

The Impact of Pay Gaps on Firm Performance

Shiyan Yang

Southwestern University of Finance and Economics, Chengdu 611130, China.

Abstract: The impact of the salary gap between executives and employees on corporate performance has always been a hot topic in academic circles, but from a horizontal perspective, there are few studies on the salary gap between employees at the same level and between different companies. This paper's target is to inquire into the salary gap of lower paid employees on firm performance. This paper collects the opinions of ordinary employees on the salary gap of enterprises through questionnaire survey, and selects the employee salary data of listed companies from 2014 to 2022 in China for regression analysis. This paper finds convincing evidence that, from the perspective of the average employee, the pay gap between peers is a better motivator for them to work hard. According to the regression results, it is found that wage difference of lower-paid employees is positively correlated with corporate performance, but the correlation coefficient is not significant, which indicates that it is may not a simple linear connection. It shows that the excessive salary gap will also limit employees' attention to their own interests, and then affect corporate performance.

Keywords: Pay Gap; Financial Performance; Employee

1. Introduction

The report of the 20th National Congress of the Communist Party of China attached a great importance of promoting high-quality development, indicating that development is the foundation and key to solving all problems in our country. ^[1] As the main participants in market economic activities, Chinese enterprises with important economic influence should also follow the call of the state. The salary gap is one of the elements that determine the target, so the academic circles have conducted extensive research on the salary gap. With the development of society and the development of marketisation, income inequality is increasing, executive compensation is increasing, and employee compensation is decreasing. ^[2] How to maintain the salary gap, make employees more efficient, and maximize corporate profits are important issues for entrepreneurs to think about. The work of Kacperczyk and Balachandra indicates that the pay gap can better help companies retain employees and reduce inter-company mobility. ^[3] There are many factors contributing to the widening pay gap. Baumgarten, Felbermayr and Lehwald have found that the industry effect and collective bargaining system have the strongest promotion effect on the widening wage gap by studying the data of (West) German enterprises from 1996 to 2014. ^[4] The pay gap affects different companies differently. Some scholars have pointed out that wage dispersion has a greater impact on the performance of technology-based enterprises. ^[5] Regardless of the industry, the pay gap has a greater impact on corporate performance. As a member who promotes the development of the enterprise, employees are the key link in the execution of tasks. However, most previous studies generally analyse the impact of the salary gap within the top management team or between employees and the top management team on corporate performance, and few studies specifically analyse the impact of employee salary gaps on corporate performance.

2. Literature review

The pay gap has always been a research hotspot in the academic circles. The overall wage inequality of the enterprise will have a greater impact on the effort of employees. ^[6] It can be seen that studying the salary gap and focusing on promoting the construction of the enterprise salary system are of great significance to the long-term development of the enterprise itself. In this paper, return on total assets (hereafter referred to as ROA) and return on equity (hereafter referred to as ROE) are used to measure the corporate

performance of selected samples. Past research on the economic results of corporate salary difference has been inconsistent. The academic circle holds two opposite views on the impact of salary difference on firms' performance. One is the tournament theory that this factor has a directly correlation with firms' financial return, and the other is behavioural theory that a smaller salary difference is, a more beneficial to corporate cohesion.

Tournament theory emphasizes the positive relationship between pay loopholes and firm execution.^[7] The salary level of a certain level of the organisation can motivate employees at the same level and lower levels, and enterprises can improve the overall performance of enterprises by rewarding productive employees and stimulating the enthusiasm of other employees.^[8] Recent papers have shown that the pay gap between presidents and representatives can improve corporate performance by helping to reduce employee misconduct, motivating employees to actively innovate and reducing stock price crash risk.^[9]

