

**EMPIRICAL STUDY OF THE EFFECTS OF INDEPENDENT VARIABLES ON THE
AMOUNT OF TOTAL CEO COMPENSATION (SALARY + BONUSES)**

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ABSTRACT:

The intended purpose of this paper is to identify which of our dependent variables have a significant correlation or impact on total CEO Compensation (salary + bonuses). CEO compensation is a vastly different amount from company to company and many believe CEOs are generally overpaid. The topic of CEO Compensation has been dissected by many independent research studies with various research variables. Our study will examine the impact of the following independent variables on Total CEO Compensation (salary + bonus): CEO age, the natural log of market value per employee, return on assets, years as CEO (tenure), total percentage of shares owned, and new green score. Through the research and statistical analysis we ran, the only variable we found to be significant was a CEO's age.

INTRODUCTION:

The Chief Executive Officer (CEO) is the highest rating executive of any organization both private and public. Though a CEO's roles and responsibilities can change due to the company's size, corporate structure or culture, their overall responsibilities are often similar. Typically, a CEO's primary responsibilities include managing the overall business operations and resources while also making major decisions. In a smaller company the CEO is more likely to be hands on; whereas, the CEO of a major organization is more of a final decision maker. Due to the importance of the role, the average CEO is likely to receive a large compensation package. According to CNBC.com, in 2017 the average CEO of "America's largest firms" made \$18.9 million in total compensation (Elkins, 2018).

Due to the naturally high compensation package, CEOs' salaries are often ridiculed and receive backlash. USA Today reports, that in some organizations the CEO's salary is 1,000 times the salary of their typically employee (Stebbins, 2019). The massive difference between the CEO's and their typical employees' salary is often due to the additional "add-on" compensation packages that CEOs typically receive. A CEO's average compensation included their salaries as well as any additional bonuses, stock options, incentive plans and paid expenses, just to name a few.

Many companies are required to disclose detailed information regarding the compensation of all senior executives, including the Chief Executive Officer. These companies are required to include this compensation information within the company's annual proxy statement (Executive Compensation, 2014). In addition to disclosing the executives' salaries, as of 2018, companies, also now need to disclose how much the executives make compared to the typical employee (Choe, 2018). As Corporate America continues to mature, various studies have been conducted to understand if there is a correlation between the CEO's salary and multiple

other variables such as company bonus, stock options, and deferred compensation (Executive Compensation, 2014).

Our research aims to uncover if there is a correlation between Chief Executive Officers compensation (salary + bonus) against multiple independent variables. We collected data on 100 organizations to provide us with the most accurate estimate of what is true within the population. Throughout a series of statistical tests, we were able to assess any possible correlations between the CEO's salary and multiple independent variables such as CEO's age, market value per employee, return on assets, number of years serving as CEO, total percentage of shares owned by the CEO, and the company's New Green Score.

LITERATURE REVIEW AND HYPOTHESIS:

Total CEO Compensation (Salary + Bonus)

A CEO's total compensation package, including salary and bonuses, is often affected by different variables within an organization. The primary objective of this research study is to determine how our independent variables impact or affect the dependant variable: Total CEO compensation (salary + bonuses). As many factors play into an individual's compensation, the rapid rise of CEO salary has been a hot topic in media and scrutinized by people who claim top executives make too much money. Recent studies show that CEO's have a quantifiable influence over their total compensation, but it is difficult to determine which factors or attributes are responsible (Page, 2017). CEO's often negotiate for better deals on their compensation packages - whether it is a higher salary, more stock options, or more frequent bonuses. Having quantifiable attributes like education, years working in the industry, or gender can make an impact on compensation; but for the purpose of this paper, we will be looking at age, the natural log of market value/number of employees, return on assets (ROA), number of years as CEO, total

percentage of shares owned, and the company's new green score as independent factors on the variable *Total CEO Compensation (salary + bonus)*. By looking at these factors, we will be attempting to determine how other factors besides an individual's quantifiable traits will affect total CEO compensation.

When reviewing different components on hiring a CEO or adjusting the compensation package, HR managers have many factors to take into consideration. Bonuses are also an interesting measure of a CEO's monetary worth. Some research suggests that "Directors are twice as likely as CEOs to say that stock price performance (total shareholder return) is the single best measure of company performance (51 percent versus 26 percent). By contrast, CEOs are more likely to believe that profitability measures - operating income and free cash flow - are best (49 percent of CEOs versus 20 of directors)" (Donatiello, 2016). With conflicting viewpoints and studies, our research will attempt to determine which of the independent variables we are testing will have a significant impact on CEO compensation.

H₀1: There is a significant linear relationship between the natural log of CEO compensation (salary + bonus) and CEO age.

The correlation matrix showed a significant negative linear relationship between the natural log of CEO compensation (salary + bonus) and the CEO age with a p-value of 0.007. The pearson correlation value was -0.246 showing the values are negatively related. This indicates that the younger a CEO is, the less money they will make compared to individuals that are older. When reviewing data from other sources, we can see that CEO age does have a significant relationship to how much they will be compensated. Many times, the research on CEO age affecting their compensation is undermined due to the overwhelming data from other factors. "For example, poor governance may make it more likely that a firm has an old CEO, and also

reduce firm value; alternatively, trouble in the firm business model may lead to a firm retaining an old CEO, and also reduce firm value” (Edmans, 2017). Other research will show that the age of a CEO is not significant but our data shows there is. This could be attributed to how other statistical tests in our data ended up being reported. Since some research indicates age is often overlooked, that could also be a reason why other studies are not in agreement that age makes an impact on CEO compensation.

