



The relationship between the institutional environment and job satisfaction. A multilevel approach

María Lourdes Gastearena-Balda¹ · Andrea Ollo-López^{2,3} · Martín Larraza-Kintana^{2,3} · Ricardo Rodrigues⁴

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Abstract

An extensive body of literature has explored the key determinants of employee job satisfaction placing particular emphasis on individual differences and job characteristics. However, variations in job satisfaction levels persist across countries, highlighting the importance of contextual and institutional factors across different national contexts. This study investigates the role of formal and informal institutions in shaping job satisfaction. Based on a sample of 10,822 employees from 26 European countries, the study employs a multilevel methodology to test the proposed hypotheses. The findings demonstrate that national institutions significantly contribute to cross-country differences in job satisfaction. In particular, the positive impact of labour freedom on job satisfaction is more pronounced in countries characterised by low power distance, low uncertainty avoidance, and high individualism. Conversely, in countries with high power distance, high uncertainty avoidance, and low individualism, the relationship between labour freedom and job satisfaction is weaker. These results emphasise the critical role of cultural and institutional contexts.

Keywords Formal institutions · Informal institutions · Job satisfaction · National culture · Labour freedom

Introduction

The complexity of today's business environment marked by uncertainty, unstable market conditions, and fierce international competition, has garnered significant attention from scholars in the fields of international and cross-cultural

research (Gu et al., 2022). Furthermore, there is growing interest among managers in enhancing employee job satisfaction, as it is widely recognised as a critical factor in organisational success (Guest, 2017). For example, research indicates that satisfied employees are more likely to engage in Organisational Citizenship Behaviours (OCB), demonstrate superior job performance, and exhibit stronger organisational commitment (Ingrams, 2020).

Organisations operate as open systems, interacting with both formal and informal institutions (Daft, 2007). According to institutional theory (North, 1990), institutions can be understood as 'the rules of the game' that regulate business activities, and significantly shape organisational behaviour by constraining and enabling actions. These institutions, categorised into formal and informal types, are expected to exert substantial influence on individual and organisational outcomes, including individual well-being (Gërzhani & Cichocki, 2023). Formal institutions refer to political, economic, and contractual rules that structure social interactions, providing a regulatory or deregulatory framework for organisational behaviour (North, 1990; Peng et al., 2008). In contrast, informal institutions consist of customs, traditions, and codes of conduct that are intrinsic to a country's cultural heritage, influencing societal behaviour and expectations

✉ María Lourdes Gastearena-Balda
mgastearena@unizar.es

Andrea Ollo-López
andrea.ollo@unavarra.es

Martín Larraza-Kintana
martin.larraza@unavarra.es

Ricardo Rodrigues
ricardo.rodrigues@kcl.ac.uk

¹ Department of Business Management and Organization, University of Zaragoza, Huesca, Spain

² Department of Business Management, Public University of Navarra, Pamplona, Spain

³ Institute for Advanced Research in Business and Economics (INARBE), Pamplona, España

⁴ Human Resource Management & Employment Relations, King's Business School, King's College, London, UK

(North, 1990; Scott, 2001). According to Williamson (2009), formal institutions are dictated and enforced by the government while informal institutions constitute private constraints.

Previous studies have established relationships between informal institutions (e.g. national culture) and employee attitudes such as job satisfaction and organisational commitment (Gu et al., 2022; Xu et al., 2023), as well as between formal institutions (e.g. labour freedom, employment protection regulation) and job satisfaction (Karabchuk & Soboleva, 2020). However, our understanding of the interaction between formal and informal institutions remains insufficiently explored. Addressing this gap in the literature is crucial, as both formal and informal institutions create a duality of freedom and constraint that shapes individual behaviours, attitudes, and values (Salimath & Cullen, 2010), which are likely to influence job satisfaction. Moreover, formal institutions are most effective when they are grounded in and supported by pre-existing informal norms (Williamson, 2009).

In this context, this study applies institutional theory (North, 1990) to contribute to the existing literature by addressing the following research question: How do the interactions between formal institutions, such as labour freedom, and informal institutions, such as national culture, influence variations in employee job satisfaction across countries? Specifically, this research examines the direct effect of labour freedom on job satisfaction and the moderating role of national culture.

Labour freedom constitutes a critical dimension of formal institutions and is defined as the ability of individuals and organizations to engage in labour contracts with minimal legal restrictions (Miller & Kim, 2016). Within this framework, lower levels of regulation represent greater labour freedom, and vice versa. Additionally, national culture is widely recognised as a key informal institution due to its significant influence on societal norms, values, and behaviours (North, 1990; Peng et al., 2008). A deeper understanding of the institutional factors influencing job satisfaction can assist policymakers in designing more targeted and effective strategies to enhance employee satisfaction.

This study presents at least two notable contributions. First, it examines the direct effect of labour freedom on employee job satisfaction. Unlike other country-level factors, such as GDP or unemployment rates (Erro-Garcés & Ferreira, 2019), the influence of labour freedom on job satisfaction has received limited scholarly attention (Tay & Harter, 2013). Specifically, labour freedom, which involves the implementation of specific HR practices, has a substantial impact on working conditions and, arguably, on employee job satisfaction. Given that institutional frameworks vary across countries, those with more flexible labour regulations

may offer employees greater freedom to negotiate favourable working conditions, potentially leading to higher levels of job satisfaction. Thus, the study expands the understanding of job satisfaction by introducing labour freedom as a key antecedent.

Second, this study explores the moderating role of informal institutions, specifically national culture, in the relationship between labour freedom and job satisfaction. Empirical evidence on the interaction between formal and informal institutions has predominantly focused on organisational outcomes (Kafouros et al., 2022) while ignoring their role in shaping job satisfaction. To present informal institutions, this study employs Hofstede's et al. (2010) cultural framework, which has been shown to be effective in explaining variations in job satisfaction (Gu et al., 2022). The hypothesis posited is that the positive effect of labour freedom on job satisfaction varies depending on the influence of national culture. By addressing this dynamic, the study provides a more contextualized understanding of the impact of labour freedom on job satisfaction, enriching the literature of institutional determinants on employee attitudes.

The remainder of this article is structured as follows: First, drawing on established theoretical framework and empirical evidence, we present and develop a series of testable hypotheses regarding the role of labour freedom and national culture in shaping job satisfaction. Second, we report the findings of an empirical study based on a sample of 10,822 employees from 26 European countries, using data from the European Foundation for the Improvement of Living and Working Conditions (Eurofound). The inclusion of European countries is particularly relevant to this study due to the significant institutional differences observed across these nations (Brewster, 2007).

