

Term Project - Milestone 5

Introduction

My aim is to provide stakeholders with actionable insights into the financial data sourced from the [National Database of Childcare Prices](#), specifically concerning weekly median prices for child care services across various counties and cities. This analysis is designed to support decision-making for DV Child Care's potential expansion into markets where the company currently has no presence. The project involves examining a dataset spanning a ten-year period (2008–2018) and includes over 250 variables across 1,779 U.S. counties, with some cities also represented. Through a combination of descriptive statistics, data visualization, and assumptions about data integrity, the analysis is structured to provide clear guidance to the company's stakeholders. The findings are intended to inform strategic decisions about where to focus expansion efforts based on financial trends and market potential.

Summary of Analysis: Findings

After reviewing the documentation and examining the meanings of the variables, I performed a preliminary analysis to understand the structure and content of the dataset. The data is well-organized and comprehensive, with some entries imputed to ensure complete records. As I analyzed the financial data, I observed a clear trend of rising prices over time, which aligns with broader economic trends of increasing costs for everyday items. This initial exploration quickly clarified the direction of the project and helped me focus on key insights to share with stakeholders.

Summary of Analysis: Assumptions

I removed all columns indicating whether there were imputed values, assuming for this analysis that the dataset is 100% accurate. Although imputed data can skew results and affect

analysis, my primary goal is to present a compelling story and three well-designed mediums for the stakeholders. Therefore, potential inaccuracies in the data are not a major concern for this project. Additionally, I excluded columns related to the 75th percentile and any aggregation flags, as I deemed them unnecessary for this analysis. These columns were removed from the DataFrame used in the project.

Summary of Analysis: Items That Still Need Clarification

I performed a correlation analysis on each of the selected counties/cities to determine if any of the provided demographics are related to the weekly median prices in the financial data. I did not expand too much on this, leaving further analysis for the company's shareholders. Additionally, I included a disclaimer noting that the prices referenced are median values. I wish the data included a range of prices; having both low and high prices would have been substantially beneficial for my analysis.

Key Message

The goal of this project is to provide stakeholders with the information needed to make the best decisions regarding company expansion. In this scenario, all the counties in the data represent potential markets where our company currently has no presence. I will call the stakeholders to act in key potential areas.

Target Audience

The target audience for this project is the stakeholders of DV Child Care. All deliverables are tailored specifically for these stakeholders to support informed decision-making.

Included Mediums

1. Interactive Dashboard: I chose blue for center-based child care variables and orange for family child care variables to maintain consistency with the slideshow's color scheme. I

initially selected a standard bar chart to compare median weekly prices across counties but switched to a horizontal bar chart for better readability and dashboard space utilization, including labels for clarity. The dashboard also features two key filters at the top. Additionally, a line chart compares median weekly prices over time, using the same color scheme, and allows users to filter by county and price variables, with labeled data points for clarity.

2. Summary Brief: This medium provides a summary for stakeholders in a straightforward format. I organized the document using bullet points under titles to enhance clarity.
3. Slide Show: I selected a simple white template for the slideshow to highlight the information and visualizations. Major titles are in black, while regular text is in dark gray. In the pricing trends analysis section, each slide features a group of line charts on the right. The line plots are straightforward and include all necessary labels, with color differentiation for the two types of child care maintained consistently across all charts. The correlation matrices use a red and blue gradient to represent correlation values.

Ethical Considerations

I made no major changes to the dataset, only dropping columns I deemed unnecessary for my analysis. The data was used purely for educational purposes, and I have not claimed it as my own. It's essential to credit the source and provide a link or reference to where it was obtained.

Lessons Learned

I would have liked to explore the correlations between demographic variables and median price variables in greater depth, as this could reveal important insights within the dataset. Additionally, adding more complexity to the project scenario could enhance the analysis. I

enjoyed applying my skills to a real-world scenario, as many businesses rely heavily on data for financial decisions, which adds valuable experience to my project portfolio.

Conclusion

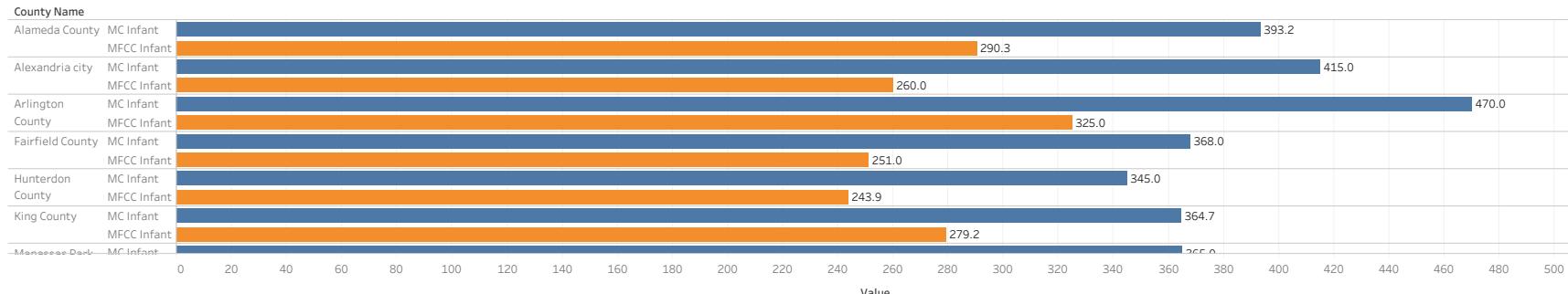
In conclusion, this analysis provides DV Child Care stakeholders with valuable insights into the trends of weekly median child care prices across various counties, helping to inform strategic decisions about potential market expansion. Although the analysis did not delve deeply into correlations with demographic factors, the findings suggest that price increases over time are a significant trend to consider when assessing market viability. The interactive dashboard, infographic, and slideshow offer clear, accessible presentations of this data to assist stakeholders in making informed, data-driven decisions. Moving forward, further exploration of demographic relationships with pricing could enhance the robustness of the findings, but the current analysis provides a solid foundation for understanding market trends and identifying areas for expansion.

Resources

National Database of Childcare prices. DOL. (n.d.). <https://www.dol.gov/agencies/wb/topics/featured-childcare>

DOL. (n.d.). <https://www.dol.gov/sites/dolgov/files/WB/media/NationalDatabaseofChildcarePricesTechnicalGuideFinal.pdf>

Median Weekly Care Prices by County and Type



Measure Names

- Count of Sheet1
 - MC Infant
 - MC Preschool
 - MC Toddler
 - MC54toSA
 - MFCC Infant
 - MFCC Preschool
 - MFCC Toddler
 - MFCC54toSA
 - Mcsa
- Study Year
- 2018
- Measure Names
- MC Infant
 - MFCC Infant

Median Weekly Prices Over Time



Milestone 5 - Summary Brief

Market Insights and Expansion Opportunities for DV Child Care

Nathanael I. Ochoa

November 17, 2024

Executive Summary

Purpose

- This summary brief is a handout provided to stakeholders at the beginning of the presentation. As an analyst for an established childcare company, my goal was to analyze center-based and family childcare prices across various counties in the U.S. to identify ideal markets for expansion. This document summarizes key recommendations to ensure stakeholders have a takeaway from the presentation.

