

Setting CEO Remuneration in Pakistan: Comparing Theory and Practice

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ABSTRACT

Purpose - The current study examines the explanatory power of four main theories (Agency, Stakeholder, Management Power, and Institutional) for setting CEO remuneration in Pakistan. As such, the study evaluates CEO remuneration from a country-specific perspective.

Design/methodology/approach - Data for 58 non-financial firms is collected for the past ten years (from 2012 to 2021) for the examination. GMM/IV approach is used for estimating the output to control the potential endogeneity problem. The study also applies Fixed Effects EGLS estimation approach as a robustness check while changing certain proxies.

Findings - The results show evidence to support the explanatory power of all four theories selected for the examination when determining CEO remuneration in Pakistan. Based on the results of the study, the order of importance or explanatory power (from highest to lowest) of the theories is: (i) Agency theory (represented by firm performance), (ii) Management Power theory (represented by firm size), (iii) Stakeholder theory (represented by CSR and sustainable practices), and (iv) Institutional theory (represented by governance and CEO-specific factors).

Practical Implications - The major practical implication of the current study relates to setting an optimal CEO remuneration policy. The study empirically shows which factors play a role in setting CEO remuneration in Pakistan, providing an avenue of reassessing and refining the policy as and when needed, as the external factors change.

Originality/value - Review of the literature shows that there is a need to establish the explanatory powers of different theorized relationships for CEO remuneration and consider how CEO remuneration is determined in practice. Furthermore, the studies covering different countries and markets show different results, reflecting the importance of considering institutional and market settings when inferring the results. Both these gaps are addressed in the current study.

Keywords: CEO Remuneration, Agency Theory, Stakeholder Theory, Management Power Theory, Institutional Theory

JEL Classification: G30, M12, M20

1 | INTRODUCTION

Chief executive (CEO) remuneration is a sensitive and highly critical corporate governance (CG) area. This is mainly because CEO remuneration is set by the board of directors (BOD, or simply the 'board'), where CEO can have a significant influence. As such, with weak governance, it might be argued that the CEOs are effectively setting the remuneration for themselves. On the flip side, the board also needs to ensure that the overall

remuneration is fair and attractive for the CEO, so that the firm can retain its key management personnel, maintaining its competitive advantage. As such, the board needs to ensure a balance between these two sides; at one end, the CEO remuneration must be attractive; however, at the other end, it must be determined independently and transparently.

As such, CEO remuneration has been very important in theory and practice. Different theoretical approaches have been used to explain how CEO remuneration is set in practice (or rather, how it should be set in practice). The four main theoretical bases used to explain CEO remuneration are the Agency theory ([Jensen & Meckling, 1976](#)), the Management Power theory ([Winter & Michels, 2019](#)), the Stakeholder theory ([Freeman, 1984](#)), and the Institutional theory ([Meyer & Rowan, 1977](#)).

Mostly the theories used to explain CEO remuneration are examined in isolation. Therefore, conclusions drawn using different theories give contradicting results. As such, available literature lacks a conclusive determination of the optimal CEO remuneration approach. Moreover, the findings of emerging and developed markets are inconsistent due to the different institutional settings and market dynamics.

1.1. Objectives and Significance of the Study

The current study aims to consider this complex but important area of CEO remuneration, to explain the overall practice, and compare it with different theorized relations highlighted by scholars in the past. More specifically, the main objective of the study is to examine the four primary theories associated with CEO remuneration and determine which (if any) best explains how board sets the remuneration of CEO in practice. Additionally, the study focuses on the non-financial firms of Pakistan, therefore, evaluating CEO remuneration from a country-specific perspective. As such, the main objective can be segregated into four parts:

- Examining the explanatory power of Agency theory in determining CEO remuneration in Pakistan.
- Examining the explanatory power of Stakeholder theory in determining CEO remuneration in Pakistan.
- Examining the explanatory power of Management Power theory in determining CEO remuneration in Pakistan.
- Examining the explanatory power of Institutional theory in determining CEO remuneration in Pakistan.

As such, the study aims at linking the practice of setting CEO remuneration with a theocratical framework in the institutional setting of Pakistan. This will help academicians in determining the importance of factors highlighted by different theories from the perspective of Pakistan, as different countries may have different optimal frameworks considering different institutional settings. Additionally, the findings can improve the effectiveness of CEO remuneration policy, ultimately making CEO remuneration more competitive and fairer.

1.2. Research Questions

There are four specific research questions that this study aims to address; these are elaborated below.

1. Does a firm's performance (Agency theory) significantly impact CEO remuneration in Pakistan?
2. Does evidence of corporate social responsibility (CSR) or sustainable practices (Stakeholder theory) significantly impact CEO remuneration in Pakistan?
3. Does a firm's size (Management Power theory) significantly impact CEO remuneration in Pakistan?
4. Does Institutional aspects of Pakistan (that is, governance and CEO-specific factors) show a significant impact on CEO remuneration?

However, the general question that this study aims to answer is, which among the four main theories identified best explains the practice in Pakistan.

1.3. Scheme of the Study

The remaining study is arranged in four further sections. Section 2 thoroughly reviews the literature. The next section (Section 3) explains the overall research approach and the variables used in the study. Section 4 shows the estimation outputs and discusses the findings. Finally, the last section, Section 5, comments on the study's conclusions, policy implications, and limitations.