According to one article about age not being a significant variable, “although CEO age and executive-employee pay gap (EEPG) are readily observable, there is surprisingly little evidence on how a CEO's age affects the decision of EEPG in the CEO's corporate. EEPG is a critical organizational policy, which would determine the behavior choices of the top executives, the employees and thus firm performance to a large degree” (Zhang, 2016). One thing important to note is that this article is from China and the data might be skewed towards their CEO salaries and not American ones.

There are some articles that agree with our findings that a CEO's compensation is affected by their age. In a recent article from the Wall Street Journal “The number of S&P 500 CEOs in their 40s has declined in the past decade” (Cutter, 2019). This quote helps explain why so many studies find a significance in the correlation between age and CEO compensation. With many CEOs being over the age of 50, any younger CEO salary compared will behave like a dummy variable since equal data is not available.

After reviewing our data and literature sources, we can conclude that our hypothesis is correct as there is a significant linear relationship between the two variables. We accept H₀₁: There is a significant linear relationship between the natural log of CEO compensation (salary + bonus) and CEO age.

H₀2: The natural log of market value per employee will have a positive significance on the natural log of CEO compensation (salary + bonuses).

Our correlation matrix showed that there was no significant relationship between the CEO compensation level and the company's current market value per each employee. We found the market level of the company's employees by taking the company's market value and dividing it by the number of employees then determining the natural log of that number. Through our research the p-value of market value/number of employees was 0.218, with a Pearson correlation value of 0.079 showing that this was insignificant correlation. Though our correlation matrix did not show a significant relationship, our online research found that there is usually a significant relationship between CEO compensation and the total number of employees. According to Business Research Guide.com, a CEO's salary is largely dependent on the number of employees that work for the company. According to their research, the CEO for a small to mid-sized organization (100-500 employees) tend to make \$210,000 a year, where a large sized company (500 plus employees) average CEO earns an average of \$2.5 million a year (Business Research Guide, 2019). Through additional research we also learned that a CEO's salary is not based off their productivity, but the productivity of their employees and the company as a whole. The employees market value productive as a whole allow for the ability to generate returns to shareholders, increasing the CEO's productivity (Baker, 2019).

The same website has another article stating "CEO pay has historically been closely associated with the health of the stock market, although this connection seemed to disappear in 2015 and 2016, when CEO compensation fell even though stock prices rose" (Mishel, 2018). The statement is referencing that CEO compensation is generally associated with the stock market, which relates to market value/employee. While historically the better the stock market is doing, the more a CEO will be compensated, there was a discrepancy in recent years showing

lower salaries even though stock prices rose. The market value/employee rose in those years, but CEO compensation was not raised in return. This discrepancy in data could be an attribute to why our data suggests there is no significant relationship between the natural log of market value/employee amount and the natural log of total CEO compensation (salary + bonus).

Based on our findings from the statistical test, we can conclude that our hypothesis is incorrect in the Natural Log of Market Value / Employee having a positive significant relationship with the Natural Log of CEO Compensation. The test is positive, but not significant. We reject H₀2: The natural log of market value per employee will have a positive significance on the natural log of CEO compensation (salary + bonuses).

H₀3: A higher Return on Assets is positively correlated with natural log of CEO compensation (salary + bonus).

Our data shows there is no significant relationship between the natural log of CEO compensation (salary + bonus) and return on assets with a p-value of 0.301 and a pearson correlation of 0.053. Other data studies suggest the opposite; return on assets can affect how much bonus a CEO receives. An interesting point to consider in other research done on this topic is “cash bonuses tied to accounting performance such as ROA may motivate executives to manipulate the timing of revenues and expenses” (Nulla, 2013). Another example of ROA having an impact on compensation comes from an article stating “equity-based compensation is only significant regarding ROA,” (Van der Wijst, 2018). These statements contradict our findings by stating their research shows it is significant for ROA to affect CEO Compensation.

In addition to other sources stating there is a correlation between CEO compensation and ROA, a recent article from Boston College that states “...we find that higher levels of abnormal CEO total pay predict lower future ROA. This is consistent with the hypothesis that abnormal pay reflects an agency problem rather than otherwise unmeasured positive attributes of the CEO”

(Carter, 2016). It seems that most research indicates return on assets will impact a CEO's total compensation - typically the bonuses.

While our research shows there is no correlation between the two variables, most other studies will disagree. We can conclude that our hypothesis is incorrect in that a higher ROA will be positively correlated with CEO Compensation as the data is not statistically significant. We reject H₀₃: A higher Return on Assets is positively correlated with natural log of CEO compensation (salary + bonus).

H₀₄: The longer a person is a CEO of a company (number of years as CEO) the higher their natural log of CEO compensation (salary + bonus) will be.

Our correlation matrix showed no significant relationship between the natural log of CEO compensation (salary + bonus) and the number of years being CEO of a corporation. The p-value of our correlation was 0.138 with a pearson correlation value of -0.110. Some data regarding this topic varies with some research showing the amount of time being a CEO does not matter on how much compensation is awarded where other research claims the opposite.

