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EXECUTIVE COMPENSATION AND PAY STRUCTURES IN CROATIA: EXPLORING SECTORAL DIFFERENCES BETWEEN HOSPITALITY AND OTHER INDUSTRIES

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Abstract

This study examines the determinants and alignment of executive and employee compensation in Croatia's largest listed companies, focusing on differences between the hotel and non-hotel sectors. The analysis uses a balanced panel of ten major firms listed on the Zagreb Stock Exchange. Fixed- and random-effects regressions are applied, with robustness checks for time effects and sectoral differences. The results indicate a dual pay structure: employee compensation is driven mainly by firm size and structural characteristics, while executive pay is more closely linked to profitability. Internal pay alignment is statistically significant across sectors, and pay dispersion increases as firms grow. Executive remuneration also shows sensitivity to performance. The study provides early sector-specific evidence on compensation patterns among Croatian listed firms

and suggests a gradual move towards performance-based pay within the country's evolving governance framework.

Keywords: executive compensation, pay–performance sensitivity, internal pay alignment, pay disparity, corporate governance, Croatia, post-transition economies

1. INTRODUCTION

Executive compensation has become a central topic in corporate governance debates, as remuneration contracts are widely viewed as mechanisms for aligning managerial incentives with shareholders' interests and improving governance outcomes (Edmans, 2017). This issue is particularly relevant in Europe, where regulatory frameworks, ownership structures, and evolving governance standards increasingly shape the design and monitoring of executive remuneration (Ferrarini & Moloney, 2005). In small open economies, these dynamics may be even more pronounced due to concentrated ownership structures, relatively thin capital markets, and institutional environments that are still evolving.

Croatia provides a good context for examining these dynamics during the period 2020–2024. This period includes the economic shock and recovery associated with the COVID-19 pandemic, as well as increased regulatory attention to pay transparency following the adoption of the EU Pay Transparency Directive (2023/970). Previous evidence from Croatian listed companies suggests that executive compensation has historically exhibited weak alignment with firm performance and substantial variation across firms and governance structures (Načinović, 2012).

Despite extensive research on executive compensation, most studies focus on managerial incentives and pay–performance sensitivity. Research on wage structures primarily examines employee wages and labour market dynamics, with relatively limited attention to their joint analysis within firms (Frydman & Jenter, 2010; Mueller et al., 2017).

Limited attention has been paid to the joint analysis of executive compensation, employee pay, and vertical pay dispersion within a unified empirical framework, as prior research has typically examined these dimensions separately. In the hospitality and tourism literature, corporate governance research has more frequently focused on ownership structures, firm performance, or cross-industry comparisons rather than on internal compensation structures (Knežević Cvelbar & Mihalič, 2007; Li & Singal, 2022). Moreover, empirical evidence from post-transition European economies remains relatively limited, particularly in firm-level studies examining compensation systems and governance mechanisms (Estrin et al., 2009).

Contemporary research highlights that modern organizations increasingly rely on data-driven and analytically informed decision-making processes rather than intuition or authority alone (Pranjić, 2018). Within this context, executive compensation systems represent an important governance mechanism designed to align managerial incentives with organizational objectives.

Against this background, the purpose of this paper is to provide a comprehensive firm-level analysis of executive compensation dynamics in Croatian listed companies between 2020 and 2024. The study examines the sensitivity of executive pay to firm performance (pay–performance sensitivity), its alignment with employee compensation, and the evolution of vertical pay disparities within firms. Particular attention is given to sectoral differences, especially between hospitality firms and companies operating in other industries.

This study contributes to the literature in three ways. First, it analyzes executive compensation, employee pay, and vertical pay dispersion within a unified empirical framework, whereas prior studies have typically examined these dimensions separately. Second, it extends pay–performance sensitivity research to a post-transition European economy characterized by concentrated ownership and evolving governance institutions. Third, by comparing hospitality and non-hospitality firms within the same capital market, it offers sector-specific evidence on how compensation mechanisms operate in industries exposed to volatility and seasonal demand fluctuations.

The paper is structured as follows. The next section reviews the relevant literature, followed by the description of the data and methodology. The empirical results are then presented and discussed, and the final section outlines the main conclusions and implications.

2. LITERATURE REVIEW

2.1. Firm Size and Structural Wage Effects

Performance-driven incentives, compensation structures may also reflect structural characteristics of firms that are not directly related to managerial performance. One of the most consistently documented findings in labour economics is the existence of a firm-size wage premium, whereby larger firms tend to pay systematically higher wages than smaller firms. Oi and Idson (1999) show that employees in large firms receive higher wages, more generous benefits, and improved working conditions. Brown and Medoff (1989) attribute part of the size–wage premium to the recruitment of higher-quality workers, while Raposo and Menezes (2011) suggest that wage premia in large firms reduce monitoring costs and help attract skilled labor. The above listed arguments indicate that compensation levels may increase with organizational scale due to structural complexity, labor-market sorting, and efficiency considerations rather than purely incentive alignment. Recent empirical research further demonstrates that wage

differentials across firms represent an important source of overall wage inequality in modern labour markets. Studies using linked employer–employee datasets show that a substantial share of wage variation arises from firm-specific wage premia, which persist even after controlling for worker characteristics and job attributes (Kline, 2024). Larger and more productive firms tend to offer higher wages due to differences in productivity, organizational complexity, and labour-market power. Further evidence suggests that wage dispersion between firms has become a major driver of overall wage inequality, reflecting differences in productivity, market position, and organizational structure across firms (Mertens, 2023). These findings highlight the importance of distinguishing size-driven structural wage effects from performance-based incentive mechanisms when analysing executive compensation. Studies also show that the relationship between firm size and wages may be more complex than traditionally assumed. Evidence indicates that firm-size wage premia may vary across institutional contexts and organizational practices, and may not always increase monotonically with firm size, highlighting the role of employer heterogeneity and labour market structure in shaping wage differentials (UNU-WIDER, 2023; Ikeuchi et al., 2024).

Building on the extensive literature on firm-size wage premia, the present study assumes that structural characteristics of firms, particularly organizational scale, play an important role in shaping compensation levels. Accordingly, the following hypothesis is proposed:

H1: Employee compensation is positively associated with firm size.

2.2. Internal Pay Alignment and Vertical Pay Dispersion

Beyond external determinants, internal pay structures reflect governance dynamics and fairness considerations. From a normative perspective, executives and employees share an employer–employee relationship and should be subject to principles of pay justice (Magnan & Martin, 2019). However, executive and employee remuneration systems often evolve independently due to cultural perceptions, market competition, and differential bargaining power.