2 | LITERATURE REVIEW

Due to the inherent risk and sensitivity of the CEO remuneration, it has been a concern for the policymakers, globally. As such, it has also been an area of interest for scholars, where literature has evaluated both theory and practice for CEO remuneration, quite thoroughly. The area of CEO remuneration shows inconsistent findings when comparisons are made between emerging and developed markets ([Khursheed & Sheikh, 2022](#); [Assenso-Okofe, et al., 2021](#); [Khursheed & Sheikh, 2020](#)). Similarly, findings of country-specific studies and studies using international samples also show somewhat divergent results ([Edmans, et al., 2021](#); [Pucheta-Martínez & Gallego-Álvarez, 2021](#); [Gan, et al., 2020](#)). However, a critical examination of the literature available on CEO remuneration is performed below, before developing each hypothesis of the study.

2.1 | Agency Theory and CEO Remuneration

Agency theory is among the fundamental theories used to explain CEO remuneration ([Jensen & Meckling, 1976](#)). This theory suggests that the remuneration for the CEO should be set in a manner that causes goal congruence among the interest of the agents (CEO being one of them) and the principles (that is, the shareholders or owners of the company) ([Liu & Sickles, 2021](#)). The prominent proxies used to represent Agency theory relate to firm performance measures. The notion put forth to justify their use pertains to the fact that the firm's performance can be used to align the personal interests of the management and the shareholders ([Bhuyan, et al., 2022](#); [Zandi, et al., 2019](#); [Lin & Shi, 2019](#)). For example, tying CEO remuneration with the firm's performance (like return on asset (ROA), return on equity, or net profit margin (NPM)) ensures that CEOs work to improve the performance of the firm and increase shareholders' value, as argued by Zoghلامي ([2020](#)); and Sheikh, et al., ([2019](#)). Scholars have used different performance-based measures to represent Agency theory. However, one of the most popular measures used remains NPM ([Zandi et al., 2019](#)). Overall, mostly the literature demonstrates a positive and significant relationship between firm's performance and CEO remuneration. As such, this study hypothesizes the following relationship:

Hypothesis I: *Firm's performance shows a positive relationship with the remuneration of CEOs of non-financial firms in Pakistan.*

2.2 | Stakeholder Theory and CEO Remuneration

Stakeholder theory takes a broader scope when determining the accountability of the firms ([Freeman, 1984](#)). It argues that firms (and thus, their management) are not only answerable to the shareholders but need to work in the best interest of society at large. Concepts like sustainability and CSR become quite relevant here ([Freeman & Dmytiyev, 2017](#)). Scholars like Kharabsheh, et al. ([2022](#)); Radu & Smaili ([2022](#)); and Hoi, et al. ([2019](#)) have explored CEO remuneration using the Stakeholder theory as the basis for setting or determining CEO remuneration. The

most prominent proxy used to represent Stakeholder theory is the CSR or ESG index of the firms. However, governance measures (like board size or CG indexes) are also used to represent Stakeholder theory. Mostly, the literature demonstrates a significant and positive relation between CSR or sustainability practices and CEO remuneration. As such, the study hypothesizes the following relationship:

Hypothesis II: *CSR and sustainable practices show a positive relationship with remuneration of CEOs of non-financial firms in Pakistan.*

2.3 | Management Power Theory and CEO Remuneration

An alternative theory used to explain how remuneration of CEOs are set in practice is the Management Power theory, which states that high-performing managers do not automatically receive higher remuneration ([Winter & Michels, 2019](#)). The rationale here is that a firm's performance does not depend on the CEO's performance but is impacted by many other macroeconomic factors and market forces ([Göx & Hemmer, 2020](#)). As such, firms prefer to use factors like firm's size to determine CEO's remuneration, as CEO has relatively more 'power' over such factors. The measures used as a proxy for a firm's size include total assets, total revenue, total employees, and total market capitalization ([Blanes, Fuentes, & Porcuna, 2019](#)). Although, the most popular measures used to represent firm size are total assets and total revenue, however, these both are book-based¹ measures. As market capitalization is a market-based² measure, it can be considered a better representative of firm's size, from shareholders' perspective ([Drempetic, Klein, & Zwergel, 2020](#)). Studies performed by Reddy ([2023](#)); Yang, et al. ([2019](#)); and Blanes, et al. ([2019](#)) demonstrate a positive and significant relationship between firm's size and CEO remuneration. As such, the study hypothesizes the following relationship:

Hypothesis III: *The firm's size shows a positive relationship with remuneration of CEOs of non-financial firms in Pakistan.*

2.4 | Institutional Theory and CEO Remuneration

Fan, et al. ([2011](#)) highlight the importance of considering institutional factors when testing economic or financial theories. Based on this idea, it can be argued that institutional factors play a key role in determining the behavior of firms. Therefore, considering these factors, the literature uses Institutional theory to examine CEO remuneration setting practices ([Meyer & Rowan, 1977](#)). Institutional theory is rather broad in scope and scholars have examined these factors from different aspects in the literature ([Bussin, et al., 2023](#); [Lovett, et al., 2022](#); [Coetzee & Bezuidenhout, 2019](#)). The most prominent factors used to represent Institutional theory include governance and CEO-specific factors. Overall, the findings of scholars examining this theory are inconclusive; for example, Khurshed & Sheikh ([2020](#)) conclude that industry type matters when evaluating the role of CEO-specific factors in determining CEO remuneration in Pakistan. However, Coetzee & Bezuidenhout ([2019](#)) show that industry type does not matter in determining CEO remuneration in South Africa. Such divergence is expected when studies are focusing on different institutional backgrounds due to the changing market dynamics and preferences ([Fan et al., 2011](#)). Based on the theocratical justifications stated by Fan, et al. ([2011](#)), this study hypothesizes following relationship:

¹ Measured using historic financial data appearing in the financial statements of firms.

² Measured using data from the market, for example, market share price.

