companies' social and environmental goal orientation, among others. The employer level refers to company size, type of activity, HR policy, structural analysis, remote work, remuneration and many other characteristics relevant to personnel management.

The data access was provided via on-site use at the Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the Institute for Employment Research (IAB) and subsequently remote data access.

Microdata from the last three waves of the study were used to construct a longitudinal dataset. From the total number of observations collected (2018/2019 N=6494, 2020/2021 N=7397, 2024 N=6611), 492 records were extracted for individuals participating in the LPP study in each of these three periods.

The main variables taken into account in the analyses are: job satisfaction and orientation towards achieving the company's social and environmental goals. The values of the job satisfaction variable come directly from the answer to the question: How satisfied are you today with your job? and takes values from 0 to 10, where 0 means completely dissatisfied and 10 means completely satisfied. Due to the fact that satisfaction ratings ranging from 0 to 6 were relatively rare, this variable was recoded into values of 1-5 as follows: value 1 was assigned to ratings 0-6, 2 - rating 7, 3 - rating 8, 4 - rating 9 and 5 - rating 10. The values of the social and environmental goal orientation variable come from the assessment of agreement with the statement: My employer does not exclusively pursue financial goals, but also goals that benefit society or the environment. Possible responses are as follows: 1 – fully applies, 2 – largely applies, 3 – neutral, 4 – does rather not apply, 5 – does not apply at all. For further analysis, the social and environmental goal orientation variable was recoded into binary variables. For estimation reasons, it is necessary to separate the base variable in models containing binary variables relating to the levels of trait measurement on a nominal or ordinal scale. In our case base level is 5 – does not apply at all. The base variable is a reference point for interpreting parameter estimates for variables relating to other levels of measurement of the given feature.

Due to the complexity of the job satisfaction phenomenon, the analysis included a number of control variables, such as: gender (man/woman), level of education (any qualification, lower secondary school certificate, intermediate secondary school certificate, university of applied sciences entrance qualification or vocational diploma, general higher education entrance qualification (A-level), extended secondary school certificate, vocational training with A-level), household size (1-person, 2-person, 3-person, 4-person and 5 or more persons), leadership position (yes/no), employment situation (worker/employee), functional area (production, sales/marketing, cross-sectional functions/administration, services), type of employment contract (permanent/fixed term), full-time employment (yes/no), job security (very concerned, somewhat concerned, not concerned at all), work hours per week, age, age square.

Since 492 common records were extracted from the sets for each wave of the study, a comparison of the structure of the selected samples with the rest of the data sets

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was made. To achieve this goal, the structure similarity index given by the formula was used (Sokołowski, 1993):

$$w_s = \sum_{i=1}^{k} \min_i(w_{1i}, w_{2i})$$

where: w_{1i}, w_{2i} - the share of the *i*-th feature category in the first and second data sets, respectively; k – number of categories of the given characteristic.

Estimates of the structure similarity index were made for the data from each study wave and the combined data for all waves and the last two. Due to: level of education, the indicators are from 0.957 to 0.975, gender - from 0.919 to 0.978, household size - from 0.899 to 0.933, leadership position - from 0.974 to 0.997, employment situation - from 0.939 to 0.987, functional area - from 0.939 to 0.959, type of employment contract - from 0.981 to 0.995, full time employment - from 0.982 to 0.999 and job security - from 0.958 to 0.991. Such high rates indicate that the structures of the subsamples selected for the study and those omitted from the study are very similar. This results in the reliability of the estimates obtained.

3.2. Method

The research tool used in the analysis is the ordered logit model. The multinomial ordered logit model estimates the probability that the observable dependent variable y falls into category j. This probability is expressed by the formula (Amemiya, 1985):

$$p_{ij} = P(y_i = j) = \frac{e^{K_j - x_i'\beta}}{1 + e^{K_j - x_i'\beta}} - \frac{e^{K_{j-1} - x_i'\beta}}{1 + e^{K_{j-1} - x_i'\beta}}$$

where: i – number of observation,

p_{ij} – the probability that the i-th observation falls into category j,

$x_i' = [x_{1i} \quad x_{2i} \quad \dots \quad x_{ki}]$ – vector of values of explanatory variables for the *i*-th observation,

$\beta = [\beta_1 \quad \beta_2 \quad \dots \quad \beta_k]$ – vector of coefficients,

k – number of explanatory variables in the model,

K_{j-1}, K_j – transition thresholds between states of variable y, constructed according to the formula:

$y_i = j \Leftrightarrow K_{j-1} < y_i^* \leq K_j, \quad \text{for} \quad j = 1,2, \dots, J,$

$K_0 = -\infty;\ K_J = \infty,$

$y_i^* = \beta_0 + \sum_{k=1}^{K} \beta_k x_{ki} + e_i$ is a transformed endogenous (latent) variable.