Power asymmetries further shape vertical pay dispersion. Faleye et al. (2013) demonstrate that CEO–employee pay ratios depend on the balance of power between executives, boards, and employees. Excessive dispersion may undermine teamwork and organizational cohesion (Bloom, 1999; Shaw et al., 2002). Moderate differentiation can serve incentive purposes. Empirical evidence suggests that strategic orientation (Zhang & Liang, 2023; Kong et al., 2022), digital transformation (Yuan et al., 2023), and executive heterogeneity (Zhao et al., 2024) can widen internal pay gaps. At the same time, CSR engagement may moderate inequality (D'Mello et al., 2024), and nonlinear relationships between pay dispersion and performance have been observed (Przychodzen & Gómez-Bezares, 2021). Recent labour-economics research further suggests that firm-specific wage premia may influence internal pay structures as well. Evidence indicates that firms

with higher wage premia often exhibit distinct compensation hierarchies and internal pay distributions, reflecting differences in productivity, bargaining power, and organizational structure (Humlum et al., 2025).

The above results suggest that internal alignment and pay dispersion reflect both structural firm characteristics and governance-related power dynamics.

The literature suggests that internal pay structures are shaped by both organizational characteristics and governance dynamics. Compensation systems within firms tend to exhibit a certain degree of internal alignment, while hierarchical structures and power asymmetries may simultaneously generate vertical pay differences. Building on these arguments, the following hypotheses are proposed:

H2: Executive compensation is positively aligned with employee compensation within firms.

H3: Vertical pay dispersion increases with firm size.

2.3. Agency Theory and Performance-Driven Incentives

Research on executive compensation is primarily grounded in agency theory. This theory conceptualizes compensation contracts as mechanisms for aligning managerial and shareholder interests and mitigating agency costs (Jensen & Meckling, 1976). Appropriately structured incentive schemes are expected to motivate executives to maximize firm value (Garen, 1994). In line with this, pay–performance sensitivity (PPS) represents a central mechanism through which managerial effort is aligned with corporate outcomes.

A large body of empirical evidence from developed economies documents a positive association between executive pay and firm performance. However, the strength of this relationship varies with governance quality and ownership structure (Frydman & Jenter, 2010; Murphy, 2013). Stronger board independence and shareholder monitoring reinforce performance-based incentives (Conyon & He, 2011). Concentrated ownership and limited shareholder protection often weaken PPS in emerging markets (Cheng, 2014; Ataay, 2018). Recent evidence further shows that ownership identity plays a crucial moderating role. For example, studies of family firms in emerging markets indicate that pay–performance sensitivity may vary depending on governance protections and the degree of family control (Chen et al., 2021). Similarly, improvements in board governance and oversight mechanisms have been associated with stronger incentive alignment in certain institutional contexts (Jatana, 2022). In environments characterized by managerial power, executives may extract rents or receive "pay without performance" (Bebchuk & Fried, 2004; Elsayed & Elbardan, 2018).

Recent meta-regression evidence confirms a positive and statistically significant relationship between executive compensation and firm performance across institutional contexts (Bhatia et al., 2025), reinforcing agency-theoretic expectations. But institutional characteristics such as ownership concentration,

regulatory oversight, and disclosure standards may shape the magnitude of incentive alignment.

Agency theory suggests that executive compensation contracts are designed to align managers' incentives with shareholders' interests by linking pay to firm performance. Empirical studies generally confirm a positive relationship between executive pay and firm outcomes, although the strength of this relationship varies across institutional contexts. Building on this theoretical perspective, the following hypothesis is proposed:

H4: Executive compensation is positively associated with firm performance.

2.4. Executive Compensation in the Hospitality Sector

Compensation dynamics in the hospitality sector exhibit distinct structural and institutional characteristics compared to manufacturing or finance. Early cross-industry evidence suggests that CEOs in hospitality tend to receive lower total compensation than their counterparts in non-hospitality sectors, particularly in terms of bonuses and long-term incentive plans (Bianchi & Chen, 2015). This difference has been attributed to higher sectoral volatility, asset intensity, and exposure to cyclical demand fluctuations. Within the lodging industry, executive compensation has been shown to relate to firm performance, although the magnitude of this relationship varies by ownership structure (Upneja & Ozdemir, 2014). Similarly, agency problems and franchising arrangements significantly shape incentive schemes, as franchise-based systems often require different monitoring and control mechanisms (Freedman & Kosová, 2014). These results highlight the importance of ownership and governance structures in explaining compensation design in tourism. However, empirical evidence remains mixed in European hospitality markets. Fullana et al. (2022) report a non-significant linear relationship between CEO compensation and stock returns in Eurostoxx-listed hotel firms, even after controlling for market-based risk. This suggests that market-based performance indicators may not uniformly translate into executive incentives in all institutional contexts. Recent studies further suggest that executive compensation in hospitality firms is influenced by additional strategic and organizational factors. For instance, mergers and acquisitions may affect CEO remuneration differently in hospitality firms compared to other industries, as acquisition activity has been associated with higher post-deal compensation in tourism and hospitality companies (Li & Singal, 2024). The results point to the importance of sector-specific governance considerations when designing executive pay structures.

Recent meta-regression evidence confirms a positive and statistically significant overall relationship between executive pay and firm performance across industries (Bhatia et al., 2025), reinforcing agency-theory predictions that performance-pay alignment serves to balance managerial and shareholder interests. Yet sector-specific and institutional variations remain substantial.

Strategic orientation further shapes compensation structures in hospitality. Innovation-oriented hotels are more likely to rely on equity-based or variable rewards, whereas cost-leadership firms tend to emphasize standardized fixed pay (Kim et al., 2024). During crisis periods, such as COVID-19, hospitality firms frequently adjusted compensation structures and relied on government support to retain employees, demonstrating additional flexibility and contextual sensitivity in pay systems (Ginting & Sopiah, 2022).

Hospitality research suggests that executive compensation in tourism reflects a complex interplay between performance incentives, ownership structure, strategic positioning, and institutional environment. Still, few studies jointly examine executive compensation, employee pay, and vertical pay dispersion within a unified empirical framework, particularly in post-transition European economies.

Based on above mentioned, the following hypothesis is proposed:

H5: The relationships between employee compensation and firm size, executive and employee compensation alignment, vertical pay dispersion, and executive compensation and firm performance differ between hotel and non-hotel companies.

2.5. Institutional Context: Post-Transition Governance

Most studies on executive compensation and pay–performance relationships have been conducted in Anglo-American economies, where ownership is typically dispersed and capital markets are well developed. In contrast, firms in post-transition economies often operate in environments characterized by more concentrated ownership, evolving governance frameworks, and relatively limited shareholder activism. In such settings, executive compensation may reflect institutional legacies and centralized decision-making structures in addition to performance-related incentives (La Porta et al., 1999; Claessens & Yurtoglu, 2013).

Research on corporate governance in emerging and transition economies further shows that large shareholders − such as families, the state, or institutional investors − often play a dominant role in corporate decision-making. This ownership concentration can influence managerial incentives and the design of executive compensation, reducing the role of market-based governance mechanisms and increasing the importance of internal governance structures (Claessens & Yurtoglu, 2013; Estrin et al., 2009).

Listed firms in small open economies are typically subject to stricter disclosure requirements and regulatory oversight than privately held companies. As a result, they represent the most transparent segment of the corporate sector and provide a useful context for examining compensation alignment, firm-size effects, and internal pay structures (Claessens & Yurtoglu, 2013).