Hypothesis IV: *Institutional factors (that is, governance and CEO-specific factors) show a positive relationship with remuneration of CEOs of non-financial firms in Pakistan.*

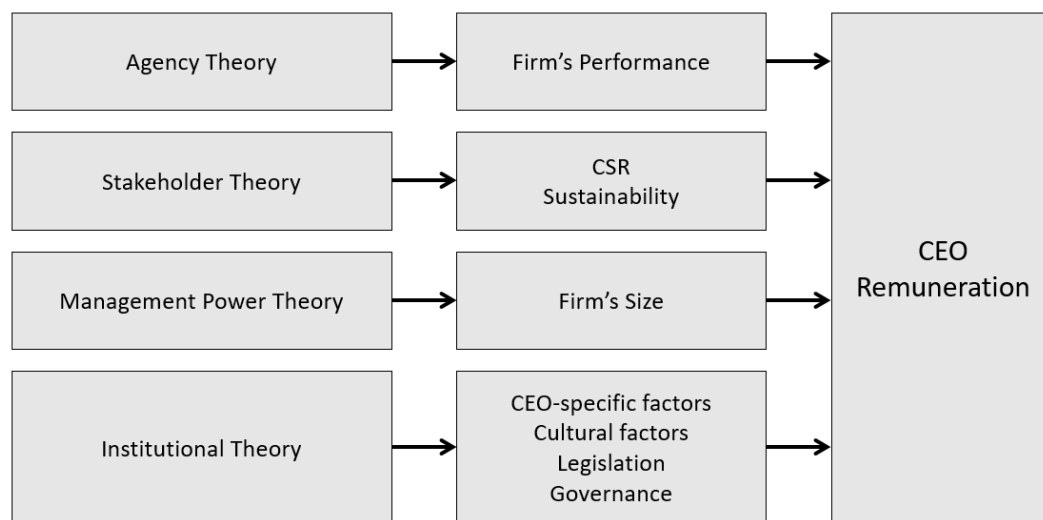
2.5 | Conclusion and Gap

Overall, available literature covering CEO remuneration is quite diverse, however, the study addresses two main gaps in the literature. Firstly, as scholars have examined it using different theoretical approaches, the results are inconclusive. As such, there is a need to establish the explanatory powers of different theorized relationships for CEO remuneration to establish how this area is determined in practice. Secondly, the studies covering different countries and markets show different results, reflecting the importance of considering institutional and market settings when inferring the results. Therefore, this study addresses these gaps by considering the four most popular theories used to explain CEO remuneration simultaneously. Further, the study focuses on the non-financial firms of Pakistan to consider the institutional uniqueness when inferring the results.

To summarize, the study aims to compare theory and practice of CEO remuneration for Pakistan, to ascertain which theorized relationship best explains practice in developing market of Pakistan. Based on the literature review conducted in this study, the theoretical model developed is demonstrated below.

Figure 1

Theoretical Model



Source: Author

3 | METHODOLOGY & DESIGN

3.1 | Research Design, Data Collection and Sample

This is an empirical study that uses an explanatory or quantitative research design. The sample selected for the study comprises Pakistan's non-financial firms included in the KSI-100 index³([Market Indexes Composition, 2023](#)). Financial firms are excluded from the scope of the study, as they are subject to different regulatory and governance mechanisms. As such, it is preferable to examine these two sectors separately, to enable more meaningful insights. The sample construction for this study is summarized in Appendix I.

The KE-100 Index consist of 75 non-financial firms ([Market Indexes Composition, 2023](#)) (rest are financial firms), however, due to unavailability of data (that is, missing data for certain years) 12 firms were removed from

³ The popular proxy used for Pakistan's market ([Zaffar & Hussain, 2022](#)).

the sample, and additional 5 firms were further removed as outliers (for example, companies having no CEO remuneration or abnormal losses). After removing the non-financial firms with missing data and outliers, the final sample consists of 580 balanced panel observations, collected for 58 non-financial firms from 2012 to 2021. Published annual reports and the companies' websites are the primary data sources. However, data related to the market are collected from publicly accessible websites (for example, the official website of the Pakistan Stock Exchange or investing.com).

The study only uses secondary data for estimation and analysis purposes. All the data used in the study is publicly available, reducing the ethical concerns associated with data handling and wrangling. Publicly accessible websites (like LinkedIn) were used for variables where insufficient information was available in published reports (for example, CEO tenure or total experience).

The study intentionally keeps the proxies or measures used to represent different areas under study to a minimum (especially the firm performance and firm size) to avoid the problem of multicollinearity. The definition and measurement of the variables are elaborated in Appendix II.

3.2 | Testing Approach and Empirical Model

This study uses the GMM/IV⁴ approach to estimate the outputs. This is mainly because GMM is considered a robust testing approach, especially where the model exhibits an endogeneity problem ([Aslam, Haron, & Tahir, 2019](#)). The available literature shows causality runs both ways for certain selected variables of the study, for example, the firm's performance and/or size with CEO remuneration ([Pucheta-Martínez & Gallego-Álvarez, 2020](#); [Aslam, et al., 2019](#); [Olaniyi, 2019](#); [Javeed & Lefen, 2019](#)).

CEO remuneration also shows dependency on its lag, theoretically speaking, the board would consider the previous year's remuneration when setting the current CEO remuneration. For example, it is common practice in firms to incrementally increase remuneration from last year, to account for factors like inflation.

Such factors increase the possibility of endogeneity between the variables of this study. Considering these factors, derived from theory and earlier literature, the study conducts a test for endogeneity for firm's performance (net profit margin) and size (market capitalization). For this purpose, both these variables are regressed using the explanatory variables shown in Appendix IV (Equations 'a' and 'b'), and the residuals are extracted. CEO remuneration is then regressed following Fixed Effects EGLS technique, using the extracted residuals from the earlier regression to confirm endogeneity.

