

Running Title: CEO–Employee Pay and Societal Outcomes

**CEO-to-Employee Pay Ratios, Societal-Level Income Inequality, and
Citizens' Subjective Well-Being**

Kaifeng Jiang

Peking University

Email: jiang.1788@gsm.pku.edu.cn

Yingya Jia*

Shanghai University

Email: Amanda_Jia@shu.edu.cn

Anne S. Tsui

Arizona State University

Email: anne.tsui@asu.edu

Jia Yu

University of Nebraska–Lincoln

Email: jia.yu@unl.edu

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***Corresponding Author:** Yingya Jia, Shanghai University, Amanda_Jia@shu.edu.cn

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ABSTRACT

Income inequality is a worldwide phenomenon that increasingly concerns scholars, policy-makers, business leaders, and ordinary citizens. Building on research emphasizing the role of firms in shaping societal outcomes, this study investigates how organizational pay structures—specifically the chief executive officer (CEO)-to-employee pay ratios—relate to societal-level income inequality and citizens’ subjective well-being. Using a 15-year panel dataset of 53 countries, we find that higher CEO-to-employee pay ratios are significantly associated with next-year increases in societal-level income inequality. Drawing on social justice theory, we also show that CEO-to-employee pay ratios are negatively related to citizens’ subjective well-being one year later, above and beyond the effects of societal-level income inequality and other national conditions. We further found that this negative association is more pronounced in countries with a stronger welfare state. Together, these findings advance research on inequality, well-being, and international business by showing how firm-level compensation structures shape broader societal outcomes. These findings also offer actionable implications for corporate leaders and policy-makers seeking to understand how corporate pay structure extends beyond organizations to affect societal economic inequality and citizens’ well-being.

Keywords: CEO-to-employee pay ratios; income inequality; subjective well-being; welfare state; social justice

There has been a long-standing interest among economic and sociology researchers in identifying macrolevel or societal drivers of income inequality, such as globalization (Goldberg & Pavcnik, 2007), technological advances (Autor et al., 2008), labor union strength (Western & Rosenfeld, 2011), tax policies (Piketty, 2014; Stiglitz, 2012), and welfare provisions (Radcliff, 2013). Beyond societal drivers, management scholars suggest that firms can shape societal-level income inequality through firm practices such as executive compensation, employment arrangements, and pay-setting norms (Bapuji et al., 2018; Cobb, 2016). However, empirical work exploring the societal impact of firm-level pay practices remains scarce (Bapuji et al., 2020).

Income inequality in a society has many consequences, one of which is citizens' subjective well-being (Bapuji et al., 2020; Shaw, 2014). We propose that firm-level pay inequality matters for citizens' well-being beyond the effect of societal-level income inequality. We focus specifically on the CEO-to-employee pay ratio as a key indicator of value distribution embedded in organizational pay practices (Greckhamer, 2016). Because firms within a country often share similar pay structures, this ratio can be constructed at the country level to explore its association with societal outcomes (Godechot et al., 2024). This vertical pay disparity derived from firms may shape perceptions of fairness and social justice, influencing citizens' overall life satisfaction.

Moreover, empirical research findings on the relationship between societal income inequality and citizen well-being are mixed. Some studies suggest that higher societal-level income inequality reduces well-being (Wilkinson & Pickett, 2010), whereas others find no relationship (Evans et al., 2019) or even a positive association (Kelley & Evans, 2017), suggesting the potential presence of contextual contingencies. Building on this stream of research, we shift the focus from societal income inequality to the CEO-to-employee pay ratio and examine how government welfare spending, i.e., the welfare state, moderates the effect of this average pay ratio on well-being, as welfare policies promote social justice (Radcliff, 2013). In doing so, we extend international business (IB) research that emphasizes the role of institutional variation in shaping both economic conditions and social equity (Judge et al., 2014).

An examination of these relationships may offer new insights into how firms contribute to both the economic and the social outcomes of a society. Indeed, there is growing recognition in IB

research that firms not only respond to (Kozlenkova et al., 2021; Krammer et al., 2022) but also help shape the institutional environments in which they operate, including outcomes such as economic development and opportunity inequality (Van der Straaten et al., 2023). Given the pervasiveness of multinational corporations worldwide, understanding how firms' pay structures influence different societies is an important IB question.

Therefore, our study contributes to several streams of work on how firm-level practices shape societal-level outcomes across national contexts. First, we extend the literature on societal income inequality by identifying the CEO-to-employee pay ratio—a constructed national indicator of firms' pay structures—as an antecedent of national income inequality. While economics and sociology scholarship emphasize how society-level factors influence firm practices, our study highlights the reverse: how firms' pay practices shape societal outcomes. Second, we contribute to well-being research by introducing the CEO-to-employee pay ratio as a theoretically grounded antecedent of societal well-being. While prior work emphasizes macrolevel predictors, we show that firms' pay structures predict well-being outcomes, and we draw on social justice theory (Rawls, 1971) to explain how such structures may shape fairness perceptions and social cohesion. Third, we contribute to IB research by showing that the societal effects of the CEO-to-employee pay ratio depend on national welfare institutions—an important feature of some capitalism models (Esping-Andersen, 1996; Judge et al., 2014). The importance of institutional context is well established in IB research. Here, we add nuance by illustrating how welfare regimes moderate the link between firm practices and societal outcomes. This research extends emerging work on firms' role in addressing grand challenges across borders (e.g., Doh, 2019; Rygh, 2021; Van der Straaten et al., 2023) and informs debates on multinational enterprises' responsibilities for inclusive growth.

THEORETICAL BACKGROUND AND HYPOTHESES

CEO-to-Employee Pay Ratio and Societal-Level Income Inequality

The field of management research complements economics and sociology by examining how firms' pay structures, employment practices, and governance shape societal income inequality. Davis and Cobb (2010) demonstrated that employment concentration—the proportion of the labor force

employed by large corporations—reduces societal income inequality, highlighting the broader societal consequences of firm-level organizational arrangements. Cobb (2016) suggested that market-oriented management practices (e.g., performance-based pay, external benchmarking for executive compensation, and nonstandard work arrangements) exacerbate a society’s income inequality, whereas internal labor markets emphasizing equity norms and skill development mitigate it. Cobb and Stevens (2017) offered some empirical evidence indicating that U.S. states with more workers employed in large firms tended to exhibit lower income inequality. Wilmers and Zhang (2022) demonstrated that prosocial commitments by employers can narrow the college wage premium and thereby mitigate income inequality. Bapuji et al. (2020) theorized how value creation, appropriation, and distribution within firms contribute to economic disparities. Recent work in information systems also highlights how digital transformation and organizational restructuring shape societal-level challenges, including inequality and welfare outcomes (Nambisan & George, 2024).

Our study extends this literature by examining the CEO-to-employee pay ratio as a quantifiable country-level indicator of organizational pay dispersion, offering insight into how executive pay compares to employee wages across countries over time (Connelly et al., 2016; Greckhamer, 2016). Firms within a country often adopt similar pay-setting practices because of shared institutional environments (Turturea et al., 2025). Consequently, firm-level pay dispersions collectively shape a country’s overall pay dispersion (Godechot et al., 2024). A 23-country study (Wilkinson & Pickett, 2010) showed substantial variation in income gaps, with nations such as Japan and several Scandinavian countries exhibiting relatively low levels of inequality, while countries like Switzerland, Canada, and France fell in the middle range. Prior research has also shown that CEO-to-employee pay ratios fluctuate over time within a country (Piketty, 2014). For instance, some economies have experienced sharp increases in executive compensation over recent decades (Bivens & Kandra, 2022), whereas others—such as the U.K. and Japan—have maintained more moderate and stable pay dispersion patterns, with executive pay growth remaining less pronounced than in many Western contexts (Kushige et al., 2025). Such cross-country and cross-time variations in CEO-to-employee pay inequality enable us to examine its associations with societal-level outcomes.

To theorize the relationship between the CEO-to-employee pay ratio and societal-level income

inequality, we draw upon the value creation, appropriation, and distribution framework (Bapuji et al., 2018, 2020). Bapuji et al. (2018) argued that the distribution of rewards for labor and other production factors critically shapes access to resources and opportunities for different stakeholders, influencing their ability to create and appropriate further value. These processes, in turn, impact how retained earnings are distributed among the contributors to the organization's value creation (Lewis et al., in press). Building on this perspective, we identify three key mechanisms through which the CEO-to-employee pay ratio may be associated with societal-level income inequality: direct distributional effects, constraints on economic mobility and opportunity, and normative reinforcement of wage disparities.

First, a high CEO-to-employee pay ratio reflects concentrated value appropriation at the top, leaving less value appropriated to lower- and middle-income employees. Given that employment earnings account for more than 70% of total income in most developed economies (Piketty, 2014) and that firms employ more than 90% of the labor force (Marsden, 1999), organizational pay structures shape societal income distribution patterns. In societies where firms allocate a larger share of value distributed to executives, income gaps between top earners and the rest of the workforce widen, contributing to economic disparity in society (Qian et al., 2025).

