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A Literature Review of the Relationship between Pay Gaps and Firm Performance

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Abstract: *The relationship between pay gaps and firm performance has aroused concern and become a hot topic in the field of compensation research. There is a lot of relevant literature regarding the effects of pay gaps on the firm performance, but researchers have not reached a consensus. Therefore, based on the existing literature, this paper expounds the concepts of pay gaps and firm performance, then sorts out their relationship from the perspectives of the external pay gap, the top management team pay gap and the executive-employee pay gap respectively. On the basis of the review and summary of the existing research, the future prospects that can be further explored are proposed at the end of the study.*

Keywords: *External pay gap; Top management team pay gap; Executive-employee pay gap; Firm performance*

1. Introduction

Compensation system is an important part of modern company system. As the most direct way to show the ability and value of individuals, the pay drives the company's employees to work and influences the process and results of company's operation and management.

The incentive effect of pay not only depends on its absolute value, but also is influenced by its relative value, that is, the pay gap. As a result, academics have conducted extensive research concerning the effects of pay on the performance with a focus on the impacts of pay gaps on firm performance, making a lot of achievements, but the conclusions have not been unified, including linear relationship and nonlinear relationship. Therefore, it's of great theoretical significance to comb the researches on the relationship between pay gaps and firm performance, which can not only deepen our understanding of the relevant basic theories, but clarify the influence of pay gaps on firm performance and the trend of future research. At the same time, it can also provide reference for firms to design scientific compensation system, improve corporate governance and organizational management as well as promote firm performance, which has strong practical significance.

Thus, this paper expounds the concepts of pay gaps and firm performance, and then combs their relationship from the perspectives of the firm's external and internal pay gaps, and finally proposes the future directions of further research on the basis of the review and summary of the existing literature.

2. Concepts of Pay Gaps and Firm Performance

2.1. Pay Gaps

According to the position in the organization, employees can be divided into top executives and average employees. Top executives are those who are entrusted and endowed with the power to operate the firms by shareholders, taking the principal responsibility for daily operations and economic benefits of the firms. The number of top executives is usually less than 1% of the total number of employees in the firms. Many scholars consider the CEOs as the core of the firms' leadership and decision-making, using them as representatives of top executives in their studies. Some also define company directors, board secretaries, supervisors, managers and vice-managers as the top executives [1], while others define them by the information disclosed in the annual reports of Chinese listed firms [2]. Average employees refer to the remaining employees who don't hold senior management positions except for the top executives.

The relevant research on pay gaps can be traced back to 1976, when Jensen and Meckling proposed

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that different pay levels should be established for different administrative levels and the pay gaps between adjacent levels should be widened appropriately [3]. Pay Gaps has become a research hotspot in the field of compensation because it can effectively influence employees' motivation. The research topics mainly include the definition, measure, influencing factors of pay gaps and the mechanism of the impacts pay gaps have on key organizational variables.

In the existing research, pay gaps are further divided into two dimensions: external pay gap and internal pay gap. The former refers to the difference in pay between employees at the same level in different firms, while the latter refers to the different pay given to employees at different levels or at the same level within the same firm, which can be further divided into the top management team (TMT) pay gap and the executive-employee pay gap according to the position level of the employees.

TMT is a group composed of all top executives of the firm [4]. The members of TMT can be divided into CEO and non-CEO executives according to the importance of their positions. CEO is the person in charge, taking the key responsibility of making strategic decisions of the firm, while non-CEO executives aim to assist the CEO in implementing the business plans and driving the smooth operations of the firm [5]. The TMT pay gap includes the vertical gap between CEO and non-CEO executives and the horizontal gap between non-CEO executives [6][7].

2.2. Firm Performance

Firm performance refers to the overall performance of the benefits achieved by its business activities and the performance contributions of managers in a certain accounting period. It includes three dimensions: (1) operating effect, which is obtained by comparing with similar products in the market;(2) operating efficiency, which is obtained by comparing input resources with output returns;(3) adaptability, which is obtained by measuring the ability of firms to cope with the changes in the complex external environment.

