Information Management and Business Review (ISSN 2220-3796)
Vol. 15, No. 4(SI), pp. 284-298, December 2023

A Systematic Review on the Executive Compensation Gap and Its Multiple Impacts on the Company

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Abstract: In recent years, the public has begun to pay attention to the compensation gap of executives, in such background of social reality, this researcher conducts a systematic review of the executive compensation gap (horizontal gap and vertical gap) and its impacts on company through the review and summary of the empirical studies of Scopus Indexed journal articles for the last decade of 2013-2022, then this study figure out the literature trend in this research area in the last decade, summarized how the literature measure executive compensation gap, then reviewed the impact of executive compensation gap can have on company (company performance, risk management, innovation ability, audit fees and other aspects), and at last summarized the findings and put forward the suggestion for future researchers. Such research fills the gap of a systematic review of the executive compensation gap and its impact on companies and provides the company compensation plan maker with practical evidence.

Keywords: *Executive compensation gap, Horizontal gap, Vertical gap, Company multiple impact, Systematic review.*

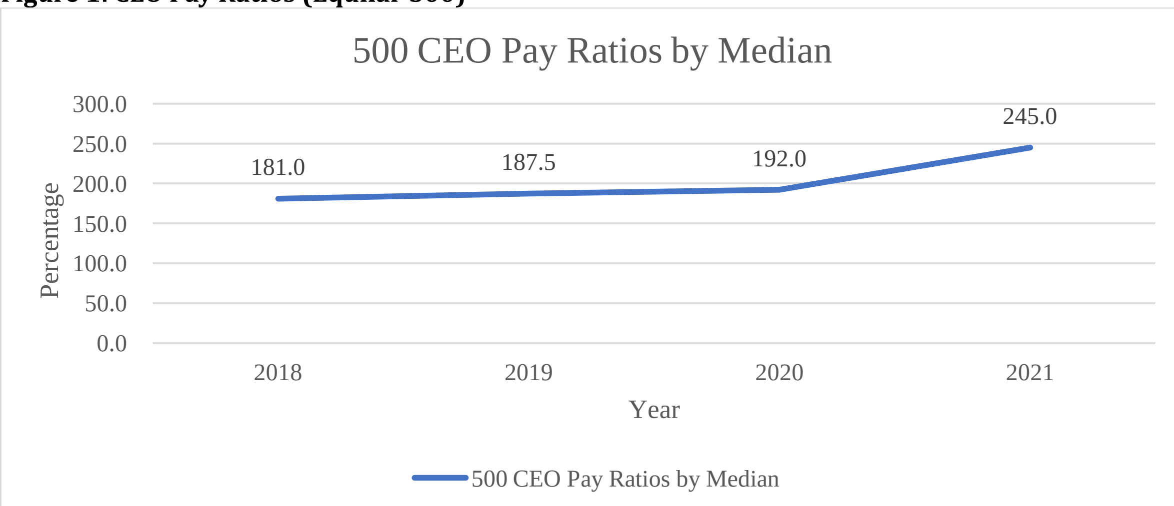
1. Introduction

According to Lazear (2018), most people in the world need to work to survive, and the main reason why work allows people to survive is because of the compensation it provides, especially the financial compensation, without which the vast majority of people would not perform their tasks, therefore, the financial compensation given by companies will inevitably affect the behavior of employees. Jiang (2016) has also mentioned this point of view in her research, who believes that employees are the source of creativity and important value creators of the companies, and the stable operation & development and growth of the company cannot be achieved without the contribution of employees. As the contributors to the intellectual and physical strength of the company, employees are bound to demand that the company pay a return equivalent to their efforts, and if they can receive a satisfactory return, they will tend to put in more effort in the future. Therefore, how to do a good job to protect employees' rights to get financial returns and motivate them to work hard has become a common concern in both theoretical and practical circles.

Employee compensation incentive is a big topic and therefore generates many branches. According to researchers, in recent years there has been a particularly high level of social and theoretical attention to the topic in the field of executive compensation (e.g. Liu and Liu, 2022; Sánchez-Marín et al., 2022). The generation of such phenomenon can be traced back to the financial crisis that happened in 2008, where it was found that, despite the negative impact of the financial crisis on the business performance of many companies around the world, many of these executives, especially chief executive officers (CEOs), still enjoy high salaries under such crisis (Sánchez-Marín et al., 2022). Although many people recognize the importance of the executive team to the company and accept the high compensation treatment of executives, with the year-on-year increase in executive compensation, more and more people began to question the rationality of high executive compensation, according to a study based on the reality of the U.S. society, the median salary of CEOs of U.S. listed companies reached $20 million in 2021, which is 254 times of the average compensation of ordinary employees, and compared with the median pay $15.0 million in 2016, there is an increase of 5 million (Gracia, 2017), despite the covid-19 pandemic that has swept the whole world in 2019-2020, which made the performance of public companies took a hit, the data showed that the CEO compensation of listed companies in the United States median was $15.5 million in 2020, and down just 1.4% relative to $15.7 million in 2019 (Liu, 2022).

The concern about executive compensation exists beyond simple numerical highs and lows or the upward and downward trends, there is also a concern about the gap in executive compensation. Figure 1 shows the data collected by Equilar, Inc (2022) on the ratio of median CEO and average employee compensation of the top 500 publicly traded U.S. companies from 2018 to 2021, from which the ratio of CEO to employee pay gap is gradually and steadily increasing. According to the statement given by Equilar, Inc. (2022) from 2019-2020, under the influence of covid-19 pandemic, many companies cut back on expenses to survive in the market thus helping reduce employee compensation, but the data shows that the pandemic has not had a significant impact on the compensation gap trend, though the median CEO compensation value has slightly decreased in the past two years (Liu, 2022), the executive compensation gap has been gradually increasing over the past four years.