Second, pay disparities within firms affect not only current income but also opportunities for future value creation (Bapuji, 2015; Lewis et al., in press). Highly paid individuals, such as CEOs, typically have greater access to financial, human, and social capital, enabling them to reinvest in skills (Datta & Iskandar-Datta, 2014), access exclusive career networks (Acquaah, 2007), and leverage financial resources (Kacperczyk et al., 2019). In addition to salaries, capital gains further expand their wealth (Piketty, 2014). These advantages yield higher returns over time, reinforcing and strengthening their economic position. In contrast, lower-wage employees face constraints on skill development, savings, investments, and entry into professional networks, limiting their economic mobility. Such variation in future value creation further entrenches societal-level income inequality.

Third, pay structures in large, publicly traded firms are visible, where CEO-to-employee pay ratios set benchmarks for compensation norms across smaller firms and industries. Firms benchmark executive compensation against their peers (Bizjak et al., 2008), influencing compensation practices

beyond those of large corporations. As a result, higher CEO-to-employee pay ratios may normalize larger wage gaps across the broader economy, reinforcing societal expectations about income distribution. Empirical evidence suggests that wage-setting behaviors among major firms can cascade into the wider labor market (Song et al., 2019), amplifying income disparity at the societal level. Given these mechanisms through which firm-level pay structures shape national wage patterns, we now develop our hypothesis about the relationship between CEO-to-employee pay ratios and societal-level income inequality¹. We propose:

Hypothesis 1. The CEO-to-employee pay ratio is positively related to societal-level income inequality.

CEO-to-Employee Pay Ratio and Citizens' Subjective Well-Being

Another important societal outcome is citizens' subjective well-being, as it is correlated with various life domains and workplace behaviors (Erdogan et al., 2012). Prior research highlights the potential adverse effects of societal-level income inequality on citizens' happiness, health, education, and mobility (Diener et al., 1995; Wilkinson & Pickett, 2010). Given that most individuals earn their income through employment and workplace experiences influence broader life satisfaction, we expect the CEO-to-employee pay ratio to have an independent effect on citizens' subjective well-being after we consider the effect of societal income inequality. We argue that the CEO-to-employee pay ratio represents a distinct and salient dimension of inequality—one that is directly observable and experienced in workplaces and widely discussed in public discourse. Employees and citizens may perceive extreme pay disparity between the CEO and regular employees to symbolize inequity in social status. We draw upon social justice theory (Rawls, 1971) to explain this relationship.

Social justice is characterized by a state in which “all social values—liberty and opportunity, income and wealth, and the bases of self-respect—are to be distributed equally unless an unequal

¹ It is possible that societies with higher income inequality may tolerate or even encourage corporate pay policies that widen disparities. Wealthy elites can influence legislation to protect executive compensation, oppose minimum wage increases, and shape labor laws (Stiglitz, 2012). Cultural norms may also affect CEO-to-employee pay ratios (Greckhamer, 2016), reinforcing firm-level practices. However, these societal forces typically operate through organizations, as wage regulations are implemented at the firm level. Thus, while reverse causality is possible, we expect firm-level pay structures to exert a stronger influence on societal income inequality than the reverse.

distribution of any, or all, of these values is to everyone's advantage" (Rawls, 1971, p. 62). According to this theory, income need not be distributed equally to maintain a harmonious society. Instead, inequality can be acceptable when it stems from fair competition or benefits the least advantaged (Bapuji & Mishra, 2015; Rawls, 1971). According to these principles, a high CEO-to-employee pay ratio can be justified if it is based on merit and if it benefits lower-income employees. However, while CEOs may deserve higher pay because of their skills and magnitude of responsibility, excessive pay inequality is unlikely to be solely merit-based. Research shows that CEO compensation is only weakly linked to firm performance but is more strongly influenced by firm size (Tosi et al., 2000), managerial power (van Essen et al., 2015), and institutional factors (Connelly et al., 2016; Greckhamer, 2016). Scholars argue that the surge in CEO pay since 1980 in countries such as the U.S. is largely driven by power dynamics and elite networks rather than performance (Piketty, 2014; Stiglitz, 2012). While pay dispersion may enhance short-term organizational performance (Shaw, 2014), excessive gaps harm organizations over time (Connelly et al., 2016). Therefore, extreme levels of CEO-to-employee pay ratios violate social justice principles by undermining fair competition and disadvantaging lower-income groups, leading to broader public discontent.

A large pay gap between CEOs and regular employees may negatively influence employee self-evaluations and self-respect, which are fundamental aspects of well-being in a just society (Rawls, 1971). Self-respect involves a sense of personal value and confidence in achieving life goals. Disparity in income is linked to negative self-evaluations (Katic & Ingram, 2018). A large CEO-to-employee pay gap may be perceived as a signal of large status differences, contributing to low social status perceptions among most citizens. Public awareness of such disparity, even among those not directly employed by organizations, can contribute to negative perceptions of those in lower levels of social stratification (Lamont, 2019). Research also suggests that high income disparity corresponds to greater social divisions, reinforcing distinctions between the upper and lower classes (Doob, 2019) and shaping views on mobility opportunities (Reyes-García et al., 2019). These dynamics pose social evaluative threats, which have been linked to feelings of deprivation, exclusion, and overall dissatisfaction with life (Pickett & Wilkinson, 2015; Wilkinson & Pickett, 2010). For these reasons, we propose the following:

Hypothesis 2. The CEO-to-employee pay ratio is negatively related to citizens' subjective well-being.

Moderating Role of the Welfare State

The extent to which CEO-to-employee pay disparity translates into broader societal outcomes likely depends on institutional context, particularly the role of the government in mitigating economic disparities. Welfare states play a critical role in redistributing income, regulating labor markets, and shaping societal perceptions of fairness (Parolin et al., 2023), which can attenuate the effect of the CEO-to-employee pay ratio on citizens' subjective well-being. Social justice theory suggests that individuals form expectations of fair treatment on the basis of broader societal frameworks, including government policies that promote equity (Rawls, 1971). In societies where social protection and income redistribution are emphasized (Korpi & Palme, 1998; Seegars et al., 2025), citizens are more likely to expect fairness in workplace pay structures. A large CEO-to-employee pay gap in these contexts may be perceived as more unjust, intensifying negative reactions to pay inequality and lowering subjective well-being (Cobb et al., 2022; Katic & Ingram, 2018). Conversely, in weaker welfare states, where economic disparities are more widely accepted, individuals may view large firm-level pay gaps as natural market outcomes rather than social injustices (Schröder, 2017). With lower expectations of income equality, citizens in these societies may be less sensitive to CEO-to-employee pay disparity, thereby weakening the negative effect of CEO-to-employee pay ratios on subjective well-being. Thus, we hypothesize the following:

Hypothesis 3. The relationship between the CEO-to-employee pay ratio and citizens' subjective well-being is more negative in societies with a stronger than a weaker welfare state.

METHODS

Sample

We used data from countries included in the *IMD World Competitiveness Yearbook*², a widely recognized source for international business research (Kang & Jiang, 2012). The IMD database has both CEO and worker pay data, enabling the calculation of the CEO-to-employee pay ratio. It also provides diverse international statistics, which we used for setting country-level fixed effects. Our sample spans from 2006 to 2020 (a total of 15 years), aligning with the availability of Gallup well-being data. After removing missing values, we obtained a final sample of 53 countries and 790 country-year observations. All countries included in the analysis are listed in the Online Supplementary document.

Measures

CEO-to-employee pay ratio. CEO remuneration comprises the average total compensation (including base salary and short-term and long-term incentives) for CEOs of companies with a minimal turnover of US\$ 250 million within the nation. A country's average annual worker compensation was calculated by multiplying the average total hourly compensation (wages plus supplementary benefits) by the average annual work hours. We then calculated a country's CEO-to-employee pay ratio, adjusted for purchasing power parity. We used the logarithm of the CEO-to-worker pay ratio in the regression models.

Society-level income inequality. We measured this income inequality using the Gini coefficient (Gini, 1921), with data obtained primarily from the Human Development Report and supplemented by the Standardized World Income Inequality Database, Luxembourg Income Study Database, OECD Income Distribution Database, and national sources.

Citizens' subjective well-being. We derived this country-level measure from the Gallup World Poll (GWP), which provides nationally representative, cross-country comparative survey data since 2006. The GWP uses two questions to evaluate respondents' current life and their future life within five years (0 = worst life, 10 = best life). We used the average of the two scores to represent national subjective well-being (the correlation between the two items was 0.759, $p = 0.000$).