The most commonly used methods for scholars to evaluate firm performance includes:(1) financial indexes such as return on assets (ROA), return on equity (ROE) and earning per share (EPS), which directly reflects the current financial situation;(2) Tobin's Q, defined as the ratio of the market value of the firm to the replacement cost of assets, which reflects the competitiveness of a firm and investors' expectations of its future;(3) Economic Value Added (EVA) which shows the state of firm's capital appreciation, making the evaluation more reasonable;(4) Balanced Scorecard (BSC), a comprehensive assessment from the perspectives of finance, customer, process as well as learning and growth with the disadvantage of possible inaccuracy due to some indicators that are uneasy to quantify effectively in practice.

3. Relationship between Pay Gaps and Firm Performance

3.1. Relationship between External Pay Gap and Firm Performance

Managerial talent is a scarce factor of production for firms, so in order to attract and retain top executives, firms usually need to use competitive pay level in the same industry as the benchmarks to determine executives' compensation, making them feel the external fairness of their compensation. As for the relationship between external pay gap and firm performance, most studies report positive results. The equity theory proposed by Adams (1963) suggests that people judge the job fairness not only by calculating their own inputs and outcomes, but also by comparing them with those of reference person to measure the fairness of distribution results [8]. Zhang and Yang (2013) conducted an empirical study on the external pay gap of top executives and found that it has a positive effect on firm performance and can, to a certain extent, curb on-the-job consumption of top executives [9]. In terms of the external equity of pay in listed firms, Wu et al. (2010) pointed out that positive excess pay can improve the performance of Chinese non-state-owned enterprises (non-SOEs), but negative excess pay has no significant effect on firm performance regardless of the nature of property rights [10]. And Li et al. (2014), based on the labor market for managers, empirically analyzed the relationship between the external pay gap of top executives and firm performance of Chinese companies from the perspective of the nature of property rights. The results showed that there was a significantly positive relationship between the two in non-SOEs, while there was no significant relationship between them in state-owned enterprises (SOE) because the mobility of top executives was restricted to some extent [11].

However, a few scholars have also analyzed the relationship between the external pay gap and firm performance, arguing that it should not be simply considered as positive or negative and there might be an optimal incentive interval or range between them, which was nonlinear [12]. Wang et al. (2015) showed that the relationship between them in listed firms was an inverted U-shaped curve, where excessive external pay gap can negatively affect firm performance, and improving external equity of pay can promote the potential performance of firms [13].

3.2. Relationship between Internal Pay Gap and Firm Performance

Internal pay gap reflects the pay structure of firms and plays an important role in management activities, which has received extensive attention from academia, but scholars have not yet reached a unified conclusion on the relationship between it and firm performance.

3.2.1. Relationship between Top Management Team Pay Gap and Firm Performance

There are three major viewpoints on the relationship between TMT pay gap and firm performance.

The first view is that there is a positive relationship between TMT pay gap and firm performance. Lazear and Rosen (1981) highlighted the incentive effect of pay gaps in tournament theory. Its basic idea is to regard promotion and compensation in the organization as the reward for winning the tournament. In each round, only the winner can get the reward, while the loser will get nothing. Therefore, the contestants must compete with each other to get the high prize [14]. Constructing reasonable pay gap within TMT can improve the work efficiency of team members, reduce agency costs and promote firm performance [15]. Under this view, Lallemand et al. (2004) supported the conclusion that the relationship between top executives' pay dispersion and firm performance was significantly positive [16]. Furthermore, some scholars have begun to study whether the firm's ownership and region in which they are located will have a heterogeneous impact on the positive relationship between TMT pay gap and firm performance, proposing that the relationship is stronger in SOEs and firms in developed regions [17]. With the sample of empirical data from Chinese listed firms, researchers found that the pay gap within TMT had a positive contribution to firm performance, indicating that tournament theory was applicable in Chinese listed firms [18].