The dependent variable in this model results directly from the responses to the question about job satisfaction on an 5-point scale (J=5).

The multinomial ordered logit model is estimated by the maximum likelihood method by maximizing the likelihood function with respect to $\beta, K_1, K_2, \dots, K_{J-1}$ (Chow, 1985). A method with robust standard errors was used. The multinomial ordered logit model is verified using: Brant's proportional odds test, VIF collinearity test, Wald likelihood ratio test, Mc-Fadden coefficient of determination. In addition, the Akaike and Schwarz information criteria were estimated. The model can be interpreted based on marginal effects.

4. Results of models' estimation

In the course of the study, multinomial logit models for ordered categories were estimated. The dependent variable in these models was job satisfaction. The independent variables included the perceived orientation of the company towards social and environmental goals and a set of control variables. Three alternative model specifications were considered:

1. Specification 1 – investigates synchronous effect – job satisfaction depends on perceptions of social and environmental goals from the same survey wave (current);
2. Specification 2 - investigates lagged effect – job satisfaction depends on perceptions of social and environmental goals from the previous survey wave (previous);
3. Specification 3 - investigates synchronous and lagged effect – job satisfaction depends on perceptions of social and environmental goals from the current and previous survey waves.

The time intervals examined in this study were determined by the availability of the LPP waves rather than selected as theoretically optimal. Therefore, the study was not designed to identify the optimal time lag (Dormann & Griffin, 2015). The adjacent-wave specification represents the shortest available lag that preserves the temporal order between a company's social and environmental goal orientation and subsequent employee job satisfaction. Alternative lag specifications were not evaluated because the dataset contains only three unequally spaced waves. The only non-adjacent alternative would relate the company's social and environmental goal orientation measured in 2018/2019 to employee job satisfaction measured in 2024. A single such comparison would combine a longer lag with different historical, organizational, and external conditions and would therefore not allow the influence of lag duration to be distinguished systematically from period-specific effects.

The available data allowed for estimation of models according to Specification 1 for all survey waves and for the combined data from the three and two most recent survey waves (a total of five models). Three models were estimated each according to Specifications 2 and 3. The model estimation results are presented in Table 1.

Table 1: Model estimation results on data from three waves of the study according to three specifications

Wave	Social and environmental goal orientation		Specification1		Specification2		Specification3	
	Period	Levels	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
2018/2019	current	fully applies	2.192	0.001***	-	-	-	-
		largely applies	1.730	0.000***	-	-	-	-
		neutral	1.373	0.000***	-	-	-	-
		does rather not apply	0.648	0.107	-	-	-	-
		does not apply at all	base level		-		-	
		Model statistics	N=492; Mean VIF=1.97; Wald chi2(25)=106.74; Pseudo R2=0.0841; Brant chi2=811.6 [0.000]; AIC=1385.3; BIC=1507.1		-		-	
2020/2021	current	fully applies	2.253	0.000***	-	-	2.110	0.000***
		largely applies	1.340	0.000***	-	-	1.260	0.001***
		neutral	0.839	0.015**	-	-	0.774	0.044**
		does rather not apply	0.280	0.446	-	-	0.349	0.361

