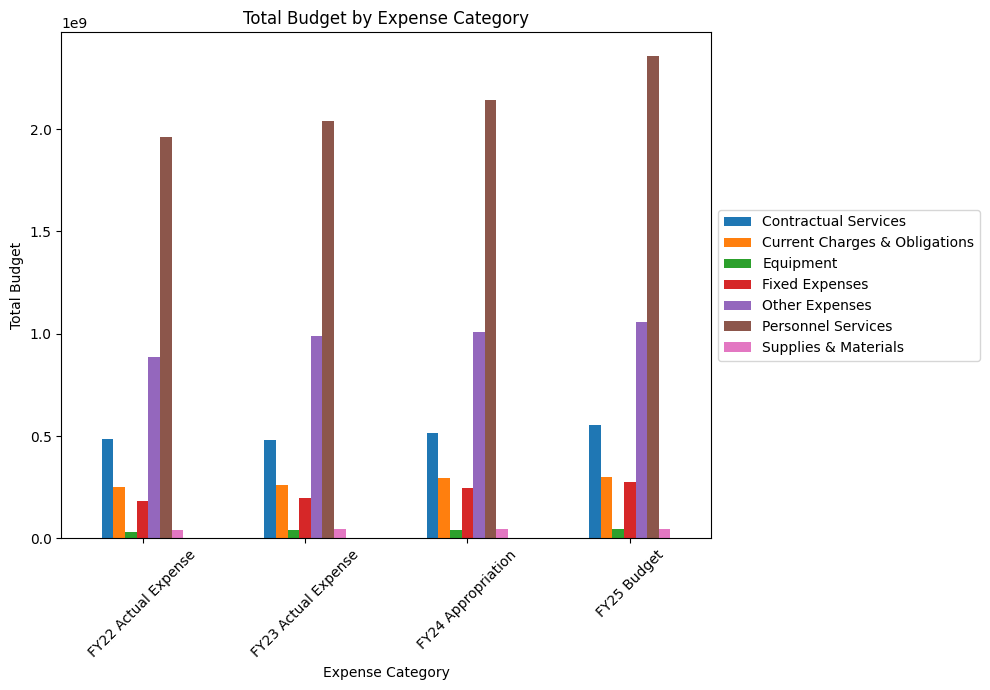
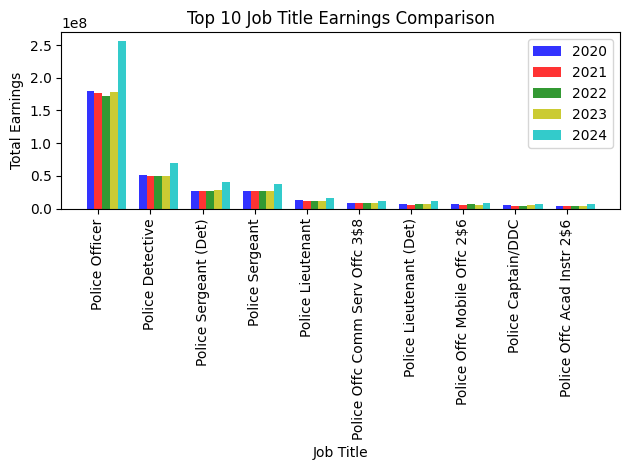
1. Identifying instances of financial excess in BPD spending