Recent articles propose that “The firm size appears to be a significant explanatory variable for CEOs' cash and total compensation regardless of CEOs tenure and measure of performance” (Nourayi, Mahmoud & Mintz, Steven; 2008). Some studies believe a CEO's total compensation is based on other factors and that their number of years being CEO is not a significant measure of the amount of compensation awarded. Our research is also indicative of similar findings, but that it is only age which affects a CEO's compensation. It is interesting to see that a CEO age will significantly affect a total compensation for a CEO, but something as similar as a person's tenure does not. Other articles will prove to disagree with our findings.

According to Diks, “Tenure has a positive effect on corporate performance ... CEOs that stay longer in the same firm improve the performance significantly” (The Impact of CEO

Characteristics on Firm Value, 2016). Another source also states that “The relationship between tenure and total compensation for S&P 500 CEOs in 2015 is consistent with these theories—pay generally increases with tenure” (How Does CEO Compensation Change with Tenure, 2016). While our study did not show the positive correlation between how long a CEO’s tenure was and their compensation, it is typically a factor human resources considers when creating a compensation package. The longer a person is at a company, the more likely they are to want a pay increase for loyal service to an organization.

Based on our statistical test, we can conclude that our hypothesis was incorrect as there is no statistical significance with a CEO’s number of years at a company and their total compensation. We reject H₀₄: The longer a person is a CEO of a company (number of years as CEO) the higher their natural log of CEO compensation (salary + bonus) will be.

H₀₅: There is a significant relationship between the natural log of CEO compensation (salary + bonus) and the total percentage of shares owned.

Through the research that we conducted we did not find any correlation between the natural log of the CEO’s compensation (salary + bonus) and the total percentage of shares owned. The p-value of our correlation was 0.160 with a pearson correlation value of -0.100. Most CEO’s own a percentage of shares of the company, but the percentage of owned shares is not related to their compensation amount. A CEO their personal shared ownership “is the most important performance driver” for any CEO according to Investopedia.com. Naturally the CEO is more invested in the company when they have shares in the company and will profit when the company does well. In addition, we learned that the smaller the company, the more likely that the CEO will be the majority shareholder: and in many cases, the CEO may be the only shareholder. Interestingly, only about 20% of a CEO’s compensation comes from their base salary, the remaining compensation comes from things such as bonus and potentially stock

payouts. As salary.com states, 80% of the average CEO's compensation comes from everything aside from salary, but our data set says there is no significant relationship (Executive, 2019).

Harvard published a study that stated that 69% of S&P 500 companies CEOs are required to own stock equal to more than their annual salary. Those smaller companies surveyed follow somewhat smaller share requirements, there are still often ownership requirements that must be followed. According to the companies surveyed this keeps the CEO's invested in making the shareholders money. In this survey done by Harvard there is a correlation between the CEO's compensation and their percentage of shares owned. Harvard's CEO survey goes against our CEO survey (Papadopoulos 2019).

In addition, an article by CNCM.com showed that on average in the year 2017 a CEO that took part in stock options on average their total compensation was \$5.5 million more dollars each year (Elkins, 2018).

Based on the statistical tests run, we conclude that our hypothesis is incorrect because there was no significance between CEO compensation and their total amount of shares owned as reported. We reject H_05 : There is a significant relationship between the natural log of CEO compensation (salary + bonus) and the total percentage of shares owned.

H₀₆: Companies with an emphasis on sustainability environment (New Green Score) are positively associated with the natural log of CEO compensation (salary + bonus).

A company's green score indicates the company's likelihood of making an environmentally conscious purchase decision. This score is based from 0 to 100 based on comparable companies and their environmentally conscious decisions (Makower, 2010). Generally, Americans believe that environmental consideration should be important for a company but at this time CEOs are not requiring the companies to measure up (Strauss, 2019).

Through our research we did not find a significant relationship between CEO compensation (salary + bonus) and the company's new green score when running our regression and correlation tests in SPSS. The results of our regression showed a p-value of 0.093 and a Pearson correlation of 0.133.

A recent survey showed that more than 40% of millennials will choose the next company that they work for based off the company's corporate sustainability, even if the company is not willing to pay the same salary as another competitor. This shows that though the compensation for a CEO will not necessarily be higher just because the new green score is higher. Much of the upcoming workforce is influenced by how a company operates, and if paying a CEO more means the organization is more environmentally sustainable than a regular employee will be more likely to work there. As other sources have indicated, new green score does not necessarily impact a CEO's total compensation as it is not a factor that determines how well that individual is performing but how well a company as a whole is doing in their corporate sustainability.

The conclusion we gather from the test we ran was that our hypothesis was incorrect, even though they are positively correlated, there is no significance to the test, meaning there is no consideration in the New Green Score on CEO compensation. We reject H_0 : Companies with an emphasis on sustainability environment (New Green Score) are positively associated with the natural log of CEO compensation (salary + bonus).

EMPIRICAL METHODS

Samples and Data Collection with Description of Variables

Our initial data was pulled from a list of the 1,000 largest companies in the USA. Due to the lack of data for some of the firms in the list, not all 1,000 companies could be used in our

final data set. After extensive research was conducted, the final list of 100 companies was chosen. Our criteria in hand selecting each of the 100 firms was that each firm needed to be credible and have substantial research available. Lastly, all of the firms that made the final data set needed to have complete information for all independent variables.