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Wave	Social and environmental goal orientation		Specification1		Specification2		Specification3	
	Period	Levels	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
2024		does not apply at all	base level		-		base level	
	previous	fully applies	-	-	1.099	0.004***	0.085	0.846
		largely applies	-	-	0.747	0.051*	0.046	0.906
		neutral	-	-	0.717	0.038**	0.211	0.595
		does rather not apply	-	-	-0.131	0.723	-0.389	0.314
		does not apply at all	-		base level		base level	
		Model statistics	N=492; Mean VIF=2.10; Wald chi2(25)=101.19; Pseudo R2=0.0698; Brant chi2=47,76 [0.994]; AIC=1432.0; BIC=1553.8		N=492; Mean VIF=1.95; Wald chi2(25)=87.88; Pseudo R2=0.0513; Brant chi2=56.99 [0.940]; AIC=1459.2; BIC=1581.0		N=492; Mean VIF=2.36; Wald chi2(29)=117.07; Pseudo R2=0.0736; Brant chi2=90.15 [0.387]; AIC=1434.4; BIC=1573.0	
	current	fully applies	1.715	0.000***	-	-	1.158	0.015**
		largely applies	1.709	0.000***	-	-	1.453	0.000***
		neutral	1.085	0.005***	-	-	0.994	0.019**
		does rather not apply	1.015	0.006***	-	-	0.983	0.014**
		does not apply at all	base level		-		base level	
	previous	fully applies	-	-	1.717	0.000***	1.089	0.033**
		largely applies	-	-	1.014	0.007***	0.361	0.380
		neutral	-	-	0.552	0.137	-0.012	0.976
		does rather not apply	-	-	0.207	0.612	-0.230	0.589
		does not apply at all	-		base level		base level	
		Model statistics	N=492; Mean VIF=2.13; Wald chi2(25)=86.63; Pseudo R2=0.0632; Brant chi2=67.9 [0.707]; AIC=1448.7; BIC=1570.5		N=492; Mean VIF=2.10; Wald chi2(25)=93.22; Pseudo R2=0.0656; Brant chi2=86.5 [0.171]; AIC=1445.2; BIC=1566.9		N=492; Mean VIF=2.63; Wald chi2(29)=98.67; Pseudo R2=0.0745; Brant chi2=147.4 [0.000]; AIC=1439.9; BIC=1578.4	
combined (2018/2019+2020/2021+2024)	current	fully applies	2.029	0.000***	-	-	-	-
		largely applies	1.587	0.000***	-	-	-	-
		neutral	1.097	0.000***	-	-	-	-
		does rather not apply	0.644	0.003***	-	-	-	-
		does not apply at all	base level		-		-	
		Model statistics	N=1476; Mean VIF=2.01; Wald chi2(25)=248.46; Pseudo R2=0.0627; Brant chi2=162.2 [0.000]; AIC=4199.5; BIC=4353.1		-		-	
combined (2020/2021+2024)	current	fully applies	1.945	0.000***	-	-	1.577	0.000***
		largely applies	1.502	0.000***	-	-	1.301	0.000***
		neutral	0.918	0.000***	-	-	0.817	0.003***
		does rather not apply	0.642	0.012**	-	-	0.657	0.016**
		does not apply at all	base level		-		base level	
	previous	fully applies	-	-	1.374	0.000***	0.596	0.062*
		largely applies	-	-	0.849	0.001***	0.234	0.391
		neutral	-	-	0.595	0.019**	0.125	0.651
		does rather not apply	-	-	0.0006	0.998	-0.310	0.268
		does not apply at all	-		base level		base level	
		Model statistics	N=984; Mean VIF=2.08; Wald chi2(29)=167.98; Pseudo R2=0.0593; Brant chi2=34.69 [0.999]; AIC=2847.7; BIC=2989.5		N=984; Mean VIF=1.98; Wald chi2(29)=162.17; Pseudo R2=0.0530; Brant chi2=12.22 [0.999]; AIC=2866.3; BIC=3008.1		N=984; Mean VIF=2.41; Wald chi2(29)=189.10; Pseudo R2=0.0648; Brant chi2=52.99 [0.999] AIC=2839.3; BIC=3000.7	

Significance level: *** 1%; ** 5%; * 10%.

Note: each model also included a set of control variables specified in the data section.

Source: Own elaborations.

For each estimated model, testing for multicollinearity of variables showed that this multicollinearity did not occur (max mean VIF 2.63). The results of the likelihood ratio test indicate statistical significance of the model parameters. The Brant test results revealed that the proportional odds assumption is met for eight of the eleven models. For three models: Specification 1 for wave 2018/2019 and combined three waves, Specification 3 for wave 2024 this assumption is not met. These models were compared with the results of the partially proportional odds model estimation. The obtained results

confirmed the direction and significance of the relationships of interest. Therefore, a simpler and more interpretable model of ordered logit was retained. Pseudo R squared values refer to model fitting where the standard coefficient of determination does not apply. It indicates how much variability a given model explains compared to the baseline model (containing only the free term). Theoretically, the values of this coefficient take values <0;1). In practice, however, they are closer to zero.