Key Findings

- Most counties have seen rising median childcare prices, with some experiencing stagnation or decline; school-age childcare prices show distinct trends.
- Significant correlations exist between demographics and median weekly prices, which are important for evaluating expansion markets, although correlation does not imply causation.
- High-profit-margin counties identified include Alameda County, CA; San Francisco County, CA; Fairfield County, CT; King County, WA; and Alexandria City, VA.

Recommendations

- New child care centers should be established in the identified counties/cities, offering both center-based and family child care services to meet market demand and benefit local families.
- Conduct surveys to assess resident demographics and childcare challenges, alongside analyzing current pricing trends to inform expansion decisions.

Overview of Analysis

Dataset Description

- The dataset is sourced from the [National Database of Childcare Prices](#). It includes data from 1,779 different counties and/or cities across the country. The key variables analyzed are:
 - Center-Based Child Care:
 - MCInfant: 0-23 months
 - MCToddler: 24-35 months
 - MCPreschool: 36-54 months
 - MC54toSA: 54 months to school age
 - MCSA: School age
 - Family Childcare
 - MFCCIInfant: 0-23 months
 - MFCCCToddler: 24-35 months
 - MFCCCPreschool: 36-54 months
 - MFCC54toSA: 54 months to school age
 - MFCCSA: School age

Methodology

- I calculated the delta (delta = end date - start date) for each county. I then aggregated these deltas to identify the top 10 counties/cities with the largest changes, focusing on areas that have experienced the most significant shifts since the start of the study. From these, I selected the top 5 locations and created a correlation matrix for each county/city to examine correlations between demographic variables and pricing variables. A table detailing the demographic variables and their corresponding correlation scores is provided in the appendices.

Key Findings

Pricing Trends

- Most counties have experienced an increase in median childcare prices over the years, although a few have seen stagnation or even reduction—a less common occurrence. Notably, school-age childcare pricing trends deviate from the overall norm, as illustrated in the accompanying line charts.

Demographic Insights

- Several demographics show strong positive and negative correlations with median weekly price variables. While correlation does not imply causation, these correlations are significant when analyzing potential expansion markets.

Market Potential

- The counties with the most potential for high profit margins are:
 - Alameda County, CA
 - San Francisco County, CA
 - Fairfield County, CT
 - King County, WA
 - Alexandria City, VA

Strategic Recommendations

Service Adaptation

- A new child care should be opened in each of the counties and/or cities listed above. Each facility should offer center-based child care and family child care services. The market for center-based care is higher but offering both forms of child care would prove to be beneficial for the families of these counties and/or cities.
- Each employee must be fully capable of working at the facility and caring for children at the homes of the families.

Monitoring Strategy

- A survey must be sent to residents/families of the target counties/cities to determine current demographics and determine what current problems they may face with their current child care providers.
- Current pricing trends must be analyzed to further support expansion decisions.

Conclusion

Recap

- The analysis identifies key counties for potential childcare expansion based on rising median prices and demographic correlations, recommending the establishment of new centers that offer both center-based and family child care services to meet local demand.

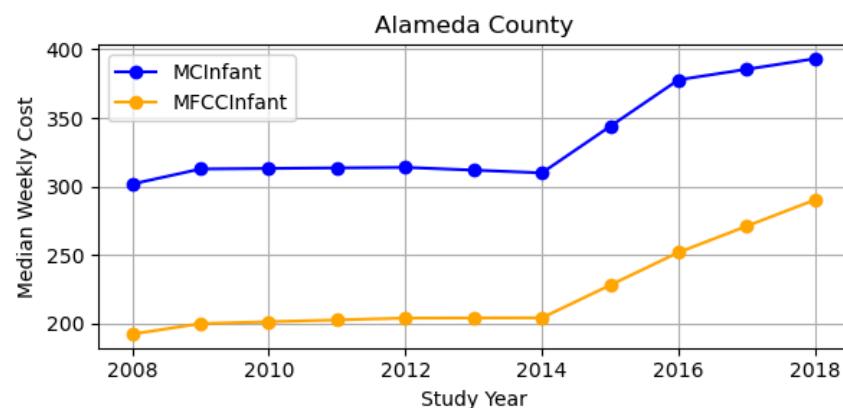
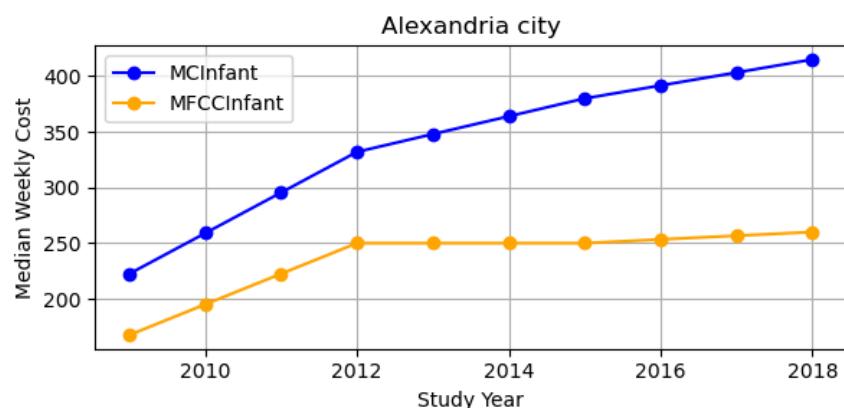
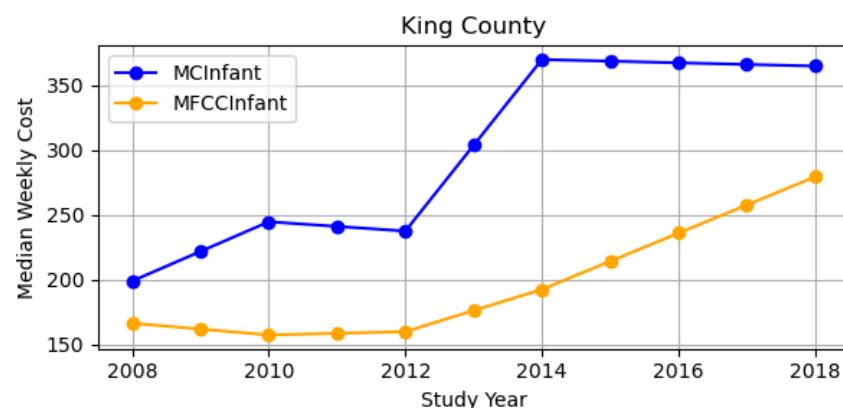
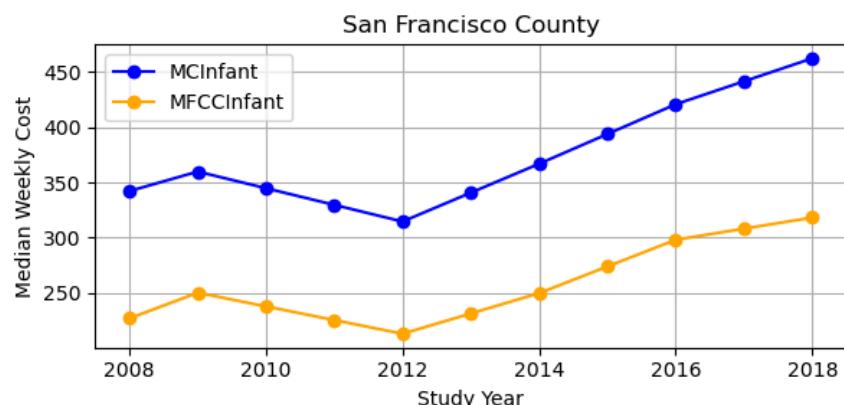
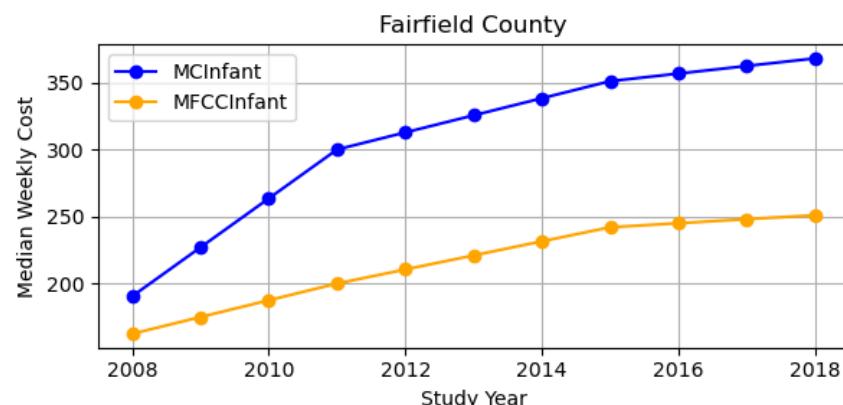
Call to Action