² Copyright © 1995-2021, IMD International, Switzerland, World Competitiveness Center, www.imd.org/centers/world-competitiveness-center/

Welfare state. We measured the welfare state using a summary index of the “*size of government*” developed by the Fraser Institute in its *Economic Freedom of the World* (Gwartney et al., 2023). This index captures income redistribution through transfers and services, government consumption, public enterprises, investments, and top marginal tax rates. The original 0-to-10 scale (higher = smaller government) was *reversed* so that higher scores reflected a stronger welfare state.

Controls. We included several control variables given their potential influence on income inequality and well-being (Greckhamer, 2016; Katic & Ingram, 2018; Lupton et al., 2020). First, economic development, measured by real *GDP per capita*, was drawn from the IMF World Economic Outlook and The Conference Board Total Economy Database. We also controlled for *country size* using log-transformed annual population data from the World Bank and included a time-invariant indicator for OECD membership (1 = OECD, 0 = non-OECD). Second, we controlled for labor institutions³, including *labor market regulation* and *unemployment rates*. The labor-market regulation data came from *Economic Freedom of the World* (0–10 scale; reverse-coded so that higher scores indicate stricter pay, hiring, and dismissal rules), whereas unemployment rates among the working-age population (15–64 years old) were sourced from the *IMD database*.

Third, we controlled for business-related institutional factors: *business regulations*, *technological advancement*, and *financialization level*. Business regulations (from *Economic Freedom of the World*) include costs and restrictions related to starting a business, licensing, and tax compliance (reverse-coded so that higher scores represent stricter regulations). Technological advancement was measured by national R&D expenditure (IMD), and financialization was measured by an IMD subjective score (1–10) of credit availability. Fourth, national culture and social norms were controlled for using subjective IMD measures of *openness* (“The national culture is open to foreign ideas”) and *justice* (“Justice is fairly administered”), both on a 1–10 scale. Finally, we controlled for *personal income tax rates*, given their redistributive role in reducing pay disparity by narrowing net income gaps between high- and low-income earners.

Analytical Strategy

³ We considered union density as a control variable, but due to substantial missing data (over one-third of the sample) after matching across sources (e.g., ILO), it was excluded from the regression models.

For hypothesis testing, we used pooled panel data, which combine cross-sectional samples and time series and employ ordinary least squares regression analysis on the combined dataset. Pooled approaches are particularly useful when the time frame is relatively short and the sample size is small to moderate (Sayrs, 1989). We included year fixed effects to account for unmodeled time-trend effects on the dependent variable, such as the trend in well-being over time. Instead of a country fixed effect, we used a set of substantive controls and relied upon the estimator to mitigate concerns about unobserved heterogeneity (Chen et al., 2021). We measured the independent variables and moderators at year $t-1$ and the dependent variable at year t . Thus, all the predictors are lagged by one year relative to the outcome variables. We report the estimation results with Huber–White robust standard errors, correcting for the pooled structure of the data⁴.

RESULTS

The descriptive statistics are presented in Table 1. The mean CEO-to-employee pay ratio was 17.81 (2.885 after taking log), indicating that CEOs typically earned 17.81 times the average employee earnings in this sample of 53 nations. Among the 53 nations, Denmark, Finland, Iceland, Ireland, Israel, and Norway exhibited relatively low average CEO-to-employee pay ratios (below 10), while Brazil, Indonesia, Mexico, the Philippines, and Thailand displayed much higher inequality, with ratios above 50 and some reaching 100⁵. The data in Table 1 also suggest that multicollinearity was not a concern because all the correlations were well below 0.7, and the highest variance inflation factor (*VIF*) value was 2.90, which is well below the standard cutoff of 10.

-----Insert Table 1 about here-----

The regression results are shown in Table 2. Model 2, which includes all the control variables, shows a significant beta on the CEO-to-employee pay ratio in predicting the next-year Gini index ($b = 2.828, p = 0.000$), supporting Hypothesis 1. This indicates that a one standard deviation increase in

⁴ To address error autocorrelation across years within nations, we replicated the Table 2 models using pooled regression with cluster-robust standard errors (country as cluster), yielding similar findings for both the main effect of the CEO-to-employee pay ratio and the moderating role of the welfare state.

⁵ Ratios in this study are derived from IMD World Competitiveness data, which use a more conservative estimation approach than sources based on averages of large publicly listed firms. Consequently, the reported ratios may differ from figures commonly cited in popular media.

the CEO-to-employee pay ratio is associated with a 2.828% unit increase in the following year's Gini index, holding the other variables constant. Model 4 indicates a negative relationship between the CEO-to-employee pay ratio and next-year citizens' subjective well-being ($b = -0.115, p = 0.002$) after controlling for the Gini index and other control variables, supporting Hypothesis 2. This indicates that a one standard deviation increase in the CEO-to-employee pay ratio is associated with a 0.115-unit decrease in citizens' subjective well-being one year later. Model 5 shows that the welfare state ($b = -0.221, p = 0.000$) strengthens the negative effect of the CEO-to-employee pay ratio. This relationship is stronger in high-welfare nations ($b = -0.653; p = 0.000$) than in low-welfare nations ($b = -0.214; p = 0.000$) (Figure 1), supporting Hypothesis 3.

-----Insert Table 2 and Figure 1 about here-----

As supplemental analyses, we conducted a series of robustness checks. First, we checked for reverse causality between the CEO-to-employee pay ratio and the Gini index. The reverse effect was not significant. Second, we replicated Hypothesis 1 using the S80/S20 ratio (used in Wilkinson & Pickett, 2010) as an alternative measure of societal income inequality. The findings are largely consistent with those when the Gini coefficient is used. Third, we conducted cross-level analyses using individual-level subjective well-being (533,675 individuals across 53 nations) as the dependent variable for Hypotheses 2 and 3. The results confirm the negative effect of the CEO-to-employee pay ratio and the moderating role of the welfare state. Finally, using a smaller OECD sample (26 countries, 2007–2016) and an alternative CEO-to-employee pay ratio measure from S&P Capital IQ, we found results consistent with our main analyses. The full details of these analyses are available in the Online Supplemental Materials.

DISCUSSION

This study responds to calls for greater theoretical and empirical exploration of firms' roles in shaping societal outcomes (e.g., Bapuji et al., 2020; Cobb, 2016; Soundararajan et al., 2025; Tsui et al., 2018), a research agenda highly relevant for scholars in IB. Recent theories in management research also emphasize that organizations and their members play a critical role in shaping societal conditions in an age of disruption (Bridoux et al., 2024). Using data from 53 nations, we found that a

country's average CEO-to-employee pay ratio across firms is positively associated with subsequent societal income inequality, even after controlling for alternative explanations. Additionally, the ratio is negatively related to citizens' subjective well-being in the following year, with stronger effects in societies with higher levels of government welfare spending. This study offers insights into societal-level inequality, citizen well-being, and the societal implications of firm practices, including the role of multinational corporations (MNCs).

These insights are as follows. First, as central economic institutions, firms influence societal income distribution through their pay structures. Our findings underscore the role of firms in shaping societal income inequality, highlighting that firms' compensation structures are not just firm-level decisions but mechanisms that are related to macroeconomic inequality trends. This advances our understanding of the institutional drivers of societal income inequality. In the context of globalization, most countries have a mixture of local and multinational corporations. The latter may bring pay practices from their home countries, which may vary significantly from those of the host countries. Future research could examine the impact of multinational firms' executive pay practices in host countries and how that may contribute to the host society's economic and social outcomes.

Second, our research contributes to the literature on citizens' subjective well-being by examining the role of CEO pay relative to average employee pay in organizations. Prior studies have focused on the role of societal-level income inequality in well-being (e.g., Katic & Ingram, 2018; Kelley & Evans, 2017; Wilkinson & Pickett, 2010), while the broader societal implications of organizational pay dispersion remain less understood. Our study identifies the moderating role of government welfare policies in attenuating the influence of firms' pay practices. By examining cross-national variations in CEO-to-employee pay ratios and welfare state policies together, our study highlights the importance of contextualizing firms within broader institutional frameworks to understand their role in influencing societal-level well-being outcomes. This is a rich agenda for IB research.

Third, our research provides opportunities to investigate other firm practices that may influence citizen well-being. Firms not only pay employees but also provide employment benefits such as leave policies, meal subsidies, childcare provisions, holiday gifts and family support. These

within-firm welfare benefits may serve to reduce a perception of injustice despite the extremely high pay given to the CEO and other executives. In addition to formal compensation and benefits, recent evidence shows that informal workplace social relations—such as relational investment, social closure, and peer networks—also contribute to between-firm pay inequality (Wilmers et al., 2025), highlighting additional organizational pathways through which firms may affect broader societal outcomes. Building on this logic, future IB research could examine how MNCs influence local citizens' conditions and, in turn, shape overall citizens' well-being. For example, Ballesteros et al. (2017) reported faster recovery from natural disasters in locations where MNCs were involved in relief assistance.