Due to the nonlinearity of the relationship, the model parameter estimates cannot be interpreted directly. For this reason, marginal effects were determined, which describe the impact of an individual change in company's social and environmental goal orientation on the probability of a specific level of employee satisfaction. Detailed results are in Annex 1.

Parameter estimates indicate that the effect sizes of company's social and environmental goal orientation on job satisfaction are very high. Models estimated according to specification 1 indicate a strong positive relationship between current job satisfaction and the company's current achievement of social and environmental goals. In each period (2018/19, 2020/21, 2024) and in the combined data (2018/19+2020/21+2024 and 2020/21+2024), the models reveal that the higher the perception of achievement of social and environmental goals, the greater the chances of higher job satisfaction among employees.

Models built according to specification 2 demonstrate the impact on job satisfaction of the company's social and environmental goals in the wave immediately preceding the job satisfaction assessment wave. In this case, positive and strong correlations are observed: the higher the perception of social and environmental impact, the higher the job satisfaction among employees. The lowest levels of non-financial impact assessments proved statistically insignificant. It should be emphasized that these impacts are slightly weaker than those in the current period. Nevertheless, this may suggest the existence of long-term relationships between the assessments of non-financial goal achievement and job satisfaction.

Models estimated according to specification 3 reveal the past and current impact of a company's achievement of non-financial goals on job satisfaction. Models estimated using data collected in 2024 and combined data from 2020/21 and 2024 indicate that job satisfaction is primarily determined by current assessments of social and environmental impact. This relationship is reinforced by the highest assessments of non-financial impact from the immediately preceding period.

Overall, the estimated models support the conclusion that the perception of a company's achievement of social and environmental goals significantly impacts job satisfaction. This influence is primarily determined by current assessments of non-financial goal achievement. Past experiences are also important and significantly impact current job satisfaction. This may indicate a long-term and consistent relationship between employers' achievement of social and environmental goals and employee job satisfaction.

5. Discussion and conclusions

The purpose of this study was to examine whether companies' alignment with social and environmental goals affects employees' job satisfaction, and whether this

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relationship remains stable over time. Drawing on OSO and SET, the study examined both synchronous and lagged effects of German companies' sustainability orientation on job satisfaction using three waves (2018/2019, 2020/2021, 2024) of longitudinal data from the Linked Personnel Panel.

Across all models, the results provide strong support for H1, demonstrating that companies' commitment to social and environmental goals is positively associated with job satisfaction in each period analyzed. This pattern is highly consistent: in 2018/2019, 2020/2021, 2024, and in both combined datasets, higher levels of sustainability goal implementation significantly increased the chances for higher job satisfaction. These findings are in line with earlier research highlighting that sustainability activities enhance employee satisfaction (Álvarez-Perez & Fuentes-Bracamontes, 2025; Bajraktarevic, 2025; Bhrambhatt & Pandey, 2026; Jeong et al., 2025). Employees view sustainability initiatives as a sign of the organization's integrity and concern, which in line with the SET framework generates positive attitudinal responses.

The results further support H2, which stated that a company's social and environmental goal orientation in the previous survey wave remains a significant positive predictor of employee job satisfaction in the subsequent survey wave underlying lagged effect. Models estimated with variables from the previous waves show that prior assessments of companies' social and environmental goal orientation continue to exert a positive influence on current job satisfaction, particularly for employees who perceived their employers as strongly committed to sustainability. Although the lagged associations are weaker than the synchronous associations, the previous-wave assessment retains relevance, particularly when employees assessed their companies as strongly oriented toward social and environmental goals. This pattern indicates attenuated temporal persistence rather than an effect of equal strength across periods. This finding aligns with SET's explanation of ongoing exchange relationships developing over time (Ahmad et al., 2023) and indicates that the lagged relationship persists, although it is attenuated relative to the synchronous relationship (Boon et al., 2025; Piening et al., 2013). Models combining current and previous assessments show that job satisfaction is determined primarily by current companies' sustainability orientation but reinforced by strong positive assessments from the previous wave. This indicates that OSO is associated with employee job satisfaction both synchronously and across subsequent periods, with the lagged relationship being weaker than the synchronous relationship (Fang & Guo, 2025).