Behavioural theory attaches great importance to collaboration and fairness, and believes that an unnecessary compensation hole will harm the attachment of the venture, weaken the satisfaction of workers, and hence lessen the exhibition of the venture.^[10] A large number of studies have found that a huge pay gap in various industries will lead to a decrease in personal satisfaction, thereby reducing the cohesion of the enterprise.^[11] Widening corporate pay gaps also impair the ability of teams to work together, reduce corporate productivity, and undermine corporate profitability.^[12]

Whether they support the tournament theory, the behavioral theory, or both, most of the above articles focus on the impact of the pay gap within the executive team on firm performance in an industry. The pay gap within the executive team and the pay gap within employees have different impacts on the enterprise. When the salary system is gradually becoming market-oriented in the construction of modern enterprises, the salary gap between executives and employees continues to widen, a series of salary chaos has surfaced, and the real value of the widening salary gap has been questioned.^[13] However, with the increasingly fierce competition in the market environment, human resources have become a key point for enterprises to gain competitive advantages.

The reason for this paper is to investigate the effect of the compensation hole among low paid employees on firm performance. For better research, this paper proposes the following three questions:

1. Does the salary gap between employees at the same level motivate lower-paid employees more?
2. How does the pay gap affect firm performance?
3. How should the firm's pay gap be maintained to maximize firm performance?

3. Methodology

3.1 Methodology overview

The overview of the research methodology is presented in the following table:

Table 1. Methodology Overview

	Research Question 1 Does the salary gap between employees at the same level motivate lower-paid employees more?	Research Question 2 How does the pay gap affect firm performance?	Research Question 3 How should the firm's pay gap be maintained to maximize firm performance?
Data	Empirical data of domestic A-share listed manufacturing and finance industries, questionnaires	Empirical data of domestic A-share listed manufacturing and finance industries	Empirical data of domestic A-share listed manufacturing and finance industries
Resources	Primary: Questionnaires Secondary: Wind, iFinD, CSMAR	Secondary: Wind, iFinD, CSMAR	Secondary: Wind, iFinD, CSMAR
Research methods	Quantitative: Comparing the pay gap difference through the database. And searching for information about the operating mechanisms in two industries.	Quantitative: Regression model and analysis of coefficient	Quantitative: Find the best strategy for normal firms in two industries based on the regression results Qualitative: Texture

	Qualitative: Asking questions to several firms' employees and managers about the pay gap.	$Performance_{t+1} = \alpha_0 + \alpha_1 Executive_pay_premi + \alpha_2 Employee_pay_premi + industrydummies + \varepsilon$	explanation about the better strategy
Analysis Tools	excel	excel	excel
Result presentation	Regression model, textual explanation to the difference and the reason	Charts, tables, textual explanation	Texture analysis based on former study

First of all, the article adopts the method of questionnaire survey, and conducts a questionnaire survey on the company's salary gap to the company's performance marketing among investors in various industries. It is helpful to compare the regression results in the subsequent quantitative regression analysis to prove whether the investor's attitude is consistent with the empirical results. And the questions of the questionnaire survey include questions about employee salaries and questions about the industry they belong to. The reason why the scope of the questionnaire survey is expanded is not only to conduct research in one industry because people are more sensitive to salary issues. If the questionnaire survey is conducted in one industry, the sample size obtained will be too small, and the sample size is likely to be insufficient. The generalizability of the findings is questionable.

Secondly, in the subsequent empirical regression part, the company's ROE will be used as the company's performance indicator, which helps to reflect the company's return on assets. And in this regression model, the pay gap of employees with lower pay levels will be used as the company's pay gap indicator. Moreover, companies may have different rates of return due to different company sizes, which is reflected in the company's scale effect. Then in this regression, the research will use the logarithmic value of the company's total assets as the company's asset index, which is helpful for the interference caused by the company's size when studying the impact of the salary gap on the company's performance. In addition, the time fixed effect parameter of the year was added to the study, excluding the influence of different years.