On the contrary, the second view, based on behavioral theories encompassing relative deprivation theory, organizational politics and allocation preference theory, proposes that TMT pay gap has an negative impact on firm performance. Taking this perspective, scholars emphasize fairness and cooperation, arguing that the employees, including managers, pay more attention to fairness. With the widening of the pay gaps between different levels, through comparison, the top executives' feeling of inequity will be strengthened, which will cause the sense of deprivation and oppression, resulting in the reduction of their efforts, enthusiasm and motivation, affecting the collaboration among top executives, which is detrimental to firm performance. Under this view, Zhang and Li (2007) empirically examined the pay gap in TMT, supporting that the pay gap among the core members of TMT was negatively related to the firm performance, which was consistent with the expectation of behavioral theories [19]. Siegel and Hambrick (2005) argued that the benefits of the pay gaps depended on the inherent need for task interdependence. If the pay gap in TMT became too large, it will damage internal collaboration and ultimately impair firm performance [7]. Some scholars further found that pay inequity will weaken the positive influence of tenure diversity and educational background diversity of TMT on organizational change, exacerbating the competition within TMT and undermining team efficiency [20]. Moreover, the deviations from normal pay gap among TMT were associated with deteriorating firm performance and a higher frequency of executive turnover [21].

The third view suggests the relationship between the two is inverted U-shaped, which means within a certain range, increasing the TMT pay gap will promote its performance; beyond this range, the decrease of incentive effect generated by the excessive pay gap will decrease firm performance. Neither tournament theory nor behavioral theories can explain it all alone. There is a balance between the pay gap within TMT and firm performance [22]. In support, Yang and Klaas (2011) demonstrated an inverted U-shaped relationship between TMT pay gap and financial performance [23]. Chen et al. (2019) also confirmed that the impact of the internal pay gap of TMT on the company 's performance was not simply linear but was contingent (i.e.,inverted U-shaped). The tournament theory holds when the pay gap is on the left side of the inflection point of the inverted U-shaped curve, while the behavioral theories holds when it is on the right side of the inflection point [24].

3.2.2. Relationship between Executive-Employee Pay Gap and Firm Performance

Likewise, scholars have divergent findings in the research of the relationship between

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executive-employee pay gap and firm performance.

Considerable research suggests that the relationship between the two is positive. Based on tournament theory, the incentive effect of competition in tournaments is related to prize differential [25]. The greater the pay dispersion between different ranks of employees in a firm is, representing the more compensation they will get when promoting, the stronger motivation the employees will have, which can improve the firm's performance [26][27].

From this perspective, scholars have conducted empirical analysis on executive-employee pay gap and firm performance, proposing that the pay gap between top executives and average employees can positively affect firm performance [28][29]. Furthermore, some of them have discussed whether the positive relationship between the two was influenced by regions, industries or nature of property rights, concluding that the executive-employee pay gap in different firms from different regions or industries had a heterogeneous impact on performance, but generally, the performance of SOEs was positively affected by the pay gap [30][31].

However, some researchers also attempted to explore the negative impact of executive-employee pay gay on firm performance. Based on the relative deprivation theory, Cowherd and Levine (1992) pointed out that employees in firms will make upward comparisons when evaluating the fairness and justice of compensation systems [32]. If they perceived that they were being treated unfairly, they might feel relatively deprived and developed negative attitudes and behaviors [33][34]. Therefore, increasing pay differentials across organizational levels can lead to reduced employee motivation, lower morale, and negative behavioral responses. Equity theorists have also proposed that the executive-employee pay gap will reduce employee cooperation [35], commitment [36], and increase turnover rate [37], which can adversely affect long-term firm performance trends [27].