From a theoretical perspective, this study makes three contributions. First, it provides longitudinal evidence on the relationship between companies' social and environmental goal orientation and job satisfaction. Second, it empirically demonstrates temporal consistency, distinguishing synchronous and lagged effects, and showing that sustainability signals produce both immediate and cumulative consequences for employee job satisfaction. Third, by integrating OSO and SET in a dynamic framework, this study demonstrates how sustainability orientation functions as a relational signal that shapes employee responses over time, thereby broadening our understanding of reciprocity mechanisms in sustainability contexts.

In turn, from a practical perspective, this study highlights that organizations benefit not only externally but also internally when they are committed to achieving social and environmental goals. Long-term sustainability orientation can strengthen job

satisfaction, enhance employee motivation, and support the long-term productivity and stability of human capital. As lagged effects are present, companies should recognize that employees evaluate not only current but also past sustainability actions. Consistency and long-term orientation are therefore essential for leveraging sustainability as part of an effective HR strategy.

Several limitations of this study should be acknowledged. First, the analysis relies on self-reported perceptions, which may involve subjective bias. Second, the study is limited to German private-sector employees, which may restrict generalizability to different institutional or cultural contexts. However, these limitations also provide a basis for future research directions. Future research should explore potential mechanisms mediating the sustainability and satisfaction link, such as perceived organizational support, meaningfulness of work, or organizational trust. Additionally, further studies should examine moderators, such as job role and industry to determine which groups of employees react most strongly to sustainability initiatives. Future research would benefit from including the perspective of employees from different countries, especially those characterized by different cultural norms and institutional framework, and economic conditions to characterize the extent to which country context shapes employee reaction to companies' sustainability orientation. Furthermore, broadening the scope of outcomes considered in employee responses within the OSO framework, such as sustainable employee behaviors or turnover intention, would help to understand how companies' sustainable orientation influences broader aspects of workforce functioning.

From a research point of view, it would be justified to conduct research not only on data from one country, but also comparative studies between countries or even panel studies. From a methodological point of view, a number of statistical methods could be used to examine the direction and strength of the relationship between company's social and environmental goal orientation and job satisfaction. Furthermore, the study methodology could include a number of econometric models that allowed for a deeper study of relationships, such as models with interactions or multilevel models. It would certainly be a challenge to seek objective measures regarding various aspects of sustainable development in organizations.