Empirical Model and Variable Specification

An empirical model based on the outline hypothesized followed the format below. The sample data collected is as of 11/13/19. The variables are as explained:

CEO Age: The Chief Executive Officers current listed age.

Natural Log of Market Value per Employee: An algebraic expression of the natural log of the firm's market value divided by the listed number of the firm's number of employees.

Return on Assets: Calculated by dividing the company's net income by the companies average total assets.

Number of Years being CEO: The number of years that the CEO has served as the organization's CEO. Any years that the individual served as CEO at a previously company do not count towards the total number of years.

Total Percentage of Shares Owned: The percentage (based out of 100%) of the shares that the CEO owns of the company.

Companies New Green Score: The companies "Green Score" is based on their performance based on eight specific indicators. The eight indicators are the following; energy productivity

(15%), greenhouse gas (15%), water productivity (15%), waste productivity (15%), green revenue score (20%), sustainability pay link (10%), sustainability board committee (5%), audited environmental metrics (5%.)

Empirical Model and Statistical Methods

To determine the impact our independent variables had on the natural log of total CEO compensation (salary + bonuses), different statistical tests were run in SPSS. The tests ran include a multiple regression analysis - including an anova, correlation, and descriptives. In the appendix are the results of the tests ran in SPSS. The first test ran was a descriptive to determine the mean, standard deviation, max and min of each variable. Then we ran a regression analysis to determine which of the independent variables had an impact on the dependent variable; the anova was used to determine whether there were any statistically significant differences between the means of three or more independent variables. Next was the correlation test, which tells you how strongly pairs of variables are related. We ran these tests to try proving our independent variables affected the natural log of total CEO Compensation (salaries + bonuses). The appendix has detailed tables of the various statistical tests run in SPSS.

Analysis and Results

The regression analysis has a coefficient of determination of 0.092 which is extremely low in explaining the variance of the model. This indicates the model can be unreliable and not accurately depict the information in it. While some of the problems with the regression could be

related to the data collected not being accurate, the most likely explanation in this case is that people are vastly different from one another and the components and variables that are taken into consideration when determining salary. According to some sources “it’s possible that additional predictors can increase the true explanatory power of the model. However, in other cases, the data contain an inherently higher amount of unexplainable variability. For example, many psychology studies have R-squared values less than 50% because people are fairly unpredictable,” (Editor, 2014). For the purpose of our study, many of these factors are so wide in their range because company size varies, the compensation of each CEO varies, and the reasons why an executive is paid a certain amount vary outside our survey. If the study were to be run again, it would be important to add more variables to the regression analysis and limit the types of companies studied so that we get more accurate results as to what factors impact a CEO’s total compensation the most. More data on the regression analysis such as an analysis of variance as well as multicorrelinity information can be found in the appendix.

The next test we ran was a correlation matrix. These tests determine the amount of statistical significance a variable will have on the dependent variable. As mentioned earlier, the only variable that had a significant relationship on the Natural Log of Total CEO Compensation (salary + bonuses) was the independent variable CEO age. The p-value = 0.007 and the pearson correlation = -0.246 indicating a negative significant linear relationship. The other variables had the following p-values: Percentage of Total Shares Owned as Reported - p-value = 0.160, Return on Assets - p-value = 0.301, Number of Years as CEO (tenure) - p-value = 0.138, Natural Log of Market Value/Number of Employees - p-value = 0.218, New Green Score - p-value = 0.093.

A note on the level of significance: with the limited amount of data we have, a confidence interval of 95% could have been too high for our data set, and lowering that level

could have yielded more positive results for our data. Most of the variables proved insignificant and not related to the dependent variable.

The overall regression equation is as follows:

Natural Log of Total Compensation = 8.149 - 0.028 (CEO Age) - 0.191 (Percentage of Total Shares Owned) + 0.003 (Return on Assets) + 0.001 (Number of Years as CEO (*Tenure*)) + 0.033 (Natural Log of Market Value/Employee) + 0.560 (New Green Score)

Hypothesis Analysis

In terms of hypothesis one (H₀₁): our statistical findings indicate the hypothesis is correct in there being a significant relationship between the natural log of CEO compensation and a CEO's age. While the relationship was a negative, it is still significant showing there is a relationship between how old a CEO is and the amount they will be compensated for. The other hypothesis was not proven correct because they were all statistically insignificant when we ran the regression analysis and many of them were not even correlated when a correlation was run. While research tended to agree with our proposed hypothesis and not our SPSS data, the only conclusive answer we are able to give from this research is that CEO Age is the only independent variable effective in determining a CEO's total compensation (salary + bonuses).

CONCLUSION AND IMPLICATIONS

The overall purpose of this research paper was to illustrate if there is any correlation between a Chief Executive Officers total compensation and multiple independent variables. After collected data for 100 organizations we ran multiple tests to indicate if there was any correlation

or statistical significance. Through our tests we found that there is no correlation between CEO compensation (salaries + bonuses) and the following independent variables; market value per employee, return on assets, number of years that the individual has served as the CEO, percentage of shares owned and the company's green score. CEO Age was the only variable to have any significance with a p-value of 0.007.