(1)To identify where there was financial excess in BPD spending we first looked at how the BPD budget had changed year over year. We looked at data from 2022-2025 as this was available to us from the City Of Boston. The overall budget was broken up into seven categories: Contractual Services, Current Charges & Obligation, Equipment, Fixed Expenses, Other Expenses, Personnel Services, and Supplies and Materials. To determine how the budget has changed between these categories, we looked at the percent each category made up of the total budget.From the graph, it is evident that Personnel Services consistently accounted for the largest portion of the total budget across all fiscal years from 2022 to 2025. This category highlights the significant costs associated with salaries and benefits, which dominate the overall spending. Year over year, while other categories such as Contractual Services, Current Charges & Obligations, and Supplies & Materials show relatively minimal changes in their share of the budget, the increasing trend in Other Expenses and Fixed Expenses suggests growing commitments or new initiatives that demanded additional funding. Notably, Equipment and Supplies & Materials remain the smallest contributors to the budget each year, indicating these areas are less prioritized. Despite these being essential for operations, their consistent low allocation reflects that BPD likely focuses resources on personnel-related and operational necessities rather than physical assets or materials. By 2025, the overall budget shows a consistent increase compared to previous years, with the largest growth occurring in Personnel Services and Other Expenses. This trend points to potential financial excess in staffing costs and operational overhead..

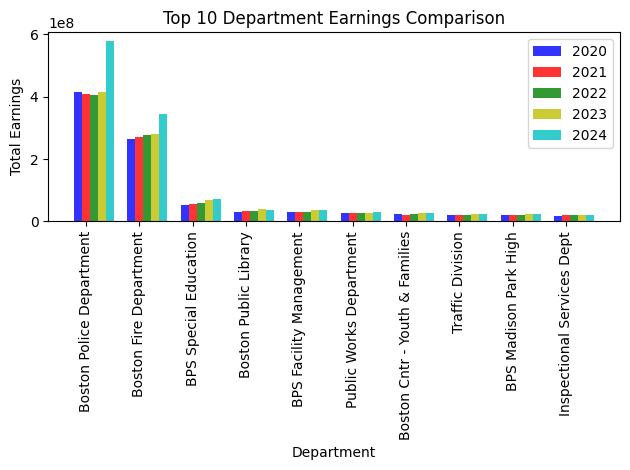


1. Where have funds grown or shrunk intra-departmentally?

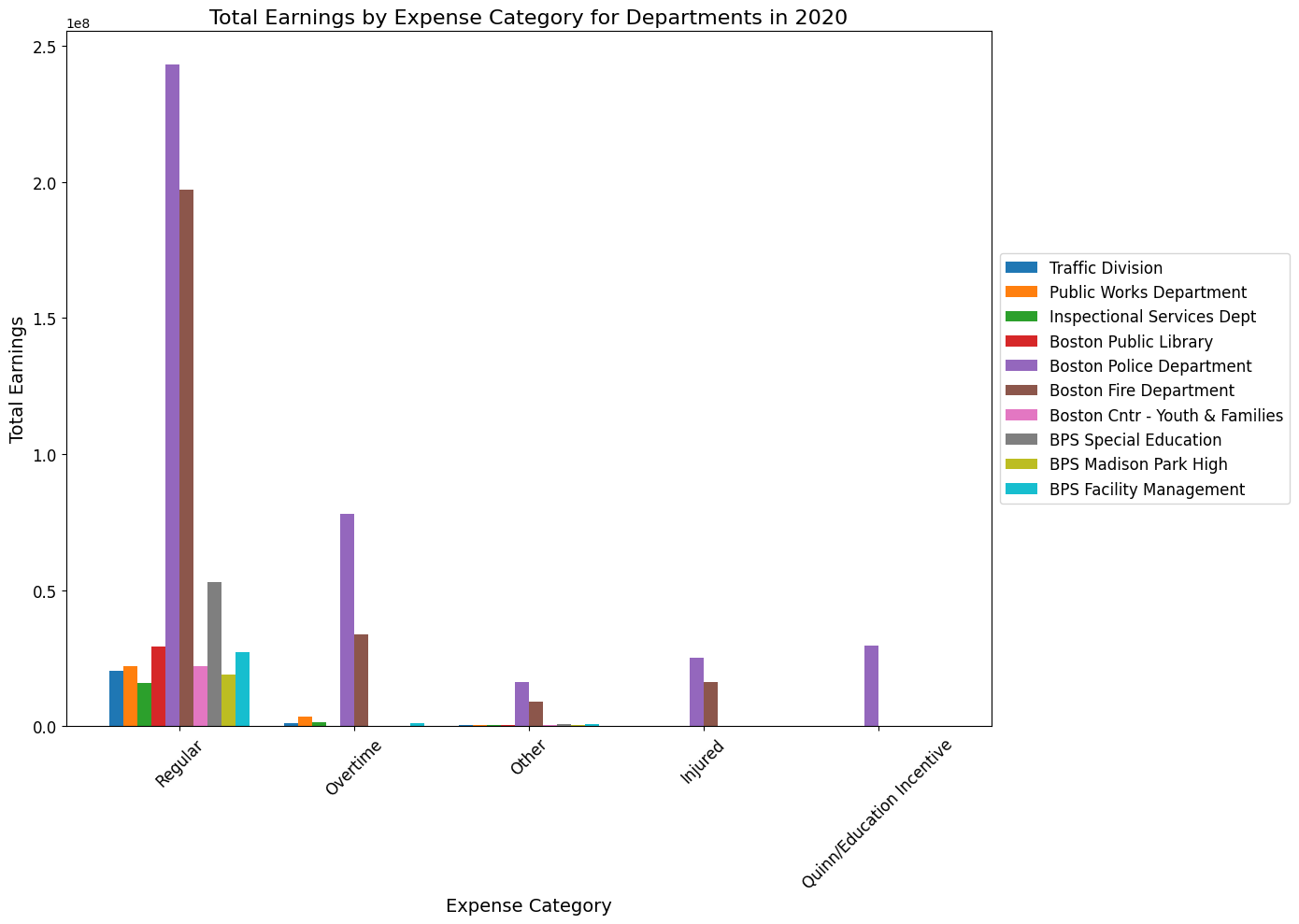
Analyzing the top ten highest-earning police department occupations from 2020 to 2024 reveals that Policy Officer consistently holds the top spot in total income. This is unsurprising, given the large proportion of officers in this role. Almost all occupations experienced relatively stable earnings from 2020 to 2023, with an increase in 2024, likely reflecting the increased Total Budget shown in the figure above.