Model and hypotheses

Formal institution. The link between labour freedom and job satisfaction

The coercive role of government-imposed rules and regulations has been widely studied in institutional literature as a constraint on organizations' ability to implement specific human resource practices (Pissarides, 2001). From the institutional perspective, institutions (i.d., labour laws, regulatory policies) set the boundaries within which companies operate (North, 1990). Labour freedom, defined as the ability of individuals and organisations to establish contracts without state intervention, influences employee outcomes by shaping employment security, working conditions (Cuéllar-Molina et al., 2018; The Heritage Foundation, 2024),

and overall well-being (Salvatori, 2010). As labour freedom varies across countries (Brewster, 2007), so does the employer-employee relationship due to institutional heterogeneity. This analysis focuses on its impact on employees.

The influence of labour freedom on employee outcomes is complex. Some studies associate it with greater insecurity and uncertainty (Probst et al., 2017), while others highlight benefits such as reduced job stress and lower turnover rates (Lepage-Saucier & Wasmer, 2016). We propose that labour freedom enhances job satisfaction by fostering a dynamic labour market, reducing entry barriers (Edmans et al., 2014), promoting job mobility (Fugate et al., 2004), and decreasing unemployment rates (Botero et al., 2004). These factors increase employees' perceptions of employability, reducing concerns about dismissal. Unemployment is strongly linked to negative outcomes, including job insecurity, poor mental health, increased stress, work strain, and a sense of uncontrollability (Russell et al., 2020). Consequently, lower unemployment rates, enhanced employability, greater productivity, and increased income are expected to have a positive influence on job satisfaction.

Labour freedom may also enhance job satisfaction by enabling employees to negotiate their working conditions more effectively. Research suggests that labour freedom improves work autonomy, which has been demonstrated to positively influence both job satisfaction and psychological well-being (Gallie, 2012). Furthermore, in less-regulated environments, employees often enjoy greater participation in decision-making processes. This participatory approach boosts morale and job satisfaction by addressing higher-order needs (Bakker & Demerouti, 2007). If labour freedom promotes favourable working conditions, job satisfaction is likely to be higher in countries with greater labour freedom. However, empirical research examining the effects of regulatory frameworks on employee outcomes remains limited. Existing findings indicate that strict labour regulations negatively affect employees' well-being and job security (Clark & Postel-Vinay, 2009).

Therefore, we suggest the following hypothesis:

H1: High labour freedom is positively associated with job satisfaction.

Informal institutions. National culture and job satisfaction

National culture is defined as “the collective programming of the mind which distinguishes the members of one category of people from another” (Hofstede, 2001, p. 9). Cultural values are closely linked to emotions, attitudes, and

behaviours, thereby shaping employees' perceptions of their working conditions (Taras et al., 2011). Hofstede developed the most widely recognised framework for studying national culture. Although this framework has faced criticism regarding its validity (Kirkman et al., 2006), particularly due to its reliance on data from a single company, subsequent replications using diverse samples have supported its robustness (Beugelsdijk et al., 2015). Additionally, it has proven effective in predicting various work-related outcomes (Taras et al., 2010). In this study we adopt Hofstede's et al. (2010) framework, which includes four primary dimensions: power distance, individualism, masculinity, and uncertainty avoidance. These dimensions reflect enduring cultural values that are likely to shape employees' perceptions of their working environment and their resulting attitudinal responses.

Power distance

Power distance refers to the extent to which less powerful members of a society accept unequal power distribution (Hofstede et al., 2010). It influences employees' perceptions of leaders' behaviour (Lin et al., 2018) and is reflected in workplace practices such as job formalisation, organisational structuring, and coordination mechanisms (Huang & Van De Vliert, 2003). In high-power distance societies, inequality is accepted and employees prioritise compliance over autonomy, upward communication, or teamwork (Korkmazurek & Korkmazurek, 2023; Ollo-López et al., 2011). Furthermore, individuals in these societies are more inclined to accept norms and regulations with little explanation (Hon & Lu, 2016). Research suggests that in low-power-distance cultures, participative leadership and job autonomy are associated with higher job performance and satisfaction (Hauff & Richter, 2015; Kucharska & Bedford, 2019). Consequently, in high-power-distance societies, labour freedom aligns poorly with prevailing cultural values, thereby limiting its positive influence on employees' attitudes and behaviours (Lebas & Weickenstein, 1986).

In summary, we propose that the positive relationship between labour freedom and job satisfaction is weaker in societies characterised by high power distance. High-power distance societies are characterised by sensitivity to context, adherence to authority, hierarchical structures, power inequality, dependency on superiors, and established norms. Consequently, labour freedom does not align with their underlying cultural values. Based on these considerations, we formulate the following hypothesis:

H2: In countries with high power distance, the positive effect of high labour freedom on job satisfaction is weaker than in societies with low power distance.

Masculinity/Femininity

Masculinity-femininity refers to the extent to which masculine versus feminine values predominate within a society (Singh, 1990). In cultures characterised by high masculinity, gender roles are very well differentiated (Gu et al., 2022); men are expected to be assertive, challenged, tough, dominant, competitive and focused on material success, while women are assumed to be more modest, solidarity-based, tender and oriented toward maintaining warm personal relationships (Hofstede, 2001). Countries with a high level of masculinity place significant emphasis on personal recognition, career advancement, financial rewards, stress management and overall professional success (Hofstede et al., 2010) and report greater job satisfaction (Kucharska & Bedford, 2019). Additionally, these cultures emphasise employability, viewing enhanced job opportunities as an essential means of achieving career objectives (Kilduff & Day, 1994).

We propose that the positive relationship between labour freedom and job satisfaction is likely to be more pronounced in masculine countries compared to feminine ones. Societies characterised by high masculinity prioritise employability and career success. In such contexts, labour freedom facilitates these objectives by promoting individual autonomy, voluntary exchange, and opportunities for career advancement. Based on this reasoning, we suggest the following hypothesis:

H3: In masculine countries, the positive effect of high labour freedom on job satisfaction is stronger than in feminine countries.