There has been steady interest in inequality and well-being issues in IB research. Recent perspective essays in the *Journal of International Business Studies* discuss how MNCs can contribute to societal well-being (Wiessner et al., 2024) or reduce economic inequality (Van der Straaten et al., 2023). The present study contributes to the literature and encourages more research on the role of multinational enterprises in perpetuating or alleviating economic and social inequalities across institutional contexts.

Limitations and Conclusion

Several limitations should be acknowledged. First, the small number of countries in our study may have constrained the variance in key variables. Second, our study tested causal relationships through a one-year lag in the analysis. Future research could employ more rigorous designs, such as natural experiments, to address potential endogeneity and reverse causality concerns. Third, our measure of the CEO-to-employee pay ratio relies on archival data, which are available only for large or listed firms. Future research could explore the role of pay practices in smaller or local firms with different pay structures, recognizing that large firms often set benchmarks for pay practices in smaller firms. Future studies could also consider how different types of redistribution may influence the relationship between pay structures and well-being outcomes.

The critical role that firms play in shaping societal outcomes is undeniable. IB research has opportunities to contribute to better societies by publishing “meaningful, high-quality research that has societal impact” (Tung, 2023, p. 2). We hope our study offers a modest contribution to this

aspiration by showing how firms' vertical pay discrepancies shape broader societal outcomes. Equally important, we hope our study highlights the need for scholars, practitioners, and policy-makers to give closer attention to how corporate pay structures can support a less inequitable and more prosperous society for everyone.

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Table 1
Descriptive Statistics and Correlations

Variables	Mean	Std	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1. Citizens' subjective wellbeing	6.612	0.847	4.024	8.266															
2. CEO-employee pay ratio (log)	2.885	0.827	0.906	5.373	-0.441														
3. Gini index	35.582	7.855	23.700	64.800	-0.080	0.532													
4. Welfare state	3.529	0.994	1.330	5.660	0.202	-0.487	-0.397												
5. Labor-market regulation	3.595	1.222	0.760	7.130	-0.133	0.211	0.205	0.014											
6. Unemployment rate	7.772	4.539	0.660	29.100	-0.280	0.045	0.294	0.118	0.153										
7. Business regulations	1.832	1.091	0.120	7.330	-0.295	0.373	0.288	-0.153	0.259	0.074									
8. Technological advancement	1.465	1.052	0.015	4.934	0.460	-0.564	-0.365	0.457	-0.118	-0.241	-0.343								
9. Financialization levels	5.558	1.633	1.380	12.711	0.417	-0.177	-0.080	-0.053	-0.200	-0.425	-0.261	0.265							
10. Culture-openness	6.684	0.996	3.774	9.267	0.339	-0.042	0.061	-0.146	-0.069	-0.224	-0.082	0.024	0.335						
11. Culture-justice	5.500	2.323	0.879	13.657	0.606	-0.618	-0.326	0.308	-0.239	-0.225	-0.502	0.590	0.549	0.364					
12. GDP per capita	10.194	0.625	7.967	11.699	0.574	-0.718	-0.523	0.460	-0.261	-0.164	-0.551	0.611	0.252	0.033	0.624				
13. Personal income tax rate	6.264	4.303	0.920	26.348	0.542	-0.601	-0.375	0.505	-0.250	0.011	-0.465	0.585	0.258	0.124	0.632	0.627			
14. Country size	3.056	1.712	-1.148	7.252	-0.164	0.528	0.455	-0.251	0.082	-0.087	0.330	-0.106	-0.063	0.012	-0.242	-0.507	-0.312		
15. OECD nation	0.611	0.488	0.000	1.000	0.422	-0.434	-0.454	0.388	-0.182	-0.082	-0.450	0.565	0.219	0.000	0.446	0.717	0.557	-0.244	

Note. $N = 790$ observations for national level variables derived from 53 countries listed in the IMD database over the 15 years.

Table 2

Pooled Regression Results of CEO-Employee Pay Ratio on Gini Index and Citizens' Subjective Well-Being

Dependent variables	Gini Index		Citizens' subjective well-being		
	Model 1	Model 2	Model 3	Model 4	Model 5
Variables	Controls	Main effect	Controls	Main effect	Moderator
<i>Controls</i>					
Gini index _{t-1}			0.040 (0.004) [0.000]	0.042 (0.004) [0.000]	0.038 (0.003) [0.000]
Country size	4.123 (0.324) [0.000]	3.445 (0.351) [0.000]	-0.008 (0.014) [0.570]	0.004 (0.015) [0.788]	0.059 (0.013) [0.000]
OECD member	-5.083 (0.816) [0.000]	-5.804 (0.779) [0.000]	0.094 (0.065) [0.150]	0.131 (0.064) [0.040]	0.120 (0.058) [0.039]
Welfare state _{t-1}	-1.947 (0.247) [0.000]	-1.622 (0.255) [0.000]	-0.029 (0.024) [0.217]	-0.034 (0.024) [0.155]	-0.023 (0.021) [0.266]
Labor-market regulation _{t-1}	0.845 (0.177) [0.000]	0.760 (0.177) [0.000]	0.051 (0.018) [0.005]	0.055 (0.018) [0.002]	0.020 (0.018) [0.273]
Unemployment rate _{t-1}	0.746 (0.083) [0.000]	0.775 (0.085) [0.000]	-0.048 (0.006) [0.000]	-0.050 (0.006) [0.000]	-0.039 (0.005) [0.000]
Business regulations _{t-1}	0.055 (0.356) [0.877]	0.272 (0.350) [0.438]	0.113 (0.025) [0.000]	0.102 (0.025) [0.000]	0.100 (0.022) [0.000]
Technological advancement _{t-1}	0.261 (0.261) [0.317]	0.627 (0.264) [0.018]	-0.027 (0.024) [0.265]	-0.045 (0.025) [0.069]	-0.055 (0.023) [0.020]
Financialization levels _{t-1}	1.063 (0.225) [0.000]	0.998 (0.205) [0.000]	0.033 (0.018) [0.073]	0.037 (0.018) [0.038]	0.023 (0.016) [0.155]
Culture-openness	0.404 (0.203) [0.047]	0.378 (0.203) [0.063]	0.111 (0.022) [0.000]	0.114 (0.022) [0.000]	0.124 (0.020) [0.000]
Culture-justice	0.014 (0.166) [0.932]	0.257 (0.169) [0.131]	0.062 (0.019) [0.001]	0.049 (0.019) [0.011]	0.033 (0.017) [0.050]
GDP per capita _t	-0.082 (0.854) [0.924]	1.725 (0.872) [0.048]	0.658 (0.068) [0.000]	0.607 (0.070) [0.000]	0.718 (0.070) [0.000]
Personal income tax rate _t	-0.102 (0.072) [0.154]	-0.070 (0.068) [0.301]	0.065 (0.005) [0.000]	0.063 (0.005) [0.000]	0.029 (0.006) [0.000]
<i>Predictor</i>					
CEO-employee pay ratio _{t-1}		2.828 (0.518)		-0.115 (0.037)	-0.433 (0.034)