Limitations

Throughout the process of this study, we ran into limitations that impacted our data study. Some of our data points, including market value per employee and return on assets were constantly changing. For the purpose of research, the data points that we used for each company were as of November 13, 2019. We were limited to the number of times we could update the data before we begin running each of our statistical tests. The data also only collected information on 100 companies - which were different in size and industry, which can have an impact on our data findings. Additionally, the data was collected in a short amount of time from two individuals and could have manual errors when recording the data or running any statistical tests as interpretation of how to record the data could vary from each person.

Application of Data

After thoroughly reviewing the data analyzed in our set and the research conducted from separate literature, we do not recommend the usage of our hypothesis when determining a CEO's total compensation (salary + bonuses). Due to many statistical tests proving insignificant and the small data size, our empirical regression formula for determining total CEO compensation could prove to be ineffective in awarding the correct amount.

Future Research

We believe that we can strengthen our data set by expanding our research. By researching and gathering information on additional companies, we could expand our data set beyond only 100 organizations and six independent variables to test what impacts a CEO's total compensation. By having a larger data set our test outputs will be more accurate. In addition, we believe it would be beneficial for the accuracy of our research to segregate the companies based on criteria. For example, our current data set includes both private and public companies. Having a data set that includes more comparable companies will provide more consistency. Though we are proud of our current paper and research our research findings are as accurate as possible, we believe adding more information to the data set and testing for more variables will give even more accurate findings.

Appendix:

Data Collected:

DV Natural Log Total Compensation	IV Age	IV Percentage of Total Shares Owned As Reported	IV Return on Assets	IV Number of Years as CEO	IV Natural Log of Market Value / Number of Employees	IV New Green Score
7.601	65	0.123	3.165	18	7.417	0.6020
8.006	56	0.020	18.381	8	9.104	0.7380
7.378	62	0.173	7.308	8	7.452	0.5370
4.605	87	0.179	4.361	49	7.233	0.1830
7.069	59	0.577	5.969	7	5.136	0.6750
7.003	63	0.135	8.542	8	6.413	0.5140
7.378	64	0.341	8.159	11	8.204	0.5220
6.800	52	0.330	3.407	3	5.864	0.4910
7.170	58	0.023	8.248	5	5.170	0.4370
7.824	66	0.094	9.505	14	7.215	0.3100
7.378	65	0.146	2.562	16	3.595	0.2430
7.193	61	0.187	12.311	4	3.827	0.3510
7.123	60	0.049	9.598	8	7.296	0.8070
7.090	50	0.089	4.261	4	6.293	0.6700

7.090	54	0.941	5.460	12	5.167	0.4160
7.378	57	0.067	11.550	7	7.893	0.7560
7.112	52	0.087	4.022	8	6.482	0.5980
DV Natural Log Total Compensation	IV Age	IV Percentage of Total Shares Owned As Reported	IV Return on Assets	IV Number of Years as CEO	IV Natural Log of Market Value / Number of Employees	IV New Green Score
7.396	61	0.193	5.582	8	5.805	0.7260
7.346	62	0.315	17.573	13	7.599	0.8190
6.622	56	0.158	7.794	19	4.383	0.6590
6.806	62	0.084	10.234	15	6.246	0.4330
6.903	56	0.169	9.630	3	4.472	0.1580
7.128	57	0.366	9.043	4	7.030	0.4220
7.245	64	0.372	4.946	11	4.060	0.5290
8.286	58	0.524	12.948	16	3.346	0.1690
7.313	64	0.288	22.155	11	5.848	0.5980
6.903	71	0.819	9.448	27	3.918	0.4680
6.217	70	0.228	12.245	7	5.008	0.6210
9.000	53	0.169	0.911	23	7.229	0.1830

6.749	59	0.481	9.030	4	5.086	0.2230
6.415	50	0.123	7.818	4	5.719	0.1360
6.802	57	0.136	1.202	21	9.874	0.2510
6.133	47	0.534	-2.730	7	1.009	0.3020
6.677	64	0.107	1.570	9	9.397	0.2190
6.908	59	0.817	3.608	16	8.341	0.1740
7.718	42	0.048	0.570	7	5.990	0.6530
DV Natural Log Total Compensation	IV Age	IV Percentage of Total Shares Owned As Reported	IV Return on Assets	IV Number of Years as CEO	IV Natural Log of Market Value / Number of Employees	IV New Green Score
6.458	49	0.022	-5.100	17	2.870	0.3050
7.346	53	0.048	-0.371	18	8.314	0.3470
6.600	60	0.249	6.090	4	6.016	0.2960
6.923	54	0.103	24.103	9	6.722	0.4850
7.090	57	0.024	23.406	9	9.734	0.2640
6.263	61	0.073	8.560	8	4.774	0.2470
6.620	55	0.024	5.400	10	8.233	0.2510
8.006	56	0.605	2.600	12	7.807	0.2140

6.856	49	0.247	15.380	4	6.394	0.5120
3.258	44	0.154	8.107	23	6.607	0.1430
7.741	51	0.033	-1.067	14	6.838	0.3830
7.340	52	0.011	17.453	10	5.736	0.1560
11.396	33	0.147	7.465	15	9.690	0.2370
7.388	60	0.025	8.701	7	8.186	0.1810
6.620	52	0.183	11.780	4	7.583	0.1960
6.927	67	0.018	7.080	10	5.865	0.4590
7.360	60	0.015	6.299	13	5.190	0.5770
7.776	46	0.038	-2.650	3	5.510	0.6120
6.922	52	0.270	11.225	4	4.581	0.4080
DV Natural Log Total Compensation	IV Age	IV Percentage of Total Shares Owned As Reported	IV Return on Assets	IV Number of Years as CEO	IV Natural Log of Market Value / Number of Employees	IV New Green Score
6.660	51	0.113	0.740	4	3.693	0.4340
6.908	56	0.065	14.344	6	6.128	0.1850
7.131	52	0.019	15.727	7	9.970	0.3140
7.032	62	0.181	8.614	12	7.443	0.3380