The empirical model tested in the study is stated below.

Equation 1

$$\ln\text{CEOPAY}_{i,t} = \gamma_0 \ln\text{CEOPAY}(-1)_{i,t} + \gamma_1 \text{NP}_{i,t} + \gamma_2 \ln\text{MC}_{i,t} + \gamma_3 \text{S}_{i,t} + \gamma_4 \text{BS}_{i,t} + \gamma_5 \text{BI}_{i,t} + \gamma_6 \text{CEOD}_{i,t} + \gamma_7 \text{CEOT}_{i,t} \\ + \gamma_8 \text{CEOO}_{i,t} + \gamma_9 \text{CEOE}_{i,t} + \gamma_{10} \text{AG}_{i,t} + \gamma_{11} \text{LER}_{i,t} + v_{i,t}$$

The study first performs the Unit Root tests on the variables to test their stationarity. After estimating Equation 1 above, the study also performs a robustness check to improve the quality of the findings of this study.

4 | RESULTS and ANALYSIS

⁴ Generalized Method of Movements – Instrumental Variables

4.1 | Descriptive Statistics and Correlation Among Variables

Table 1 shows the summary of the descriptive statistics of the selected variables. The variables have been expressed in natural log form to improve the normality, where relevant.

Table 1

Summary of Descriptive Statistics

Descriptive stats	Mean	Median	Standard Deviation	Range	Minimum	Maximum	Count
CEOPAY*	43,846.64	31,025.50	49,580.43	556,851.00	1.00	556,852.00	580
lnCEOPAY	10.28	10.34	1.07	13.23	-	13.23	580
NP**	0.13	0.09	0.42	12.91	(5.46)	7.45	580
LER**	2.29	1.00	7.78	166.04	(84.92)	81.12	580
BS***	9.02	8.00	2.29	16.00	5.00	21.00	580
BI***	7.12	6.00	2.51	18.00	2.00	20.00	580
S	0.55	1.00	0.50	1.00	-	1.00	580
CEOD	0.07	-	0.25	1.00	-	1.00	580
CEOT***	7.00	5.00	6.56	29.00	1.00	30.00	580
CEOE***	29.79	30.00	8.25	44.00	8.00	52.00	580
CEO**	0.03	0.00	0.07	0.34	-	0.34	580
AG***	43.26	38.50	24.90	155.00	5.00	160.00	580
MC****	65,575	26,408	118,685	1,107,644	8	1,107,652	580
lnMC	23.80	24.00	1.84	11.86	15.87	27.73	580

Note: (*) expressed as PKR thousands, (**) expressed as ratio, (***) expressed as numbers, (****) expressed as PKR millions.

When considering the measures of central tendency, market capitalization shows the highest mean in absolute form. However, when considering CEO remuneration and market capitalization in natural logs, age of the firm shows maximum mean and median values among the variables of the study, followed by the total experience of the CEO. When considering measures of dispersion, market capitalization shows the highest range and standard deviation in absolute form. However, restricting the focus again on natural logs of relevant variables, the highest range is shown by leverage and the highest standard deviation is shown by firm's age. As firm's age and leverage are control variables, considering just independent variables of the study, the CEO-specific characteristics demonstrate the highest dispersion.

The correlation matrix for the selected variables is presented in Table 2. The highest correlation is demonstrated between the two governance variables (board size and board independence). Such a high correlation between variables increases the potential for multicollinearity. However, literature has used both these measures thoroughly together, when evaluating CEO remuneration, as such, this study also does not drop any of these variables when estimating the models.

Table 1*Correlation Matrix*

	<i>lnCEOPAY</i>	<i>NP</i>	<i>LER</i>	<i>BS</i>	<i>BI</i>	<i>S</i>	<i>CEOD</i>	<i>CEOT</i>	<i>CEOE</i>	<i>CEOO</i>	<i>AG</i>	<i>lnMC</i>
<i>lnCEOPAY</i>												
<i>NP</i>	17.91%											
<i>LER</i>												
<i>BS</i>	14.90%		13.17%									
<i>BI</i>	18.83%	11.87%	12.64%	89.76%								
<i>S</i>	17.29%	8.14%		17.97%	24.88%							
<i>CEOD</i>				-10.29%	-17.70%							
<i>CEOT</i>				-17.74%	-26.42%	-29.30%	12.77%					
<i>CEOE</i>				12.75%	20.39%	19.37%						
<i>CEOO</i>				-15.88%	-17.26%	-14.72%		44.71%				
<i>AG</i>	-10.60%			-8.44%	-8.75%				-13.64%	18.08%		
<i>lnMC</i>	34.93%	17.60%		20.67%	26.22%	19.48%	-12.58%	-28.45%	14.53%	-24.80%		

Note: All the figures are significant at 5%.

4.2 | Estimation Results and Interpretation

As stationarity is one of the essential assumptions when regressing the variables for estimating coefficients, we first consider the stationarity of the variables by running the Unit Root tests. The results of the Unit Root tests are available in Appendix III. The Unit Root test indicates that, except for CEO ownership and CEO experience, all other variables are integrated at the level. The Unit Root test results also show that all variables are integrated at the first difference. Although most variables do not show a stationarity problem at the level, it must be noted that this is not a sufficient condition for a long-term relationship, but a necessary condition ([Tjøstheim, 2020](#)). However, the long-term relationship between these variables (co-integration) is not within the scope of this study, but the results of Unit Root test do pose doubt on their long-term relationship.

The estimated output for Equation 1 is demonstrated below. The probability of J-statistics shows that the model is not overidentifying the restrictions.