Figure 1: CEO Pay Ratios (Equilar 500)



(Source: Equilar Inc., 2022)

Thus, when studying the field of executive compensation gap, researchers have suggested that it is also necessary to explore the impact of executive compensation gap and how it can impact the company. Liu and Liu (2022) argue that although many studies on executive compensation have emerged in recent years, most of them still focus on the absolute value of executive compensation and lack research on the relative disparity of executive compensation. Wang et al. (2021) also mentioned this view in their study, suggesting that executive behavior can be driven by the compensation, which is influenced not only by the amount of pay itself but also by the compensation gap, and that the individual behavior of executives can further affect the operation of the firm, in addition to the impact on the current business results, it may even affect the long-term development of the company.

Since there is a lack of research on the executive compensation gap in the academic field, thus, this study will review the relevant empirical research results based on the Scopus Indexed Journal Paper and Conference Paper in the past ten years, aiming to systematically sort out the overall situation of the research on the executive compensation gap and its multiple impacts of on company, and summarize the hot spots of discussion and aspects that are still lacking, to provide insights for future research on executive compensation gap.

2. Literature Review

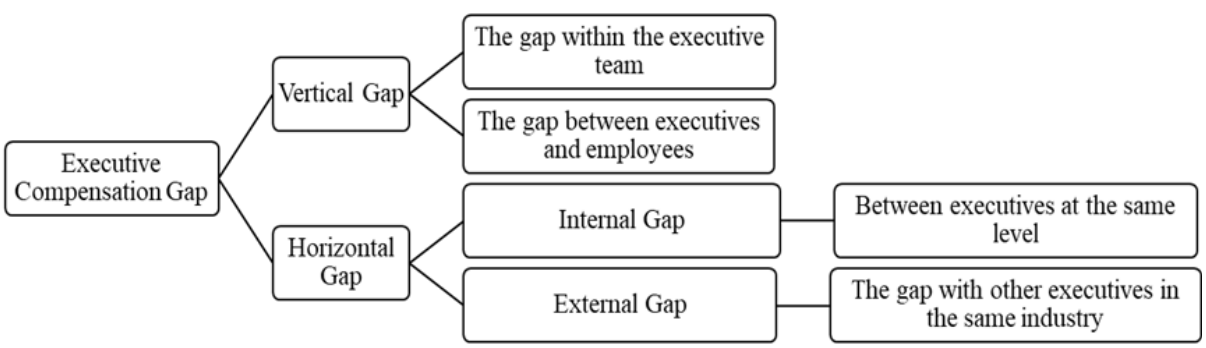
Overview of the Executive Compensation Gap: In the current field of research on pay gap, scholars always use different terms to refer to the phenomenon that firms give different levels of pay to workers of different ability levels, the pay/compensation/salary related to variation/gap/difference/equity/dispersion, where pay dispersion and compensation gap are the most frequently used terms, with high pay dispersion equating to a large pay gap and low dispersion equating to a small pay gap (Connelly et al., 2014; Downes and Choi, 2014).

Since the current academic community has not yet standardized terminology for this phenomenon, this research will only use the term compensation gap to refer to this phenomenon.

According to the comparative object of compensation, the researcher proposes that the compensation gap can be divided into two aspects, vertical gap and horizontal gap, the vertical compensation gap refers to the difference in compensation of different hierarchical positions within the same organization, for example, the difference in compensation between executives and general employees, while the horizontal compensation gap refers to the difference in compensation of the same hierarchical positions, for example, the difference in compensation of the same human resource apartment employees in the same company, and the key of quick distinction between these two definitions is whether the gap exists within the same position level (Axelsson and Ulander, 2017; Li, 2018; Park and Kim, 2017).

Now, researchers propose that both horizontal and vertical pay gaps can be used to measure the executive compensation gap, Figure 2 is built based on relevant literature in the field of executive pay gap research to demonstrate a more specific classification and its definition, from which it can be seen that the vertical gap in executive compensation can still be further subdivided into the gap between ordinary employees and executives (e.g. Sun, 2019; Messersmith, Kim and Patel, 2018) and the gap between high-level executives (e.g., CEO) and low-level executives (e.g., other executives) (e.g., Lee et al., 2019; Kim, Kyung and Ng, 2022). After searching the literature, it is found that the current mainstream of academia is for the study of the vertical pay gap of executives, but some scholars also give a method to measure the horizontal pay gap of executives, which can be further subdivided into internal and external gaps, and the internal gap refers to the gap based on the same organization, which refers to the compensation gap of executives at the same position level within the executive team (e.g., the gap between other than the CEO other executives) (e.g. Grabner and Martin, 2021; Jiang et al., 2018), while external gaps are industry-based and are not limited to the same organization, referring to the pay gap between executives at the same level in different organizations within the same industry (e.g., the pay gap between CEOs of different companies in the same industry) (e.g. Santulli, 2022; Torre, Pelagatti and Solari, 2015).

Figure 2: The Specific Sort of Executive Compensation Gap



The above analysis reveals that the executive compensation gap includes many aspects, most researchers nowadays also studied these aspects, however, relevant research also suggested that current researchers still mostly focus on the vertical gap, and do not take the horizontal gap into account (Torre, Pelagatti & Solari, 2015; Li, 2018). Therefore, this study will summarize the definition and measurement of the executive pay gap by previous researchers and point out the gap that still exists in the current research through a systematic review of the current empirical research on the executive compensation gap and put forward the suggestion to future researchers.