3.2 Data collection

3.2.1 Primary data

To investigate the difference in average salary caused by all industry, this paper collects primary data from questionnaires by using WenJuanXing. A total of 235 valid questionnaires are returned. The participants in filling out the questionnaire are executives and employees in the finance and manufacturing industry, or people whose friends or family members worked in manufacturing or finance industry. In terms of questionnaires, executives and employees in both industries answered their salary ranges, expressed their views on the pay gap, and indicated the extent to which the salary gap motivates them to work. The selected questionnaire samples are first-level employees with an annual salary of 60,000-100,000. Their age is 25-40 years old, and men and women account for 50% each.

To answer question 1, the questionnaire is formed by a combination of open-ended and closed-ended questions, which had been divided into four parts. The first part consists of the first four and multiple choice questions. These multiple choice questions are chosen to understand the basic situation of the respondents, distinguish executives from ordinary employees, and further understand their salary levels. The second part consists of 5 to 8 questions, all of which are multiple choice. Find out how satisfied employees/executives are with their company's current pay gap and how motivated they are by their company's current pay gap. And further judge whether the salary gap will affect the cohesion of the team. The third part is questions 9 to 13. Among these multiple-choice questions, this article sets a specific situation to calculate whether the most suitable salary gap is different from the perspective of employees and executives, and whether the incentives brought by different salary gaps are different. The last part is 14 questions, which is an open question. This question is to explore whether employees/executives have other perceptions about the pay gap. (See descriptive statistics and questionnaire questions in the appendix for details)

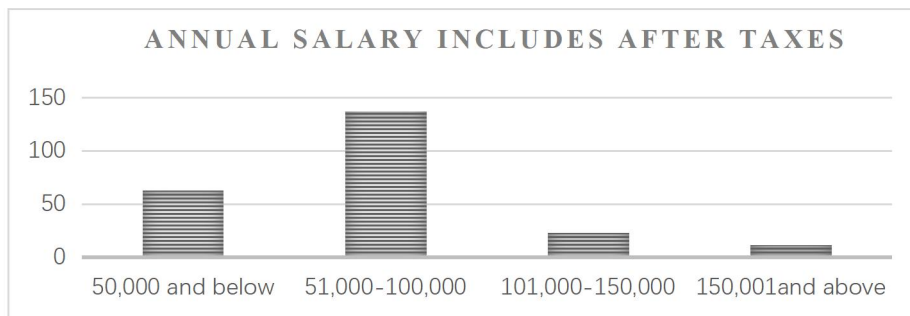
3.2.2 Secondary data

This paper selects all listed companies in China from 2014 to 2022 as a sample, uses its ROA as a way to measure corporate performance and uses assets to measure its company size, and regards the salary gap of level 1 employees as the salary gap of the lower salary level. The second question is answered by analysing the impact of the pay gap between lower paid employees on firm performance through regression model analysis. And the most suitable salary gap can be found through the regression model, which can answer the third question.

4. Results

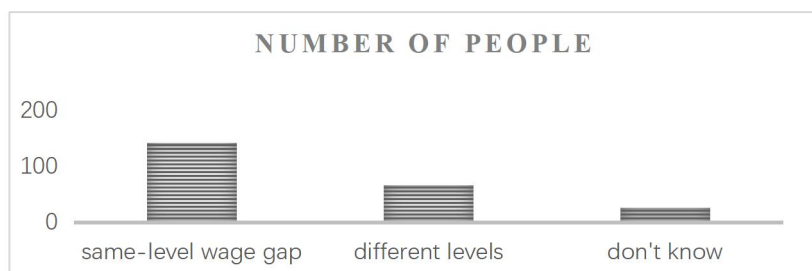
4.1 Questionnaire

Table 2 the Average Salary Level of the Population who Filled out the Questionnaire



Among the 235 valid samples collected, 63 have an annual salary below 50,000, 137 have an annual salary between 50,001 and 100,000, 23 have an annual salary between 100,001 and 150,000, and 12 have an annual salary above 150,001.