Uncertainty avoidance

Uncertainty avoidance reflects “the extent to which people are uncomfortable with situations that they perceive as unstructured, unclear, ambiguous, or unpredictable” (Taras et al., 2011, p. 5). In high uncertainty avoidance contexts, individuals tend to avoid ambiguity and unstructured situations by relying on explicit guidelines, procedures, and regulations (Hofstede, 2001; Hofstede et al., 2010). Consequently, these societies favour stronger regulations that enhance certainty, conformity and predictability, while minimising ambiguity and unpredictability (Taras et al., 2011). Moreover, countries with high uncertainty avoidance often emphasise lifelong employment (Taras et al., 2011) and job stability (Taras et al., 2010). Conversely, in societies with low uncertainty avoidance, individuals tend to accept greater ambiguity, placing more emphasis on flexibility, adaptability, and willingness to embrace change (Hofstede et al., 2010). These characteristics suggest that greater labour freedom is more suitable for such countries,

as fewer regulations inherently foster an environment that encourages flexibility and risk-taking, enabling employees to achieve their goals.

Based on this, we contend that the impact of labour regulation is contingent upon a country’s level of uncertainty avoidance. Specifically, in countries with high levels of uncertainty avoidance, increased labour freedom is less likely to align with cultural preferences. In these contexts, employees in high uncertainty avoidance societies are expected to report lower levels of job satisfaction compared to their counterparts in low uncertainty avoidance societies.

This reasoning is encapsulated in the following hypothesis:

H4: In high uncertainty avoidance countries, the positive effect of high labour freedom on job satisfaction is weaker than in low uncertainty avoidance countries.

Individualism/Collectivism

Individualism/Collectivism refers to the degree to which individuals see themselves as part of a group. In individualistic societies, individuals are expected to prioritise their own needs and those of their immediate family. In contrast, in collectivistic societies, individuals identify more strongly as members of a collective, prioritise group interests (Hofstede, 2001), and relates to more social support (Zhang & Han, 2023). Previous research suggests that competitive attitudes tend to dominate in individualistic societies, whereas cooperative attitudes are more prevalent in collectivistic societies (Cox et al., 1991).

We propose that the positive relationship between labour freedom and job satisfaction is stronger in individualistic countries than in collectivistic ones. In these societies, individuals act autonomously and independently of the group, prioritising challenging jobs and their personal goals over collective objectives (Hofstede et al., 2010). These countries are more inclined to accept lower levels of regulation, as individuals are expected to make their own decisions, be self-motivated, and rely on their own abilities (Oyserman et al., 2002). Research has shown that individualistic countries are positively associated with labour mobility and economic freedom and negatively associated with job tenure (Nikolaev & Salahodjaev, 2017). Additionally, employees in collectivistic countries tend to exhibit a positive attitude toward trade unions (Sarkar, 2012), which suggests that, in more individualistic countries, people are more inclined to be self-reliant. In contrast, in collectivistic countries, people prefer to negotiate, even if this approach results in lower outcomes for more capable individuals. These findings

suggest that labour freedom is likely to be more highly valued in individualistic countries.

Thus, these arguments lead to the next hypothesis:

H5: In individualistic countries, the positive effect of high labour freedom on job satisfaction is stronger than in collectivist countries.

Figure 1 visually summarizes the hypotheses presented thus far:

Method

Database

To test our model (Fig. 1), we combined individual-level data with country-level data from three independent sources: the European Working Conditions Survey, the Index of Labour Freedom, and Hofstede's cultural dimensions. Individual-level data come from the sixth European Working Conditions Survey (Eurofound, 2015), a representative EU-level survey covering 35 countries. This survey, conducted by the European Foundation for the Improvement

of Living and Working Conditions (Eurofound, 2015), provides high-quality cross-sectional data on job characteristics (Greenan et al., 2014). The reference population included workers aged 15 or older (16 and older in Bulgaria, Norway, Spain, and the UK) who were employed during the field-work period. Sample selection in each country followed a multi-stage stratified random sampling design, along with a screening procedure to select eligible respondents within households. Data collection took place between January and March 2015 through face-to-face interviews using computer-assisted personal interviewing in respondents' homes. Although the survey data are somewhat dated, they provide relevant information on working conditions, enabling us to test the proposed hypotheses effectively.

The Index of Labour Freedom from The Heritage Foundation (2024) constitute one of the country-level data source on which we have based the study. The data were collected from the second half of 2013 to the first half of 2014. The Heritage Foundation's index is widely used for studying cross-country institutional differences (Young et al., 2018). The labour freedom indicator is derived from the *Doing Business* dataset, which is heavily based on the methodology developed by Botero et al. (2004). In this study, we rely on its original definition