Tournament Theory and the Executive Compensation Gap: The creation and widening of the executive compensation gap can be explained by academic theories. Lazear & Rosen (1981) first proposed the tournament theory based on Jensen and Meckling's (1976) principal-agent theory, which explains the large gap observed between CEO compensation and the compensation of executives below them in rank. The owners of the company, i.e., the shareholders, must monitor executive behavior to get senior management to do their best for the company and to reduce self-interest, and direct monitoring would consume significant resources and be difficult to put into practice. The long-term consequence of this lack of monitor is that it leads to more self-interested behavior on the part of executives; as a result, it will be difficult for shareholders to measure the level of contribution made by executives to the firm, which in turn makes it difficult to select promoters and set salaries (Gao, 2020).

Tournament theory provides a possible solution to this dilemma by suggesting that employee promotion can be viewed as a competition in which the prize is executive position and compensation, and each employee has an equal opportunity to receive higher compensation, and the likelihood of winning the prize increases with the level of effort, i.e., the harder the employee works, the more possibility one can be promoted and receive higher compensation, and this competitive model ensures that employees can be less self-interested and work harder to win the game, thus maximizing their contribution to the company (Connelly et al., 2014; Ullah et al., 2022; Ekinci Kauhanen and Waldman, 2019).

But the equal opportunity for promotion and higher pay is not enough, researchers argue that contest participants tend to focus not only on the absolute value of rewards but also on the relative differences between rewards, which means when employees compete for higher positions, they also compare the amount of compensation incentives they receive with those received by others (Li, 2018). To motivate employees to continue working hard for higher positions and rewards after they have been promoted to executives, to prevent them from losing their enthusiasm for the competition, it is necessary to set a relative gap for the awards, and if this concept of setting a gap is introduced into the design of compensation, it is necessary to make the compensation of each level within the company increase in turn while ensuring that the pay gap between the CEO and the next highest position executive (Gao, 2020).

However, the tournament theory only provides a basis for executive compensation at the theoretical level, such theory does not explain in detail the relationship between the executive compensation gap and the future performance of the company, but some researchers have introduced the tournament theory as a theoretical basis for their research, and the conclusion confirms that paying executives high compensation and widening the pay gap is beneficial for corporate performance (El-Sayed and Elbardan, 2016). In general, the tournament theory argument is in favor of widening the executive compensation gap, arguing that widening the pay gap will increase employee motivation, secure the interests of shareholders, and reduce the cost of monitoring executives, it is one of the important theories to explain why the executive compensation gap exists in companies. However, this is only a literal statement and the theory needs to be further combined with empirical studies, so this study will make an analysis of the practical feasibility of tournament theory in the design of corporate compensation by reviewing the findings of previous literature.

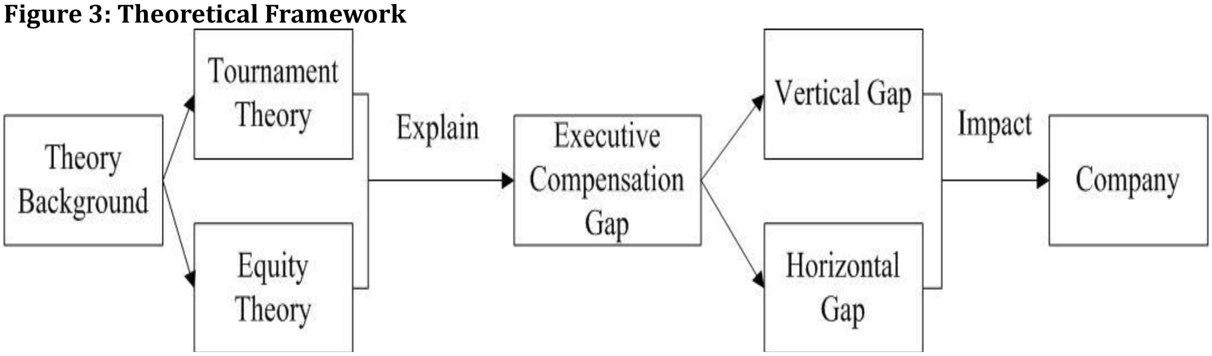
Equity Theory and the Executive Compensation Gap: The theoretical attitude towards the executive compensation gap is not only one viewpoint of tournament theory, but also the opposite viewpoint of equity theory, which believes that widening the pay gap will undermine fairness, thus leading to the growth of employee dissatisfaction and jealousy towards colleagues, which will affect their work efficiency and lose their enthusiasm for work, and in the long run, will affect the long-term interests of the company. Scholars believe that tournament theory is more concerned with ensuring shareholders' interests and corporate interests through competition among employees, while equity theory is more concerned with employees' emotions and believes that a smaller compensation gap is more conducive to enhancing organizational cohesion, strengthening organizational commitment, and shaping a cooperative atmosphere through fair treatment to contribute to corporate long-term development, therefore, enterprises need to implement the principle of fairness (Wang, 2014). This view is supported by a study by Hargreaves (2018), which argues that the compensation received by executives is no longer proportional to the efforts they put in and that the current compensation of corporate executives has reached an unreasonably high level, and the gap should be narrowed to ensure that the interests of the company are maximized.

Festinger (1954) proposed the social comparison theory and suggested that individuals have a strong comparison mentality, and people usually compare their income with others to evaluate whether they get satisfactory pay. When individuals perceive unfairness in such comparisons, they tend to be less motivated to work (Akafo and Boateng, 2015). Based on this theory, Adams (1963), a famous American psychologist, conducted a pioneering study on fairness preference from the perspective of organizational behavior, arguing that individuals will not only pay attention to the absolute value of their compensation, but also pay attention to the relative difference between their own and others, thus seeking a sense of fairness as one of the criteria to measure their pay satisfaction, and eliminating the sense of pay inequity is conducive to the motivation of individuals. Thus, the equity theory focuses on fairness and cooperation, arguing that there should not be a large pay gap between employees within the firm, or even advocating an egalitarian pay distribution and that the firm will profit from this low or even no gap (Axelsson and Ulander, 2017).