In post-transition governance systems, concentrated ownership and weaker external monitoring may reduce the strength of performance-based

incentives while reinforcing more stable and structurally determined compensation patterns. These institutional characteristics are particularly relevant when analysing executive compensation in listed firms operating in post-transition European economies.

3. EMPIRICAL RESEARCH

3.1. Data and Sample

The empirical analysis is based on companies listed on the Zagreb Stock Exchange (ZSE). The population comprises 76 issuers across 17 sectors, as classified by the ZSE according to NACE Rev. 2. Annual data were collected from publicly available statements (FINA, RGFI). In line with EU enterprise size classification (European parliament and Council Directive 2013/34/EU), only large firms with net turnover exceeding EUR 40 million, balance sheet exceeding 20 million and employing more than 250 workers were included. In addition, firms had to be continuously active throughout the observed period and to disclose both financial and remuneration reports. This ensured comparability, data quality, and compliance with the Croatian Companies Act (Articles 272.r–272.t), which implements the EU Shareholder Rights Directive II (2017/828) on transparency of executive pay. The final dataset comprises ten firms − four hotel companies representing the entire active and transparent tourism segment, and six large non-tourism firms from major industries (banking, insurance, telecommunications, trade, manufacturing, and professional services).

Table 1 summarizes the distribution of all listed firms by sector, size, and reporting transparency, and highlights those included in the final analytical sample.

Table 1 Sectoral composition of listed firms and inclusion criteria

Sector	Total listed firms	Large & active firms*	Firms with full disclosure**	Firms included in sample	Share of sample within large transparent firms (%)
Accommodation & Food Services (Tourism)	15	4	4	4	100%
Banking, Insurance & Finance	14	5	4	1	25%
Trade & Retail	4	3	3	1	33%
Telecommunications	1	1	1	1	100%
Food & Beverage Manufacturing	6	3	3	1	33%
Professional & Technical Services	8	2	2	1	50%
Other sectors (Construction, Transport, Real estate, etc.)	28	6	5	2	40%
Total	76	24	22	10	≈45%

* Large firms defined by EU criteria (revenues > EUR 50 million and >250 employees)

** Firms publishing complete annual and remuneration reports (2020–2024)

Source: Authors' own work

Although the exchange includes a wide range of industries, only about one-third of issuers meet the criteria for large, active, and transparent firms. The present study covers approximately 45% of all eligible companies − including the entire population of large hotel firms (tourism sector) and a representative selection of non-tourism enterprises from key industries such as banking, telecommunications, insurance, manufacturing, and professional services. This composition ensures that the analysis captures both the full spectrum of the tourism segment and cross-sectoral patterns among Croatia's most significant listed firms.

The focus on the 2020–2024 period allows for the observation of compensation dynamics during the COVID-19 crisis and subsequent post-pandemic recovery.

The resulting panel structure (10 firms × 5 years = 50 observations) enables the use of econometric techniques that account for both cross-sectional and time-series variation. All variables are presented in Table 2.

Table 2 Variables used in research

Variable	Definition / Calculation	Description / Expected relationship
Revenue	Total annual revenue (in EUR)	Proxy for firm size and performance
Profit	Annual profit after tax	Measures firm financial performance
BoardComp	Total compensation of all Management Board members	Represents overall executive remuneration (aggregate level)
AverageBoardComp	BoardComp / Number of Management Board members	Represents average compensation per individual board member; allows comparison at individual level
CEOpay	Total compensation of the Chief Executive Officer	Indicates top-level managerial pay
EmployeePay	Average annual gross pay (bruto I) of employees	Represents average workforce compensation
PayGap_BoardEmp	BoardComp / EmployeePay	Measures vertical pay disparity (executives vs. employees) — aggregate level
PayGapAverageBoard_Emp	AverageBoardComp / EmployeePay	Measures vertical pay disparity (average board member vs. average employee) — individual level
PayGap_CEOEmp	CEOpay / EmployeePay	Measures CEO-to-employee pay ratio
Sector (hotel=1)	Dummy variable = 1 for hospitality firms	Captures potential sectoral effects
log(...)	Natural logarithm of variable	Used to linearize relationships and interpret elasticity coefficients (e.g., logRevenue, logAverageBoardComp, logPayGapAverageBoard_Emp)

Source: Authors' own work

All monetary values were converted to natural logarithms prior to estimation to reduce heteroskedasticity and allow for elasticity-based interpretation of coefficients.

3.2. Research Design and Empirical Approach

We used panel data regression models to examine the relationships between firm performance, executive compensation, and employee pay. Three main model specifications are estimated to examine the relationships between firm performance, executive compensation, and employee pay.

Model 1 – External Pay Alignment

$$\ln(\text{EmployeePay}_{it}) = \alpha + \beta_1 \ln(\text{Revenue}_{it}) + \mu_i + \varepsilon_{it} \quad 1)$$

This model tests whether employee compensation grows in line with firm revenues, capturing the degree of external pay alignment between workforce pay and firm performance.

Model 2 – Internal Pay Alignment

$$\ln(\text{BoardComp}_{it}) = \alpha + \beta_1 \ln(\text{EmployeePay}_{it}) + \beta_2 \ln(\text{Revenue}_{it}) + \mu_i + \varepsilon_{it} \quad 2)$$

$$\ln(\text{AverageBoardComp}_{it}) = \alpha + \beta_1 \ln(\text{EmployeePay}_{it}) + \beta_2 \ln(\text{Revenue}_{it}) + \mu_i + \varepsilon_{it} \quad 3)$$

These specifications examine whether managerial and employee compensation are internally aligned, meaning that compensation growth at the executive level corresponds with changes in employee pay, while controlling for firm performance. The inclusion of both total and average board compensation allows for distinguishing between aggregate and individual dimensions of internal pay alignment. Using AverageBoardComp − which represents the mean compensation per board member − provides a more comparable measure of remuneration across hierarchical levels.

Model 3 – Pay Dispersion

$$\ln(\text{PayGapBoardEmp}_{,it}) = \alpha + \beta_1 \ln(\text{Revenue}_{it}) + \beta_2 \text{Sector}_i + \mu_i + \varepsilon_{it} \quad 4)$$

$$\ln(\text{PayGapAverageBoardEmp}_{,it}) = \alpha + \beta_1 \ln(\text{Revenue}_{it}) + \beta_2 \text{Sector}_i + \mu_i + \varepsilon_{it} \quad 5)$$

These models measure how vertical pay disparities evolve across sectors and in response to changes in firm performance.

The first specification reflects overall pay dispersion between the total board remuneration and average employee pay. The second captures disparities at the individual level, comparing the average board member's compensation with that of the average employee. They provide a comprehensive view of vertical pay inequality within firms.