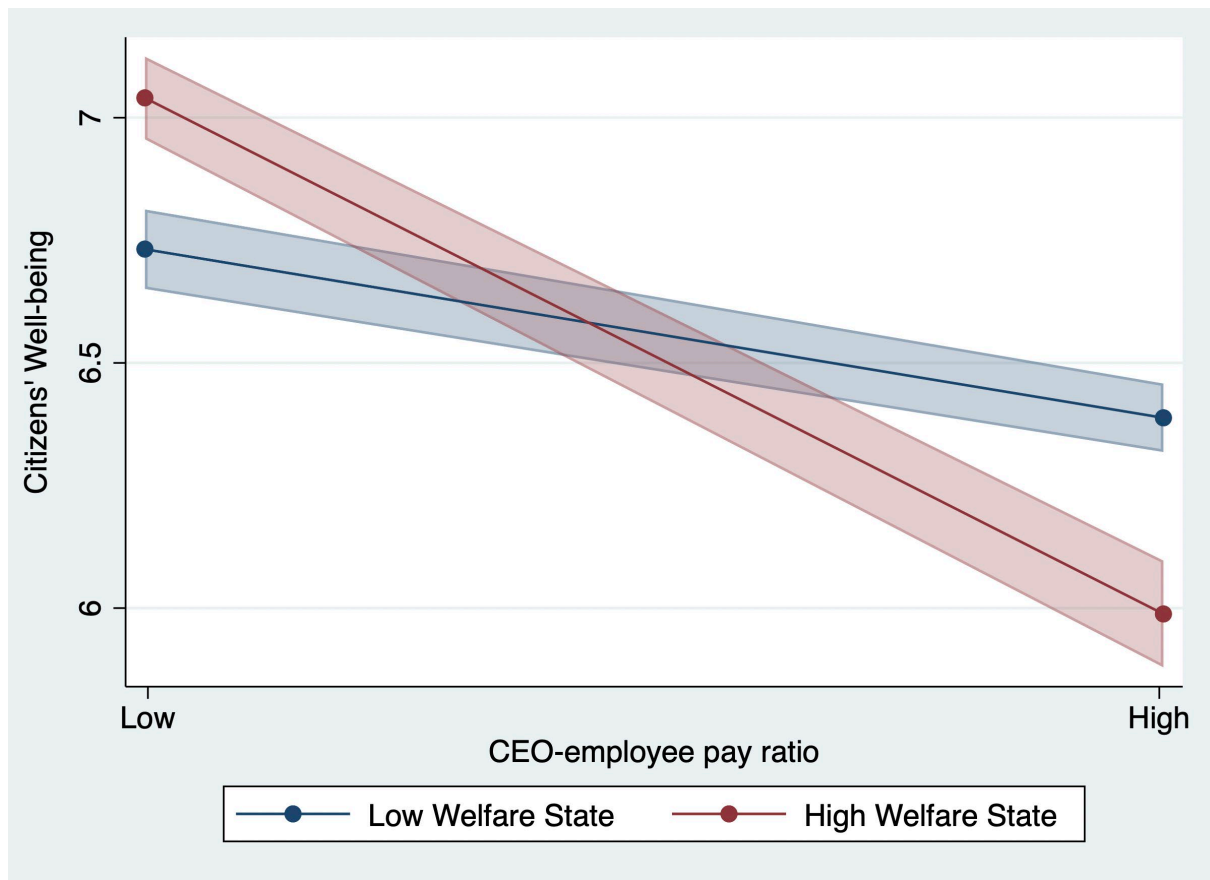
		[0.000]		[0.002]	[0.000]
<i>Interaction term</i>					
CEO-employee pay ratio $_{t-1}$ *Welfare state $_{t-1}$					-0.221 (0.025) [0.000]
<i>Intercept</i>	23.606 (9.157) [0.010]	-4.820 (9.958) [0.629]	-3.067 (0.740) [0.000]	-2.234 (0.802) [0.005]	-3.448 (0.762) [0.000]
<u>R-squared</u>	<u>0.521</u>	<u>0.547</u>	<u>0.622</u>	<u>0.626</u>	<u>0.682</u>

Note. All regressors are standardized scores; Huber-White robust standard errors are in parentheses; p values are in brackets.

For Model 1-2, $N = 714$; for Model 3-5, $N = 790$ (country-year observation)

Figure 1

The moderating effect of welfare state on the relationship between CEO-to-employee pay ratio and citizens' subjective well-being.



Supplementary Material
For
CEO-to-Employee Pay Ratios, Societal-Level Income Inequality, and
Citizens' Subjective Well-Being

Part 1: List of Countries Included in Our Sample

Our sample includes the following 53 countries:

Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Kazakhstan, Korea (Republic of), Latvia, Lithuania, Luxembourg, Malaysia, Mexico, Netherlands, Norway, Peru, Philippines, Poland, Portugal, Romania, Russia, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, the United Kingdom, and the United States.

Part 2: Supplementary Analyses

To assess the robustness of our findings, we conducted several supplementary analyses. First, for Hypothesis 1, we checked for possible reverse causality between the CEO (Chief Executive Officer)-to- employee pay ratio and national income inequality. Second, we replicated the results by using an alternative measure of societal-level income inequality—the S80/S20 ratio. Third, to replicate the results of Hypotheses 2 and 3, we performed cross-level analyses using individual-level subjective well-being as the dependent variable based on a sample of 533,675 individuals nested within the 53 sample nations. Fourth, we obtained another sample of OECD countries with an alternative measure of the CEO-to-employee pay ratio and validated the hypotheses. Fifth, we visualized the relationships between CEO-to-employee pay ratios and subjective well-being separately for high- and low-welfare state countries.

Examining reverse causality in Hypothesis 1

To examine potential reverse causality between the CEO-to-employee pay ratio and national income inequality, we followed the approach of Bertrand and Mullainathan (2003) by simultaneously including the CEO-to-employee pay ratio at year t and year $t+1$ as instrumental variables in the regression equations. If the absolute values of the coefficients are larger and more significant for those with more time lags and smaller and nonsignificant for those with more time priors, we can somewhat exclude reverse causality. We used the standardized variables to make the coefficients comparable. To simplify the model, only the key control variables are kept in this analysis.

Table S1 shows the results. As seen from Model 1, the CEO-to-employee pay ratio and the next year's Gini index were significantly correlated ($b = 3.554, p = 0.000$), suggesting that the organization-level CEO-employee pay ratio is related to the subsequent year's national-level income inequality. In Model 2 and Model 3, the coefficients for the CEO-to-employee pay ratio with more time priors were smaller ($b = 3.499$ and 3.351 , respectively; both $ps = 0.000$) than those in Model 1 were. A coefficient comparison between the three models revealed that the three coefficients of the CEO-to-employee pay ratio are marginally different ($\chi^2 = 4.590, p = 0.100$). Model 4 further mitigates the concern of reverse causality by including the three CEO-to-employee pay ratio variables in a single model. Of these, only the CEO-to-employee pay ratio at year $t-1$ proved to be a significant predictor of the Gini index ($b = 3.561, p = 0.076$). Thus, reverse causality may be excluded to some extent.

-----Insert Table S1 about here-----

Replication for Hypothesis 1 using a new measure of societal-level income inequality

We subsequently verified the results of Hypothesis 1 by using an alternative measure of societal-level income inequality—the S80/S20 ratio—the ratio between the income share held by the highest 20% and that held by the lowest 20% of the people in a nation. This analytical approach remains consistent with that described above. In Table S2, Models 2, 3, and 4 show that the coefficients of the CEO-to-employee pay ratio over the previous time periods decreased ($b = 1.630, 1.587$ and 1.504 , respectively; $p = 0.000$). In Model 5, only the CEO-to-employee pay ratio at year $t-1$ proved to be a significant predictor of the S80/S20 ratio ($b = 2.046, p = 0.053$). The coefficient comparison results indicate that the three coefficients of the CEO-to-employee pay ratio are marginally insignificant ($\chi^2 = 4.550; p = 0.103$). Collectively, these results are consistent with our main analysis results reported in the manuscript, providing support for Hypothesis 1, suggesting that the CEO-to-employee pay ratio is associated with increases in societal income inequality rather than the reverse.

-----Insert Table S2 about here-----

Replication for Hypotheses 2 and 3 using cross-level analyses

The Gallup World Poll (GWP) provided both the aggregated subjective well-being at the national level and the original score of individual citizens. To fully address the limitation of the small sample size at the national level and given the cross-level nature of our Hypotheses 2 and 3, we performed a supplementary analysis using individual-level subjective well-being as the dependent variable.

We used a sample of 533,675 individuals nested in the 53 nations over the study period (2006–2020). To analyze the multilevel panel data, we used the R package *lme4* (Bates et al., 2020) to fit cross-nested linear mixed models with restricted maximum likelihood estimation (REML). We adopted this analytic method because of the research questions involved, the nested nature of the data, and the flexibility of the multilevel analysis framework for analyzing predictors of within- and between-unit differences.

We first performed a random effect ANOVA model to justify the need to use multilevel modeling (Snijders & Bosker, 1999), where we included only subjective well-being as the dependent variable and country and year as independent grouping factors. The intraclass correlation coefficient ($ICC(1) = 0.16$) for subjective well-being indicates that 16% of the variance in subjective well-being could be attributed to the between-country difference. Additionally, the $ICC(1)$ for differences over time (years) was 0.001, suggesting that only 0.1% of the variance in subjective well-being is accounted for by the year effect. Since our data span the COVID-19 pandemic years, we allow each year to have a unique intercept, which accounts for any unprecedented variance that might disrupt the linear trend over time.

Table S3 displays the results of the linear mixed models. Model 2 shows that the CEO-to-employee pay ratio was negatively related to citizens' subjective well-being ($b = -0.048$, $p = 0.000$), supporting Hypothesis 2. In Model 3, the welfare state negatively moderated the negative relationship between the CEO-to-employee pay ratio and citizens' subjective well-being ($b = -0.012$, $p = 0.011$). We plotted the significant interactions based on Model 3 for the moderating effect of the welfare state. As shown in Figure S1, the relationship between the CEO-to-employee pay ratio and subjective well-being is more negative when the welfare state is strong than when it is weak. Hence, the results of additional analyses using linear mixed models provide further evidence for Hypotheses 2 and 3.

-----Insert Table S3 and Figure S1 about here-----

Additional analyses using the OECD sample and a new measure of the CEO-to-employee pay ratio

Sample

We replicated the main study by using another national-level sample from OECD countries. These countries represent the most economically advanced and developed entities, where relative income matters more than absolute income does (Deaton, 2008). Therefore, this additional study can help verify the findings by using a more concentrated sample and an alternative measure of the CEO-to-employee pay ratio from 2007 to 2016.