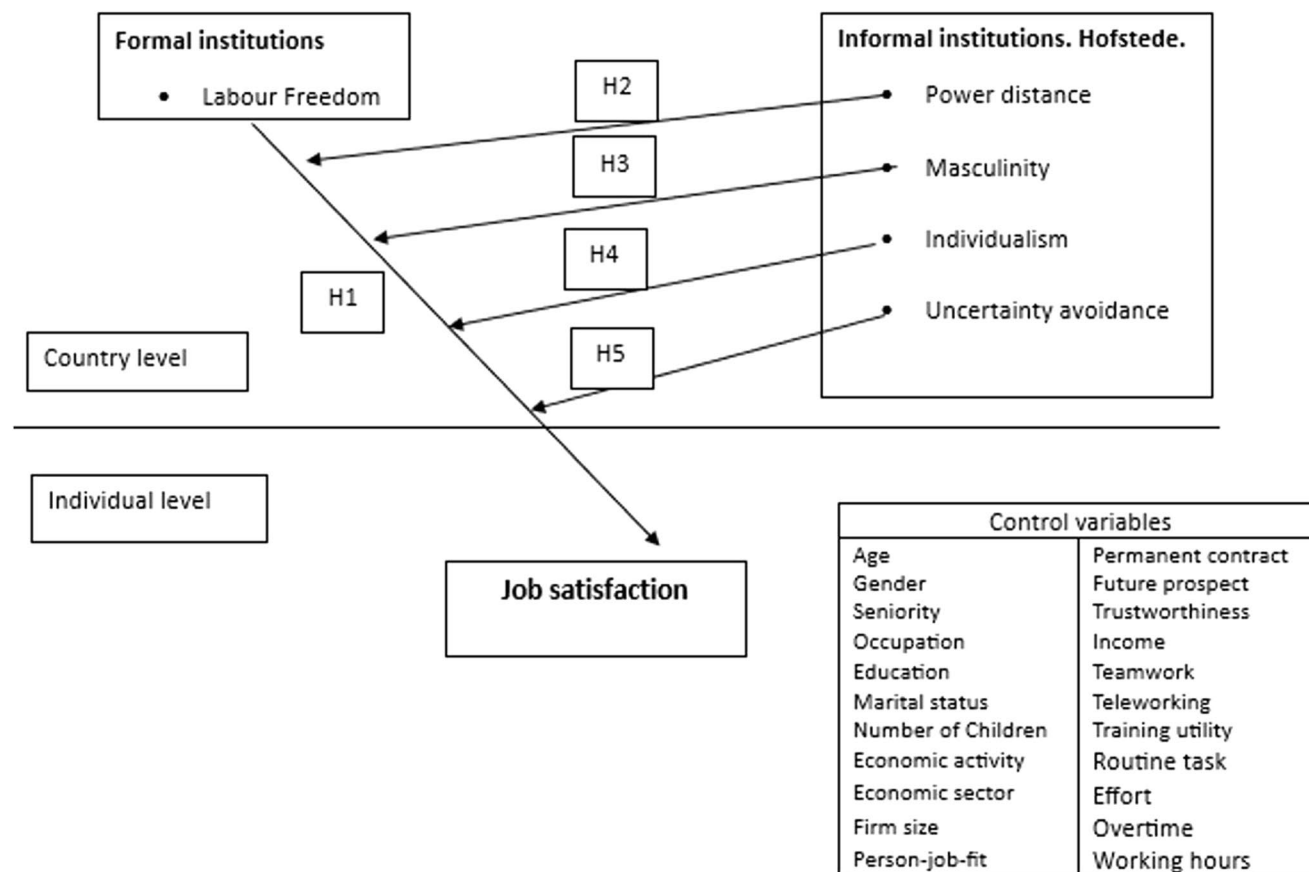


Fig. 1 Theoretical model

and methodology without modifications. We chose the labour freedom category as it shapes the relationship between employers and employees (Gooderham et al., 2018). Finally, Hofstede's (2015) cultural values (version December 8, 2015) represent the second country-level data sources on which we have based the study. The data come from various years, depending on the country and the specific cultural dimension being measured. According to Hofstede et al. (2010), cultural scores, particularly the differences between cultures that these scores represent, tend to remain stable over time. They emphasise that the scores reflect relative cultural differences between countries rather than absolute cultural values. While cultures may evolve, if they change in a similar manner due to shared global influences, the scores continue to be relevant. We chose Hofstede's framework due to its extensive citation in previous studies and its widespread acceptance in the international literature (Gu et al., 2022).

After excluding missing values, the initial sample consisted of 10,822 observations across 26 European countries.

Measures

The dependent variable, job satisfaction, is derived from responses to the following question: *On the whole, are you very satisfied, satisfied, not very satisfied or not at all satisfied with working conditions in your main paid job?* Responses were measured on a four-point scale ranging from 1 ("not at all satisfied") to 4 ("very satisfied"). The validity of single-item measures of job satisfaction has been well established in the literature by Allen et al. (2022), and their use has been documented in empirical research (Erro-Garcés & Ferreira, 2019). As the aim of this study was to examine differences in average job satisfaction levels across European countries, a single-item satisfaction measure was deemed appropriate.

The independent variable, labour freedom, is taken from the Economic Freedom Index (EFI) compiled by

The Heritage Foundation (2024). It captures various aspects of labour regulation, including minimum wage requirements, hiring restrictions, limitations on working hours, constraints on dismissal, legally mandated notice periods, and severance pay requirements. The index computes the average of these six items as a proxy for the degree of labour freedom in a given country. This variable ranges from 0 to 100, with 0 indicating the lowest degree of labour freedom and 100 the highest. These scores can be obtained from <http://www.heritage.org/index/>. The detailed methodology used to construct this index is available at <https://datafinder.qog.gu.se/dataset/hf>. The Labour Freedom Index allows us to study cross-country differences in labour freedom and its effect on average job satisfaction at the national level (Young et al., 2018). As such, it serves our research purpose effectively, given that these regulations are likely to have a substantial influence on the functioning of labour markets (Boeri et al., 2000).

Regarding the moderating variables, we considered Hofstede's (2015) cultural values. In particular, we focused on four cultural dimensions that capture differences between nations: power distance, individualism, masculinity, and uncertainty avoidance. With a few exceptions due to replication studies, these four dimensions are measured on a scale from 0 to 100, with higher values indicating a greater influence of the respective cultural dimension, and vice versa. These scores can be obtained from <https://www.hofstede-insights.com>.

Basic information on the dependent, independent and moderating variables is presented in Tables 1 and 2. Table 1 shows the values for the entire sample, whereas Table 2 displays the average values per country.

Lastly, we include a series of control variables to account for other determinants of job satisfaction. In our study, we adopt the perspective of Erro-Garcés and Ferreira (2019), who argue that job satisfaction is influenced by employee characteristics, job characteristics, company characteristics, and country-level factors. Regarding employee characteristics, we account for variables such as age, gender, seniority, occupation, education, marital status and number of children. With respect to firm characteristics, we consider economic activity, economic sector and firm size. Regarding job characteristics and HR practices, we considered factors such as person-job fit, permanent contracts, future prospects, trustworthiness, income, teamwork, teleworking, training utility, routine tasks, effort, overtime, and working hours. Finally, we incorporate country-level factors such as GDP and unemployment to perform robustness analysis. Table 3 presents the means, standard deviations and proportions of these variables.