- Stakeholders should support the rollout of surveys in the target areas to gather valuable insights on resident demographics and childcare challenges, ensuring data-driven decisions that enhance our market strategy and benefit local families.

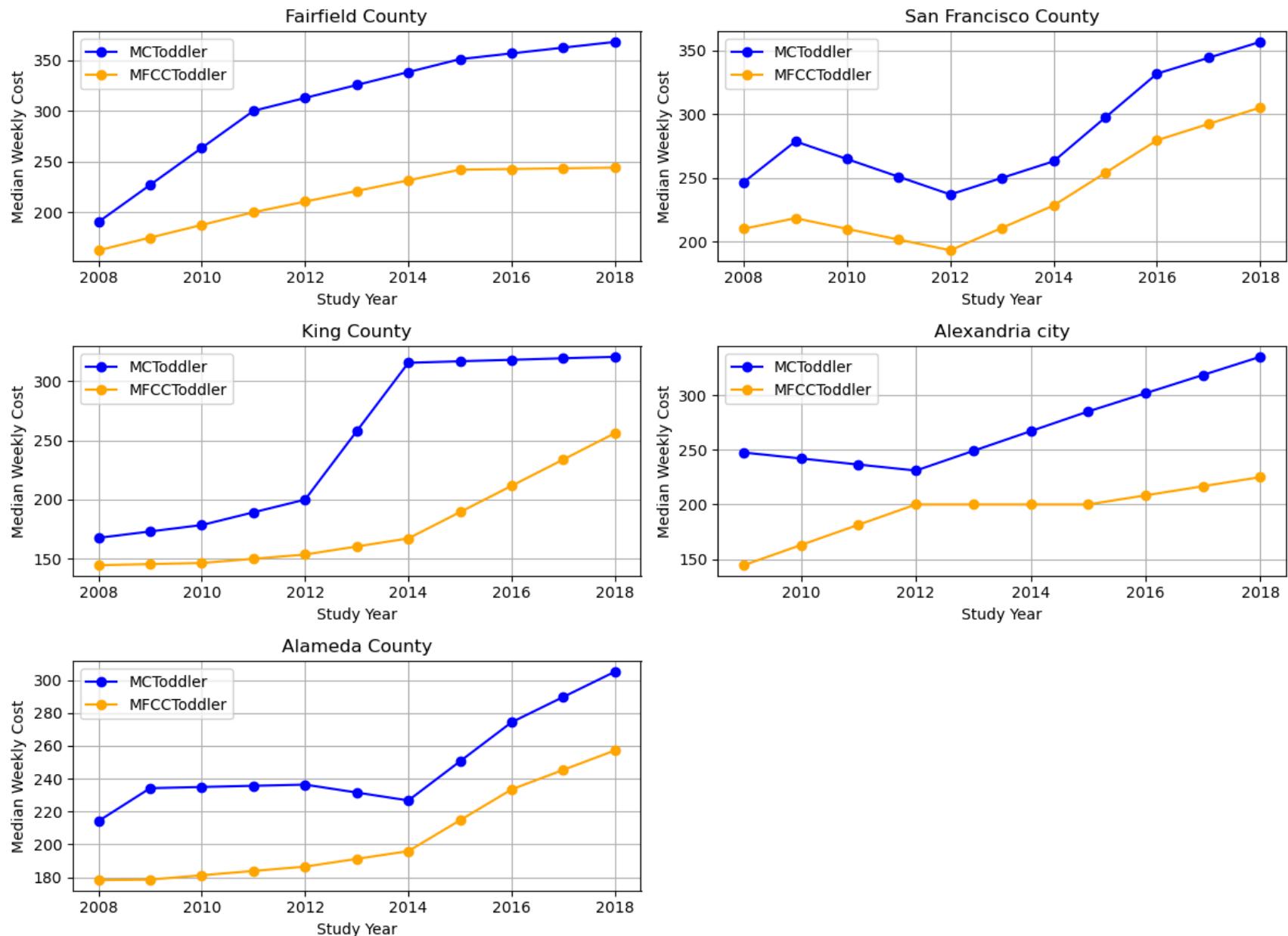
Appendices

- <https://www.dol.gov/agencies/wb/topics/featured-childcare>
- <https://www.dol.gov/sites/dolgov/files/WB/media/NationalDatabaseofChildcarePricesTechnicalGuideFinal.pdf>
 - Variable descriptions begin on page 34 of this document.