Measures

CEO-to-employee pay ratio. In this study, we applied the approach of the *Economic Policy Institute* (EPI, 2020) and manually calculated organizational pay inequality as the ratio of a nation's average CEO compensation to its average annual wage. CEO compensation includes an array of pay elements, including salaries, bonuses, the grant-date value of restricted stock awards, the grant-date Black-Scholes value of granted options, and other pay

items such as premiums for insurance policies and medical expenses within a specific year. We computed the average CEO compensation based on all listed firms within a given nation, as featured in the S&P Capital IQ database. This database has been providing high-quality CEO compensation data since 2007 and covers a wide array of nations (Gao & Li, 2015). Therefore, our observations span from 2007 to 2016, the period for which the most recent data were available to us when we initiated the study. We had to exclude nine OECD countries because they lacked a sufficient number of firms (fewer than 20 firms per nation) for a reliable calculation of average CEO compensation at the national level. As a result, our sample includes 260 nation-year observations of average CEO compensation (i.e., 26 nations for 10 years from 2007 to 2016). The number of listed firms across these countries varied, with a low of 26 firms in Luxembourg and Iceland and a high of 10,939 firms in the U.S.. On average, each of the 26 nations had 1,030 firms, with an average firm size, measured by the number of employees, of 8,310. We retrieved data on the average annual wages of each nation from OECD Statistics (Organization for Economic Co-operation and Development [OECD], 2017). To make the cross-national data comparable and maintain consistency with the CEO compensation data, we adjusted all wages to 2015 U.S. dollars.

Society-level income inequality. As in the main study, the Gini index, mainly from the World Bank for 2007 to 2016, was used again to measure society-level income inequality.

Citizens' subjective well-being and welfare state. We used the same measure and the same source as in the main study.

Welfare state. We used the same measure and the same source as in the main study.

Controls. Like in the main study, we also controlled for GDP per capita, labor market regulation, unemployment rate, union density and health and education spending. For the first four control variables, we used the same measure and the same source as in the main study. For health and education spending, we chose the composite measure of *health and primary education* as an indicator of objective well-being, an index from the *Global Competitiveness Report*, to measure a country's investment in health services and the quality and quantity of primary education. We did not include more control variables as the main study, mainly because of the data structure of the relatively short panel data. As compensation, we explored additional models with fixed effects for a robustness check.

Results

Table S4 provides the means, standard deviations, minimum values, maximum values, and correlations among the variables of the OECD sample, which indicate that the CEO-to-employee pay ratio is positively correlated with the Gini index and negatively correlated with citizens' subjective well-being. Table S5 shows the results for Hypothesis 1. From Model 2 to Model 4, the coefficients of the CEO-to-employee pay ratio with more time priors decreased ($b = 0.050, 0.034$ and 0.032 , respectively). In Model 5, when all three CEO-to-employee pay ratio variables were included in the same model, the CEO-to-employee pay ratio at year $t-1$ was the only significantly positive predictor ($b = 0.076, p = 0.001$). The above results support Hypothesis 1.

Table S6 shows the pooled regression results of the main effect of the CEO-to-employee pay ratio on citizens' subjective well-being (Hypothesis 2) as well as the moderating effects (Hypothesis 3). As indicated in Model 2, the CEO-to-employee pay ratio was negatively related to citizens' subjective well-being ($b = -0.017, p = 0.000$), providing support for Hypothesis 2. The moderating effect of the welfare state is shown in Model 3, and the coefficient was negatively significant ($b = -0.012, p = 0.000$). The data in Figure S2 indicate that the CEO-to-employee pay ratio was more negatively related to citizens' subjective well-

being in a country with more government spending ($b = -0.036, p = 0.000$) than in a country with less government spending ($b = -0.009, p = 0.003$). Thus, Hypothesis 3 is supported.

-----Insert Tables S4-S6 and Figure S2 about here-----

Visualizing the main relationship with high versus low welfare states

To further illustrate these cross-national differences, we visualized the relationship between CEO-to-employee pay ratios and citizens' subjective well-being separately for high- and low-welfare state countries using the IMD dataset in our main analysis. As shown in Figure S3, in high-welfare state countries, greater CEO-to-employee pay disparities are more strongly associated with lower subjective well-being. Conversely, in low-welfare state countries, this association appears weaker, suggesting that societal tolerance for pay disparities may vary depending on institutional context. By providing this visual cross-country comparison, we contribute to a more nuanced understanding of institutional embeddedness in international business research.

-----Insert Figure S3 about here-----

Table S1 Verifying reverse causality between the CEO-employee pay ratio and the Gini index (IMD sample) (Hypothesis 1)

Variables	Model 1 Main effect	Model 2 Main effect	Model 3 Main effect	Model 4 Reverse causality
<i>Controls</i>				
GDP per capita _{<i>t</i>}	-1.613 (0.709) [0.023]	-1.810 (0.706) [0.011]	-2.102 (0.707) [0.003]	-1.642 (0.699) [0.019]
Unemployment rate _{<i>t</i>}	0.476 (0.090) [0.000]	0.477 (0.090) [0.000]	0.477 (0.090) [0.000]	0.475 (0.089) [0.000]
Welfare state _{<i>t</i>}	-1.340 (0.227) [0.000]	-1.352 (0.227) [0.000]	-1.366 (0.227) [0.000]	-1.348 (0.227) [0.000]
<i>Predictors</i>				
CEO-employee pay ratio _{<i>t-1</i>}	3.554 (0.477) [0.000]			3.561 (2.001) [0.076]
CEO-employee pay ratio _{<i>t</i>}		3.499 (0.489) [0.000]		1.289 (3.254) [0.692]
CEO-employee pay ratio _{<i>t+1</i>}			3.351 (0.498) [0.000]	-1.352 (2.378) [0.570]
<i>Intercept</i>	42.422 (8.015) [0.000]	44.522 (8.012) [0.000]	48.025 (8.025) [0.000]	42.874 (7.987) [0.000]
R-squared	0.440	0.438	0.435	0.442

Note. Coefficients of year dummies are omitted. All regressors are standardized scores; Huber–White robust standard errors are in parentheses; p values are in brackets. $N = 790$ (country-year observation)

Table S2 Linear regression results of the relationship between the CEO–employee pay ratio and the S80/S20 ratio (IMD sample) (Hypothesis 1)

Variables	Model 1 Controls	Model 2 Main effect	Model 3 Main effect	Model 4 Main effect	Model 5 Reverse causality
<i>Controls</i>					
GDP per capita _{<i>t</i>}	-2.114 (0.285) [0.000]	-0.587 (0.350) [0.094]	-0.691 (0.354) [0.051]	-0.825 (0.364) [0.024]	-0.582 (0.349) [0.096]
Unemployment rate _{<i>t</i>}	0.166 (0.046) [0.000]	0.151 (0.050) [0.002]	0.150 (0.050) [0.003]	0.149 (0.051) [0.003]	0.153 (0.050) [0.002]
Welfare state _{<i>t</i>}	-0.542 (0.096) [0.000]	-0.322 (0.082) [0.000]	-0.329 (0.083) [0.000]	-0.344 (0.084) [0.000]	-0.323 (0.083) [0.000]
<i>Predictors</i>					
CEO-employee pay ratio _{<i>t-1</i>}		1.630 (0.234) [0.000]			2.046 (1.054) [0.053]
CEO-employee pay ratio _{<i>t</i>}			1.587 (0.245) [0.000]		0.793 (1.774) [0.655]
CEO-employee pay ratio _{<i>t+1</i>}				1.504 (0.257) [0.000]	-1.258 (1.337) [0.347]
<i>Intercept</i>	28.583 (2.772) [0.000]	7.878 (3.828) [0.040]	9.049 (3.882) [0.020]	10.716 (4.004) [0.008]	7.956 (3.864) [0.040]
R-squared	0.272	0.345	0.340	0.333	0.346

Note. Coefficients of year dummies are omitted. All regressors are standardized scores; Huber–White robust standard errors are in parentheses; p values are in brackets. $N = 627$ (country-year observation)

Table S3 Cross-level regression results of the effect of the CEO-to-employee pay ratio on citizens' subjective well-being (IMD sample) (H2 and H3)