Furthermore, there are a few papers that study the relationship between the two, announcing that it is nonlinear. Some scholars have added the discussion on sabotage behavior of competitors to the tournament theory, believing that the relationship is inverted U-shaped and the interval effect is significant [38][39]. The inverted U-shaped relationship was not affected by the nature of property rights and region after the heterogeneity test [40]. Further, with the increase of market competition intensity, research found that the threshold of the relationship will shift to the right [41]. However, based on relative deprivation theory and tournament theory, Luo et al. (2020) discussed the possible nonlinear effects of executive-employee pay gap in the Chinese context and proposed that widening the pay gap at its low level will decrease the firm productivity, while increasing the pay gap at its high level was beneficial to productivity, which demonstrated an approximate U-shaped relationship between executive-employee pay gap and firm performance [42].

4. Conclusions and Future Prospects

4.1. Conclusions

By sorting out the current status of research on the relationship between pay gaps and firm performance, this paper finds that in terms of the theoretical basis, the mainstream theories used in the study of pay gap are tournament theory, equity theory and behavioral theories,which are usually used to explain the incentive effects and economic consequences of pay gaps.

In regard of research conclusion, academics have not reached a consensus on the relationship between pay gaps and firm performance. Much of the early literature reported positive relationship results, but scholars failed to reach consensus on the impact of the widening of pay gaps. In the later research, some scholars even concluded that there was negative relationship or nonlinear relationship between them.

The differences in research conclusions may be due to: (1) the varied definition of relevant concepts. For example, some scholars limited the pay to explicit one such as monetary pay, reporting the research results that pay gaps positively affected firm performance, while others included implicit benefits such as on-the-job consumption into executives' compensation and obtained the research conclusion that pay gaps was negatively related to firm performance; (2) the different theoretical perspectives. When studying the effect of pay gaps on performance, some scholars used tournament theory to speculate and support that the effect was significantly positive. But a part of papers demonstrated that the pay gaps had a negative impact on firm performance based on behavioral theories. There were also a few scholars combining tournament theory with behavioral theories and examining the nonlinear relationship between them;(3) the differences in measurement methods of variables such as pay gaps and firm performance; (4) diverse institutional background, economic structure and cultural characteristics. The research on the performance effect of pay gaps cannot be separated from its rooted political, economic and cultural environment, in which different countries have great differences. For example, countries deeply influenced by collectivism culture and hierarchy could pay more attention to fairness in pay distribution and job promotion, so the incentive effect of pay gaps may be relatively weaker and the relevant research conclusions can be more diversified.

4.2. Future Prospects

Firstly, the existing research mainly uses tournament theory and behavioral theories to analyze the relationship between pay gaps and firm performance. However, in practice, the effect of pay gaps on performance is not simply positive or negative as these theories deduce, but a complex result influenced by multiple factors. Therefore, in the future, it is necessary to break through the single theoretical perspective, introduce new theories into research.

Secondly, most of the current research is based on the default hypothesis of homogeneity of employees, ignoring the existence of their heterogeneity. Therefore, future research can deduce the mediating mechanism between pay gaps and firm performance from the perspective of employees' psychological perception, cognitive evaluation, etc., and make contributions to comprehensively reflect the effect of pay gaps on performance.

Thirdly, there are relatively few literature about the impact of the pay gap within average employee team on firm performance currently. The average employee team is an important part of the hierarchy in the organization, playing a significant role in performance creation. Therefore, the future literature should refine the research field of pay gaps and pay more attention to the effect of pay gap in average employee team.

Last but not least, scholars have classified the pay gaps into horizontal and vertical ones for a long time. Recently, some researchers have also started to divide the pay gaps into “pay gaps that can be explained by employees’ inputs” and “pay gaps that cannot be explained by employees’ inputs”, focusing on the specific drivers of the pay gaps. Thus, future research can continue to explore the types of pay gaps based on specific drivers and examine the performance effect of pay gap.

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