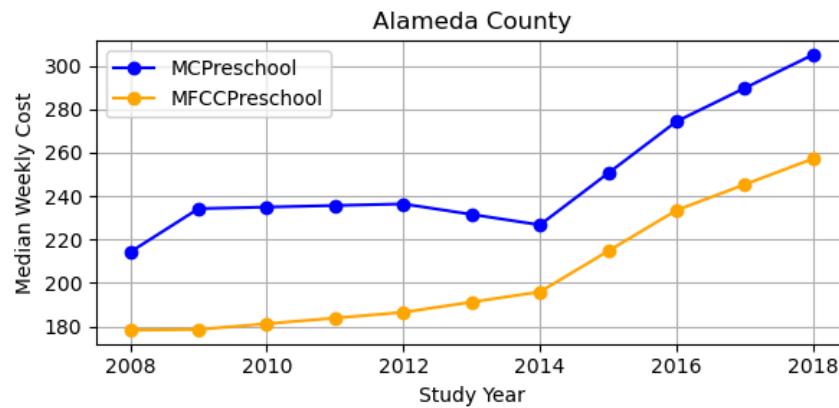
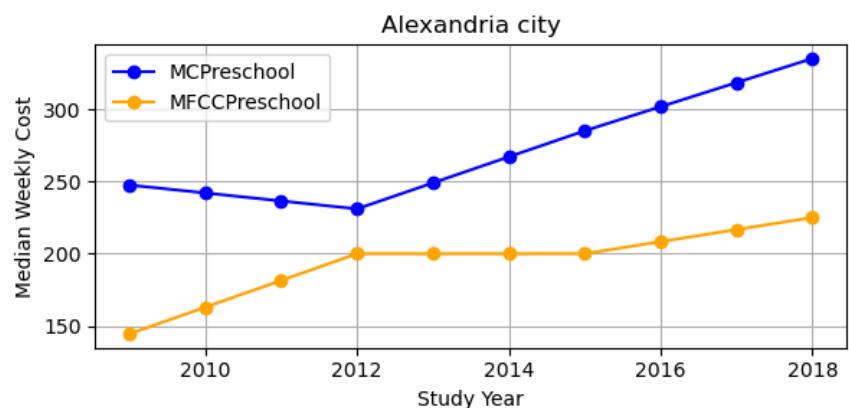
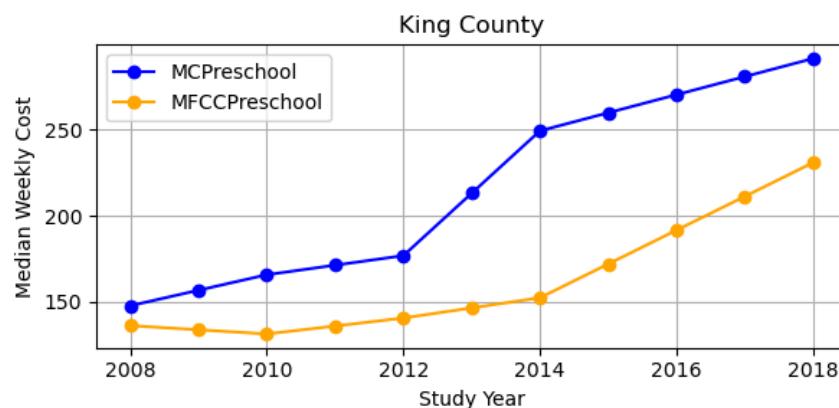
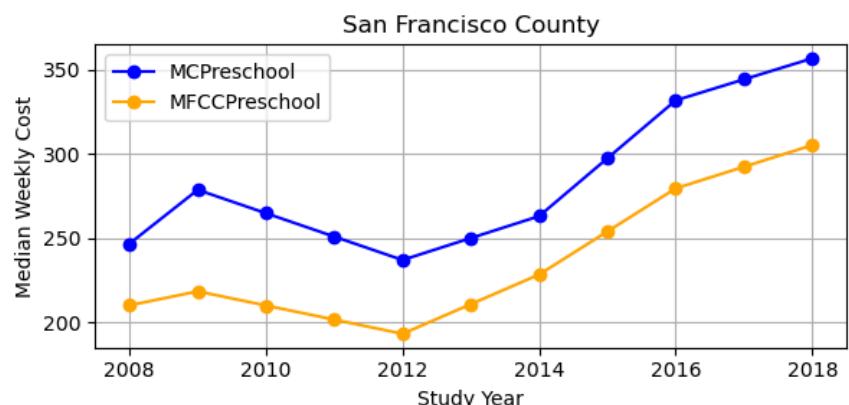
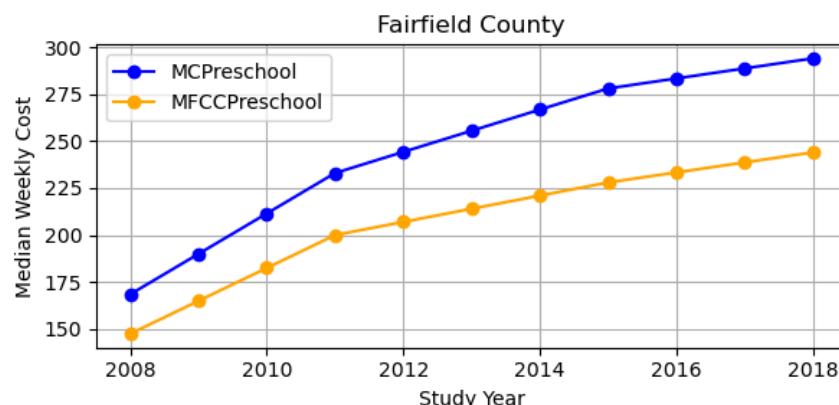
Cost Comparison of MCInfant and MFCCInfant by Selected Counties