Variables	Model 1 Controls	Model 2 Main effect	Model 3 Moderator
<i>Nation level controls</i>			
Gini index $t-1$	-0.012 (0.009) [0.181]	-0.008 (0.009) [0.370]	-0.005 (0.009) [0.597]
Welfare state $t-1$	0.043 (0.006) [0.000]	0.042 (0.006) [0.000]	0.045 (0.006) [0.000]
Country size	-2.927 (0.114) [0.000]	-3.052 (0.115) [0.000]	-3.022 (0.116) [0.000]
OECD member	-0.011 (0.007) [0.097]	-0.011 (0.007) [0.127]	-0.009 (0.007) [0.199]
Labor-market regulation $t-1$	-0.078 (0.005) [0.000]	-0.079 (0.005) [0.000]	-0.078 (0.005) [0.000]
Unemployment rate $t-1$	-0.037 (0.004) [0.000]	-0.033 (0.004) [0.000]	-0.034 (0.004) [0.000]
Business regulations	-0.047 (0.003) [0.000]	-0.052 (0.003) [0.000]	-0.052 (0.003) [0.000]
Technological advancement	-0.048 (0.008) [0.000]	-0.044 (0.008) [0.000]	-0.045 (0.008) [0.000]
Financialization levels	0.031 (0.003) [0.000]	0.034 (0.004) [0.000]	0.034 (0.004) [0.000]
Culture-openness	0.000 (0.003) [0.897]	0.005 (0.003) [0.163]	0.004 (0.003) [0.211]
Culture-justice	0.086 (0.006) [0.000]	0.082 (0.006) [0.000]	0.082 (0.006) [0.000]
GDP per capita t	0.315 (0.016) [0.000]	0.312 (0.017) [0.000]	0.318 (0.017) [0.000]
Personal income tax rate t	-0.054 (0.011) [0.000]	-0.063 (0.011) [0.000]	-0.068 (0.011) [0.000]
Health spending	0.078 (0.016) [0.000]	0.072 (0.016) [0.000]	0.062 (0.017) [0.000]
<i>Individual level controls</i>			
Per capita income quintiles ^a	0.148 (0.001) [0.000]	0.148 (0.001) [0.000]	0.148 (0.001) [0.000]
Gender ^b	0.044 (0.001) [0.000]	0.043 (0.001) [0.000]	0.043 (0.001) [0.000]

Secondary or beyond secondary education ^c	0.073 (0.002) [0.000]	0.073 (0.002) [0.000]	0.073 (0.002) [0.000]
Beyond high school education ^d	0.125 (0.002) [0.000]	0.125 (0.002) [0.000]	0.125 (0.002) [0.000]
Age	-0.160 (0.002) [0.000]	-0.161 (0.002) [0.000]	-0.161 (0.002) [0.000]
Personal health index	0.224 (0.001) [0.000]	0.224 (0.001) [0.000]	0.224 (0.001) [0.000]
Children under 15 years of age	0.034 (0.001) [0.000]	0.034 (0.001) [0.000]	0.034 (0.001) [0.000]
Employed full time ^e	0.007 (0.001) [0.000]	0.007 (0.001) [0.000]	0.007 (0.001) [0.000]
Employed part time do not want full time ^f	0.021 (0.001) [0.000]	0.021 (0.001) [0.000]	0.021 (0.001) [0.000]
Unemployed ^g	-0.037 (0.001) [0.000]	-0.037 (0.001) [0.000]	-0.037 (0.001) [0.000]
Employed part time want full time ^h	-0.014 (0.001) [0.000]	-0.014 (0.001) [0.000]	-0.014 (0.001) [0.000]
Out of workforce ⁱ	0.000 (0.001) [0.807]	0.000 (0.001) [0.885]	0.000 (0.001) [0.864]
Married ^j	0.024 (0.002) [0.000]	0.024 (0.002) [0.000]	0.024 (0.002) [0.000]
Separated ^k	-0.014 (0.001) [0.000]	-0.014 (0.001) [0.000]	-0.014 (0.001) [0.000]
Divorced ^l	-0.027 (0.001) [0.000]	-0.027 (0.001) [0.000]	-0.027 (0.001) [0.000]
Widowed ^m	-0.020 (0.002) [0.000]	-0.020 (0.002) [0.000]	-0.020 (0.002) [0.000]
Domestic partner ⁿ	0.004 (0.001) [0.004]	0.004 (0.001) [0.002]	0.004 (0.001) [0.002]
<i>Predictor</i>			
CEO-to-employee pay ratio $t-1$		-0.048 (0.007) [0.000]	-0.045 (0.007) [0.000]
<i>Interaction terms</i>			
CEO-to-employee pay ratio $t-1$ *Welfare state $t-1$			-0.012 (0.005) [0.011]
AIC	2075646.761	2075601.565	2075604.125
BIC	2076038.325	2076004.317	2076018.064

Notes: $N = 53$ at the country level each year from 2006–2020; $N = 533,675$ at the individual level each year. All regressors are standardized scores; robust standard errors are in parentheses; p values are in brackets.

^a1 = Poorest 20%; 2 = Second 20%; 3 = Middle 20%; 4 = Fourth 20%; 5 = Richest 20%.

^b1 = female, 0 = male.

^c1 = secondary–3-year tertiary secondary education and some education beyond secondary education (9–15 years of education), 0 = otherwise.

^d1 = completed four years of education beyond 'high school' and/or received a 4-year college degree, 0 = otherwise.

^e1 = employed full time for self, 0 = otherwise.

^f1 = employed part-time do not want full-time, 0 = otherwise.

^g1 = unemployed, 0 = otherwise.

^h1 = employed part-time want full time, 0 = otherwise.

ⁱ1 = out of the workforce, 0 = otherwise.

^j1 = married, 0 = otherwise.

^k1 = separated, 0 = otherwise.

^l1 = divorced, 0 = otherwise.

^m1 = widowed, 0 = otherwise.

ⁿ1 = domestic partner, 0 = otherwise.

Table S4 Descriptive statistics and correlations in additional analyses (OECD countries)

Variables	Mean	SD	Min	Max	1	2	3	4	5	6	7	8
1. CEO-to-employee pay ratio	24.166	15.580	4.736	90.450								
2. Gini Index	0.309	0.051	0.227	0.509	0.222							
3. Citizens' subjective well-being	7.094	0.685	5.050	8.200	-0.349	-0.149						
4. Welfare state	4.620	1.131	1.970	6.750	-0.080	-0.688	-0.008					
5. Labor-market regulation	3.248	1.318	0.760	6.110	-0.087	-0.131	-0.234	0.244				
6. Unemployment rate	7.538	3.717	2.318	26.219	0.272	0.197	-0.383	0.045	0.171			
7. Union density	88.678	57.993	1.000	190.000	-0.265	-0.501	0.307	0.487	0.168	-0.153		
8. GDP per capita	40995.949	13780.587	16226.149	101926.424	-0.036	-0.380	0.378	0.207	0.002	-0.317	0.179	
9. Health and education	6.322	0.263	5.368	6.891	-0.126	-0.621	0.274	0.404	-0.271	-0.145	0.347	0.245

Note. $N = 208$ – 260 observations for national-level variables derived from 26 OECD countries over ten years.

Table S5 Pooled regression results of the relationship between the CEO-to-employee pay ratio and the Gini index in additional analyses (OECD countries) (Hypothesis 1)

Variables	Model 1 Controls	Model 2 Main effect	Model 3 Main effect	Model 4 Main effect	Model 5 Reverse causality
<i>Controls</i>					
GDP per capita	-0.950 (0.364) [0.010]	-1.026 (0.369) [0.006]	-1.085 (0.377) [0.004]	-1.092 (0.405) [0.008]	-0.917 (0.393) [0.021]
Unemployment rate	0.238 (0.053) [0.000]	0.164 (0.052) [0.002]	0.193 (0.055) [0.001]	0.204 (0.063) [0.001]	0.188 (0.062) [0.003]
Welfare state	-2.996 (0.307) [0.000]	-2.942 (0.315) [0.000]	-2.937 (0.319) [0.000]	-2.909 (0.345) [0.000]	-2.956 (0.334) [0.000]
<i>Predictors</i>					
CEO-to-employee pay ratio _{t-1}		0.050 (0.014) [0.000]			0.076 (0.023) [0.001]
CEO-to-employee pay ratio _t			0.034 (0.018) [0.064]		-0.062 (0.055) [0.260]
CEO-to-employee pay ratio _{t+1}				0.032 (0.019) [0.101]	0.024 (0.043) [0.589]
<i>Intercept</i>	28.646 (0.727) [0.000]	28.816 (0.702) [0.000]	28.144 (0.830) [0.000]	28.211 (0.818) [0.000]	29.497 (0.971) [0.000]
R-squared	0.577	0.600	0.593	0.591	0.600

Note. Coefficients of year dummies are omitted. All regressors are standardized scores; Huber–White robust standard errors are in parentheses; p values are in brackets. $N = 182$ – 208 country-year observations.