As can be seen from the equity theory, it is necessary to close the executive compensation gap, the above two theories holding opposite views, it can be seen that the theoretical community still holds different views on the executive compensation gap and its possible effects on firms, and if want to test the realistic applicability of the theories, the researcher must collect the relevant compensation data of companies to put the theories into practice, so this study will also test whether the ideas of these theories can be supported by empirical evidence.

In the literature review stage, this study reviews the definition of the executive compensation gap and the different theoretical backgrounds of executive compensation. The theoretical framework is shown in Figure 3, it can be seen from the figure that the tournament theory and equity theory can be used to explain the large and small executive compensation gap, and the executive compensation gap can be further divided into vertical gap and horizontal gap, and both kinds of gaps can have impact on the company.

Figure 3: Theoretical Framework



Although some scholars have started to conduct empirical research on the executive compensation gap and its effects, there is still a lack of in-depth systematic review of research findings on this topic. Thus, this research will try to contribute to the current knowledge by filling the gap of the lack of review in the current research field by systematically reviewing the empirical findings of the past literature. Such a study will analyze how the previous researchers defined and measured the executive compensation gap to find out what is lacking in the current research field, and then summarize the findings of various research and combine them with the two theories, using the theories to explain the findings of different research and also using the empirical evidence to justify the practical applicability of the theories, starting from the basic theory, it can not only find the driving factors of the executive compensation gap but also reasonably explain the consequences caused by such gap. Therefore, this paper firstly compares the compensation-related theories and outlines the economic consequences of the compensation gap from the perspectives of corporate performance, corporate innovation and risk management, etc. by systematic review; finally, it proposes the directions for further research. Therefore, this study will adopt a systematic review approach to analyze the relevant literature of the past ten years on the executive compensation gap and its multiple impacts on the company field.

The specific questions of the study include:

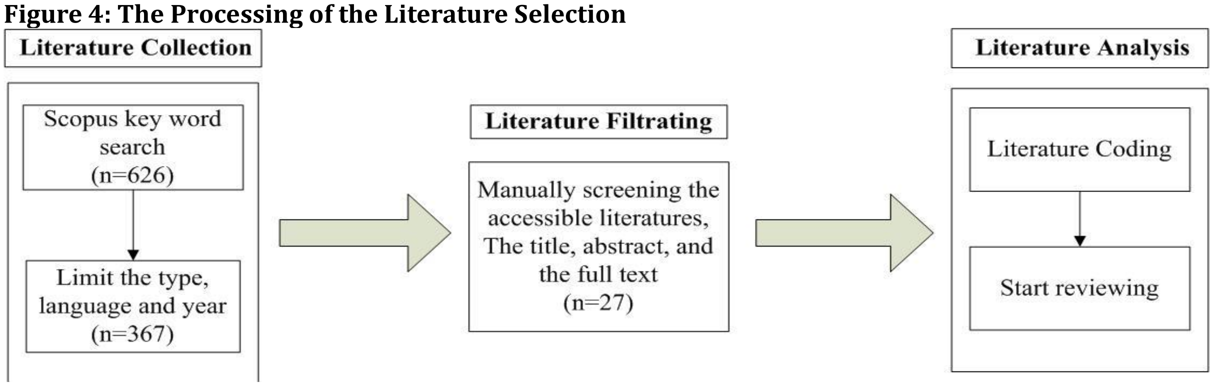
- What is the research trend in the field over the past decade?
- What is the measurement of the executive compensation gap in different literature?
- How will the executive compensation gap have multiple impacts on the company?

3. Data and Methodology

Based on the literature review of the last decade (i.e., 2013-2022), this study conducts a systematic review of empirical studies on the multiple impacts of the executive compensation gap on the company. A systematic review, also known as a systematic literature review, uses specific statistical analysis methods (e.g., descriptive statistics, content analysis, meta-analysis, etc.) to summarize findings from scattered research results that are specific to the research topic. Compared with general reviews, systematic reviews allow for more focused research questions and emphasize the transparency and clarity of the review process, as well as minimizing literature selection and interpretation bias (Huang, You and Tu, 2017). In addition, many researchers have already started to review the literature using this approach (e.g., Martin Sun and Westine, 2020; Valverde-Berrocoso et al., 2020; Arham et al., 2022). Therefore, this study will also adopt a systematic review approach to collect and analyze the relevant literature on the impact the executive compensation gap can have on the company, to fill the gaps in the current study.

Figure 4 illustrates the design of the systematic literature review for this study to provide a clear picture of the whole process. The first step is literature collection, which is conducted based on the Scopus paper repository, which is the largest abstract and citation database of peer-reviewed literature that covers journals in various research areas and is the preferred choice of many schools for purchasing databases. A computer search of this database for published papers with the following keywords: "executive pay/compensation/salary" separately related to "variation/gap/difference/equity/inequity/dispersion", and the result shows that a total of 626 articles could be obtained, then the category of literature is limited to English, the article type is limited to journal and a conference paper, the proceeding ones will also be included to widen the total amount of articles possible, and the year is limited from 2013 to 2022, and finally 367 relevant articles are obtained. However, this is not the final number of literature, and the second step of the process, i.e., the literature filtrating stage is needed. The study considers ethical issues of online document access rights and eliminates the inaccessible literature, and then manually eliminates the literature that is not related to the topic of the study by screening the title, abstract, and full text, and finally obtains a total of 27 literature samples for analysis. The third step is literature analysis. The 27 papers are coded according to the research question, and a coding table is formed based on the information and content of the literature, then a review and commentary of the literature will be conducted.