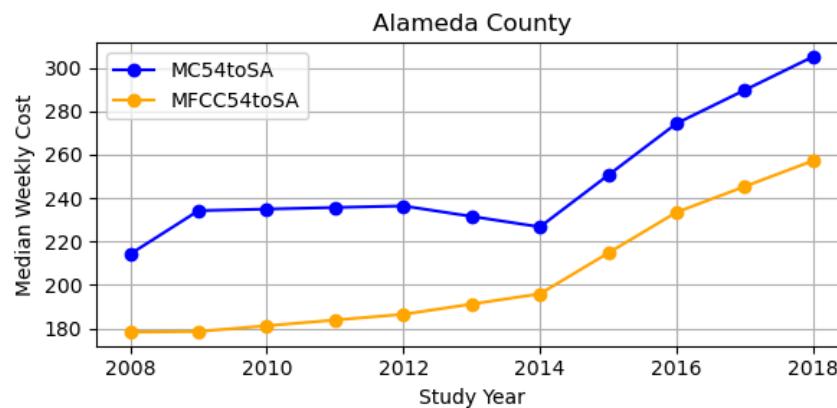
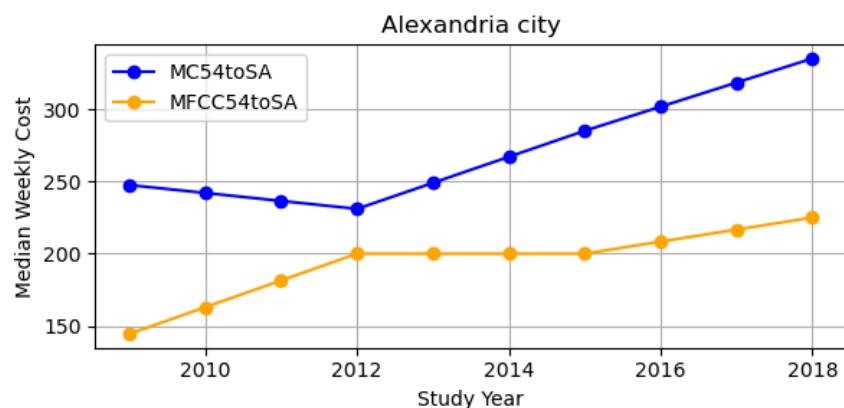
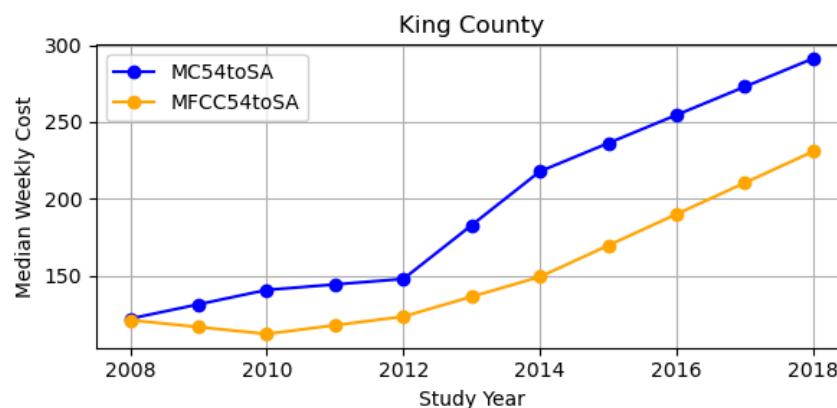
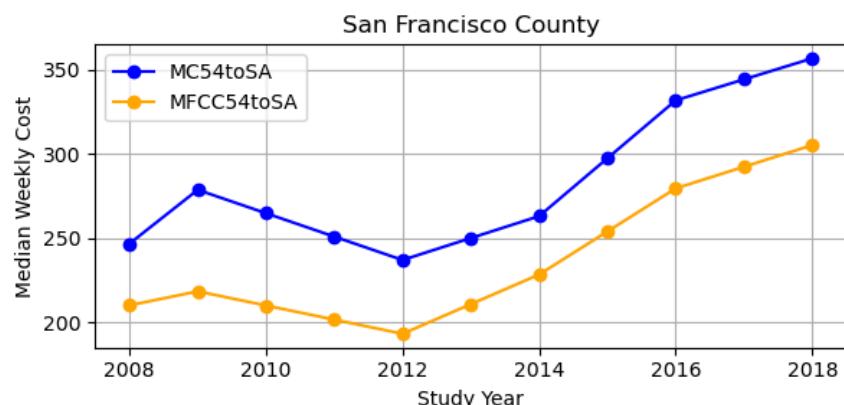
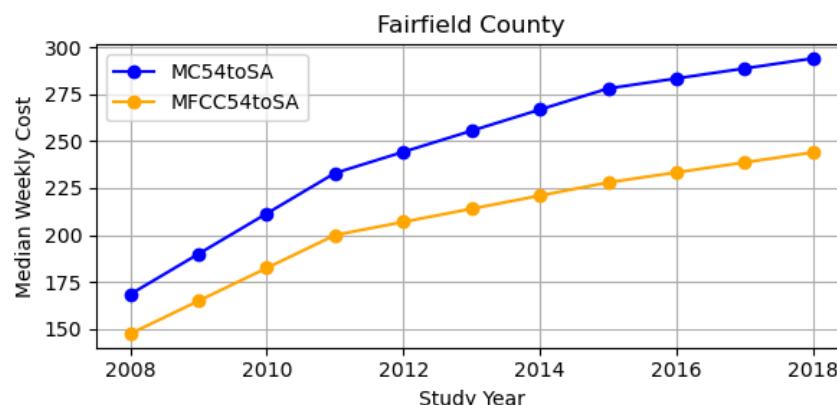
Cost Comparison of MCToddler and MFCCToddler by Selected Counties