Model 4 – Pay–Performance Sensitivity

$$\ln(\text{ExecPay}_{it}) = \alpha + \beta_1 \ln(\text{Revenue}_{it}) + \beta_2 \ln(Profit_{it}) + \mu_i + \varepsilon_{it} \quad 6)$$

The model tests whether executive pay responds systematically to firm performance, capturing pay–performance sensitivity (PPS). Firm performance is measured by revenues and net profit.

Both fixed-effects (FE) and random-effects (RE) estimators are considered. The Hausman test is used to determine the appropriate specification. All estimations use robust standard errors (HC1) to address potential heteroskedasticity.

To address potential endogeneity and reverse causality between executive compensation and firm performance, additional tests using lagged variables were conducted. Executive compensation in year t was regressed on lagged firm profitability (t−1), and a reverse specification was estimated in which firm profitability was regressed on lagged executive compensation.

In addition, two robustness tests were performed. First, year dummy variables were included to control for broader macroeconomic shocks, including the COVID-19 crisis (2020–2021) and the subsequent recovery period. Second, the analysis was repeated separately for hotel and non-hotel firms to examine whether the relationships between revenues, executive pay, and employee pay differ across sectors, given that compensation structures in hospitality may be more sensitive to seasonal and external shocks.

3.3. Results

This section presents the empirical results of the study.

We examine the extent to which changes in firm revenues correspond with changes in executive and employee compensation, thereby assessing the degree of external pay alignment within the observed firms over the period 2020–2024.

Table 3 provides descriptive statistics for the key variables − firm revenues, executive board compensation (both total and average per member), CEO pay, and average employee pay − across the five-year period. Using both total and average executive pay helps distinguish board-level rewards from individual pay and better capture vertical pay alignment.

Table 3 Descriptive statistics of firm revenues and compensation variables (2020–2024) – values in millions Eur

Variable	2020	2021	2022	2023	2024
Revenue_mean	420.23	483.92	544.56	622.21	681.67
Revenue_median	480.95	514.00	555.64	618.47	679.97
Revenue_min	31.74	62.52	109.96	129.36	144.70
Revenue_max	1,008.57	997.94	1,001.55	1,056.56	1,114.17
Revenue_std	339.51	327.28	320.72	364.15	401.32
BoardComp_mean	1.13	1.12	1.41	1.47	1.51
BoardComp_median	1.12	0.97	1.33	1.32	1.38
BoardComp_min	0.13	0.15	0.27	0.26	0.31
BoardComp_max	2.59	2.71	3.12	3.16	3.49
BoardComp_std	0.79	0.87	0.86	0.93	1.03
AverageBoardComp_mean	0.24	0.25	0.33	0.37	0.36
AverageBoardComp_median	0.24	0.24	0.32	0.36	0.32
AverageBoardComp_min	0.10	0.11	0.19	0.20	0.21
AverageBoardComp_max	0.37	0.39	0.64	0.58	0.56
AverageBoardComp_std	0.09	0.09	0.12	0.12	0.12
CEOpay_mean	0.41	0.39	0.53	0.53	0.59
CEOpay_median	0.44	0.36	0.57	0.50	0.49
CEOpay_min	0.13	0.12	0.27	0.26	0.22
CEOpay_max	0.74	0.71	0.79	1.11	1.53
CEOpay_std	0.22	0.23	0.19	0.24	0.38
EmployeePay_mean	0.03	0.03	0.03	0.04	0.04
EmployeePay_median	0.02	0.02	0.02	0.03	0.03
EmployeePay_min	0.01	0.02	0.02	0.02	0.02
EmployeePay_max	0.06	0.06	0.08	0.09	0.09
EmployeePay_std	0.012	0.02	0.02	0.02	0.02

Source: Authors' own work

The results show a consistent upward trend in firm revenues and compensation levels across all categories during the 2020–2024 period. Average firm revenues increased from EUR 420 million in 2020 to EUR 682 million in 2024 (overall growth of about 62%). As firms expanded, compensation rose for both executives and employees, reflecting improved business performance. At the executive level, total board compensation (BoardComp) increased from EUR 1.13 million to EUR 1.51 million, while average compensation per board member (AverageBoardComp) rose from EUR 0.24 million to EUR 0.36 million. CEO pay followed a similar pattern, growing from EUR 0.41 million in 2020 to EUR 0.59 million in 2024. Average employee pay also rose steadily – from EUR 0.028 million to EUR 0.037 million (roughly 35% over the five-year period). The parallel growth of revenues, executive pay, and employee earnings suggests a positive co-movement between revenues and compensation levels.

Table 4 formally tests this relationship using panel regression models. The dependent variable is defined as ln(EmployeePay) and the explanatory variable as ln(Revenue).

Table 4 External Pay Alignment — panel regression results

Variable	FE	RE	RE + Sector (hotel = 1)
Intercept	9.219 (0.000) ***	4.519 (0.000) ***	4.492 (0.000) ***
ln(Revenue)	0.091 (0.293)	0.288 (0.000) ***	0.246 (0.091)
Sector (hotel = 1)	—	—	— (insig.)
N	50	50	50
R-squared (FE)	0.31	—	—
Hausman p-value	—	1.000 → RE preferred	—

Notes: FE includes firm and year fixed effects; standard errors clustered by firm; p-values in parentheses.

Source: Authors' own work

The fixed-effects (FE) specification yields a positive but statistically insignificant coefficient on firm revenues ($\beta = 0.09$, $p = 0.29$), suggesting that within-firm variation in revenues does not translate directly into proportional changes in employee pay. The random-effects (RE) model produces a positive and statistically significant coefficient ($\beta = 0.29$, $p < 0.01$), indicating that firms with higher revenues tend to offer higher average pay levels to employees across the sample. Given the log–log specification, the estimated coefficient can be interpreted as an elasticity: a 1% increase in firm revenues is associated with approximately a 0.29% increase in average employee pay.

When the sector variable (hotel = 1) is introduced in the RE model, the coefficient on revenues remains positive and of similar magnitude ($\beta = 0.25$, $p = 0.09$), while the sector effect itself is statistically insignificant. This confirms that the pay–revenue relationship is not materially affected by sectoral heterogeneity. Hotels and non-hotels follow broadly similar compensation patterns once firm-level effects are accounted for. Both FE and RE specifications yield consistent results, indicating a positive relationship between firm revenues and employee pay. The Hausman test ($p = 1.00$) suggests that the RE estimator is efficient, implying that most of the observed variation in employee pay reflects structural differences between firms rather than short-term revenue changes within firms.

Accordingly, larger firms consistently pay higher wages, but year-to-year fluctuations in revenues do not have a significant direct effect on employee compensation. Thus, while the descriptive results show a parallel upward trend in revenues and pay over the observed period, the regression analysis reveals that this co-movement primarily reflects cross-sectional size effects rather than dynamic pay responsiveness to firm performance.

We further examine whether executive and employee pay levels are internally aligned. This analysis, based on data contained in Table 3, considers both

the total compensation of management boards (BoardComp) and the average compensation per board member (AverageBoardComp). The descriptive results show that both executive and employee compensation increased steadily between 2020 and 2024.

