Does Education & Experience Impact Developer Compensation

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OBJECTIVE

This study aims to evaluate the relationship between education level and yearly compensation, examine the impact of professional coding experience on yearly compensation, and provide insights for developers and employers to make informed decisions regarding career paths and talent acquisition.

Introduction

This study investigates the impact of education level and professional coding experience on the yearly compensation of developers. Understanding these factors is crucial for both developers planning their careers and employers seeking to attract and retain top talent. By analyzing data from the 2023 Stack Overflow Developer Survey, we aim to provide valuable insights that can contribute to the existing literature on developer compensation.

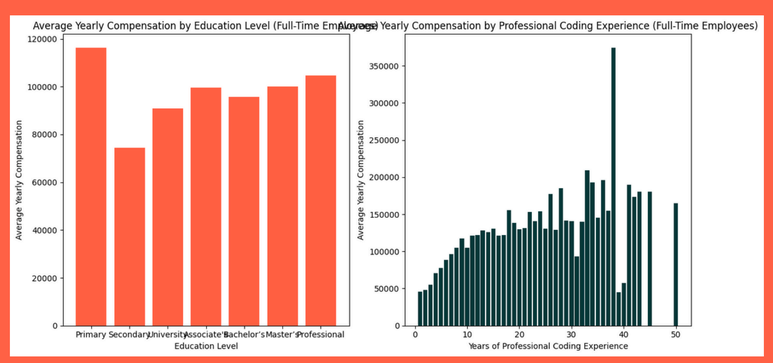
METHODOLOGY

The research was conducted using data from the 2023 Stack Overflow Developer Survey. The team employed data cleaning techniques to remove null values, reducing the dataset from 89,185 to 6,351 entries. The cleaned data was then segmented by employment type, education level, years of professional coding experience, and industry to facilitate meaningful comparisons. Statistical analysis was performed to evaluate the relationships between these factors and yearly compensation.

RESULTS

Our study found a significant relationship between yearly compensation and both education level and years of professional coding experience. Specifically, for full-time workers, both predictors were statistically significant (p-values < 0.05). However, for self-employed individuals, only years of professional coding experience showed significance, while education level did not. Despite statistical significance, the correlations between these variables and compensation were weak, indicating other factors may also play important roles in determining developer salaries.

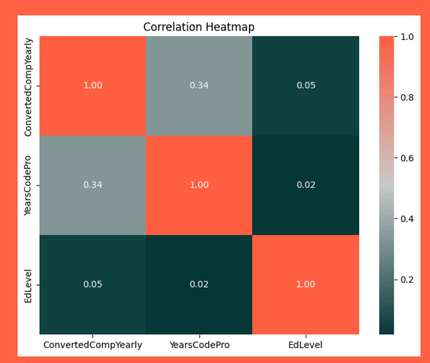
Analysis



Bar Graph of Education Level and Years of Professional Codinf Plotted Against Compensation.

The bar graph on the left shows the level of education against the mean yearly compensation. From the looks of it there doesn't seem to be a clear correlation. On the other hand, the bar graph on the right shows the years of professional coding against the mean yearly compensation. In this graph, there is a slight observable correlation in that as years of professional coding increases, the yearly compensation also increases.

The correlation heat map further confirms our observations, showing that the corelation between education level and compensation is extremely weak (0.05) while the correlation between years of professional coding and compensation is stronger but still pretty weak .(0.34)



Correlation Heatmap of Compensation, Education Level, and Years of Professional Coding

HYPOTHESIS TESTING

We tested the hypothesis using regression analysis and calculated p-values for the predictors: education level and years of professional coding experience. All p-values were found to be less than 0.05, leading us to reject the null hypothesis. This indicates that both education level and years of professional coding experience significantly impact yearly compensation. After analyzing the correlation though, we can conclude that there is in fact a relation between the two variables and the compensation, however it is a weak one.

Conclusion

The analysis reveals a significant relationship between education level, years of professional coding experience, and yearly compensation for developers. However, this influence varies across different groups, with a weaker correlation found among self-employed individuals. Despite these factors playing a role, the study highlights that they are not the sole determinants of compensation, suggesting the presence of other influential variables.