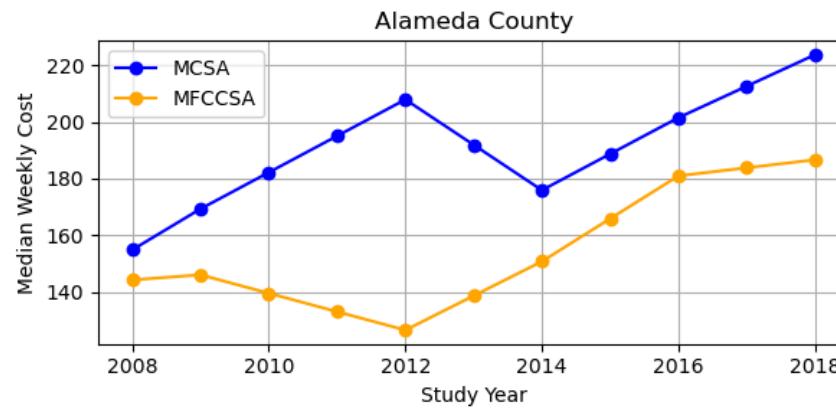
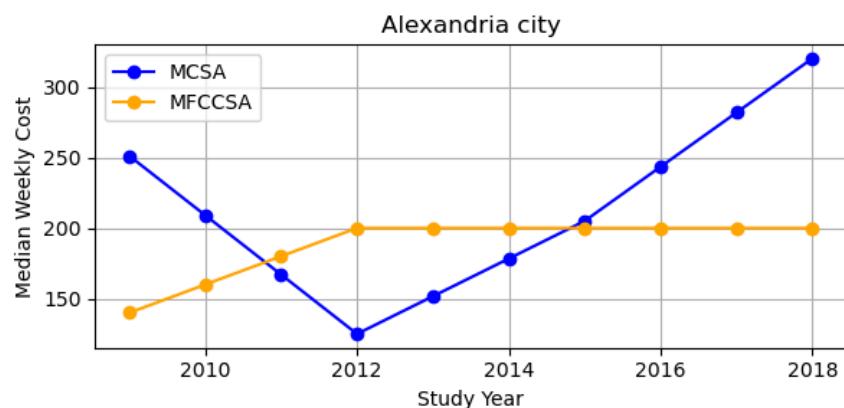
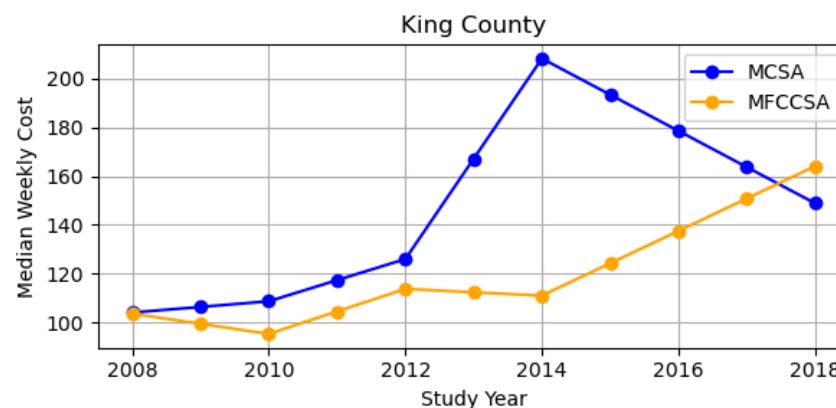
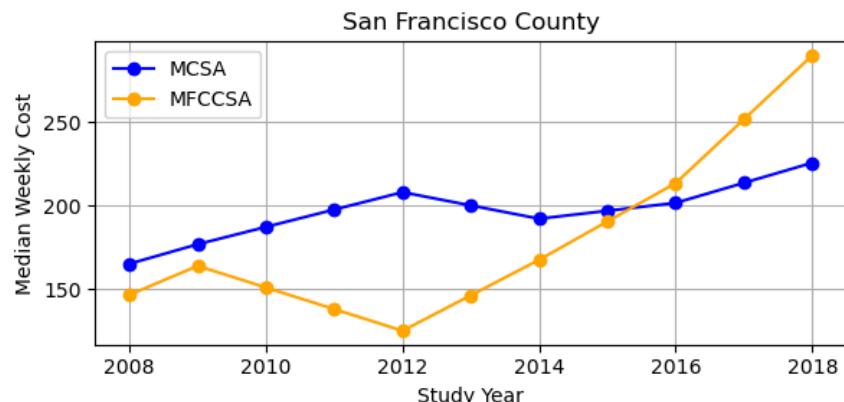
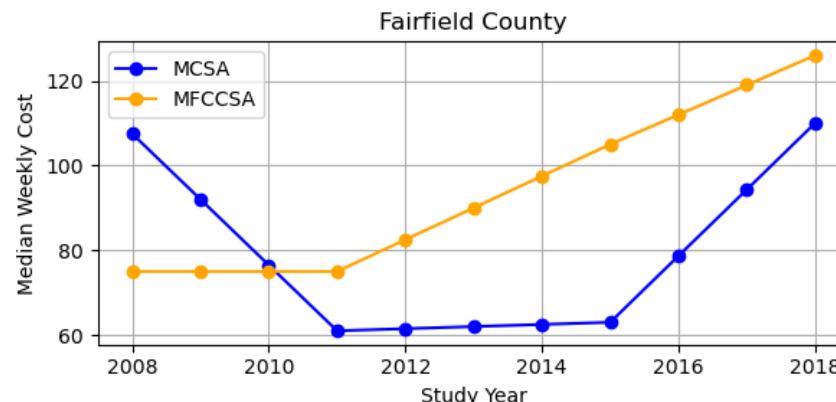
Cost Comparison of MCPreschool and MFCCPreschool by Selected Counties