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Annex 1: Marginal effects

Wave	Social and environmental goal orientation		Outcome of job satisfaction														
			Specification1					Specification2					Specification3				
	Period	Levels	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
2018/2019	current	fully applies	-0.3922	-0.1058	0.2030	0.2305	0.0645	-	-	-	-	-	-	-	-	-	-
		largely applies	-0.3437	-0.0621	0.2079	0.1593	0.0387	-	-	-	-	-	-	-	-	-	-
		neutral	-0.2938	-0.0297	0.1873	0.1113	0.0249	-	-	-	-	-	-	-	-	-	-
		does rather not apply	-0.1554	0.0112	0.0974	0.0390	0.0079	-	-	-	-	-	-	-	-	-	-
		does not apply at all			base level					-					-		
2020/2021	current	fully applies	-0.3570	-0.1352	0.1135	0.2549	0.1237	-	-	-	-	-	-0.3350	-0.1318	0.1167	0.2389	0.1112
		largely applies	-0.2653	-0.0577	0.1498	0.1285	0.0447	-	-	-	-	-	-0.2469	-0.0579	0.1424	0.1206	0.0418
		neutral	-0.1844	-0.0191	0.1136	0.0684	0.0214	-	-	-	-	-	-0.1683	-0.0203	0.1054	0.0633	0.0198
		does rather not apply	-0.0669	0.0019	0.0411	0.0185	0.0053	-	-	-	-	-	-0.0813	-0.0014	0.0511	0.0244	0.0072
		does not apply at all			base level					-					base level		
	previous	fully applies	-	-	-	-	-	-0.1842	-0.0756	0.0749	0.1279	0.0570	-0.0134	-0.0060	0.0060	0.0103	0.0040
		largely applies	-	-	-	-	-	-0.1376	-0.0454	0.0695	0.0810	0.0326	-0.0073	-0.0037	0.0034	0.0055	0.0021
		neutral	-	-	-	-	-	-0.1331	-0.0430	0.0681	0.0772	0.0308	-0.0319	-0.0176	0.0128	0.0262	0.0105
		does rather not apply	-	-	-	-	-	0.0291	0.0031	-0.0175	-0.0110	-0.0037	0.0701	0.0259	-0.0394	-0.0418	-0.0148
		does not apply at all			-					base level					base level		
2024	current	fully applies	-0.3032	-0.0990	0.1572	0.1757	0.0694	-	-	-	-	-	-0.2091	-0.0718	0.1260	0.1154	0.0394
		largely applies	-0.3026	-0.0985	0.1573	0.1749	0.0689	-	-	-	-	-	-0.2428	-0.1001	0.1289	0.1560	0.0580
		neutral	-0.2225	-0.0408	0.1391	0.0931	0.0311	-	-	-	-	-	-0.1870	-0.0564	0.1180	0.0944	0.0310
		does rather not apply	-0.2112	-0.0350	0.1332	0.0850	0.0280	-	-	-	-	-	-0.1855	-0.0554	0.1174	0.0930	0.0305
		does not apply at all			base level					-					base level		
	previous	fully applies	-	-	-	-	-	-0.2241	-0.1397	0.0396	0.2156	0.1086	-0.1160	-0.1000	-0.0104	0.1488	0.0776
		largely applies	-	-	-	-	-	-0.1625	-0.0779	0.0788	0.1168	0.0448	-0.0492	-0.0335	0.0185	0.0459	0.0183
		neutral	-	-	-	-	-	-0.1005	-0.0360	0.0605	0.0567	0.0193	0.0019	0.0011	-0.0010	-0.0014	-0.0005
		does rather not apply	-	-	-	-	-	-0.0409	-0.0106	0.0264	0.0191	0.0061	0.0377	0.0184	-0.0218	-0.0254	-0.0089
		does not apply at all			-					base level					base level		
combined (2018/2019+2020/	current	fully applies	-0.3542	-0.1092	0.1579	0.2193	0.0862	-	-	-	-	-	-	-	-	-	-
		largely applies	-0.3077	-0.0695	0.1691	0.1554	0.0526	-	-	-	-	-	-	-	-	-	-
		neutral	-0.2360	-0.0277	0.1440	0.0921	0.0277	-	-	-	-	-	-	-	-	-	-
		does rather not apply	-0.1497	-0.0015	0.0927	0.0457	0.0128	-	-	-	-	-	-	-	-	-	-
		does not apply at all			base level					-					-		
combined (2020/2021+2024)	current	fully applies	-0.3289	-0.1145	0.1359	0.2123	0.0952	-	-	-	-	-	-0.2702	-0.0991	0.1269	0.1719	0.0705
		largely applies	-0.2833	-0.0750	0.1500	0.1505	0.0578	-	-	-	-	-	-0.2392	-0.0739	0.1294	0.1335	0.0502
		neutral	-0.1969	-0.0261	0.1199	0.0774	0.0258	-	-	-	-	-	-0.1682	-0.0326	0.1036	0.0728	0.0244
		does rather not apply	-0.1448	-0.0095	0.0897	0.0490	0.0156	-	-	-	-	-	-0.1398	-0.0214	0.0877	0.0555	0.0180
		does not apply at all			base level					-					base level		
	previous	fully applies	-	-	-	-	-	-0.2057	-0.1045	0.0610	0.1680	0.0812	-0.0808	-0.0525	0.0201	0.0777	0.0355
		largely applies	-	-	-	-	-	-0.1474	-0.0581	0.0713	0.0956	0.0386	-0.0355	-0.0196	0.0147	0.0287	0.0117
		neutral	-	-	-	-	-	-0.1104	-0.0365	0.0601	0.0630	0.0238	-0.0196	-0.0102	0.0089	0.0149	0.0060
		does rather not apply	-	-	-	-	-	-0.0001	0.0000	0.0001	0.0001	0.0000	0.0551	0.0213	-0.0309	-0.0333	-0.0122
		does not apply at all			-					base level					base level		

Source: own elaborations.