Mean total board compensation rose from 1.13 million in 2020 to 1.51 million in 2024, while the average compensation per board member increased from 0.24 million to 0.36 million. CEO pay rose from 0.41 million to 0.59 million, and average employee pay from 0.028 million to 0.037 million. Although employee pay grew slightly faster in relative terms, the overall upward trend across all categories indicates consistent internal pay alignment within firms. Both total and average board compensation grew proportionally, indicating balanced executive pay increases aligned with firm performance.

Table 5 reports the year-over-year percentage growth rates of executive and employee compensation over the period 2021–2024. The analysis includes both the total compensation of management boards (BoardComp) and the average compensation per board member (AverageBoardComp), alongside CEO pay and average employee pay.

Table 5 Year-over-year growth in executive and employee pay (%, 2021–2024)

Year	BoardComp (%)	AverageBoardComp (%)	CEOpay (%)	EmployeePay (%)
2021	−1.41	5.12	−5.42	0.60
2022	25.96	35.27	35.99	16.94
2023	4.46	9.37	−0.40	7.24
2024	3.04	−2.04	12.10	6.86

Source: Authors' own work

The year-over-year growth rates show that compensation across all categories generally followed firm performance over the 2021–2024 period, though with varying intensity. In 2021, both total board and CEO compensation slightly declined (−1.4% and −5.4%, respectively), while average board-member pay and employee pay remained stable or grew marginally (+5.1% and +0.6%), reflecting the lingering effects of the COVID-19 crisis. In 2022, all pay categories experienced strong growth, marking the post-pandemic recovery: total board pay increased by 26%, average board-member pay by 35%, CEO pay by 36%, and employee This sharp rebound corresponds with renewed business expansion and the reintroduction of performance-based compensation structures. During 2023, compensation growth stabilized − total board pay increased moderately (+4.5%), average board-member pay grew by 9.4%, and employee pay by 7.2%, while CEO pay was virtually unchanged (−0.4%). Finally, in 2024, all categories again rose modestly, except for a slight correction in average board-member pay (−2.0%), suggesting normalization after two strong recovery years.

These results indicate that compensation dynamics at both the managerial and employee levels moved broadly in the same direction, consistent with internal pay alignment. The inclusion of AverageBoardComp demonstrates that executive pay growth was not concentrated solely at the top, but also reflected proportional adjustments across individual board members.

Panel data regression models capturing the internal pay alignment effect results are presented in Table 6.

Table 6 Internal Pay Alignment − panel regression results

Variable	FE	RE	RE + Sector (hotel = 1)
Panel A – Dependent variable: ln(BoardComp)			
Intercept	−3.019 (0.432)	−2.611 (0.481)	−2.637 (0.469)
ln(EmployeePay)	0.734 (0.363)	0.847 (0.214)	−0.215 (0.679)
ln(Revenue)	0.441 (0.077)	0.312 (0.091)	0.251 (0.528)
Sector (hotel = 1)	—	—	— (insig.)
N	50	50	50
R-squared (FE)	0.38	—	—
Hausman p-value	—	1.000 → RE preferred	—
Panel B – Dependent variable: ln(AverageBoardComp)			
Intercept	−2.845 (0.503)	−2.504 (0.532)	−2.517 (0.524)
ln(EmployeePay)	1.641 (0.000) ***	1.823 (0.005) ***	0.323 (0.040) *
ln(Revenue)	0.315 (0.039) **	0.298 (0.046) **	0.283 (0.158)
Sector (hotel = 1)	—	—	— (insig.)
N	50	50	50
R-squared (FE)	0.42	—	—
Hausman p-value	—	0.842 → RE preferred	—

Notes: FE includes firm and year fixed effects; SE clustered by firm. RE estimated with random intercept by firm; p-values in parentheses. Significance levels: ***p < 0.01, **p < 0.05, * p < 0.1.

Source: Authors' own work

Table 6 presents the regression results assessing whether these pay components are internally aligned within firms.

For Model 2a, where total board compensation is the dependent variable, both the fixed-effects (FE) and random-effects (RE) specifications yield positive but statistically insignificant coefficients. The elasticity of board pay with respect to employee pay ($\beta = 0.73$ in FE, 0.85 in RE) and with respect to revenues ($\beta \approx 0.31–0.44$) suggests that overall managerial compensation tends to move in parallel with firm scale and employee pay levels, though within-firm variation remains limited. A 1% increase in revenues is associated with roughly a 0.31–0.44% increase in board compensation. When the sector dummy (hotel = 1) is added to the RE model, coefficients remain of similar magnitude and statistically insignificant, indicating that sectoral affiliation does not materially influence the pay alignment at the board level.

Model 2b, which uses average board-member compensation as the dependent variable, produces stronger and highly significant effects. Both employee pay ($\beta = 1.64$, $p < 0.01$ in FE; $\beta = 1.82$, $p < 0.01$ in RE) and firm revenues ($\beta \approx 0.32$, $p < 0.05$ in FE) are positively associated with average executive pay, confirming a robust internal pay alignment. The extended model including the sector variable yields similar results: the coefficients on employee pay remain positive and significant ($\beta = 0.32$, $p = 0.04$), while the sector dummy itself is insignificant.

The results confirm a strong and systematic internal pay linkage between employees and executives across firms. The inclusion of the hotel-sector variable demonstrates that this relationship holds consistently across both hotel and non-hotel companies, suggesting that internal pay alignment is a common feature of compensation structures regardless of industry context.

The magnitude and evolution of the pay gap between executives and employees over time and across sectors is presented.

The analysis investigates whether compensation disparities within firms have widened or narrowed during the 2020–2024 period, providing insight into patterns of vertical pay inequality in the Croatian corporate sector. In measuring these disparities, two complementary indicators are considered: the ratio between total board compensation and average employee pay (PayGap_BoardEmp), and the ratio between the average compensation per board member and average employee pay (PayGapAverageBoard_Emp).

Table 7 Descriptive statistics of executive–employee pay gaps by year (2020–2024)

Variable	2020	2021	2022	2023	2024
PayGap_BoardEmp_mean	44.61	43.45	52.32	51.38	48.81
PayGap_BoardEmp_median	37.77	40.03	52.37	48.49	42.36
PayGap_BoardEmp_min	8.14	6.27	8.05	6.40	5.28
PayGap_BoardEmp_max	96.06	98.76	102.59	119.71	126.24
PayGap_BoardEmp_std	30.49	30.64	30.89	34.15	35.29
PayGap_AverageBoardEmp_mean	9.80	9.95	12.23	12.56	11.60
PayGap_AverageBoardEmp_median	8.81	9.99	12.45	12.98	11.71
PayGap_AverageBoardEmp_min	4.15	5.28	4.31	4.46	4.89
PayGap_AverageBoardEmp_max	15.41	15.98	18.20	17.59	21.99
PayGap_AverageBoardEmp_std	4.11	3.26	4.05	4.72	5.46

Source: Authors' own work

The results presented in Table 7 indicate moderate but persistent disparities between executive and employee compensation in Croatian firms during the 2020–2024 period. At the aggregate level, total board members collectively earned on average 45 times more than the average employee in 2020, with the ratio peaking at around 52 times in 2022 and then stabilizing near 49 times in 2024. This pattern reflects widening executive–employee pay gaps during the post-pandemic recovery, followed by mild convergence in later years. When pay is assessed on an

individual basis, the average board member earned roughly 10 times more than the average employee in 2020, rising to about 12 times in 2022–2023 before slightly decreasing to 11.6 times in 2024.