Table 3 Comparing the Incentive Effects of the Same-Level Pay Gap and the Pay Gap Between Employees and Executive



Among the 235 samples selected in this paper, 142 questionnaires believe that the pay hole between workers at the same level has a more obvious incentive effect on them, and 67 questionnaires believe that the compensation hole among representatives and chiefs meaningfully affects their salary gap. 26 were not sure which pay gap affected them more.

The third part of the questionnaire is to set a special situation. From the different perspectives of ordinary employees and executives, it is found that the salary gap between employees has a more obvious incentive effect on ordinary employees. For executives, the salary gap between executives and employees or between employees has no obvious incentive effect on executives.

4.2 Regression model

ave_roa	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
lnasset	-.101	.048	-2.11	.036	-.195	-.007	**
spread	.002	.003	0.71	.479	-.004	.009	
k	-.008	.022	-0.35	.724	-.05	.035	
Constant	1.381	.598	2.31	.022	.204	2.559	**

*** $p < .01$, ** $p < .05$, * $p < .1$

Figure 1 Linear Regression

The regression coefficient for assets is negative, indicating that the larger the company size, the lower the organisation's ROA, the

more noteworthy the compensation hole among the base level workers of the organisation, the better the company's performance.

In this paper, the organisation's yearly typical profit from assets is used to represent the company's performance, and the logarithm of the organisation's resources addresses the organisation's size. The gap represents the pay gap for bottom-level employees in the company. The k variable is a year dummy variable, which excludes the impact of different years on the company's performance. It very well may be seen from the outcomes that the relapse coefficient of resources is negative, and that implies that the larger the company, the lower the company's ROA, which is obviously in line with the scale effect. And it is found that the more prominent the compensation hole of the grassroots representatives of the company, the better the company's performance, indicating that the compensation hole significantly affects employees, making the organisation's general presentation better.

5. Discussion

5.1 Research question 1: Wage gaps between employees at the same level motivate lower-wage workers more

In this article, employees with an annual salary of less than 100,000 are defined as ordinary employees with lower salary levels. 85% of the respondents collected in the questionnaire meet the employees with lower salary levels defined in this article, so most of the opinions in the questionnaire are raised by the target group. By setting different salary gap options between employees and between employees and executives, the questionnaire in this paper shows that 60% of employees believe that the compensation hole at a similar level can motivate them and make them work harder. These employees may think that although the compensation hole among leaders and representatives is enormous, and the compensation hole between peers is not large, the difference between executives and their ranks is very large. Therefore, it is difficult for them to achieve the ideal salary level only by making great efforts. At this time, the role of the tournament theory is weakened. The compensation hole among leaders and them is difficult to stimulate employees' desire to compete. No matter how high the salary of executives is, the compensation hole between executives the pay hole won't make the motivation difference. Running against the norm, and according to behavioural theory, the compensation hole among chiefs and workers might diminish the attachment of ventures. The salary gap between employees can even stimulate the competitiveness of ordinary employees, because they may think that the goals of the same level are more achievable, so they will work harder to achieve a higher salary level among the same level.

5.2 Research question 2: Pay gap affects company performance.

The connection between the compensation hole and firm execution has been the focus of attention in both academic and business circles. Through linear regression analysis, it is found that the salary gap between employees at the same level has a positive connection with corporate execution. When the company's salary gap is large, the company's performance may be better, but the correlation coefficient is not significant.