Table 1 Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Dependent variable				
Job Satisfaction	3.074	0.677	1	4
Independent variable				
<i>Formal institutions</i>				
Labor Freedom	59.992	12.217	42	92
Moderating variables				
<i>Informal institutions</i>				
Power distance	51.157	20.170	11	104
Masculinity/Feminity	44.312	23.519	5	110
Uncertainty Avoidance	72.395	21.639	23	112
Individualism/Collectivism	58.753	16.050	27	80

Table 2 Dependent and independent variables by country

	Job satisfaction	Labor freedom	Power distance	Masculinity/Femininity	Uncertainty avoidance	Individualism/Collectivism
Austria	3.305	76.7	11	79	70	55
Belgium	3.076	63.7	65	54	94	75
Bulgaria	3.086	76.6	70	40	85	30
Croatia	3.028	42.8	73	40	80	33
Czech Republic	3.138	82.9	57	57	74	58
Denmark	3.348	92.1	18	16	23	74
Estonia	3.043	58.7	40	30	60	60
Finland	3.157	54.8	33	26	59	63
France	2.797	43.5	68	43	86	71
Germany	3.164	51.2	35	66	65	67
Greece	3.121	51.6	60	57	112	35
Hungary	3.075	67.7	46	88	82	80
Ireland	3.229	76.2	28	68	35	70
Italy	3.047	55.4	50	70	75	76
Latvia	2.916	61.5	44	9	63	70
Lithuania	3.006	62	42	19	65	60
Luxembourg	2.967	42.1	40	50	70	60
Malta	3.116	55.6	56	47	96	59
Netherlands	3.173	66.3	38	14	53	80
Poland	3.042	60.4	68	64	93	60
Portugal	3.166	42.9	63	31	104	27
Romania	3.038	68.6	90	42	90	30
Slovakia	3.004	56.5	104	110	51	52
Slovenia	2.928	57.1	71	19	88	27
Spain	3.003	52.6	57	42	86	51
Sweden	3.058	54	31	5	29	71

Analysis

The hypotheses were tested using hierarchical multilevel modeling (Cui et al., 2019) with random effects. Due to the hierarchical structure of our data, in which lower-level observations (i.e., employees) are nested within higher-level units (i.e., countries) (Nezlek, 2010), and considering institutional theory (North, 1990) alongside the formulated hypotheses, a multilevel analysis was deemed the most appropriate estimation strategy. Furthermore, because of the ordinal nature of our dependent variable, we adopted a multilevel ordered probit model. This approach is pertinent as it mitigates potential biases in estimates that could arise from ignoring clustering effects. The assumption of independent observations, if unaddressed, could lead to underestimation of standard errors (Hofmann et al., 2000, as cited in Boudreaux et al., 2018). In addition, the multilevel technique allows for the simultaneous analysis of information at both the individual and country levels, while accounting for variations in job satisfaction across these levels. This method also helps to avoid issues related to ecological fallacy (Pettigrew, 2006).

Following prior research, we adopted a three-step strategy (Xavier-Oliveira et al., 2015). First, we estimated the

amount of variance attributable to each level of analysis by employing a null model that excluded predictors. The likelihood ratio (LR) test rejected the null hypothesis of no country-level effect, indicating that multilevel technique is preferred over multiple regression (country variance = 3.813***). In the second step, we introduced individual-level data into the model to estimate the variability explained by these predictors (Model I in Table 4). Subsequently, we added country-level variables to the model to estimate the variability explained by these predictors (Model II in Table 4). In the third step, we gradually incorporated interaction terms into the model (Models III to VI in Table 4). The reduction in the variance of the random intercept across the models, from 3.813% in the null model (not shown) to 1.105% in Model II, 0.724% in Model III, 1.013% in Model IV, 0.660% in Model V, indicate the extent to which country-level predictors explain individual-level job satisfaction. Finally, we assessed model fit using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). The results of these evaluations indicate that the models provide a good fit to the data, with low values for both indicators, suggesting an optimal balance between goodness of fit and model complexity.

Table 3 Descriptive statistics of control variables

Variables		N	%	M	S.D.
Age (16–85)				43.211	11.115
Gender:	Female = 1	5538	51.17		
	Male = 0	5284	48.83		
Seniority (1–55)				11.303	9.516
Occupation	Managers (omitted) (0–1)	677	6.27%		
	Professional Technicians (0–1)	3565	32.94		
	Clerical Services (0–1)	3033	28.03		
	Skilled Craft Plant Armed (0–1)	2581	23.85		
	Elementary Occupations (0–1)	965	8.92		
Education	Education Primary (0–1)	277	2.56		
	Education Secondary (omitted) (0–1)	6714	62.04		
	Education Tertiary (0–1)	3831	35.40		
Marital status:	Partner = 1	7294	67.40		
	No partner = 0	3528	32.6		
Children	Yes = 1	4895	45.23		
	No = 0	5927	54.77		
Economic Activity	Agriculture (0–1)	212	1.96		
	Services (0–1)	7785	71.94		
	Construction (0–1)	727	6.72		
	Industry (omitted) (0–1)	2098	19.39		
Public Sector	Public = 1	3251	30.04		
	Private = 0	7571	69.96		
Firm size	2–9 employees (0–1)	1935	17.88		
	10–249 employees (omitted) (0–1)	4711	43.53		
	250 or more employees (0–1)	4072	37.63		
<i>Job demands</i>	Routine (0–1)	5326	49.21		
	Involuntary Effort (–1.43–1.69)			–0.007	0.994
	Overtime (0–1)	2276	21.03		
<i>Job resources</i>	Work hours (1–100)			38.288	9.595
	Person job fit (0–1)	6223	57.49		
	Unlimited contract (0–1)	9741	90.01		
	Future prospect (0–1)			4.003	1.234
	Trustworthiness (0–1)	8751	80.86		
	Income (4–1600000)			5700	25,579
	Teams (0–1)	6923	63.97		
	Telework (1–5)			1.483	1.030
	Training utility (0–1)	5879	54.32		

In conducting the analysis, all predictor variables were centred, as recommended by Enders and Tofighi (2007). To assess multicollinearity, we calculated the Variance Inflation Factor (VIF). With the exception of the interaction between labour freedom and uncertainty avoidance, which yielded VIF values close to 10, the average VIF in our sample was 2.06, well below the critical threshold of 10 recommended by Gujarati and Porter (2010). Although the interaction between labour freedom and uncertainty avoidance exhibited a relatively high VIF value, this is mitigated by the large sample size, which minimises the potential impact of multicollinearity on the stability and reliability of the results (Goldberger, 1991).

Results

We present the results of our multilevel estimates in Table 4, which includes five distinct models (II to VI) to test our proposed hypotheses. Hypothesis H1 examines the relationship between labour freedom and the average level of job satisfaction across countries. Our findings indicate that individuals in countries with greater labour freedom, represented by the Labour Freedom Index, tend to report higher levels of job satisfaction. As demonstrated in Model II, the relationship between labour freedom and job satisfaction is positive and statistically significant, highlighting the importance of the institutional flexibility in shaping employees' work experience. Therefore, our results support H1, which posits a positive association between labour freedom and employee job satisfaction.