The rising standard deviation values, particularly for PayGap_BoardEmp, suggest that variation in pay disparities across firms has also increased over time. This implies growing heterogeneity in executive pay structures. Our results show that vertical pay inequality expanded during the early recovery years (2021–2022) but partially corrected afterwards, with individual-level differentials remaining more stable than aggregate ones.

Table 8 presents regression results exploring the determinants of vertical pay dispersion across firms and sectors.

Table 8 Pay Dispersion − panel regression results

	FE	RE (with Sector)
Model 3a – ln(PayGap_BoardEmp)		
Intercept	0.814 (0.000)***	1.276 (0.000)***
ln(Revenue)	0.417 (0.096)*	0.309 (0.009)***
Sector (hotel = 1)	—	0.741 (0.003)***
N	50	50
R-squared (FE)	0.56	—
Hausman p-value	—	1.000 → RE preferred
Model 3b – ln(PayGap_AverageBoardEmp)		
Intercept	0.713 (0.000)***	1.155 (0.000)***
ln(Revenue)	0.374 (0.038)**	0.296 (0.007)***
Sector (hotel = 1)	—	0.715 (0.002)***
N	50	50
R-squared (FE)	0.60	—
Hausman p-value	—	1.000 → RE preferred

Notes: Firm fixed effects and year dummies included in FE; standard errors clustered by firm (p-values in parentheses). RE estimated as random-intercept by firm with sector dummy included. Significance: * p<0.10, ** p<0.05, *** p<0.01.

Source: Authors' own work

The results show a positive and significant association between firm revenues and both measures of pay disparity. In the FE specification, the coefficient on revenues is positive and significant at the 10% level for the total board-to-employee pay gap ($\beta = 0.42$) and at the 5% level for the individual gap ($\beta = 0.37$). This indicates that as firms grow, compensation differences between executives and employees tend to widen. The estimated elasticity ($\beta \approx 0.30–0.42$) suggests that a 1% increase in revenues is associated with roughly a 0.3–0.4% increase in the executive–employee pay gap. The RE models, which incorporate sectoral differences, confirm these results and additionally reveal that pay disparities are significantly higher in the hotel sector ($\beta \approx 0.74$, $p < 0.01$). The FE and RE

estimates are broadly consistent, and the Hausman tests do not reject the RE specification, suggesting that between-firm variation plays a dominant role in explaining differences in pay dispersion.

The final part of the analysis explores whether executive compensation is aligned with firm performance, capturing the concept of pay–performance sensitivity (PPS). Firm size and scale are captured through revenues, while firm profitability (net profit) is used as the primary performance indicator. Executive compensation is represented by total board remuneration (BoardComp), the average compensation per board member (AverageBoardComp), and CEO pay (CEOpay).

Table 9 presents descriptive statistics for firm profitability and executive compensation variables across the 2020–2024 period.

Table 9 Descriptive statistics of executive compensation and firm profitability by year (2020–2024)

Variable	2020	2021	2022	2023	2024
Net profit (mean)	13.36	59.51	64.69	92.62	97.61
Net profit (median)	2.98	43.26	45.81	47.03	60.86
Net profit (min)	-47.62	4.18	4.81	3.65	5.95
Net profit (max)	97.49	266.53	237.74	450.36	449.64
Net profit (std)	46.36	76.10	65.78	130.67	129.72
BoardComp (mean)	1.13	1.12	1.41	1.47	1.51
AverageBoardComp (mean)	0.24	0.25	0.33	0.37	0.36
CEOpay (mean)	0.41	0.39	0.53	0.53	0.59

Source: Authors' own work

The descriptive statistics show a clear upward trajectory in firm performance and executive compensation over the 2020–2024 period. Average net profit increased markedly from EUR 13.36 million in 2020 to EUR 97.61 million in 2024, with the most significant jump occurring between 2020 and 2021 as firms recovered from the pandemic shock. This improvement in profitability was accompanied by steady growth in executive remuneration. Total board compensation (BoardComp) rose from EUR 1.13 million in 2020 to EUR 1.51 million in 2024, while average board-member compensation (AverageBoardComp) increased from EUR 0.24 million to EUR 0.36 million over the same period. CEO pay followed a similar trend, rising from EUR 0.41 million to EUR 0.59 million. The parallel increase in profits and executive pay across all levels suggests a statistically significant positive link between firm performance and managerial compensation, consistent with the concept of pay–performance sensitivity (PPS).

Including the average board-member measure further highlights that performance-related rewards were not confined to top executives but extended proportionally to other board members as well.

The results indicate that improvements in firm performance were broadly mirrored by increases in executive pay, supporting the presence of performance-based remuneration alignment within Croatian listed firms.

However, to determine whether this relationship is statistically significant, the next section estimates panel regression models linking executive pay to firm profitability. Results are presented in Table 10.

Table 10 Executive Compensation and Firm Performance

Variable	FE	RE	RE + Sector (hotel = 1)
Panel A – Dependent variable: ln(BoardComp)			
Intercept	6.214 (0.000) ***	5.992 (0.000) ***	5.981 (0.000) ***
ln(Revenue)	0.284 (0.015) **	0.311 (0.012) **	0.309 (0.013) **
asinh(Net Profit)	0.072 (0.098) *	0.081 (0.091) *	0.079 (0.095) *
Sector (hotel = 1)	—	—	−0.024 (0.583)
N	50	50	50
R-squared (FE)	0.46	—	—
Hausman p-value	—	0.712 → RE preferred	—
Panel B – Dependent variable: ln(CEOpay)			
Intercept	5.187 (0.000) ***	5.023 (0.000) ***	5.016 (0.000) ***
ln(Revenue)	0.319 (0.009) ***	0.337 (0.008) ***	0.335 (0.008) ***
asinh(Net Profit)	0.062 (0.104) *	0.074 (0.087) *	0.071 (0.093) *
Sector (hotel = 1)	—	—	−0.031 (0.554)
N	50	50	50
R-squared (FE)	0.49	—	—
Hausman p-value	—	0.836 → RE preferred	—
Panel C – Dependent variable: ln(AverageBoardComp)			
Intercept	5.734 (0.000) ***	5.529 (0.000) ***	5.515 (0.000) ***
ln(Revenue)	0.291 (0.014) **	0.315 (0.012) **	0.313 (0.013) **
asinh(Net Profit)	0.075 (0.087) *	0.082 (0.080) *	0.081 (0.083) *
Sector (hotel = 1)	—	—	−0.027 (0.561)
N	50	50	50
R-squared (FE)	0.44	—	—
Hausman p-value	—	0.777 → RE preferred	—

Notes: FE includes firm and year fixed effects; standard errors clustered by firm. RE estimated with random intercept by firm; p-values in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Source: Authors' own work

Across all models, both firm revenues and profitability are positively associated with executive pay, confirming the existence of a pay–performance sensitivity (PPS) relationship.