It starts with understanding the connection between the compensation hole and firm execution. The compensation hole concentrated on in this article alludes to the salary level difference among employees of the same level within the company. There is a positive connection between the compensation hole and corporate execution, firstly because the work performance of a large number of ordinary employees largely affects corporate performance. A high-efficiency salary gap means that employees have more space and potential to improve their positions and salary levels, and employees are more motivated to work hard to achieve greater self-interest, so that the company can effectively motivate employees and improve the company for the purpose of overall performance. However, the relationship coefficient between the compensation hole and firm execution isn't significant, and the correlation coefficient is a statistical indicator used to measure the strength of the relationship between two variables. This means that the connection between the compensation hole and firm execution is not a simple linear one. Analysing the reasons, it may be that to a certain extent, a large salary gap can indeed bring about positive effects, but an excessively large gap may lead to too fierce competition among employees, thereby affecting teamwork and stability. This reason further explains that the pay gap has different impacts on corporate performance in the short and long term

5.3 Research question 3: Explicit compensation hole to augment firm execution

According to the results of regression analysis, it can be seen that the compensation hole between workers at a similar level is

emphatically connected with corporate execution, but the correlation coefficient is not significant. This shows that companies should increase the compensation hole between employees at the same level, so that employees can work hard to achieve their target salary, thereby driving corporate performance. commitment to the burden of the company's overall performance. Therefore, enterprises should consider behavioral theory and competition theory at the same time. They cannot expand the salary gap without limit, but can only increase the salary gap between employees at the same level to a certain extent, so that employees can always maintain healthy competition, so that enterprises can gain long-term benefits.

6. Limitation

The data samples selected in this article come from listed companies from 2014 to 2021. The time span is not long, and the correlation coefficient of the regression model in this article is not significant, so the conclusions drawn may be accidental. Since the disclosure of employee salaries by companies can easily arouse negative emotions among employees, trigger internal conflicts, and be detrimental to the cohesion among employees, many companies use the advantages of salary confidentiality and information asymmetry to manage in order to improve employee satisfaction with salary. Achieve efficient corporate governance. Therefore, it is difficult to collect a large amount of public salary information about a specific industry in this paper. We can only expand the scope of information collection to the entire industry. However, this paper fails to find a suitable method to calculate the exact salary gap range that maximizes corporate performance.

7. Conclusion

This paper finds that ordinary employees believe that the promotion goals among their peers are better accomplished, and employees will work harder in order to wait for more promotion opportunities, so the salary gap between employees with lower wages is larger than the compensation hole between conventional representatives and leaders. At the same time, the compensation hole between representatives with lower pay levels decidedly affects corporate execution. The enthusiasm of employees drives the development of the overall economy of the company. However, a large salary gap will make employees pay too much attention to their own interests and ignore the overall interests of the team, weakening the cohesion between people. Therefore, the salary gap between employees with lower salary levels cannot increase infinitely, and should be maintained at a level that can both motivate employees to work hard and avoid malicious competition among employees. Only in this way can a healthy competition among employees be formed so as to maximize the performance of the enterprise.

8. Recommendation

Human resources are an important resource of an enterprise. How to design a reasonable salary system to enable talents to play the best role is a problem that enterprises should think about at present. As far as the current Chinese companies are concerned, the salary gap between employees with lower qualifications is relatively low, and companies have more room to adjust the salary gap between employees at the same level, so as to stimulate employees' enthusiasm for work, thereby improving corporate performance to a certain extent. This paper suggests that enterprises should expand the salary gap among ordinary employees, and at the same time pay attention to the competition among employees, so as to avoid the vicious competition caused by the widening salary gap and maximize the performance of enterprises.

References

- [1] Xi JP. Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects. Shanghai: People Press; 2022.
- [2] Guellec D., Paunov C. Digital innovation and the distribution of income. National Bureau of Economic Research. 2017.
- [3] Kacperczyk, A., Balachandran, C. Vertical and horizontal wage dispersion and mobility outcomes: Evidence from the Swedish microdata. *Organisation Science*. 2018; 29(1):17-38.
- [4] Baumgarten, D., Felbermayr, G., Lehwald, S. Dissecting between-plant and within-plant wage dispersion: evidence from Germany. *Industrial Relations: A Journal of Economy and Society*. 2020; 59(1):85-122.
- [5] Mahy, B., Rycx, F., Volral, M. Does wage dispersion make all firms productive?. *Scottish Journal of Political Economy*. 2011; 58(4):455-489.