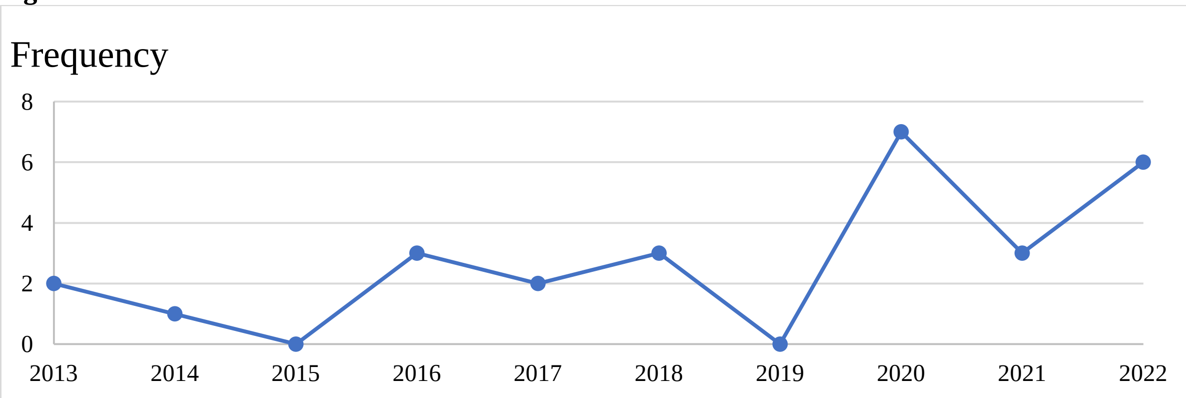
Figure 4: The Processing of the Literature Selection



4. Literature Trend in this Research Area for the Last Decade

Annual Distribution: Figure 5 shows the tendency of Scopus-indexed articles that focused on the impact of executive compensation gap on corporate in the past ten years, from which it can be seen that before 2020, researchers paid little attention to this topic, and in 2019, there was not a single relevant study, however, since 2020, researchers began to pay more attention to this filed, and the total number of articles published in 2020-2022 reached 16, accounting for 59% of the total number of articles published in the past decade, with the largest number of articles published in 2020 and 2022, which is 7 and 6 respectively. However, in general, the attention to this research area is still insufficient, and after screening the literature that does not fit the research topic, the total number of articles in the past ten years is only 27, which coincides with the view of some researchers that current academia is still inadequate on the impact of executive compensation gap on the company (Liu and Liu, 2022; Yang, 2017).

Figure 5: Annual Distribution of Literature Volume over the Last Decade



(Source: Scopus, 2022, Handmade Collation by the Researcher)

Distribution of Authors: In addition, researchers also suggest that when discussing the impact of the executive compensation gap on corporate, because of the cultural and national background differences of the researcher, the results may also differ depending on the region where the research is based. This study finds that, firstly, Chinese scholars are highly concerned about the executive compensation gap by counting the author information of the collected related literature, with a total of 11 studies based on the capital market of Chinese listed companies out of 27 studies, this phenomenon may be attributed to the fact that, according to Kim and Leung (2007), Chinese people always tend to have more focuses about the distribution of compensation and more sensitive to the perception of pay gap than people in other countries, which may be due to the social reality of the existence of a large pay gap in China. In addition, scholars in Europe and the Americas, or other developed countries, especially in the United States, are also concerned about the executive compensation gap, but relatively less interested than Chinese scholars, after reviewing relevant literature, it has been found that researchers in developed countries are more concerned about gender pay equality than the executive compensation gap. Finally, it is worth mentioning that there are now also many scholars who have conducted cross-national studies on the impact of the executive compensation gap on firms, an attempt is made to discover if and what differences there were in the findings based on different countries and cultural contexts.

Distribution of Research Methods: By summarizing the research methods mentioned in the abstracts and methodologies of these 27 articles, the results of the analysis are shown in Table 1. 26 of the 27 papers used quantitative analysis by collecting data on executive compensation from corporate financial reports and corporate information databases, and then put forward econometric models and analyzing them using computer software (e.g., EViews Software and Stata Software). However, one study is noteworthy based on the Finnish capital market, which used a qualitative approach to investigate executive compensation and to determine the impact of the executive pay gap on the company through individual perceptions of the fairness of the pay distribution (Tenhiälä and Laamanen, 2018). Widely cited research that has been conducted by Rahman (2020) suggested that qualitative analysis is labor-intensive, and the costly human and material resources are large, so it is only suitable for small sample studies and not suitable for large sample studies. Although the data collected by such an approach is a kind of primary data, it may also lead to bias in the study outcome, since individuals can have strong personal preferences, which may also lead to biased research results. As a result, currently using secondary empirical data collected accessibly in databases to conduct data analysis on this research area is the more widely available option for researchers.

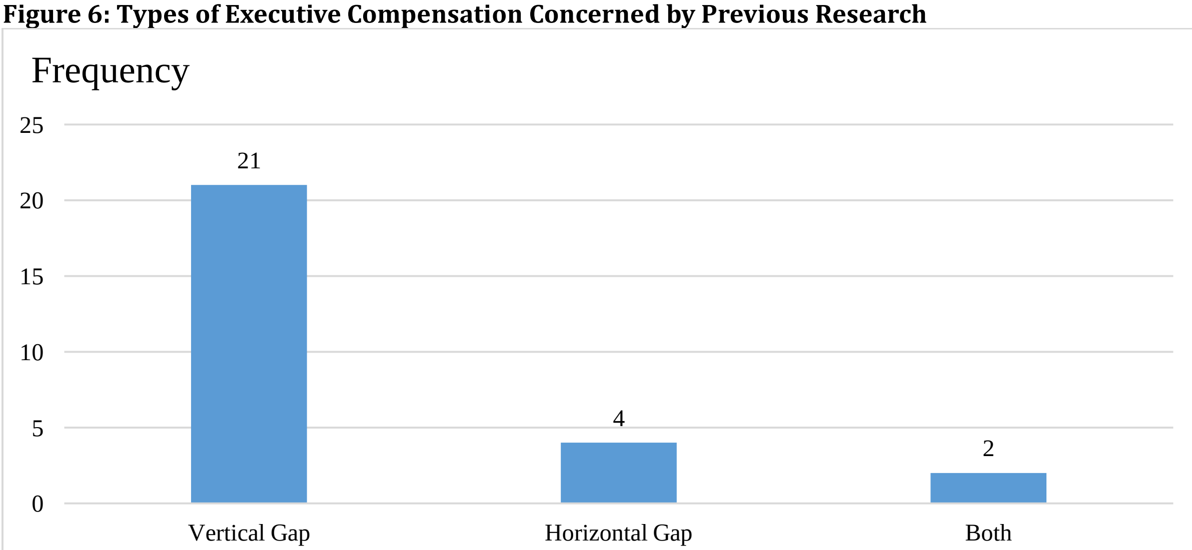
Table 1: Distribution of Research Methods