Table 4 Hierarchical multilevel models

	Model I	Model II	Model III	Model IV	Model V	Model VI
Labor freedom		0.640**	0.538***	0.611**	0.469**	0.714***
Power distance		−0.531***	−0.412**	−0.597***	−0.453***	−0.432***
Masculinity/Femininity		0.194+	0.143	0.234*	0.220*	0.199*
Uncertainty Avoidance		−0.075	0.008	−0.034	−0.020	−0.021
Individualism/Collectivism		−0.480*	−0.385+	−0.519*	−0.407*	−0.359*
Labor x power distance			−0.025***			
Labor x masculinity				−0.012		
Labor x uncertainty avoidance					−0.022***	
Labor x individualism						0.042***
/cut1		−138.649***	−136.680***	−138.981***	−136.980***	−137.076***
/cut2		−33.323**	−31.401**	−33.663**	−31.698**	−31.727**
/cut3		174.933***	176.839***	174.585***	176.555***	176.515***
var(
_cons[Country)	3.103**	1.105***	0.724**	1.013**	0.660*	0.404
N	10,822	10,822	10,822	10,822	10,822	10,822

Control variables included: age, gender, seniority, occupation, education, marital status, children, economic activity, economic sector, firm size, person job fit, unlimited contract, future prospect, trustworthiness, income, teamwork, telework, training utility, routine, effort, overtime, and work hours

*** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$ + $p < 0$

Regarding cultural values, our estimates indicate that cultural dimensions generally act as moderators in the relationship between labour freedom and job satisfaction. Specifically, Hypothesis H2 posits that in countries characterised by high power distance, the positive effect of labour freedom on job satisfaction is weaker compared to countries with low power distance. The estimates in Model III indicate that the interaction between labour freedom and power distance has a negative and statistically significant effect on job satisfaction, confirming that this relationship is indeed weaker in high power distance countries. Therefore, our findings provide strong support for H2.

The interaction between labour freedom and masculinity, the second cultural dimension considered, has a negative but non-significant effect. Hence, we find no evidence to support Hypothesis H3, which posits that masculinity weakens the positive relationship between labour freedom and job satisfaction. Additionally, we theorised that in countries with high levels of uncertainty avoidance, the positive relationship between labour freedom and job satisfaction would be weaker than in countries with low levels of uncertainty avoidance. The results indicate that the interaction between labour freedom and uncertainty avoidance has a negative and significant effect on job satisfaction. Therefore, we find support for Hypothesis H4.

Finally, Hypothesis H5 predicted that in countries with high levels of individualism, the relationship between labour freedom and job satisfaction is expected to be stronger than in collectivist countries. The results indicate that the coefficient for the interaction between labour freedom and individualism on job satisfaction is positive and statistically significant. Hence, we find strong support for H5. Figures 2,

3 and 4 illustrate the significant moderating effects of cultural values.

Discussion

Theoretical implications

Job satisfaction is widely recognised as a critical factor for organisations, given its association with key organisational outcomes such as employee turnover, performance and absenteeism (Kessler et al., 2020; Li & Yao, 2022; Mayfield et al., 2020). In recent years, international studies have gained prominence among managers and scholars, driven by broader contextual factors affecting firms' operations. Thus, it is important for researchers and practitioners to gain additional insight into how environmental conditions can facilitate or hinder job satisfaction. In this study, we assigned a leading explanatory role to the surrounding environment in shaping job satisfaction, proposing that labour freedom has a significant impact on it. Furthermore, we suggest that this relationship may vary depending on national cultural characteristics, aligning with Gahan and Abeysekera's (2009) assertion that a country's culture shapes how individuals perceive their work, thereby enriching the current understanding of the factors influencing job satisfaction.

Our analysis showed that both labour freedom and national culture contribute to increased job satisfaction. In particular, we identified a positive, robust, and statistically significant relationship between labour freedom and job satisfaction, indicating that higher levels of labour freedom increase job satisfaction. This finding suggests that in