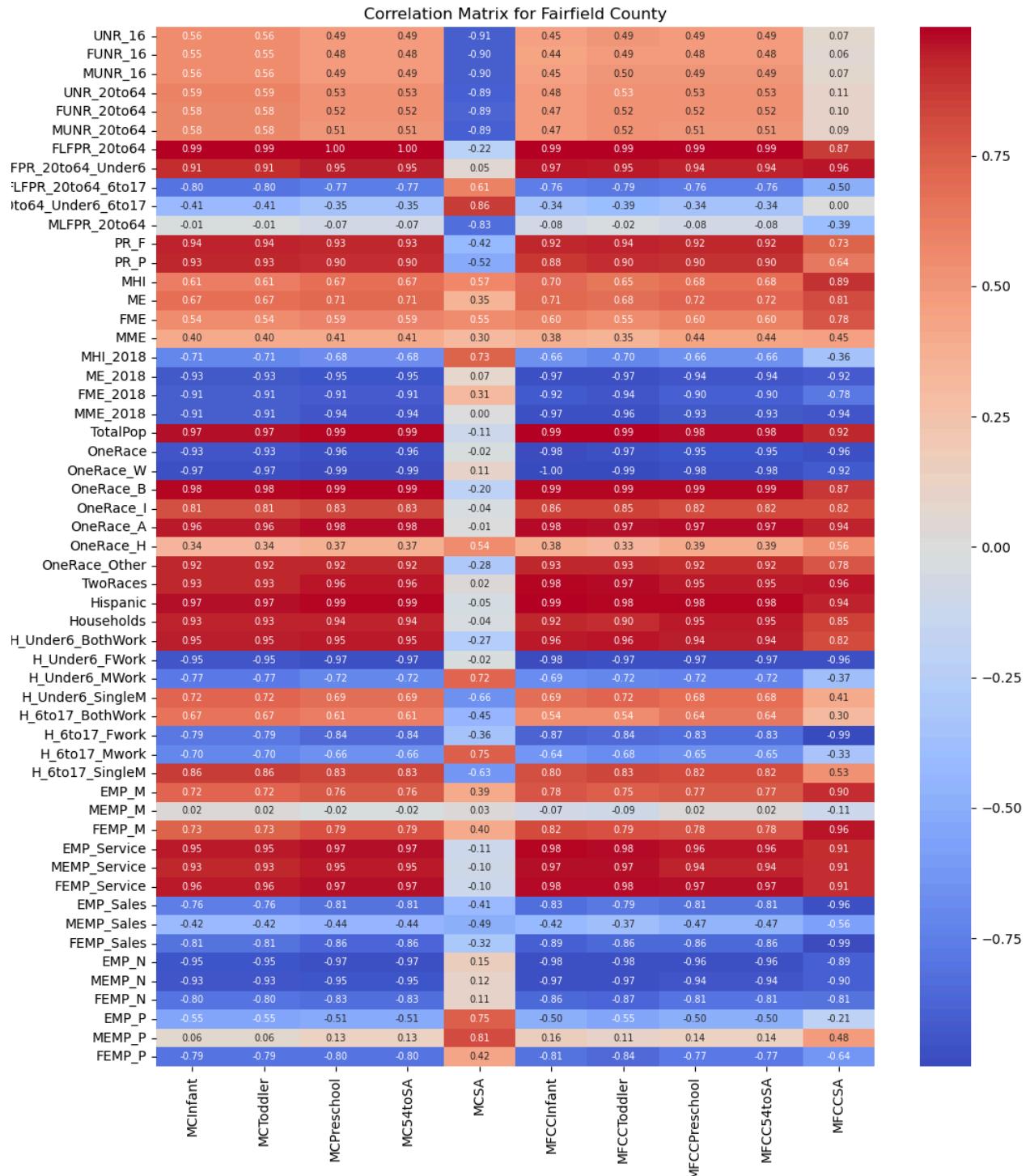


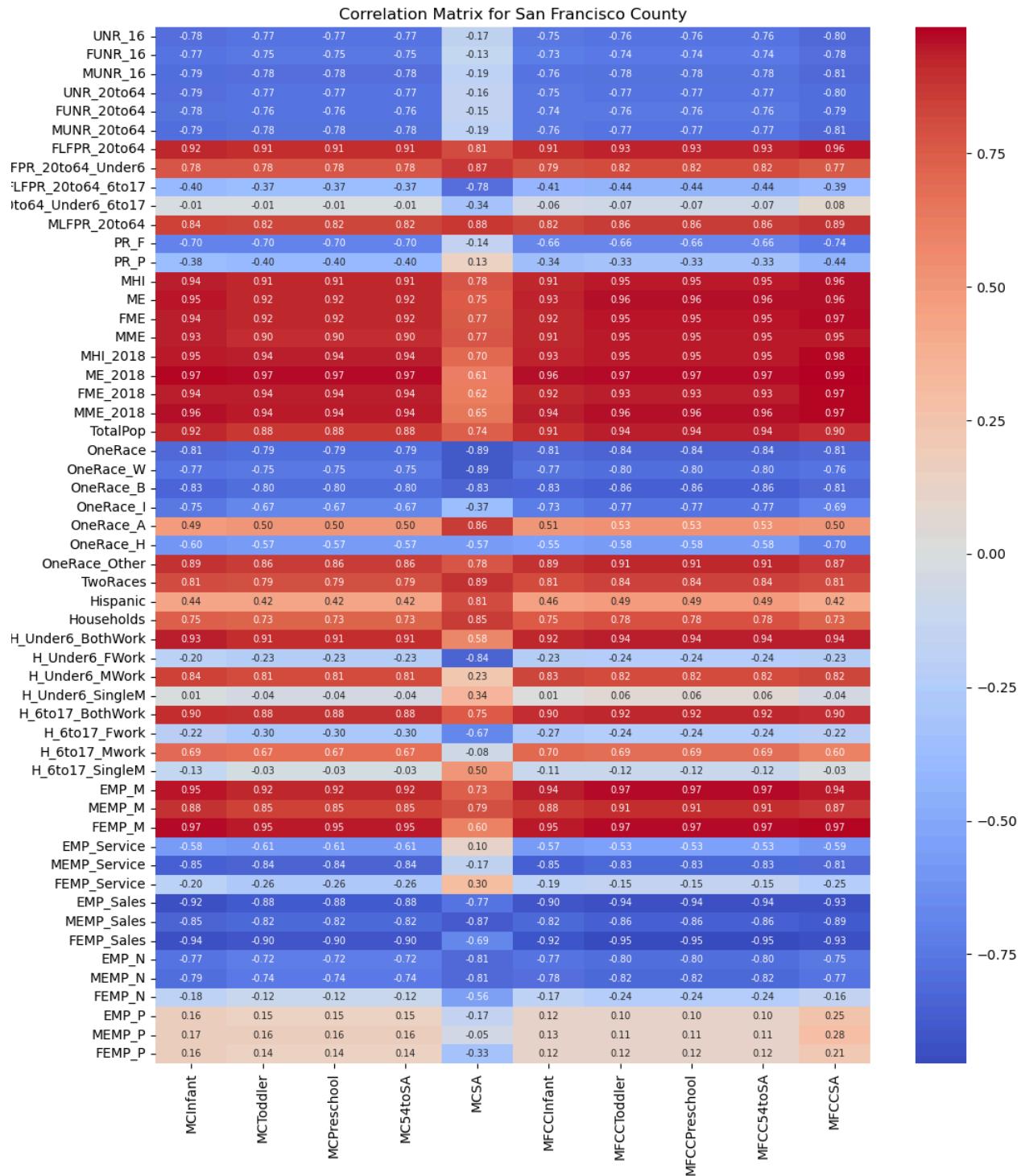
Cost Comparison of MC54toSA and MFCC54toSA by Selected Counties