6.082	54	0.072	8.470	19	8.003	0.5060
6.892	49	0.247	9.885	4	3.224	0.5680
6.620	52	0.107	4.420	6	4.964	0.3690
6.551	48	0.855	3.630	9	5.359	0.4680
7.601	66	0.307	8.600	24	6.664	0.2690
6.719	66	0.010	14.124	8	3.379	0.3590
7.111	54	0.729	5.930	19	7.070	0.1680
6.512	56	0.674	6.547	6	7.321	0.2360
7.307	61	0.152	4.966	7	5.357	0.4590
6.908	58	0.069	2.284	4	7.208	0.1350
6.521	56	0.567	4.110	5	7.164	0.6120
6.685	53	0.250	7.170	4	7.444	0.5640
6.438	54	0.116	3.690	3	6.098	0.1200
6.397	58	0.016	-0.070	12	6.790	0.4360
6.542	64	0.699	5.010	9	6.990	0.2350

DV Natural Log Total Compensation	IV Age	IV Percentage of Total Shares Owned As Reported	IV Return on Assets	IV Number of Years as CEO	IV Natural Log of Market Value / Number of Employees	IV New Green Score
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6.081	51	0.347	3.380	4	11.391	0.5180
6.551	51	0.059	-1.560	15	9.271	0.2230
5.802	73	0.621	3.690	6	10.159	0.1150
7.202	50	0.022	11.640	4	7.369	0.4170
6.856	59	0.138	2.441	6	7.017	0.5410
6.727	65	0.054	5.710	23	5.584	0.4720
7.090	59	0.042	0.958	3	4.808	0.3560
6.454	59	0.298	11.174	13	7.076	0.3890
6.071	55	0.297	-9.959	6	-1.392	0.2690
7.132	56	0.384	6.015	5	-3.029	0.4120
6.882	64	0.041	0.342	21	6.740	0.2530
7.313	58	0.011	0.672	9	7.290	0.3950
6.908	59	0.173	6.110	7	7.123	0.2420
6.948	60	0.103	7.240	18	6.014	0.3670
7.636	63	0.051	1.201	12	6.794	0.3810
7.277	52	0.296	-5.433	4	1.337	0.3240
6.263	70	0.011	21.010	32	5.879	0.4290
6.189	56	0.137	12.980	7	5.896	0.4340
6.587	57	0.762	3.340	7	13.600	0.3640

DV Natural Log Total Compensation	IV Age	IV Percentage of Total Shares Owned As Reported	IV Return on Assets	IV Number of Years as CEO	IV Natural Log of Market Value / Number of Employees	IV New Green Score
6.713	62	0.215	21.463	19	7.598	0.5620
7.313	65	0.083	-8.797	24	9.313	0.2380

Descriptive Statistics:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DV: Natural Log Total Compensation	100	3.258	11.396	6.95191	.804941
IV: Age	100	33	87	57.67	7.214
IV: Percentage of Total Shares Owned- As Reported	100	.000	.941	.23167	.242448
IV:Return on Assets	100	-44.760	24.103	6.38039	8.183221
IV: Number of Years as CEO	100	3	49	10.95	7.823
IV: Natural Log of Market Value/Number of Employees	100	-3.029	13.600	6.36835	2.336675
IV: New Green Score	100	.1150	.8190	.393400	.1734604
Valid N (listwise)	100				

Correlation:

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
DV: Natural Log Total Compensation	6.95191	.804941	100
IV: Age	57.67	7.214	100
IV: Percentage of Total Shares Owned- As Reported	.23167	.242448	100
IV:Return on Assets	6.38039	8.183221	100
IV: Number of Years as CEO	10.95	7.823	100
IV: Natural Log of Market Value/Number of Employees	6.36835	2.336675	100
IV: New Green Score	.393400	.1734604	100

Correlations

		DV: Natural Log Total Compensation	IV: Age	IV: Percentage of Total Shares Owned- As Reported	IV:Return on Assets	IV: Number of Years as CEO	IV: Natural Log of Market Value/Number of Employees	IV: New Green Score
DV: Natural Log Total Compensation	Pearson Correlation	1						
	N	100						
IV: Age	Pearson Correlation	-.246	1					
	Sig. (1-tailed)	.007						
	N	100	100					
IV: Percentage of Total Shares Owned- As Reported	Pearson Correlation	-.100	.074	1				
	Sig. (1-tailed)	.160	.233					
	N	100	100	100				
IV:Return on Assets	Pearson Correlation	.053	.112	-.239	1			
	Sig. (1-tailed)	.301	.133	.008				
	N	100	100	100	100			
IV: Number of Years as CEO	Pearson Correlation	-.110	.437	.027	-.021	1		
	Sig. (1-tailed)	.138	.000	.396	.417			
	N	100	100	100	100	100		
IV: Natural Log of Market Value/Number of Employees	Pearson Correlation	.079	.045	.015	.048	.121	1	
	Sig. (1-tailed)	.218	.327	.440	.319	.116		
	N	100	100	100	100	100	100	
IV: New Green Score	Pearson Correlation	.133	-.016	-.148	.234	-.142	-.070	1
	Sig. (1-tailed)	.093	.439	.071	.010	.079	.243	
	N	100	100	100	100	100	100	100

