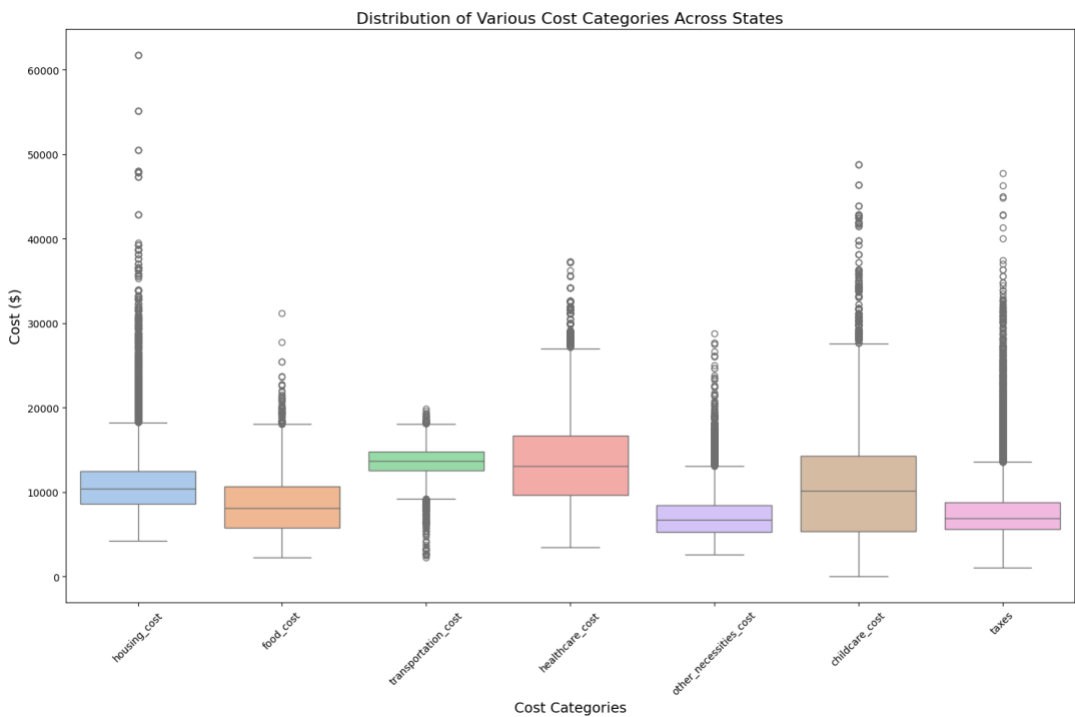
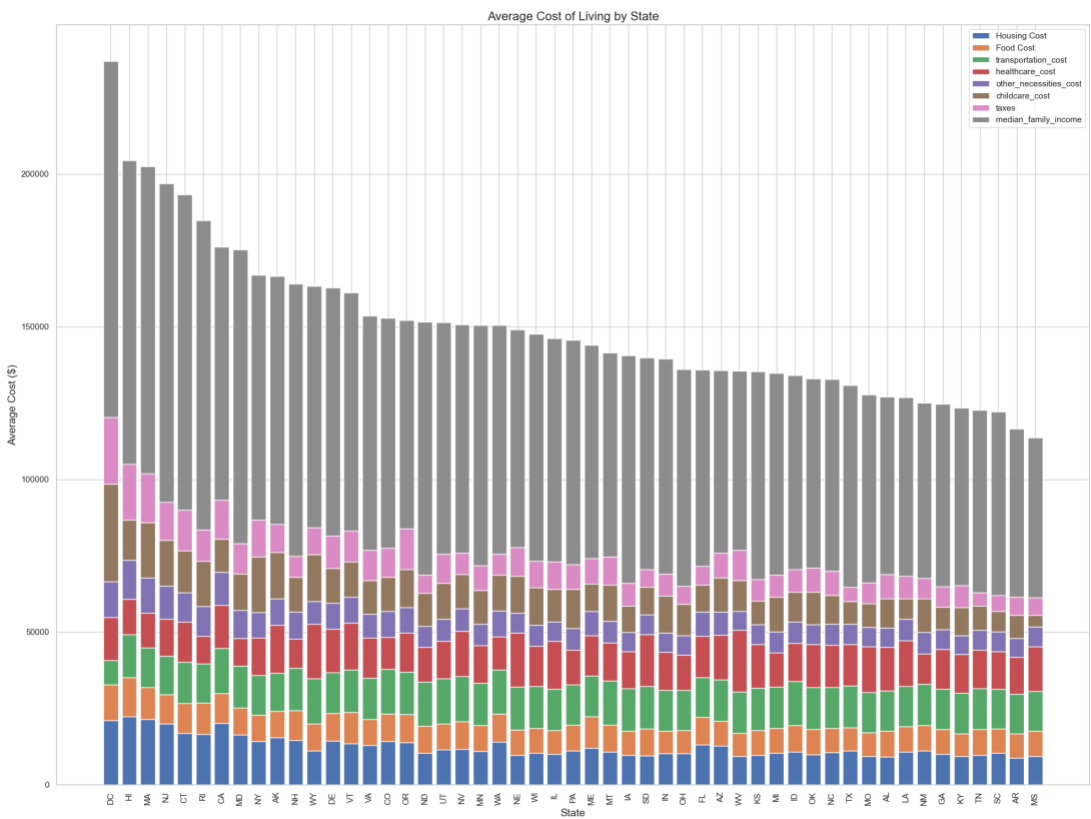