Type of Method	Specific Method	Frequency
Quantitative Method	Empirical Analysis Based on Econometrics	26
Qualitative Analysis	Survey	1

Definition and Measurement of the Executive Compensation Gap in Different Literature: The literature review discussed the different types of executive compensation gaps, and Figure 6 shows the different aspects of executive compensation gaps that past research has focused on, from the figure, it can be seen that most scholars are still stuck in the focus on the vertical compensation gap for executives, there are 21 literatures focused on the vertical pay gap, which specifically including the pay gap for CEOs and their subordinate executives (e.g., Osiichuk, 2022; Le, Nguyen and Gregoriou, 2022), and also the executive-employee pay gap (e.g., Ye, Li and Zeng, 2022; Fu, Zhang and Wu, 2022), which is consistent with the review in Chapter 2 of the definition vertical gap in executive compensation. However, some studies adopt a new definition, a research conducted by Amore and Failla (2020) defines the executive compensation gap as the difference between the highest and lowest paid executives in the executive team, which does not measure the pay gap by position level, unlike most studies that consider the specificity of CEOs and differentiate the executive team into CEOs and non-CEOs, the measurement is based on the numerical value of compensation. Similarly, Lin, Yeh and Shih (2013) also consider the value of pay as the basis of measurement, although this approach lacks the consideration of different hierarchy, the gap between the values of executive compensation can be most intuitively observed in this way, because sometimes the CEO of a company does not necessarily receive the highest pay.

There are only four studies that focus on the horizontal gap in executive compensation, three of which focus on the external aspect of the horizontal gap, the studies conducted by Coles, Li and Wang (2018); Banker, Bu and Mehta (2016) are based on industry difference, which is consistent with the definition that been reviewed in section 2, i.e., comparing executive compensation with that of executives in the same industry and to determine its impact on firms, while Ma, Pan and Stubben's (2020) study of the external horizontal gap in executive compensation is conducted on a regional basis, discussing how the gap between executive compensation and executive compensation in the same region affects firms' performance, risk-taking ability and financial reporting decisions. Only one of these four papers focuses on the horizontal executive compensation gap within firms, and this one defines the executive compensation gap as the gap between non-CEO executive compensation (Talavera, Yin and Zhang, 2021). One thing worth mentioning is that only two articles can comprehensively consider both horizontal and vertical gaps in executive compensation, so the overall academic attention to the horizontal pay gap and the comprehensive consideration of both gaps is still insufficient in this research field now.

Figure 6: Types of Executive Compensation Concerned by Previous Research



The Multiple Impacts of Executive Compensation Gap on Company: Previous research has proved that executive compensation gap can have an impact on the company, but the impact also includes many aspects, so this part will review the research and try to summarize the outcomes of previous literature on what aspects will executive compensation gap impact on the company. The specific impact that the executive compensation gap can have on the company is stated as follows.

The Impact on Company Performance: Among these 27 literatures, the focus on company performance is the highest, 12 studies are about the impact of executive compensation gap on corporate performance. Robbins and Coulter (2017) argued that corporate performance refers to the total amount of value generated by a firm through its business activities, and when it is quantified, it can be measured by the relevant indicators in the financial statements of the firm. Leite (2019) reviewed the indicators related to company performance and suggested that it can be mainly divided into accounting performance and financial market performance, where accounting performance data is the most easily available and common, the most common indicators are cash flow from operations, earnings before interest and taxes (EBIT), return on assets (ROA) and so on, but study accounting performance alone is not enough, so financial market performance is another aspect to be considered (Otley, 2001), which includes the indicators of beta coefficient, earnings-per-share (EPS), Tobin's q and so on. This study summarizes the findings of these 11 studies on the impact of executive compensation gap on firm performance and the information and findings are shown in Table 2.

Table 2: Compilation of Findings on Executive Compensation Gap Impact on Company Performance