Table 2*Estimation Output*

Dependent Variable: CEO remuneration		
Method: Panel Generalized Method of Movements		
Sample: 2012 - 2021		
Periods included (adjusted sample) = 8		
Cross-sections included: 58		
Total panel (balanced) observations: 464 (reduced from 580)		
Instrument specification: @DYN(LNCEOPAY(-2), RA(-1), LNMC(-1), AG(-1), LEV(-1), DPS(-1))		
Variable	Coefficient	
LNCEOPAY(-1)	0.0319	**
NP	0.7476	***
LNMC	0.0502	**
S	0.1163	**
BS	-0.1150	***
BI	0.1591	***
CEOD	-0.1691	
CEOT	-0.0002	
CEOO	4.1305	***

CEOE	0.0086	***
AG	0.0917	***
LER	0.0043	
J-statistic	23.34315	
Prob (J-statistic)	0.7606	

Note: (***) denotes significant at 1%, (**) denotes significant at 5%, and (*) denotes significant at 10%.

The results demonstrate a positive and significant impact of NPM on CEO remuneration. This advocates that the board does consider firm's performance when setting CEO remuneration in Pakistan. Profitability is usually associated with long-term stability, thus, linking CEO remuneration to performance supports the Agency theory, as highlighted by Jaiswal & Raman (2019). This finding agrees with the earlier literature (Khan, et al., 2023; Reddy, 2023; and Bhuyan, et al., 2022). As NPM is expressed as a ratio, the value of the coefficient of NPM can be interpreted as a 1% increase in NPM increases the CEO remuneration by 0.75%.

Similarly, the results demonstrate a positive and significant impact of the firm's size (represented by market capitalization) on CEO remuneration. This demonstrates that the board also links CEO remuneration to factors that arguably CEO has more 'power' over, providing evidence that, like Agency theory, Management Power theory also holds explanatory power over CEO remuneration in Pakistan. This finding is consistent with the work of earlier scholars like Reddy (2023); and Hoi, et al. (2019). Considering studies focusing specifically on Pakistan, the results agree with prior studies by Khan, et al. (2023) and Khursheed & Sheikh (2020). However, these findings do not agree with the study of Sheikh, et al. (2019), where it was demonstrated that firm's size does not significantly impact CEO remuneration for non-financial firms of Pakistan.

Although overall these findings agree with the literature, when comparing the role of firm's performance and size in determining CEO remuneration, the coefficient and the significance of firm's size are relatively lower than performance. This is because firm's size shows significance at 5%, whereas firm performance shows significance at 1%. Additionally, as both market capitalization and CEO remuneration are expressed in log form, the coefficient of market capitalization can be interpreted as the sensitivity of CEO remuneration to changes in the firm's market capitalization. Therefore, a 1% change in Market capitalization increases the CEO remuneration by 0.05%. As such, the findings show that the explanatory power of firm's performance is higher than its size.

The results also demonstrate a positive and significant impact of CSR and sustainability reporting on CEO remuneration. However, the variable used to represent the CSR and sustainability practices of the firm is a dummy variable, having a value of unity where the firm provides relevant disclosures of CSR and sustainability in its annual report (or issues a separate CSR or sustainability report). As such, the findings demonstrate that the CEO remuneration for firms that provide CSR or sustainability disclosures is, on average, 11.63% higher than for firms that do not provide CSR or sustainability disclosures. These study results corroborate earlier literature, for example, these findings agree with the conclusions drawn by Kharabsheh, et al. (2022).

Although this impact is relatively higher than the impact of firm's performance and size, it should be highlighted that CSR and sustainability is examined here as a constant dummy variable, therefore, its impact is not relative, but instead, absolute. On the other hand, the impact of both the firm's size and performance is relative. Therefore, the impact of firm's size and performance will increase as the firm's size and performance increase respectively. Therefore, it can be concluded that the impact of firm's size and performance can be considered more powerful than CSR and sustainability, based on the findings of this study.

The Institutional theory is represented by governance and CEO-specific factors, and the results of the estimation output are rather interesting. Firstly, although both board size and independence significantly impact CEO remuneration, the impact of board size is negative, and the impact of board independence is positive. This depicts that as the board size increases by one member, the CEO remuneration reduces by 0.12%. Similarly, as the number of independent directors increases by one member, the CEO remuneration increases by 0.16%. Based on these contradictory results, it is difficult to ascertain whether board composition positively or negatively impacts CEO remuneration. For example, from the results, it can be inferred that increasing the size of the board by one executive member will reduce the average CEO remuneration, however, increasing the size of the board by one non-executive member might have a net positive impact on the CEO remuneration (depending on existing size and independence of the board). As board composition is a relatively complex phenomenon, such contradictions or complexities are expected. This inconsistency in the findings of the impact of governance on CEO remuneration also resonates in the earlier literature. For example, a study by Gan, et al. (2020) shows that board size does not explain CEO compensation, specifically when considering long-term CEO remuneration. Similarly, this study's findings contradict Reddy (2023); and Bhuyan, et al. (2022).

Finally, the results demonstrate mixed findings when considering the impact of CEO-specific factors. CEO duality (CEO also serving as the board's chairperson) and CEO tenure (consecutive years of working as CEO of the firm) does not significantly impact CEO remuneration. These findings do not agree with the conclusions drawn by Khursheed & Sheikh (2020), where it was concluded that CEO tenure has a significant positive impact on remuneration of CEOs in Pakistan. However, CEO ownership and CEO experience both show a significant positive impact. As Pakistan is an emerging market, it is characterized by lower investor protection, weaker financial markets, and concentrated ownership of the firms (Fan et al., 2011). As such, mainly due to concentrated ownership in non-financial firms, the impact of CEO ownership is quite substantial on CEO remuneration. The results show that a 1% increase in CEO ownership shows, on average, a 4.13% increase in CEO remuneration. These findings agree with the work conducted by Yang, et al. (2019); and Hoi, et al. (2019).