Regression:

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.304 ^a	.092	.034	.791308	.092	1.573	6	93	.164

a. Predictors: (Constant), IV: New Green Score , IV: Age, IV: Natural Log of Market Value/Number of Employees, IV: Percentage of Total Shares Owned- As Reported, IV:Return on Assets , IV: Number of Years as CEO

b. Dependent Variable: DV: Natural Log Total Compensation

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.911	6	.985	1.573	.164 ^b
	Residual	58.234	93	.626		
	Total	64.145	99			

a. Dependent Variable: DV: Natural Log Total Compensation

b. Predictors: (Constant), IV: New Green Score , IV: Age, IV: Natural Log of Market Value/Number of Employees, IV: Percentage of Total Shares Owned- As Reported, IV:Return on Assets , IV: Number of Years as CEO

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	8.149	.726		11.223	.000	6.707	9.591						
	IV: Age	-.028	.012	-.251	-2.250	.027	-.053	-.003	-.246	-.227	-.222	.784	1.275	
	IV: Percentage of Total Shares Owned- As Reported	-.191	.341	-.058	-5.560	.577	-.869	.487	-.100	-.058	-.055	.923	1.084	
	IV:Return on Assets	.003	.010	.035	.329	.743	-.017	.024	.053	.034	.033	.879	1.138	
	IV: Number of Years as CEO	.001	.012	.007	.065	.948	-.022	.024	-.110	.007	.006	.779	1.284	
	IV: Natural Log of Market Value/Number of Employees	.033	.034	.097	.969	.335	-.035	.102	.079	.100	.096	.978	1.023	
	IV: New Green Score	.560	.480	.121	1.166	.246	-.393	1.512	.133	.120	.115	.913	1.095	

a. Dependent Variable: DV: Natural Log Total Compensation

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	IV: Age	IV: Percentage of Total Shares Owned- As Reported	IV:Return on Assets	IV: Number of Years as CEO	IV: Natural Log of Market Value/Number of Employees	IV: New Green Score
1	1	5.417	1.000	.00	.00	.01	.01	.01	.00	.00
	2	.723	2.738	.00	.00	.26	.44	.00	.00	.00
	3	.385	3.751	.00	.00	.55	.29	.22	.00	.00
	4	.276	4.429	.00	.00	.10	.23	.43	.01	.14
	5	.134	6.366	.00	.00	.02	.00	.11	.45	.44
	6	.059	9.552	.05	.06	.06	.00	.10	.49	.39
	7	.006	29.337	.94	.94	.00	.02	.13	.03	.02

a. Dependent Variable: DV: Natural Log Total Compensation

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.149	.726		11.223	.000		
	IV: Age	-.028	.012	-.251	-2.250	.027	.784	1.275
	IV: Percentage of Total Shares Owned- As Reported	-.191	.341	-.058	-.560	.577	.923	1.084
	IV: Return on Assets	.003	.010	.035	.329	.743	.879	1.138
	IV: Number of Years as CEO	.001	.012	.007	.065	.948	.779	1.284
	IV: Natural Log of Market Value/Number of Employees	.033	.034	.097	.969	.335	.978	1.023
	IV: New Green Score	.560	.480	.121	1.166	.246	.913	1.095

a. Dependent Variable: DV: Natural Log Total Compensation

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	IV: Age	IV: Percentage of Total Shares Owned- As Reported	IV: Return on Assets	IV: Number of Years as CEO	IV: Natural Log of Market Value/Number of Employees	IV: New Green Score
1	1	5.417	1.000	.00	.00	.01	.01	.01	.00	.00
	2	.723	2.738	.00	.00	.26	.44	.00	.00	.00
	3	.385	3.751	.00	.00	.55	.29	.22	.00	.00
	4	.276	4.429	.00	.00	.10	.23	.43	.01	.14
	5	.134	6.366	.00	.00	.02	.00	.11	.45	.44
	6	.059	9.552	.05	.06	.06	.00	.10	.49	.39
	7	.006	29.337	.94	.94	.00	.02	.13	.03	.02