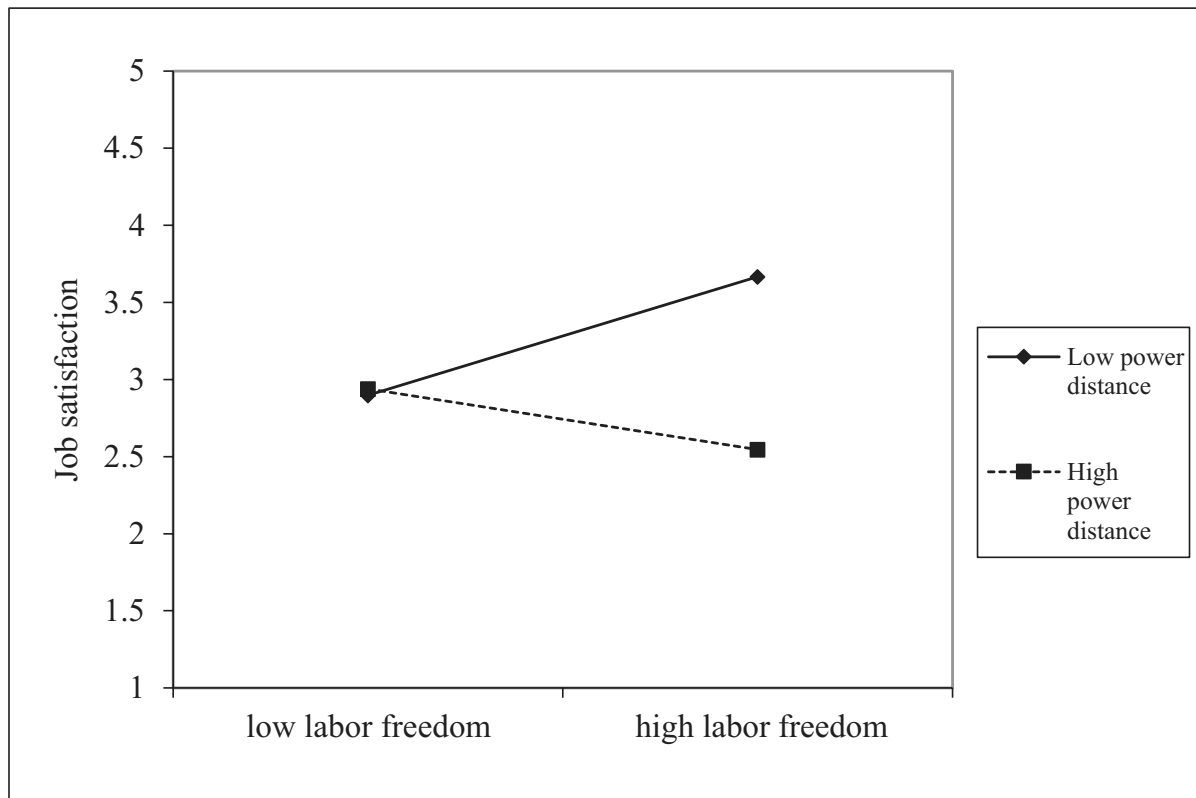


Fig. 2 Interaction effect of labour freedom and power distance

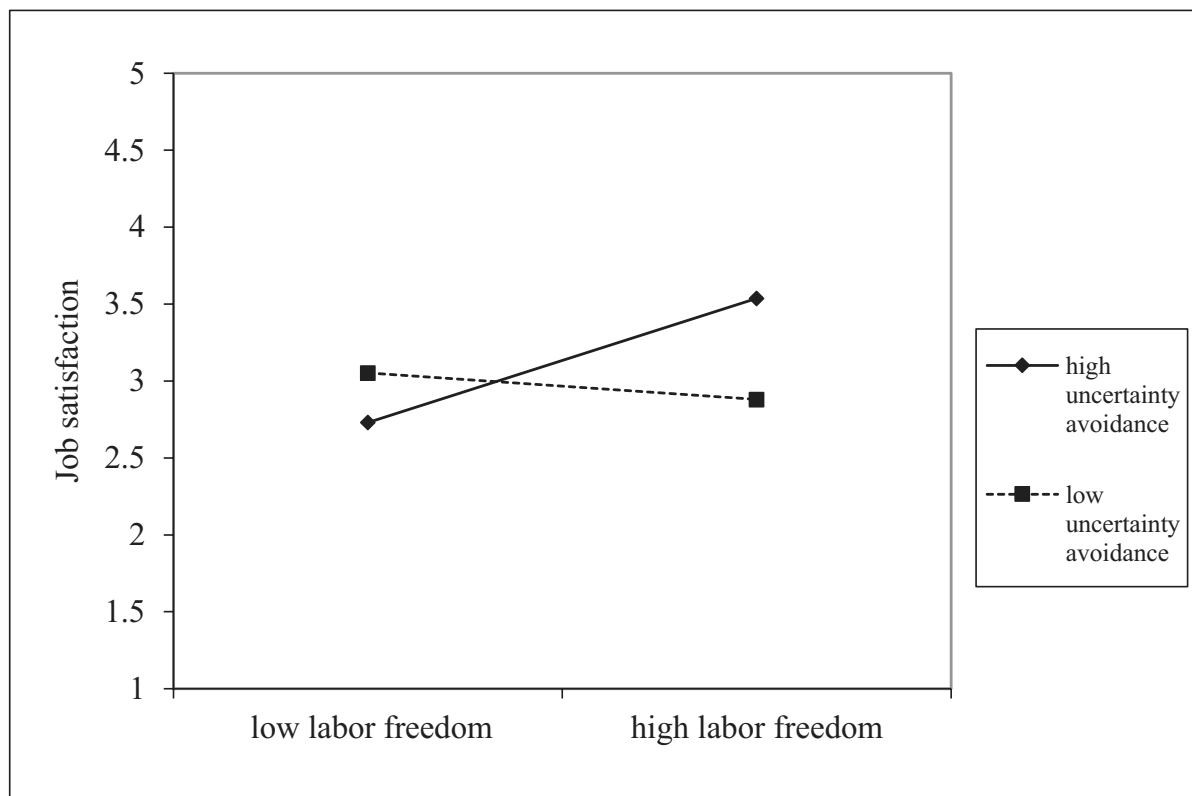


Fig. 3 Interaction effect of labour freedom and uncertainty avoidance

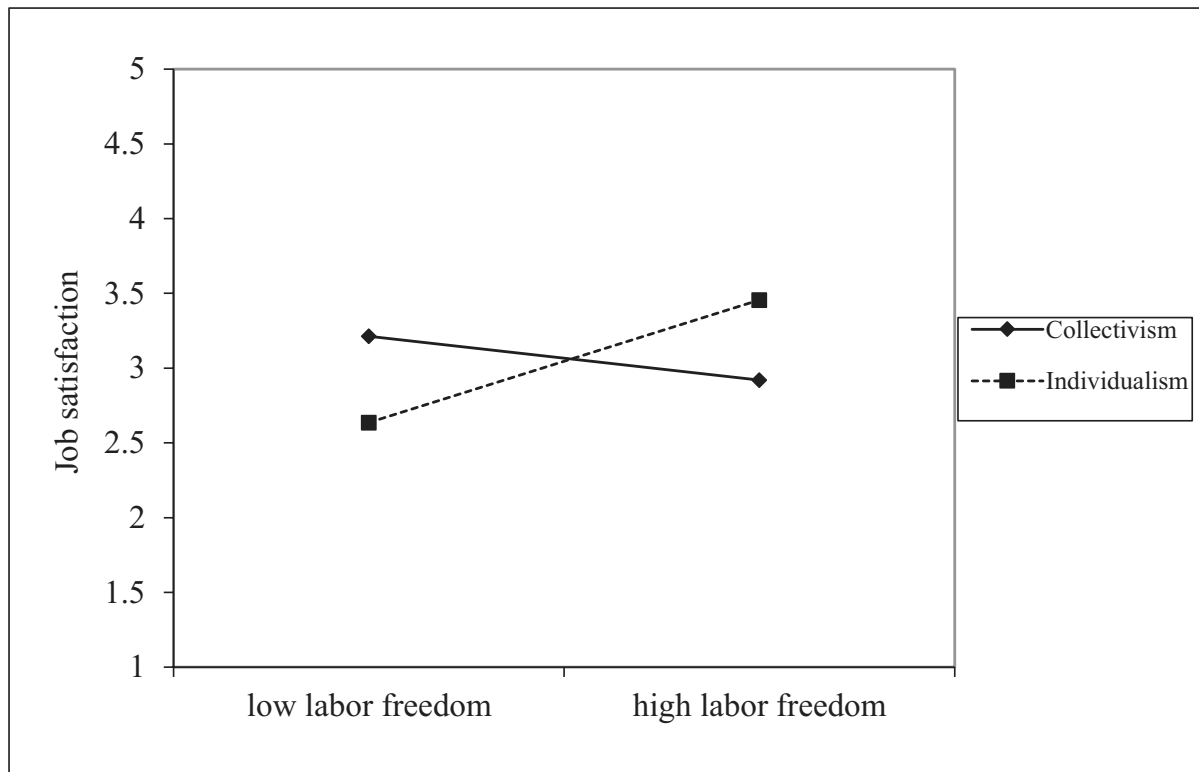


Fig. 4 Interaction effect of labour freedom and individualism/collectivism

a context of high labour freedom, employees feel empowered to pursue their own goals and secure jobs that align with their skills and preferences. This result aligns with Karabchuk (2016), who found that liberal labour legislation increases the subjective well-being of working women, and with Salvatori (2010), whose findings indicate that restrictions on temporary employment negatively affect permanent employees in the private sector. Thus, we confirm that labour freedom can enhance job satisfaction. These findings also support a key premise of institutional theory: that the broader environmental context, alongside other factors, shapes how employers and employees experience work, ultimately influencing job satisfaction levels.

Further, we provide evidence on how this positive effect of labour freedom varies depending on a country's cultural context. Specifically, our results suggest that in countries with low power distance, low uncertainty avoidance, and high individualism, the effect of labour freedom on job satisfaction is stronger than in countries with high power distance, high uncertainty avoidance, and low individualism. In such contexts, individuals are more likely to value an institutional environment that promotes labour freedom, as it aligns with their comfort in facing risk, their willingness to pursue challenging jobs, and their preference for being consulted on job-related matters, characteristics consistent with their cultural values. Despite these results, we found

no evidence supporting the interaction between labour freedom and masculinity. A possible explanation for this is that in highly masculine countries, individuals tend to prioritise higher financial rewards, and their perceived job satisfaction may be influenced by a mismatch between what they earn and what they consider fair compensation. Considering this, we confirm that the impact of labour freedom on job satisfaction depends on the contextual factors of national culture. This contributes to institutional theory by showing that the effects of labour freedom on employee behaviour are moderated by cultural dimensions. Thus, the effects of labour freedom may vary according to a country's specific cultural characteristics.

In sum, our findings suggest that national institutions are key factors that should be considered when seeking to improve job satisfaction levels.

Practical implications

This study has important practical implications, particularly for policymakers. This study reinforces the argument that labour freedom and national culture are key determinants of a country's average job satisfaction level. Labour freedom can shape labour market dynamics by regulating or deregulating employment relationships, thereby influencing overall workforce satisfaction levels. However, this influence

also depends on a country's cultural context, highlighting the interplay between the institutional frameworks and cultural values in shaping job satisfaction.

As job satisfaction is influenced by national institutions, public authorities should exercise caution when designing regulatory frameworks to ensure they align with a country's dominant cultural values. The findings highlight that higher labour freedom translates into greater job satisfaction. As governments have the capacity to shape institutional structures, policymakers should consider expanding labour freedom as a strategy to improve overall job satisfaction. The results also show that perceptions of labour freedom may vary depending on cultural dimensions, functioning more effectively in countries with low power distance, high individualism and low uncertainty avoidance. As managers cannot directly alter a country's cultural values, understanding the strengths and limitations of specific cultural dimensions is essential for fostering an external environment that aligns with these values. Finally, a key implication for legislators is that labour market regulations designed in line with a country's cultural context are more likely to be well received by employees, as they resonate with national cultural values. This alignment, in turn, can lead to higher level of job satisfaction.