However, the findings show mixed results when considering the overall impact of institutional factors (governance and CEO-specific). CEO-specific factors generally show a positive impact on CEO remuneration, but only two out of four variables have a significant relationship with CEO remuneration. Similarly, governance also shows mixed results, although both variables (board's size and independence) significantly impact CEO remuneration, however, the sign of the relationship is different. Therefore, the explanatory power of institutional factors on CEO remuneration can be considered inferior to other theories like Agency theory and Management Power theory (firm's performance and size, respectively).

4.3 | Summary of the Findings

To summarize the findings, the results show evidence to support the explanatory power of all four theories selected for the examination, when determining CEO remuneration in Pakistan. However, the explanatory power of these theories is not the same. For example, the results advocate that the firm's performance has relatively more material impact on CEO remuneration, demonstrating that in Pakistan, the board considers firm's performance more important variable when setting CEO remuneration. These findings confirm the earlier work of Khan, et al. (2023); Reddy (2023); and Bhuyan, et al. (2022). On the other hand, Institutional theory shows mixed results, depicting that although these factors play a role when setting CEO remuneration, their overall

impact is lesser than other factors like firm's performance, firm's size, and CSR or sustainable business practices. These findings agree with the work of Gan, et al. (2020), but contradict Reddy (2023); and Bhuyan, et al. (2022).

Based on the results of the study, the order of importance or explanatory power (from highest to lowest) of the theories is: (1) Agency theory (or firm's performance), (2) Management Power theory (or firm's size), (3) Stakeholder theory (or CSR and sustainable practices), and (4) Institutional theory (or governance and CEO-specific factors).

4.4 | Robustness Check

To ensure that the findings of the study are robust, the study re-estimates the results by changing: (1) the proxies⁵ for firm's performance (from NPM to ROA) and firm's size (from market capitalization to total revenue); and (2) estimation technique (from GMM/IV to Fixed Effects EGLS⁶). The re-estimated equation (Equation 2) is expressed below.

Equation 2

$$\ln\text{CEOPAY}_{i,t} = \lambda_{0,t} + \lambda_1\text{RA}_{i,t} + \lambda_2\ln\text{RVN}_{i,t} + \lambda_3\text{S}_{i,t} + \lambda_4\text{BS}_{i,t} + \lambda_5\text{BI}_{i,t} + \lambda_6\text{CEOD}_{i,t} + \lambda_7\text{CEOT}_{i,t} + \lambda_8\text{CEO}_{i,t} \\ + \lambda_9\text{CEO}_{i,t} + \lambda_{10}\text{AG}_{i,t} + \lambda_{11}\text{LER}_{i,t} + \epsilon_{i,t}$$

To perform the robustness check, the study first estimates the above equation using the Random Effects approach and performs the Hausman test. The results of the Hausman test show preference for the Fixed Effects approach. Therefore, Equation 2 is re-estimated using the Fixed Effects approach, and the results are expressed in the table below.

Table 3

Robustness Check

Dependent Variable: CEO remuneration	Equation 1		Equation 2	
Method:	GMM		FIXED EFFECTS	
Sample:	2012-2021		2012-2021	
Periods included:	8 (adjusted)		10	
Cross-sections included:	58		58	
Total panel (balanced) observations:	464		580	
Variable	Coefficient		Coefficient	
C			4.1853	***
LNCEOPAY(-1)	0.0319	**		
NP	0.7476	***		
RA			0.4150	**
LNMC	0.0502	**		
LNRVN			0.1058	**
S	0.1163	**	0.1292	***
BS	-0.1150	***	-0.1151	***
BI	0.1591	***	0.1431	***
CEOD	-0.1691		-0.0042	
CEOT	-0.0002		-0.0025	
CEO	4.1305	***	0.2262	
CEO	0.0086	***	-0.0068	**

⁵ The measurement and definition of the variables RA and lnRVN are available in Appendix II.

⁶ Estimated Generalized Least Squares

AG	0.0917	***	0.1016	***
LER	0.0043		-0.0011	
F-statistic			58.9282	
Prob (F-statistic)			0.0000	***
J-statistic	23.34315			
Prob (J-statistic)	0.7606			

(1) (***) denotes significant at 1%, (**) denotes significant at 5%, and (*) denotes significant at 10%.

(2) Instrument specification for GMM (Equation 1): $DYN(LNCEOPAY(-2))$, $RA(-1)$, $LNMC(-1)$, $AG(-1)$, $LEV(-1)$, $DPS(-1)$, the sample has been adjusted to cover the period 2014-2021 (to account for the lagged variables), as such, the total balanced observations used for estimation are 464.

The major findings under both the estimation approaches remain the same, with firm performance demonstrating the highest explanatory power concerning the determination of CEO remuneration. The changes in coefficients of firm's size, CSR or sustainability, and control variables remain immaterial as well. The CEO-specific factors show most changes in the re-estimation, where the coefficient of CEO ownership becomes insignificant, and the coefficient of CEO experience reverses its sign, becoming consistent with CEO duality and tenure.

5 | CONCLUSION

This study compares the 'theory and practice' of CEO remuneration, by comparing the explanatory power of four popular theoretical approaches used to explain how firms set their CEO remuneration. The findings of this study remain overall consistent with the previous literature, showing that all four theories have significant explanatory power for CEO remuneration in Pakistan ([Khan, et al., 2023](#); [Khursheed & Sheikh, 2022](#); [Aslam, et al., 2019](#); [Blanes, et al., 2019](#); [Coetzee & Bezuidenhout, 2019](#); [Lin & Shi, 2019](#)). However, firm's performance shows the highest explanatory power, demonstrating that firms in Pakistan favor Agency theory when setting CEO remuneration. This finding is consistent with the traditional theoretical understanding, that emerging markets have an overall risky political and economic setting ([Fan et al., 2011](#)). As such, firms prefer to reduce the agency problem by aligning the interests of shareholders and the CEO by linking CEO remuneration with the firm's long-term stability (or profits and performance) ([Jaiswall & Raman, 2019](#)).