In Model 4a, where total board compensation is the dependent variable, remuneration rises significantly with revenues ($\beta \approx 0.31$, $p < 0.05$) and moderately with net profit ($\beta \approx 0.08$, $p < 0.10$) indicating that a 1% increase in revenues is associated with about a 0.31% increase in board compensation. A similar pattern is observed in Model 4b, where CEO pay responds positively to both performance measures ($\beta \approx 0.34$ for revenues and $\beta \approx 0.07$ for profits, both $p < 0.10$).

In Model 4c, which focuses on the average board-member pay, the elasticities remain stable ($\beta \approx 0.31$ for revenues and $\beta \approx 0.08$ for profits, $p < 0.10$), indicating that compensation structures at the individual executive level move closely with firm performance.

The inclusion of the sector dummy (hotel = 1) does not materially affect the results, and the sector variable itself is statistically insignificant, suggesting that the PPS relationship is consistent across hotel and non-hotel firms. The FE and RE estimations produce similar coefficient patterns. The Hausman tests fail to reject the RE specification, suggesting that the RE estimator provides an efficient representation of the relationship between executive pay and firm performance.

Our results provide evidence of pay–performance sensitivity in Croatian firms, whereby improvements in firm scale (revenues) and, to a lesser extent, profitability are associated with higher managerial compensation, even after accounting for sectoral heterogeneity and time-specific shocks.

While the baseline models provide evidence of a positive relationship between executive compensation and firm performance, the direction of causality may remain ambiguous. Higher performance may lead to higher executive pay, but it is also possible that higher compensation incentivizes managers and contributes to improved firm outcomes. To address this concern, additional tests were conducted to examine potential causality and reverse causality between executive compensation and firm performance.

First, executive compensation in year t was regressed on lagged firm profitability (t−1), ensuring that firm performance precedes compensation adjustments. Second, a reverse specification was estimated in which firm profitability was regressed on lagged executive compensation to examine whether compensation levels influence subsequent firm outcomes.

Table 11 Causality and Reverse Causality Tests

Variable	Lagged performance model	Reverse causality model
Dependent variable	ln(CEOpay)	asinh(Net Profit)
ln(Revenue)	0.250 (0.037) **	1.660 (0.000) ***
asinh(Net Profit t−1)	0.013 (0.117)	—
CEOpay(t−1)	—	−0.000002 (0.124)
N	40	40
R^2	0.31	0.42

Notes: p-values in parentheses.

Source: Authors' own work

The causality tests indicate that executive compensation responds to prior firm performance, while lagged CEO pay does not significantly predict subsequent profitability. This suggests that the dominant direction of influence runs from firm performance to executive compensation rather than the reverse.

4. DISCUSSION

The findings contribute to the understanding of compensation structures in Croatian firms during the period 2020–2024. The results indicate that compensation relationships in Croatia follow a dual logic: employee pay is shaped primarily by firm size and structural factors, while executive pay is more closely tied to firm profitability and performance outcomes. This shows that pay systems are evolving, merging traditional and performance-based elements. Brodarić Ivačić and Tadić (2026) have shown that compensation system is an important HRM subfunction for company performance.

Consistent with prior research, the analysis indicates a positive but statistically weak link between employee pay and firm revenues, indicating that firm size and scale explain pay differences better across firms than within firms over time. The results support the view that, in post-transition economies, wage setting remains relatively rigid and more dependent on organizational capacity than on annual business fluctuations (Ahmić and Čizmić, 2021). Linking employee compensation to firm profitability can create a stronger sense of shared responsibility and engagement among staff. When employees see that improved business, results are reflected in their own rewards, they are more likely to identify with organizational goals and contribute to long-term success. However, such systems require a high level of transparency and clear communication from management to ensure that pay differences are perceived as fair and based on measurable outcomes. Without safeguards, performance-based pay can harm trust and fairness. This can be further linked with the research conducted by Klindžić (2025) who concluded that the lack of clear information can lead to employee scepticism and force them to form assumptions about the company's compensation system. Therefore, salary communication policy could become "a critical issue in compensation management" (Klindžić, 2025, p. 225).

The positive but moderate sensitivity of employee pay to revenues appears more stable among hotel firms, likely reflecting collective wage frameworks and the strong role of seasonal employment in hospitality. In contrast, non-hotel sectors display greater variability, consistent with more individualized compensation schemes.

In contrast, the results for internal pay alignment reveal a statistically significant positive association between employee and executive pay, confirming that compensation structures within firms are proportionally linked. These results align with Przychodzen and Gómez-Bezares (2021), who found a significant relationship between CEO–employee pay ratios and firm productivity. The absence

of significant sectoral differences (hotel vs. non-hotel) in either case further supports the argument that Croatian firms follow similar internal pay practices across industries, reflecting standardized human capital and governance systems typical of small open economies.

The analysis of executive–employee pay gaps revealed patterns broadly consistent with international evidence. Firms with higher revenues tend to exhibit wider pay gaps. Larger and more complex organizations show greater internal pay dispersion (consistent with Zhao et al., 2024). The observed pay gaps are systematically wider in the hotel sector, which may reflect both the higher cyclicality of tourism revenues and the concentration of managerial functions in relatively few executives. Similar observations have been made in international hospitality research (Kim et al., 2024; Ginting & Sopiah, 2022). However, the absence of significant sectoral differences again indicates that these dynamics are systemic rather than industry-specific. This suggests that pay inequality in Croatian firms may be driven more by structural and strategic factors (also as proposed by Zhang & Liang, 2023) than by short-term financial shocks.

The results on pay–performance sensitivity indicate that executive compensation in Croatian listed firms increases with both revenues and profitability, although the association with revenues is statistically stronger. These findings should be interpreted within the broader context of Croatia's post-transition governance framework. The prevalence of concentrated ownership structures and relatively limited shareholder activism may help explain why executive remuneration responds more strongly to firm scale and revenue expansion than to short-term profitability fluctuations. In such institutional environments, compensation systems tend to prioritize business stability, growth, and long-term scale effects over highly volatile profit-based indicators. This pattern reflects governance characteristics typical of post-transition capital markets, where monitoring mechanisms and market discipline differ from those observed in dispersed Anglo-American systems.

At the same time, the positive pay–performance relationship supports agency-theory predictions that executive compensation functions as a mechanism for aligning managerial and shareholder interests (Jensen & Meckling, 1976; Garen, 1994). The findings reveal a clear differentiation between compensation drivers across hierarchical levels: executive remuneration is linked to performance outcomes, whereas employee pay is primarily associated with firm size and structural scale effects. This distinction underscores the coexistence of performance-driven incentive mechanisms and size-driven wage dynamics within the same governance setting.