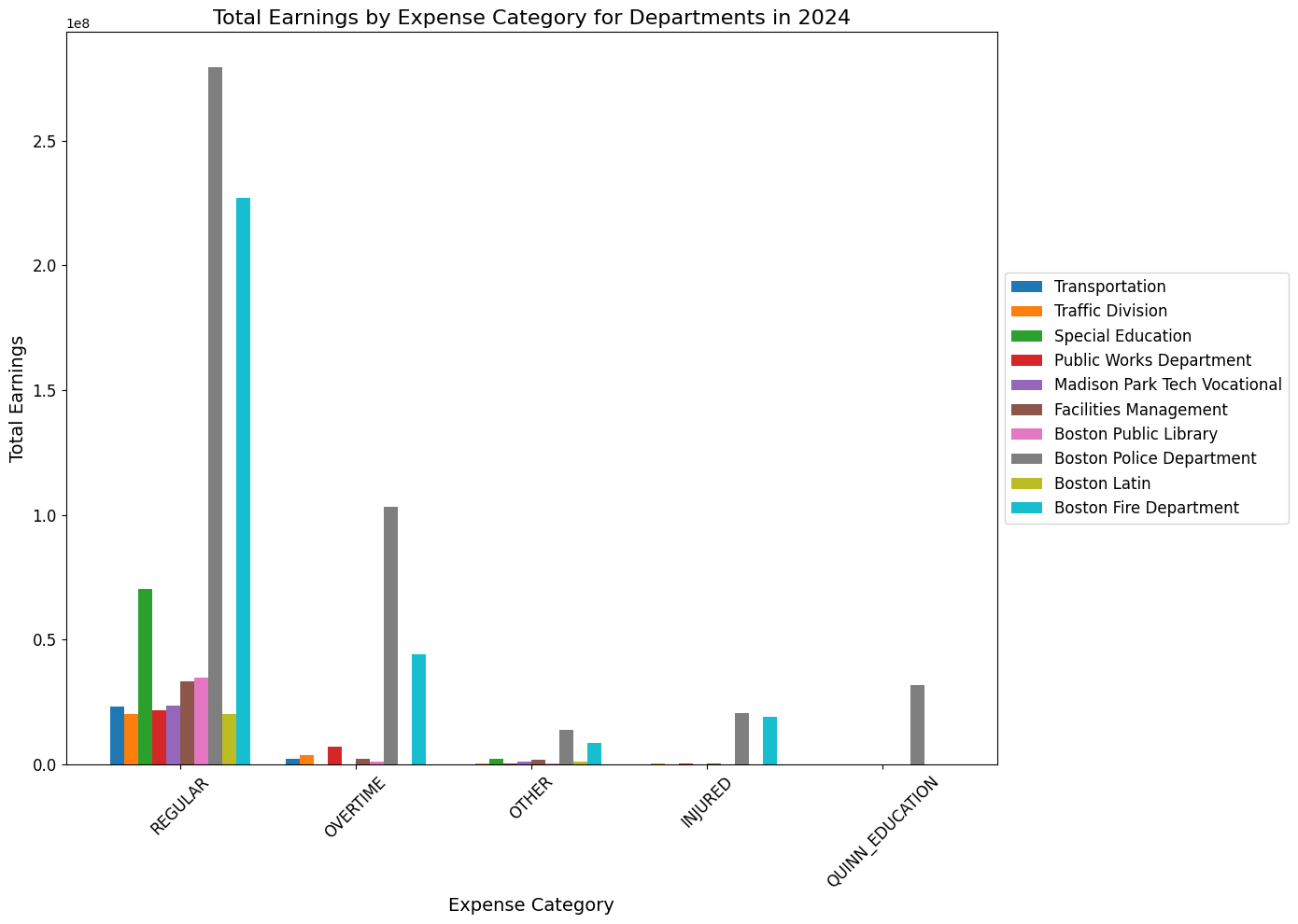


Lastly we looked at the changes in funding between departments. To do this we looked at earnings data from 2012-2022. From this we were able to see which departments received the highest salaries and therefore the most budget for that category, focusing on the top 10 departments.As the image shows, the police department has consistently been the highest-earning department between 2020 and 2024, with a significant increase in 2024. While other departments have remained relatively stable, this suggests a budget increase for the police department in 2024.

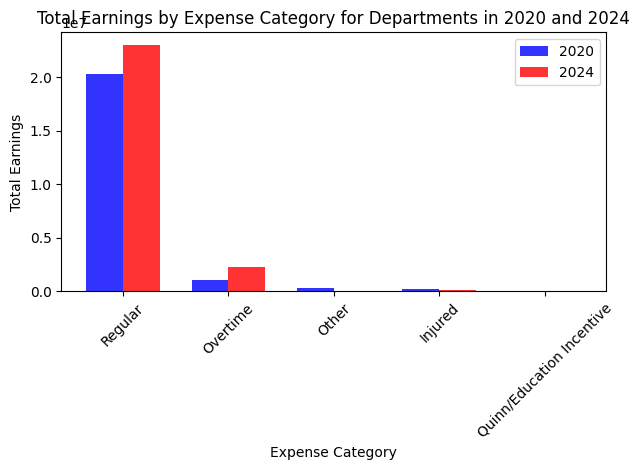


To better analyze the variations in revenue growth, we created a detailed revenue and expenditure analysis for the top ten departments in total revenue for both 2020 and 2024, as shown in the image below.





The charts indicate that the Boston Police Department and Boston Fire Department have the highest regular salaries, likely due to the inherent risks of their work. Overtime pay data confirms frequent overtime in these departments, and they also exhibit the highest rates of injury and associated compensation, unlike other departments which report almost no injuries. Additionally, the Boston Police Department's involvement in education and training contributes to their comparatively higher salaries.