The study's findings provide two major contributions. The study's theoretical contribution relates to the comparison of the four most popular theories used to explain CEO remuneration in the literature. A direct comparison among the theories helps clarify the 'theory and practice' debate, demonstrating which theory best explains the practice in the institutional setting of Pakistan. Additionally, the major practical implication of the current study relates to setting an optimal CEO remuneration policy. The study empirically shows which factors play a role in setting CEO remuneration in Pakistan. The economic and political conditions are dynamic and keep on changing. As such, the board needs to periodically reassess the determinants of CEO remuneration. Pakistan's current institutional and market settings favor linking CEO remuneration to firm's performance, however, as the external environment changes, the board needs to re-evaluate the CEO remuneration policy, this is because the importance of factors and preferences of relevant stakeholders might also change.

Therefore, the findings of this study provide a thorough insight on how firms determine CEO remuneration in the developing market of Pakistan, and what factors are currently perceived as important, considering the existing market conditions. The study also highlights the determinants based on the four leading theories

explaining CEO remuneration in literature. Therefore, the study helps identify which tools can be managed and changed by firms when setting CEO remuneration, as the external factors change.

The limitations of the current study provide direction for future research to further enhance the literature on CEO remuneration. The first limitation relates to the sample size. The study uses a sample of 58 non-financial firms, this is consistent with other similar studies due to lack of availability of data, especially in the context of Pakistan ([Khan, et al., 2023](#); [Khursheed & Sheikh, 2022](#); [Khursheed & Sheikh, 2020](#); [Aslam, et al., 2019](#)). However, improving the sample size would improve the overall quality and the generalizability of the findings. Additionally, although Unit Root tests for the variables mainly do not show a problem of stationarity, however, the long-term relationship between the variables needs to be further explored (as a sufficient condition for a long-term relationship is for the variables to be integrated at a higher level than their linear combination ([Tjøstheim, 2020](#))). Moreover, the study examines the impact of CSR or sustainability using a dummy variable; considering the overall complexity of this area, this can be seen as an inefficient approach. Future research can develop or use relevant indexes to represent governance and sustainability (or CSR) for more robust results.

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Appendix I

Sample Construction

Detail	Number		
Total NON-FINANCIAL FIRMS in KSE-100 Index	75		
Less:			
Companies missing data for 2012-2021	12		
Companies excluded as outliers	5		
Final sample	58		
Total number of observations per firm (10 years)	10		
Total number of observations	580		
Sample distribution by industry			
Industry	Firms	Observations	%
Automobile Assembler	4	40	6.90%
Automobile Parts & Accessories	2	20	3.45%
Cable & Electrical Goods	1	10	1.72%
Cement	7	70	12.07%
Chemical	4	40	6.90%
Engineering	2	20	3.45%
Fertiliser	4	40	6.90%
Food & Personal Care Products	3	30	5.17%
Glass & Ceramics	1	10	1.72%
Leather & Tanneries	1	10	1.72%
Miscellaneous	2	20	3.45%
Oil & Gas Exploration Companies	4	40	6.90%
Oil & Gas Marketing Companies	4	40	6.90%
Paper & Board	1	10	1.72%
Pharmaceuticals	2	20	3.45%
Power Generation & Distribution	3	30	5.17%
Sugar & Allied Industries	1	10	1.72%
Synthetic & Rayon	1	10	1.72%
Technology & Communication	1	10	1.72%
Textile Composite	6	60	10.34%
Textile Weaving	1	10	1.72%
Tobacco	2	20	3.45%
Woollen	1	10	1.72%
Total	58	580	100.00%

Source: Author

Appendix II

Variables and Measurements

Nature	Name	Symbol	Measurement	Source	Reference
Dependent	CEO total remuneration	lnCEOPAY	Natural log of basic pay, bonuses, benefits, post-employment benefits, and share options.	Disclosed in the notes to the financial statements	Khursheed & Sheikh (2022); Khursheed & Sheikh (2020); Blanes, et al. (2019).
Independent					
Firm's performance (Agency Theory)	Net Profit Margin	NP	Net income divided by total net sales.	Financial statements	Zandi, et al. (2019).
Firm's size (Management Power Theory)	Market capitalization	lnMC	Total ordinary shares issued multiplied by average market share price for the year.	Financial statements and investing.com	Wijeweera, et al. (2022).
CSR and sustainability (Stakeholder Theory)	Sustainability / CSR reporting	S	Dummy variable having a value of 1 in case the company issues either: (1) Integrated Report, (2) CSR report, (3) Sustainability report, (4) ESG report. Otherwise, the value of the dummy variable is 0.	Published on the official website.	Pucheta-Martínez & Gallego-Álvarez (2021).
Governance and CEO-specific factors (Institutional Theory)	Board size	BS	Total number of directors on the Board.	Annual report	Radu & Smaili (2022); Pucheta-Martínez & Gallego-Álvarez (2021); Gan, et al. (2020). Reddy (2023);
	Board independence	BI	Total non-executive or independent directors divided by total board size.	Annual report	Kharabsheh, et al. (2022); Radu & Smaili (2022).
	CEO duality	CEOD	Dummy variable having a value of 1 if the CEO is also the chairperson of the firm and 0 otherwise.	Annual report	Kharabsheh, et al. (2022); Bhuyan, et al. (2022); Radu & Smaili (2022).
	CEO tenure	CEOT	Total number of consecutive years as CEO.	Annual report	Gan, et al. (2020); Khursheed & Sheikh (2020); Hoi, et al. (2019).
	CEO ownership	CEOO	Total shares owned by the CEO divided by the total number of shares.	Annual report	Kharabsheh, et al. (2022); Bhuyan, et al. (2022).
	CEO experience	CEOE	Total number of years of CEO experience.	Profile of CEO (in the annual report, firm's website, or LinkedIn, etc.)	Lin & Shi (2019).
	Firm age	AG	Total number of years since the incorporation of the firm.	Annual report	Zoghلامي (2020); Song & Wan (2018).
Control	Leverage	LER	Total debt divided by total equity.	Annual report	Reddy (2023); Kharabsheh, et al. (2022).
Robustness					
Firm's performance (Agency Theory)	Return on asset	RA	Net income divided by total assets.	Financial statements	Bhuyan, et al. (2022); Zoghلامي (2020); Blanes, et al. (2019).
Firm's size (Management Power Theory)	Total revenue	lnRVN	Natural log of total revenue.	Financial statements	Reddy (2023); Gan, et al. (2020); Yang, et al. (2019).