Author (Year)	Title	Findings
Ye, Li and Zeng (2022)	Former CEO director and executive employee pay gap	This study based on data from the Chinese stock market from 2005-2019 found that the compensation gap of executives and employees caused by the board of directors of former CEOs has a negative impact on the future accounting performance of the company.
Osiichuk (2022)	The Driver of Workplace Alienation or the Cost of Effective Stewardship? The Consequences of Wage Gap for Corporate Performance	This research uses data from 2003-2018 from 40 different global countries, the study found that the CEO-employee compensation gap has a positive impact on firm profitability, but that excessive pay gaps should also be prevented to prevent extreme wage inequality from having an impact on firm accounting growth.
Kong, Huang and Liu (2022)	Digital Transformation and Within-Firm Pay Gap: Evidence from China	The study uses data from 2013-2020 of listed Chinese companies and found that digital transformation of companies leads to an increase in the compensation gap between executive and employee, which will improve the accounting performance of companies.
Talavera, Yin S and Zhang (2021)	Tournament incentives, age diversity and firm performance	Such a study is based on a sample of listed companies in the Shanghai and Shenzhen stock market in China from 2000-2015, and it finds that the horizontal pay gap between non-CEO executives contributes to the development of corporate accounting performance.
Ma, Pan and Stubben (2020)	The effect of local tournament incentives on firms' performance, risk-taking decisions, and financial reporting decisions	Based on the data of U.S. S&P 1500 index companies from 1994 to 2013, examining the impact of external horizontal executive compensation disparities on companies based on region, the results demonstrate that such disparities can lead to higher accounting and financial market performance, greater risk and more financial failures.
Tenhiälä and Laamanen (2018)	Right on the money? The contingent effects of strategic orientation and pay system design on firm performance	A survey of 955 companies from Finland concluded that the impact of the executive compensation gap should depend on the different companies, growth-oriented companies would benefit from a larger gap, but efficiency-oriented companies would be more likely to benefit from a low gap.
Coles, Li and Wang (2018)	Industry tournament incentives	Based on CEO compensation data from the S&P ExecuComp database from 1992-2005, study the impact of external horizontal tournament incentives based on the industry, and the study concludes that tournament incentives in the industry have a significant positive relationship on both firm performance and firm risk.
Burns, Minnick	CEO Tournaments: A Cross-Country Analysis of Causes,	The study is based on data from 14 countries from 2005-2009, and the findings demonstrate that the size of the CEO-other

and Starks (2017)	Cultural Influences, and Consequences	executive pay gap varies across cultures, but that larger executive pay differences generally lead to better financial market performance across cultures, yet the rate of increase is decreasing, with the wider the pay gap, the smaller the increase in firm value.
Yu and Van Luu (2016)	Bank performance and executive pay: tournament or teamwork	The study conducted a cross-country sample of banks from 2004 to 2012, which examines the impact of executive compensation gaps on both aspects of company performance, the findings suggest that the results are different across country contexts, with the developed and civil law subsamples tending to support the equity theory that firms benefit from low dispersion, while developing countries tend to support the tournament theory that firms benefit from high dispersion.
Banker, Bu and Mehta (2016)	Pay Gap and Performance in China	Based on data from 2000-2009 for listed companies in China, the findings indicate that the external executive compensation gap based on industry positively affects firm accounting performance, and this positive effect is moderated by firm ownership, to a lesser extent of positive impact in state-owned firms than in non-state-owned firms.
He and Fang (2016)	Subnational institutional contingencies and executive pay dispersion	Based on data from China-listed companies from 2000-2011, the results of the study found that the dispersion of CEO-other executive compensation is lower in state-owned enterprises, but overall, the executive compensation gap has a positive impact on accounting performance in both state-owned and non-state-owned enterprises.
Lin, Yeh and Shih (2013)	Tournament theory's perspective on executive pay gaps	Such study based on Taiwan region samples from 2002 to 2004 to study the impact of the vertical executive compensation gap on company accounting and financial market performance, the findings suggest that the applicability of tournament theory needs to be discussed by the industry and that tournament theory is effective for non-high-tech companies with low innovation intensity, however, for high-tech companies with high coordination needs, the gap should be moderately reduced.

As can be seen from the findings, most of the studies still only focus on one aspect of company performance and seldom consider financial market performance or comprehensively consider both accounting performance and financial market performance together. Previous literature has proved that executive compensation gap, either the vertical and horizontal gap can have an impact on company performance, but the outcome is still full of controversial, the result may differ for different regions and countries with different cultural backgrounds or different types of companies, researchers also combined the study outcome with related theories, some of the research has proved that company can benefit from the tournament incentive, but some of which consider that the tournament incentive may have both sides of effect, it can help improve the company performance, but also may increase the risk has also increased accordingly (e.g. Ma, Pan and Stubben, 2020, Coles, Li and Wang, 2018).

The Impact on Company Risk Management: Researchers have also explored the impact of the executive pay gap on corporate risk (6 articles), and have concluded that corporate tournament incentives are two-sided, with better performance leading to greater operation risk (Ma, Pan and Stubben, 2020, Coles, Li and Wang, 2018). However, some researchers argue that despite the increased risk, the firm's risk tolerance ability also increases due to the widening of the executive compensation gap, the study conducted by Cooper, Uzun and Zheng (2014) suggested that the CEO-other executive compensation gap has a positive impact on the risk-taking ability of firms, but it is worth mentioning that this impact diminished after the financial crisis, which implies that management's attitude towards risk changed and the financial crisis made executives start to tend to be risk-averse.

Researchers have also examined enterprise risk in more detailed aspects, Colak et al. (2021) examined the impact of the vertical compensation gap between CEOs and other executives on initial public offerings (IPOs) failure risk based on a sample of companies from the Thomason One Banker database for the period 2000-2012, and the results of the study proved that tournament incentives for executives are effective and can reduce the likelihood of IPO failure and improve the chances of IPO survival. However, some of the research supports the equity theory, Le, Nguyen and Gregoriou (2022) find that widening the pay gap between CEOs and their key subordinate executives increases a company's risk of future stock price crash, using a sample of listed companies in the eight largest stock markets (the U.S., the UK, Canada, France, Germany, Australia, New Zealand and Belgium). The study conducted by Bannister, Newman and Peng (2020), based on relevant data collected from the CompStat database from 1992 to 2013, examines the impact of executive compensation tournament incentives on a firm's future credit rating and concludes that a firm's credit rating is negatively affected because the greater the pay gap of a firm, the greater the risk, and past studies have concluded that rating agencies perceive riskier firms to have a higher probability of default and therefore assign a low credit rating (Molina, 2005), so a widening executive pay gap will lead to a lower future credit rating of the company.