Table S6 Pooled regression results of the effect of the CEO-to-employee pay ratio on citizens' subjective well-being in additional analyses (OECD countries) (H2 and H3)

<i>Variables</i>	Model 1 Controls	Model 2 Main effect	Model 3 Moderator
<i>Controls</i>			
Gini index $_{t-1}$	1.799 (1.581) [0.257]	3.321 (1.446) [0.023]	5.258 (1.408) [0.000]
Welfare state $_{t-1}$	-0.169 (0.063) [0.008]	-0.115 (0.057) [0.046]	-0.151 (0.058) [0.010]
Labor-market regulation $_{t-1}$	-0.042 (0.038) [0.271]	-0.066 (0.035) [0.061]	-0.018 (0.034) [0.594]
Unemployment rate $_{t-1}$	-0.033 (0.014) [0.017]	-0.009 (0.013) [0.487]	-0.013 (0.013) [0.302]
Union density $_{t-1}$	0.004 (0.001) [0.000]	0.003 (0.001) [0.005]	0.002 (0.001) [0.014]
GDP per capita $_t$	0.236 (0.058) [0.000]	0.288 (0.069) [0.000]	0.269 (0.065) [0.000]
Health and Education	0.657 (0.290) [0.025]	0.811 (0.263) [0.002]	1.127 (0.251) [0.000]
<i>Predictor</i>			
CEO-to-employee pay ratio $_{t-1}$		-0.017 (0.003) [0.000]	-0.022 (0.003) [0.000]
<i>Interaction term</i>			
CEO-to-employee pay ratio*Welfare state $_{t-1}$			-0.012 (0.003) [0.000]
<i>Intercept</i>			
	2.318 (2.125) [0.277]	1.022 (1.937) [0.599]	-1.550 (1.865) [0.407]
R-squared	0.360	0.475	0.516

Note. Coefficients of year dummies are omitted. All regressors are standardized scores; Huber–White robust standard errors are in parentheses; p values are in brackets.

$N = 189$ country-year observations.

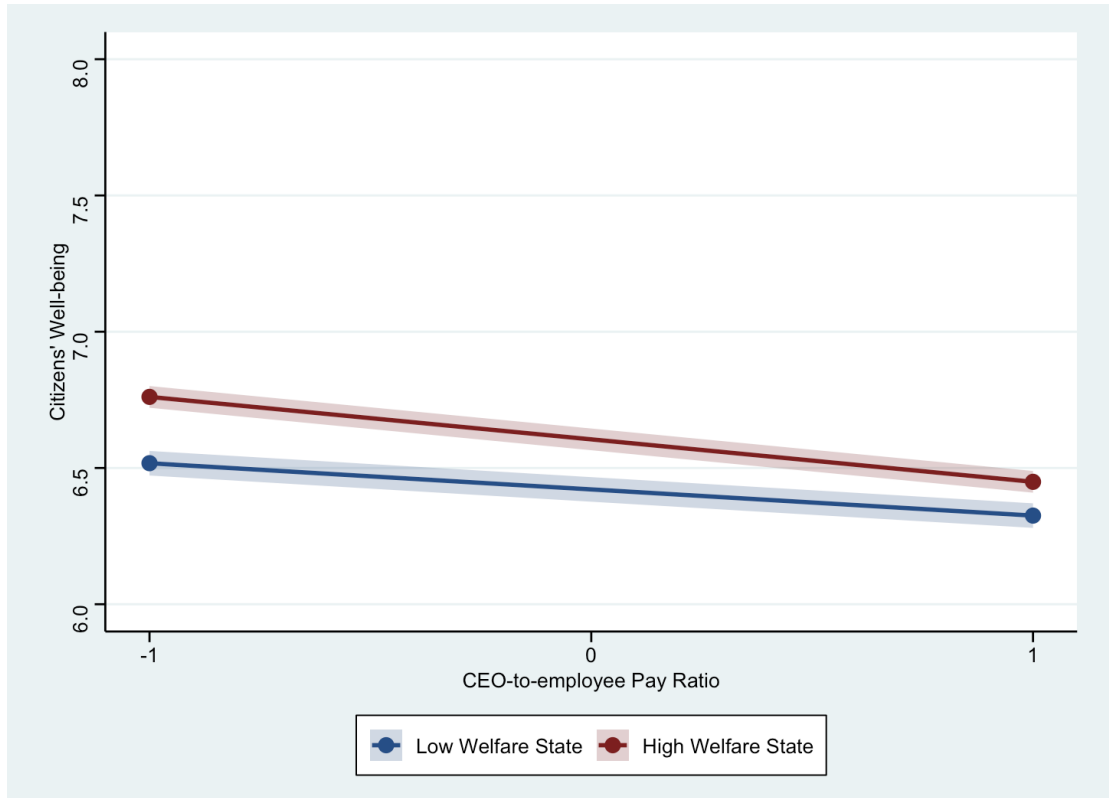


Figure S1 Moderating effect of the welfare state on the relationship between the CEO-to-employee pay ratio and citizens' subjective well-being (cross-level results of the IMD sample).

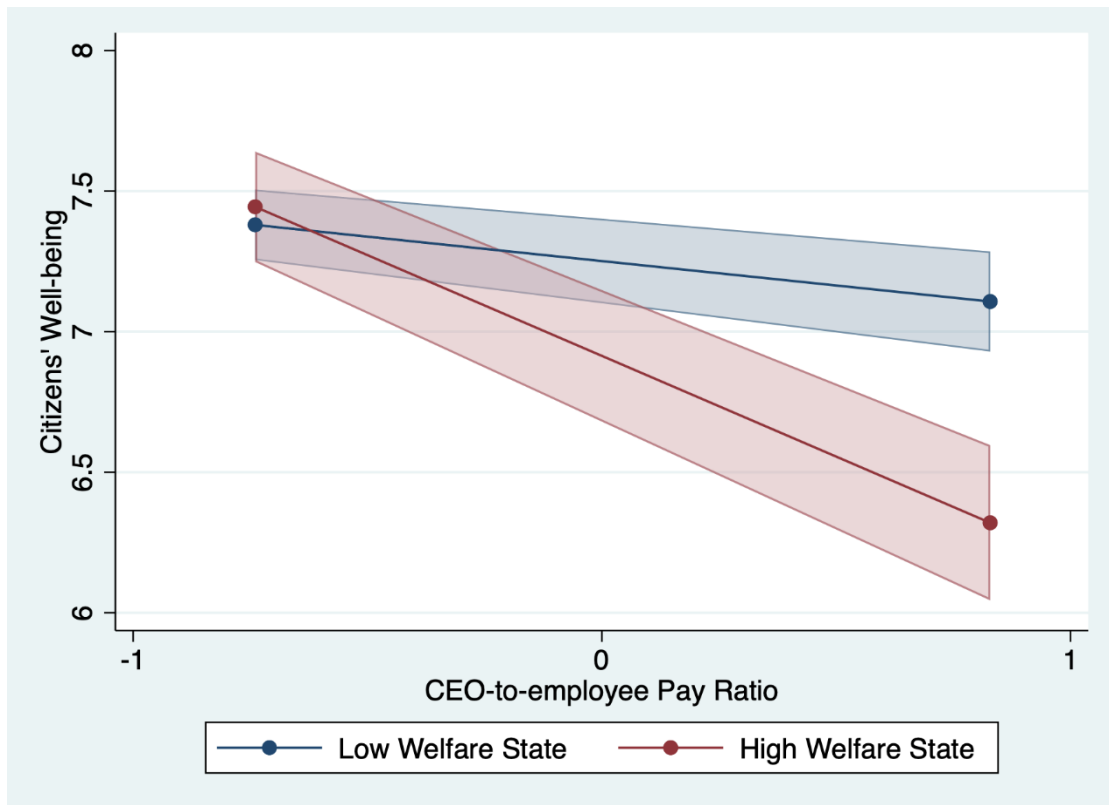


Figure S2 Moderating effect of the welfare state on the relationship between the CEO-to-employee pay ratio and citizens' subjective well-being (OECD sample).

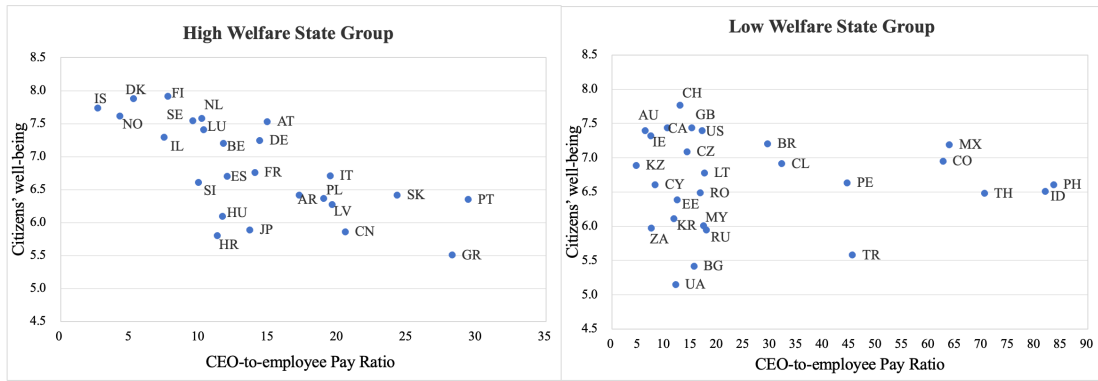


Figure S3 Scatter plots between the CEO-to-employee pay ratio and citizens' subjective well-being for high- and low-welfare state countries.