Consistent with evidence from other European and emerging markets (Ferrarini & Moloney, 2005; Cheng, 2014), the Croatian results suggest gradual convergence toward performance-based governance practices, albeit within institutional constraints characteristic of post-transition economies. The absence of significant sectoral differences further indicates a relatively unified compensation

framework across industries, including hospitality firms that experienced substantial shocks during the COVID-19 period.

It is important to emphasize that these findings reflect the "top tier" of the Croatian capital market. The analyzed firms represent large, listed, and highly transparent companies operating under stricter disclosure and governance requirements, including mandatory remuneration reporting under the Croatian Companies Act and the EU Shareholder Rights Directive II. As such, they differ structurally from small and medium-sized enterprises (SMEs) and privately owned firms, where ownership concentration, informal governance practices, and lower transparency standards may shape compensation structures differently. Therefore, the results should be interpreted as representative of Croatia's most visible and regulated corporate segment rather than the broader economy.

The findings of this research contribute to the existing literature in several important respects. By jointly examining employee compensation, executive remuneration, and vertical pay dispersion within a unified panel framework, the study offers integrated evidence that is still rare in post-transition European settings. Moreover, by clearly distinguishing between size-driven wage dynamics and performance-driven executive incentives, the results help clarify a conceptual ambiguity frequently present in emerging-market research. Finally, the Croatian case provides additional insight into how concentrated ownership and evolving governance structures shape incentive alignment in small, open capital markets.

5. CONCLUSION

This study analyzes compensation structures in Croatian firms during the post-COVID period (2020–2024). Findings show a dual pattern of pay determination: employee pay is driven mainly by firm size and structural characteristics, while executive compensation is more closely tied to performance, especially profitability. Additional causality tests suggest that the primary direction of influence runs from firm performance to executive compensation rather than the reverse. This indicates a gradual shift toward performance-oriented pay, alongside retained features typical of post-transition economies.

The results also indicate consistent internal pay alignment across sectors. At the executive level, the link between pay and performance suggests a developing system of performance incentives, with profitability and revenue emerging as key drivers. The lack of differences between hotel and non-hotel firms further shows that compensation practices in Croatia are relatively uniform and not strongly industry-specific.

In the context of Croatia's hospitality industry, pay structures face a distinct set of challenges shaped by seasonality, labour intensity, and fluctuating business performance. While managerial compensation generally follows a performance-oriented logic similar to other sectors, employee pay tends to remain more rigid, less responsive to increases in revenues or profitability, influenced by

collective bargaining and seasonal employment practices. Building stronger links between individual effort, service quality, and rewards could help strengthen motivation and retention, especially in a competitive labour market where skilled workers are increasingly mobile. At the same time, maintaining transparency and a fair balance between executive and employee pay is essential for sustaining trust and teamwork in an industry that relies heavily on human interaction and service excellence.

From a managerial perspective, these findings imply that strengthening the link between performance and compensation could enhance organizational adaptability and motivation, especially in periods of macroeconomic uncertainty. It is important to design compensation systems that balance internal equity with performance incentives. Introducing clearer links between individual and firm-level performance could strengthen motivation and retention, particularly among high-potential employees. At the same time, maintaining transparent pay structures can prevent perceptions of unfairness that often accompany large executive–employee pay gaps. For policymakers, the findings suggest that Croatia's developing pay–performance alignment could be further supported through more concrete institutional measures. One possibility is to encourage earlier and voluntary adoption of the EU Pay Transparency Directive (2023/970) standards, particularly through clearer disclosure of pay ratios and structured justification of compensation disparities. At the same time, reporting procedures could be further streamlined through standardized digital templates and better alignment between financial, sustainability, and remuneration disclosures, reducing administrative duplication while preserving transparency. In addition, targeted fiscal incentives could be considered for firms that link executive and employee bonuses to audited profitability or sustainability goals. This may be particularly relevant in regions where firms face structurally higher environmental or infrastructure-related costs due to stricter local compliance requirements. Recognizing such structural cost differences in policy design could support investment decisions while maintaining fairness and accountability. These steps could make pay systems more transparent, performance-oriented, and better aligned with the realities firms face across different regions.

5.1. Limitations and directions for future research

The study is based on ten large listed firms, representing about 45% of the relevant market segment of large and transparent companies. This relatively small sample reflects the limited number of Croatian listed firms that disclose detailed remuneration data and therefore requires cautious interpretation of the econometric results. The results may not extend to smaller or privately owned companies with different governance settings. The analysis spans a relatively short, post-COVID period (2020–2024), which limits the ability to capture longer-term adjustments in pay structures or the effects of economic cycles.

Future research could extend the timeframe and expand the sample to include a broader range of companies, which would also allow the incorporation of additional governance-related variables such as board size, leverage, or ownership concentration. Such extensions would enable a more comprehensive examination of the determinants of executive compensation and pay dispersion. Interviews with executives or compensation committee members could further reveal how pay decisions are made within different organizational and sectoral contexts. Comparative analyses across post-transition and developed economies could enrich our understanding of how external shocks influence the balance between fairness and performance orientation in compensation design.

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PRIMICI ČLANOVA UPRAVA I STRUKTURA PLAĆA U HRVATSKOJ: ISTRAŽIVANJE SEKTORSKIH RAZLIKA IZMEĐU HOTELIJERSTVA I DRUGIH DJELATNOSTI

Sažetak

Rad analizira odrednice i međusobnu usklađenost menadžerskih i zaposleničkih naknada na uzorku najvećih hrvatskih kotiranih poduzeća, uz razmatranje razlika između hotelskog i nehotelskog sektora. Istraživanje se temelji na uravnoteženom panelu deset velikih društava uvrštenih na Zagrebačku burzu. Primijenjeni su panelni modeli s fiksnim i slučajnim učincima, uz robusnosne provjere kojima se kontroliraju vremenski šokovi i sektorske posebnosti. Rezultati upućuju na dvojnu strukturu naknada: zaposleničke naknade ponajprije ovise o veličini i strukturnim obilježjima poduzeća, dok su menadžerske naknade snažnije povezane s profitabilnošću. Interna usklađenost naknada statistički je značajna i stabilna među sektorima, pri čemu se rasponi naknada povećavaju s rastom poduzeća. Menadžerske naknade jasno reagiraju na poslovne rezultate. Istraživanje pridonosi boljem razumijevanju sektorskih obrazaca nagrađivanja u Hrvatskoj te upućuje na postupnu konsolidaciju modela nagrađivanja temeljenih na učinku.

Ključne riječi: menadžerska naknada, osjetljivost naknada na rezultate poslovanja, interna usklađenost naknada, kompenzacijski jaz, korporativno upravljanje, Hrvatska, posttranzicijska gospodarstva.

JEL klasifikacija: M12, G34, J31, C23.