The Impact on Company Innovation Ability: Some of the scholars focus on the impact of innovation ability (3 articles), Hsin-Han Shen and Zhang's (2018) study based on all firms in the Compustat Execucomp database from 1993 to 2003, examines the impact of executive tournament incentives on corporate innovation. The empirical evidence suggests that a widening CEO-other executive pay gap is conducive to improving innovation efficiency, however, the study by Amore and Failla (2020) argues that the impact of the executive compensation gap on firms' innovation capabilities depends on the type of pay, based on empirical data from U.S. listed firms, which concludes that a larger gap in variable compensation is associated with higher innovation output, while a larger gap in fixed compensation is associated with lower innovation capabilities. A study from a more recent source gives a different view, which uses data from 2011-2018 from Chinese listed pharmaceutical industry companies and argues that the impact of the vertical executive-employee pay gap on corporate innovation ability supports both the tournament theory and the equity theory and that such impact is nonlinear, showing an inverted U-shaped relationship, which means the executive pay gap can promote innovation within a certain range, but this effect is not endless, and when the gap is too large until up to 27 times, it will start to impair innovation (Fu, Zhang and Wu, 2022).

The Impact on Audit Pricing: An interesting finding of how executive compensation impact audit pricing is that compared with most of the studies supported the tournament theory, both literature support the view of equity theory when discussing audit pricing, Ge and Kim's (2020) study based on U.S. data collected from the ExecuComp database from 2003-2014, investigates the impact of vertical executive compensation gap on company audit fees, and shows that an increase in compensation gap leads to an increase in audit fees, while Yin and DU (2021) also supported such conclusion based on the Chinese capital market, the result shows that tournament incentives have a negative impact and that executive compensation gap increases audit fees, which leads to an increase in the firm's operating costs.

Other Impacts: In addition to the above aspects, researchers have found that the executive compensation gap can have an impact on other aspects of a company. Researchers supporting tournament theory argue that the larger the executive compensation gap exists the more firms will tend to be robust in financial reporting (Gad, Nguyen and Scapin, 2022), achieve superior acquisition performance, and also help to improve the merge and acquisition (M&A) capability (Nguyen et al., 2020) and positively influence the international business expansion of company (Lin and Cheng, 2013), while researchers supporting equity theory argue that maintaining a smaller executive compensation gap is necessary to improve an organization's ability to cope with adversity and turnaround (Tao, Xu and Liu, 2020), and that widening the executive compensation gap leads to lower corporate responsibility in environmental terms (Zhang, Tong and Li, 2020), and some researchers hold the same view as Fu, Zhang and Wu (2022), who argue that either the tournament theory or the equity theory can separately explain the relationship and proposed that the executive compensation gap has an inverted U-shaped effect on the total factor productivity of company (Dai, Kong and Xu, 2017).

Discussion and Future Research: The current research field is in the starting stage, some scholars started to pay attention to the effects of the executive compensation gap on companies through empirical study, but the conclusion is still fully controversial, so the systematic review and summary of previews findings are needed, however, such review is still lacking now, by reviewing the relevant empirical literature in the Scopus Indexed over the past decade such research filled this kind of gap of knowledge system. This research concludes that the current research on the impact of the executive compensation gap on corporate is insufficient, and future researchers should further strengthen relevant research, thus this research also offers future researchers a path for further filling the gap in the knowledge system.

Firstly, relevant research pays little attention to the horizontal executive compensation gap, still mostly focusing only on the vertical aspect, yet the role of the executive compensation gap on corporate is not determined only by vertical compensation, so future researchers need to enhance the attention to the horizontal executive compensation gap, especially for the intra-company perspective, to fill the gap in the current field. In addition, when studying the impact of the executive compensation gap, the number of studies related to the impact on corporate performance is large and numerous, but most scholars still define corporate performance simply as traditional accounting performance, lacking consideration of financial market performance, and lacking a comprehensive consideration of both aspects, this study argues that a comprehensive consideration of both aspects of corporate performance can enhance the credibility of the study, so future researchers should consider corporate performance more comprehensively.

Although previous literature has already proved that the executive compensation gap can impact company performance, risk management, innovation ability, audit fees and many other aspects, there is still controversy among the research outcomes, it can be found from the literature that the tournament incentive is more supported, but many researchers also argue that the tournament incentive can have a two-sided effect of negative ones and positive ones, while some researchers supported the core view equity theory, especially research based on the developed countries and regions, several researchers thought that neither the tournament theory or the equity theory can be used to explain the research findings, it is a more complicated question and needs to be discussed by situations. It can be seen from the findings that the practical applicability of the theory will vary depending on the study sample, thus, the jury is still out on how the executive pay gap affects the company, the research findings will vary depending on the heterogeneity of countries, regions, cultures, etc., therefore, this research suggests future researchers conduct more studies based on different kinds samples to expand the literature in the current field.

5. Conclusion

In conclusion, this research reviewed the concept of the executive compensation gap and the relevant theory background and then conducted a systematic review based on the Scopus Indexed articles of the past decade from 2013-2022, presenting a repeatable procedure for collecting literature, and then figure out the literature trend in this research area in the last decade, summarized how the literature measure executive compensation gap, then reviewed the impact of executive compensation gap can have on company and then summarized the findings and put forward the suggestion for future researchers.

Such research filled the gap of review on the executive compensation gap and how it can impact the company. However, this research inevitably has a limitation, which only focused on the literature available to this researcher of the Scopus Indexed articles, there are many other quality databases, such as the Web of Science (WOS), therefore, the analysis of the literature may be missing and future studies should further add to the literature.

Acknowledgment: The authors would like to thank Universiti Teknologi MARA, Cawangan Melaka for supporting this article.

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