Cost of Living Across the United States



Findings from the Produced Figure

- **Significant Variation in Cost of Living:** The bar chart reveals a wide range of cost of living across the 50 states. States on the left side of the chart have notably higher total costs, indicating regional variations in living expenses.
- **Dominant Cost Factors:** Housing and healthcare emerge as the most significant contributors to the overall cost in most states. This highlights the impact of these essential services on a family's budget.
- **Diversity in Cost Distribution:** While some states show a balanced distribution among different cost categories, others exhibit a pronounced dominance of certain costs, like housing or childcare.
- **Cost Factors and Distribution:** The distribution of housing costs, with its wide range, reinforces the observation that this expense is a dominant factor. Similarly, healthcare costs show substantial variability. The boxplot also reflects diversity in cost distribution, with some categories like childcare showing a wide range, indicating a pronounced impact on the budget in certain states.
- **Comparative Analysis:** The visual representation through a boxplot facilitates direct comparison of living expenses across states, particularly highlighting the median, range, and outliers within each category, thereby offering a clear picture of how costs stack against each other.

Data and Method

- **Data Source:** The data was sourced from a comprehensive cost of living dataset, detailing expenses in various categories across all 50 states in the United States.
- **Data Categories:** The dataset included metrics such as housing, food, transportation, healthcare, childcare, taxes, and other necessities.
- **Exclusion of Non-Numeric Data:** For accuracy, non-numeric data and irrelevant columns ('case_id') were excluded from the analysis.
- **Grouping and Averaging:** Data was grouped by state, and average costs were calculated for each category to provide a clearer picture of the general cost of living in each state.
- **Sorting for Clarity:** States were sorted in descending order based on their total cost, offering an intuitive understanding of the cost differences.

- **Visualization Approach:** A bar chart was used to visualize the data, with distinct colors representing different cost categories. This method was chosen for its clarity and ability to showcase comparative data effectively.

Significance of the Figure

- **Understanding Economic Challenges:** The figure provides vital insights into the economic challenges faced by families across different states. It underscores the disparities in living expenses, which are crucial for policymakers, researchers, and the public.
- **Informed Decision-Making:** For individuals and families considering relocation, this visualization serves as a valuable tool to assess potential financial burdens in different states.
- **Impact on Policy and Planning:** The data can influence governmental and organizational policies, particularly in areas like housing and healthcare, where costs significantly affect the population.
- **Resource Allocation:** By highlighting the costliest components in each state, the chart can guide resource allocation and welfare initiatives.
- **Economic Research and Analysis:** The visualization contributes to the broader field of economic research by offering a snapshot of living expenses, which can be correlated with other socio-economic factors.
- **Public Awareness:** Raising public awareness about the cost of living differences can lead to a more informed citizenry, capable of making better financial and life decisions.

GitHub Link: <https://github.com/taoweiguo/2415-Final>