a. Dependent Variable: DV: Natural Log Total Compensation

REFERENCES

- Baker, Dean. “Reining in CEO Compensation and Curbing the Rise of Inequality.” *Economic Policy Institute*, 4 June 2019, www.epi.org/publication/reining-in-CEO-compensation-and-curbing-the-rise-of-inequality/.
- Carter, Mary Ellen, et al. “Excess Pay and Deficient Performance.” Elsevier Inc, 10 Mar. 2016. https://www2.bc.edu/alan-marcus/papers/RFE_2015.pdf.
- Choe, Stan. “For CEOs, \$11.7 Million a Year in Compensation, on Average, Is Just Middle of the Pack.” *USA Today*, Gannett Satellite Information Network, 25 May 2018, www.usatoday.com/story/money/business/2018/05/25/CEOs-11-million-year-salary-just-middle-pack/643823002/.
- Cutter, Chip. “CEOs Under 50 Are a Rare Find in the S&P 500.” *The Wall Street Journal*, Dow Jones & Company, 22 May 2019, www.wsj.com/articles/CEOs-under-50-are-a-rare-find-in-the-s-p-500-11558517401.
- Diks, Jelle. “The Impact of CEO Characteristics on Firm Value.” Tilburg School of Economics & Management, 2016. <http://arno.uvt.nl/show.cgi?fid=141992>
- Donatiello, N., Tayan, B., Larcker, D., & Thompson, J. (2016, January). CEOs and Directors on Pay: 2016 Survey on CEO Compensation. https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/cgri-survey-2016-ceo-compensation_0.pdf
- Editor, Minitab Blog. “How to Interpret a Regression Model with Low R-Squared and Low P Values.” *Minitab Blog*, 12 June 2014, <https://blog.minitab.com/blog/adventures-in-statistics-2/how-to-interpret-a-regression-model-with-low-r-squared-and-low-p-values>
- Edmans, Alex, and Xavier Gabaix. “Executive Compensation: A Survey of Theory and Evidence.” 26 June 2017. https://scholar.harvard.edu/files/xgabaix/files/executive_compensation.pdf.
- Elkins, Kathleen. “CEOs Made an Average of \$902,000 in 1965—Here's How Much They Earn Today.” *CEOs Made an Average of \$902,000 in 1965—Here's How Much They Earn Today*, CNBC, 20 Aug. 2018, www.cnbc.com/2018/08/20/how-much-CEOs-at-the-biggest-us-companies-earn.html.
- “Executive Compensation.” *SEC Emblem*, 21 Oct. 2014, www.sec.gov/fast-answers/answers-execomphtm.html.

“How Does CEO Compensation Change with Tenure?” *Equilar*, 8 Aug. 2016, www.equilar.com/blogs/144-change-with-tenure.html.

“How Much Does a CEO Make?” *Business Research Guide*, 2019, www.businessresearchguide.com/faq/how-much-does-a-CEO-make/.

Makower, Joel. “Newsweek's Green Rankings: What They Mean ... and Don't.” *GreenBiz*, GreenBiz Group Inc., 18 Oct. 2010, www.greenbiz.com/blog/2010/10/18/newsweeks-green-rankings-what-they-mean-and-dont.

McClure, Ben. “A Guide to CEO Compensation.” *Investopedia*, Investopedia, 18 Nov. 2019, www.investopedia.com/managing-wealth/guide-CEO-compensation/.

Mishel, Lawrence. “CEO Compensation Surged in 2017.” *Economic Policy Institute*, 16 Aug. 2018, www.epi.org/publication/CEO-compensation-surged-in-2017/.

Nourayi, Mahmoud & Mintz, Steven. (2008). Tenure, firm's performance, and CEO's compensation. *Managerial Finance*. 34. 524-536. 10.1108/03074350810874055. https://www.researchgate.net/publication/235301660_Tenure_firm's_performance_and_CEO's_compensation.

Nulla, Yusuf. (2013). The Effect of Return on Assets (ROA) on CEO Compensation System in TSX/S&P and NYSE Indexes Companies. *International Journal of Scientific and Engineering Research*. 4. 1. https://www.researchgate.net/publication/299903394_The_Effect_of_Return_on_Assets_ROA_on_CEO_Compensation_System_in_TSXSP_and_NYSE_Indexes_Companies.

Page, T. Beau, 2018. "CEO attributes, compensation, and firm value: Evidence from a structural estimation," *Journal of Financial Economics*, Elsevier, vol. 128(2), pages 378-401.

Papadopoulos, Kosmas. “CEO Ownership, Corporate Governance, and Company Performance.” *CEO Ownership, Corporate Governance, and Company Performance*, 13 May 2019, corpgov.law.harvard.edu/2019/05/13/CEO-ownership-corporate-governance-and-company-performance/.

Strauss, Karsten. “The Most Sustainable Companies In 2019.” *Forbes*, Forbes Magazine, 22 Jan. 2019, www.forbes.com/sites/karstenstrauss/2019/01/22/the-most-sustainable-companies-in-2019/.

Stebbins, Samuel. “These CEOs Make 1,000 Times More than Their Employees.” *USA Today*, Gannett Satellite Information Network, 17 Apr. 2019, www.usatoday.com/story/money/2019/04/17/these-ceos-make-1000-times-more-than-their-employees/39350499/.

Van der Wijst, Nick. “The Influence of CEO Compensation on Firm Performance and Its Relation to Economic Growth.” Radboud University, Nijmegen School of Management, Aug. 2018. https://theses.ubn.ru.nl/bitstream/handle/123456789/6215/Wijst%2C_Nick%2C_van_der_1.pdf?sequence=1.

Zhang, Changzheng. “Role of CEO Age in Determining Executive-Employee Pay Gap in Chinese Listed Manufacturing Companies: A Perspective of Risk Aversion.” Xi’an University of Technology, School of Economics & Management, 2016. https://www.researchgate.net/publication/314718319_Role_of_CEO_Age_in_Determining_Executiveemployee_Pay_Gap_in_Chinese_Listed_Manufacturing_Companies_A_Perspective_of_Risk_Aversion.