In sum, these findings highlight that labour freedom, alongside other factors, has an additional job satisfaction-enhancing effect by enabling employees to operate more freely. Thus, adopting policies that promote greater labour freedom could lead to higher average job satisfaction levels within a country.

Limitations and future research

This study has several limitations that offer excellent opportunities for future research. First, our research has focused on a particular formal institution, the labour freedom index, which we consider particularly relevant for the study of job satisfaction. This index covers a broad range of labour regulations, but it also excludes certain aspects that may also have a significant impact on job satisfaction. For example, specific regulations for temporary and permanent workers, as outlined in the Employment Protection Legislation (EPL), could yield valuable insights by differentiating their effects on these two types of employees. We encourage future research to extend our framework by addressing EPL and other regulatory mechanisms to better understand the link between formal institutions and job satisfaction. Second, job satisfaction in our study is measured using a single-item variable. Despite its consistency with prior studies (Allen et al., 2022) mentioned in the "Measures" section, we suggest that future research replicates the proposed model using multi-item measures of job satisfaction (Yanchovska,

2022). This would enhance the robustness of the findings and provide a more comprehensive assessment. Third, we base our analysis on a limited number of Hofstede's cultural dimensions, as this framework is widely recognised for its validity, stability, and reliability (Hofstede, 2001; Kirkman et al., 2006). However, alternative classifications of cultural values could further capture cross-national variations and offer additional valuable insights. Exploring these alternative frameworks in future research could help validate and expand upon the relationships investigated in this study. Finally, the cross-sectional nature of our data limits our ability to draw definitive conclusions regarding the causal relationship between formal and informal institutions and job satisfaction. While cultural values are generally considered stable over time (Taras et al., 2009), this may not necessarily apply to labour freedom. Future studies using longitudinal or experimental designs could elucidate this issue.

Despite these limitations, our study demonstrates that a country's labour freedom can play a distinctive role in enhancing overall job satisfaction, and this relationship depending on national cultural characteristics.

Conclusion

The results presented in this study highlight the importance of complementing individual-level explanations of job satisfaction with aggregate-level effects. Explicitly linking the institutional context to job satisfaction provides valuable insights into how perceptions of job satisfaction vary across countries due to differences in their institutional environments. Our findings further explain how national culture establishes boundary conditions in the relationship between labour freedom and job satisfaction. Specifically, in societies characterised by low power distance, low uncertainty avoidance and high individualism, increasing labour freedom has a greater positive effect on job satisfaction than in countries with high power distance, high uncertainty avoidance and low individualism. We hope that the insights provided in this study will enhance public policymakers' understanding of the potential consequences of increasing labour freedom and guide efforts to optimise institutional environments for improved job satisfaction outcomes.

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Data availability The author confirms that all data analysed during this study are included in this published article. Furthermore, secondary sources supporting the findings of this study were all publicly available at the time of submission.

Declarations

Conflict of interest The authors declared no potential conflicts of interest.

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