Next, we compared the 2020 and 2024 income data within the Boston Police Department.

Based on our previous analysis, we know that the total revenue in 2024 is greater than that in 2020. Comparing the charts, we observe an increase in regular wages and overtime pay in 2024 compared to 2020, while other income components remained relatively stable. This indicates that the company increased compensation for employees' regular and overtime hours in 2024, reflecting a greater recognition of employee labor value and enhanced incentives. The stability in other income items (such as bonuses and allowances) suggests a consistent policy in these areas. Therefore, the increase in total revenue in 2024 is primarily attributed to the growth in regular wages and overtime pay.

Another interesting point is that the number of INJURED in 2020 is slightly higher than in 2024. We calculated the average, maximum, and variance of INJURED for both 2020 and 2024. The data is as follows:

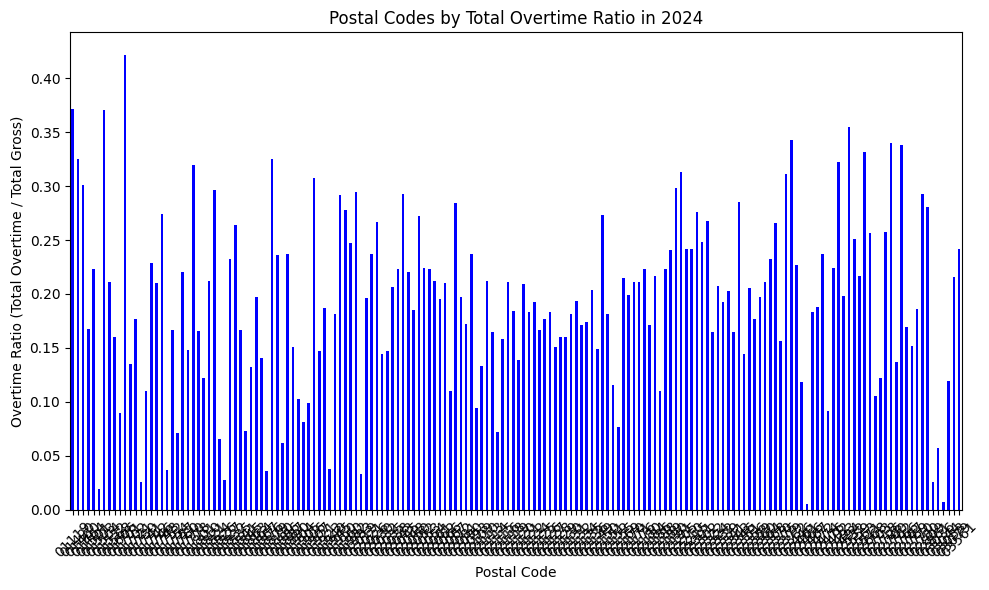
2020 Injured - Max: 25272021.09, Mean: 4231181.3149999995, Variance: 80574886206358.27

2024 Injured - Max: 20552550.44, Mean: 4105282.082, Variance: 68899807503967.93

Based on the data, the number of extremely high injury compensation cases decreased significantly from 2020 to 2024, and the overall distribution became more compact and equitable. This may be due to policy adjustments, improved management practices, or stricter subsidy reviews.

1. Are there systemic inequalities ingrained in the policing system?

For this problem, we're starting with postal codes to explore whether overtime pay is fair across different regions. Our plan is to analyze the ratio of overtime pay to total earnings. Below is the distribution of this ratio across different regions:



We've observed significant variations in overtime pay rates across different regions. Some zip codes show rates exceeding 0.35, while others are below 0.10. The proportion of overtime earnings by zip code reveals clear regional disparities within the police system. This indicates that overtime income is not being distributed equally or fairly across different areas. While this data alone doesn't definitively prove inequality, it does reflect inequitable distribution. Further multi-factor analysis (e.g., demographics, local policies, crime rates) would help determine the underlying causes of these differences.