Source: Compiled by author, relevant sources are stated in the last column.

Appendix III

Phillips-Perron Fisher Unit Root Test

Variable	Phillips-Perron Fisher Unit Root (Intercept and Trend)			
	Level	1st Difference		
	Chi-square Statistic	Probability	Chi-square Statistic	Probability
lnCEOPAY	293.739	0.0000***	481.302	0.0000***
RA	222.661	0.0000***	302.58	0.0000***
NP	224.540	0.0000***	355.998	0.0000***
lnRVN	182.176	0.0001***	339.974	0.0000***
lnMC	212.475	0.0000***	161.754	0.0032***
BS	98.432	0.0007***	220.125	0.0000***
BI	148.903	0.0000***	366.18	0.0000***
CEOO	88.4936	0.1199	243.346	0.0000***
CEOE	37.186	0.9752	127.567	0.0000***
CEOT	87.305	0.0077***	199.073	0.0000***

Source: Author

Note: The values in bold are significant, (***) denotes significant at 1%, (**) denotes significant at 5%, and (*) denotes significant at 10%.

Appendix IV

Testing Endogeneity

Equation 'a' for NP:

$$NP_{i,t} = \alpha_0 + \alpha_1 \ln MC_{i,t} + \alpha_2 S_{i,t} + \alpha_3 BS_{i,t} + \alpha_4 BI_{i,t} + \alpha_5 CEOD_{i,t} + \alpha_6 CEOT_{i,t} + \alpha_7 CEOO_{i,t} + \alpha_8 CEOE_{i,t} + \alpha_9 AG_{i,t} + \alpha_{10} DIV_{i,t} + u_{i,t}$$

(Where variable DIV represents cash dividend paid during the year).

Model specifications: The model is regressed using Fixed Effects EGLS approach, keeping effects of cross-section weights fixed, using cross-section weights as GLS weights, and using cross-section weights (PCSE) as coefficient covariance method.

The residuals of the estimation are extracted and regressed in following Equation, with same model specifications as above:

$$\ln CEOPAY_{i,t} = \beta_0 + \beta_1 \text{RESID}(NP)_{i,t} + \beta_2 \ln MC_{i,t} + \beta_3 S_{i,t} + \beta_4 BS_{i,t} + \beta_5 BI_{i,t} + \beta_6 CEOD_{i,t} + \beta_7 CEOT_{i,t} + \beta_8 CEOO_{i,t} + \beta_9 CEOE_{i,t} + \beta_{10} AG_{i,t} + \eta_{i,t}$$

The results of the estimation demonstrate that the residuals are significant at 1%, confirming the problem of endogeneity for the variables.

Equation 'b' for LNMCP:

$$\ln MC_{i,t} = \delta_0 + \delta_1 NP_{i,t} + \delta_2 S_{i,t} + \delta_3 BS_{i,t} + \delta_4 BI_{i,t} + \delta_5 CEOD_{i,t} + \delta_6 CEOT_{i,t} + \delta_7 CEOO_{i,t} + \delta_8 CEOE_{i,t} + \delta_9 AG_{i,t} + \delta_{10} DPS_{i,t} + \vartheta_{i,t}$$

(Where variable DPS represents dividend per share for the year).

Model specifications: The model is regressed using Fixed Effects EGLS approach, keeping effects of cross-section weights fixed, using cross-section weights as GLS weights, and using cross-section weights (PCSE) as coefficient covariance method.

The residuals of the estimation are extracted and regressed in following Equation, with same model specifications as above:

$$\ln CEOPAY_{i,t} = \xi_0 + \xi_1 \text{RESID}(\ln MC)_{i,t} + \xi_2 NP_{i,t} + \xi_3 S_{i,t} + \xi_4 BS_{i,t} + \xi_5 BI_{i,t} + \xi_6 CEOD_{i,t} + \xi_7 CEOT_{i,t} + \xi_8 CEOO_{i,t} + \xi_9 CEOE_{i,t} + \xi_{10} AG_{i,t} + \varepsilon_{i,t}$$

The results of the estimation demonstrate that the residuals are significant at 10%, confirming the problem of endogeneity for the variables.

Results

Endogeneity test for	NP	LNMCP
Dependent variable	LNCEOPAY	LNCEOPAY
Coefficient of residuals	0.15119 ***	0.028265 *
Conclusion	Endogeneity	Endogeneity

Source: Author