[6] Hamann, D.J., Ren, T. Wage inequality and performance in nonprofit and for-profit organisations. *Nonprofit Management and Leadership*. 2013; 24(2):207-228.

[7] Lazear, E.P., Rosen, S. Rank-order tournaments as optimum labor contracts. *Journal of political Economy*. 1981; 89(5):841-864.

[8] Rajgopal, S., Srinivasan, S. Pay dispersion in the executive suite. Unpublished working paper. 2006.

[9] Smulowitz, S.J. Reprint of "Predicting employee wrongdoing: The complementary effect of CEO option pay and the pay gap". *Organizational Behavior and Human Decision Processes*. 2021; 166: 104-116.

[10] Gavetti, G., Greve, H.R., Levinthal, D.A., Ocasio, W. The behavioral theory of the firm: Assessment and prospects. *Academy of Management Annals*. 2012; 6(1):1-40.

[11] Pfeffer, J., Langton, N. The effect of wage dispersion on satisfaction, productivity, and working collaboratively: Evidence from college and university faculty. *Administrative Science Quarterly*. 1993; 382-407.

[12] Bloom, M., Michel, J.G. The relationships among organizational context, pay dispersion, and among managerial turnover. *Academy of Management Journal*. 2002; 45(1):33-42.

[13] Ma, S. Internal salary gap and corporate innovation under the background of common prosperity. *Friends of Accounting*. 2023; 08:150-156.

10. Appendices

Questionnaire

The purpose of this questionnaire is to explore whether the salary gap between ordinary employees with lower salaries or the salary gap between employees and executives has a greater incentive effect on employees. All the questionnaire feedback will only be used (partly) in researcher's report, after further sorting out and analyses.

Age:

Sex:

1. Your current level (Single-selection)

A. Ordinary employees

B. Grassroots managers

C. Middle managers

2. The industry category in which you work (Single-selection)

A. Finance industry

B. Manufacturing industry

C. Education

D. Others

3. The percentage of your annual salary that includes pay for performance (Single-selection)

A. 0%

B. 1-20%

C. 21-40%

D. 41-60%

E. 61-80%

F. 81-100%

4. Your annual salary includes after taxes (Single-selection)

A. 50,000 and below

B. 51,000-100,000

C. 101,000-150,000

D. 151,000-200,000

E. 200,000 and above

5. What you think is a reasonable distribution of remuneration is (Single-selection):

- A.distribute equally.
- B.there is a slight difference.
- C.appropriate gaps.
- D.the difference is large.
- E.disparity in distribution.

6. Are you satisfied with the pay gap system of your current company? (Single-selection)

- A.Very satisfied,
- B.Somewhat satisfied
- C.Fair
- D.Less satisfied
- E.Very dissatisfied

7. Executives are able to communicate with employees in a timely and effective manner? (Single-selection)

- A.Totally agree
- B.Agree
- C.Don't know
- D.Disagree
- E.Completely disagree

8. Your work status is: (Single-selection)

- A.very positive
- B.more positive
- C.not sure
- D.not very positive
- E.very unactive

9. If you are a low-level employee, the salary of low-level, middle-level and senior employees is 5,000, 10,000, and 20,000 respectively. Your level of effort will be:

Very hard Very little hard 1 2 3 4 5 little hard

10. If you are a low-level employee, the salary of low-level, middle-level and senior employees is 5,000, 6,000, and 20,000 respectively. Your level of effort will be:

Very hard Very little hard 1 2 3 4 5 little hard

11. If you are a low-level employee, the salary of low-level, middle-level and senior employees is 5,000, 8,000, and 20,000 respectively. Your level of effort will be:

Very hard Very little hard 1 2 3 4 5 little hard

13. What do you think of the company's current salary system? (open-ended)