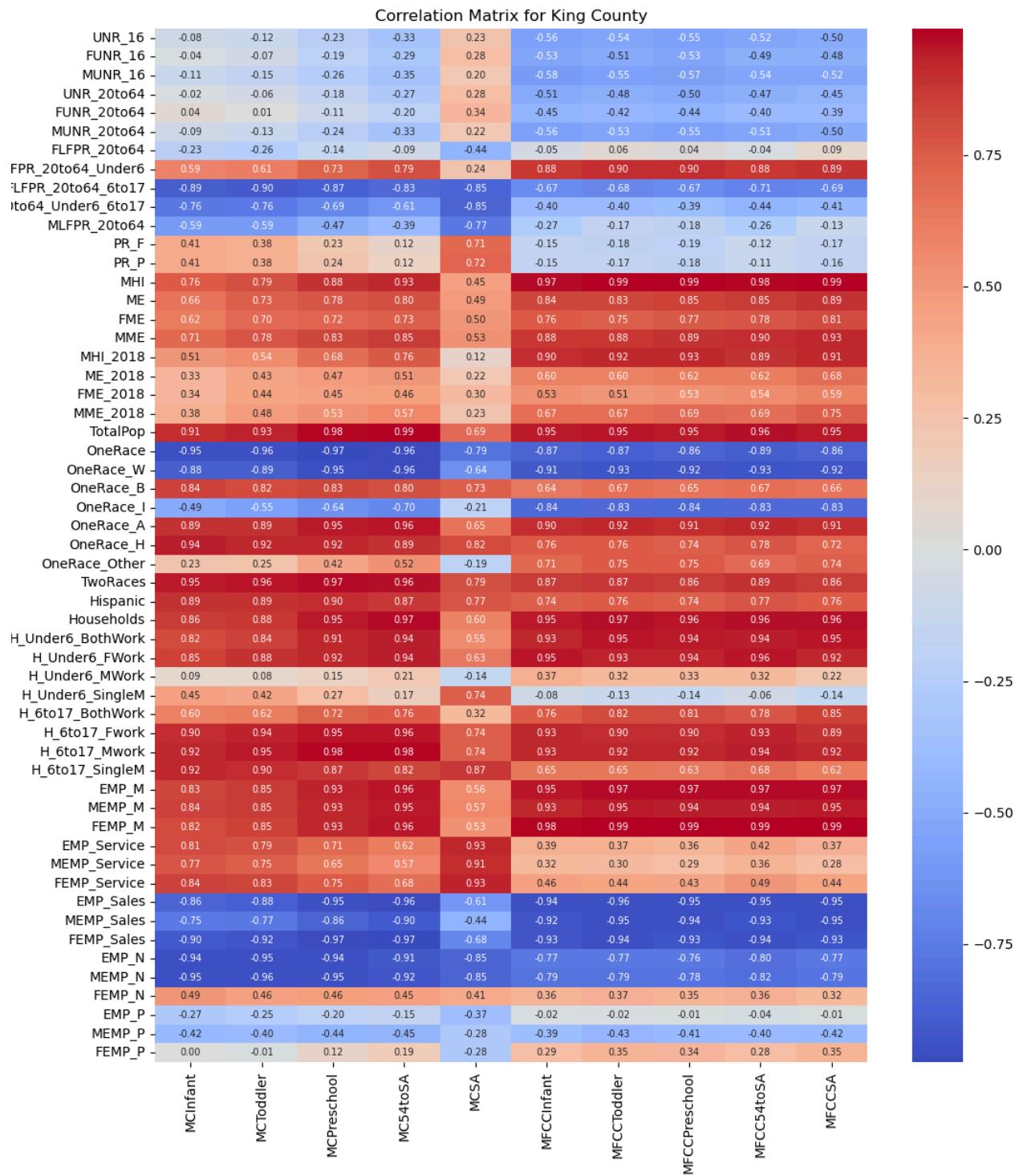


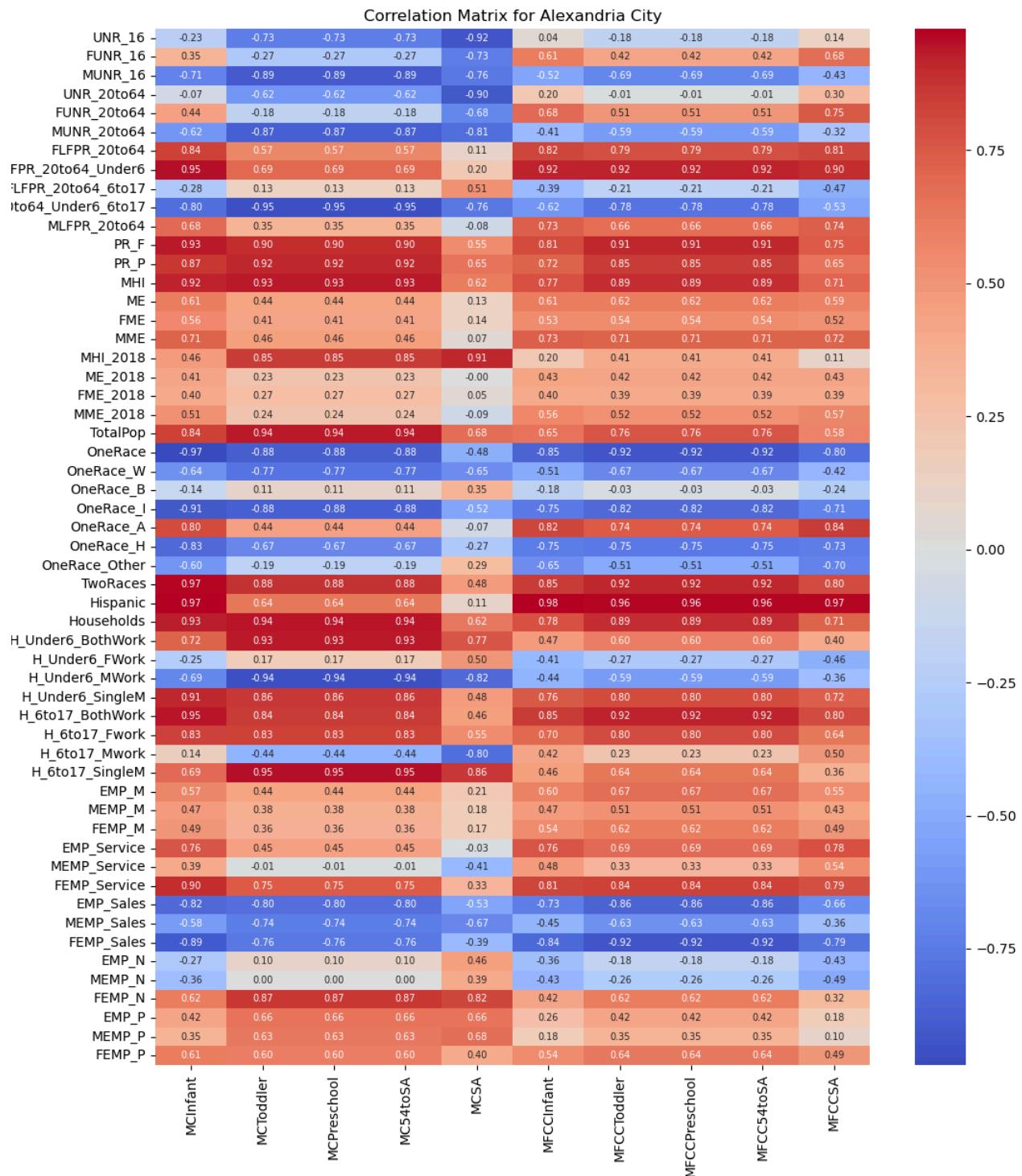
Cost Comparison of MCSA and MFCCSA by Selected Counties

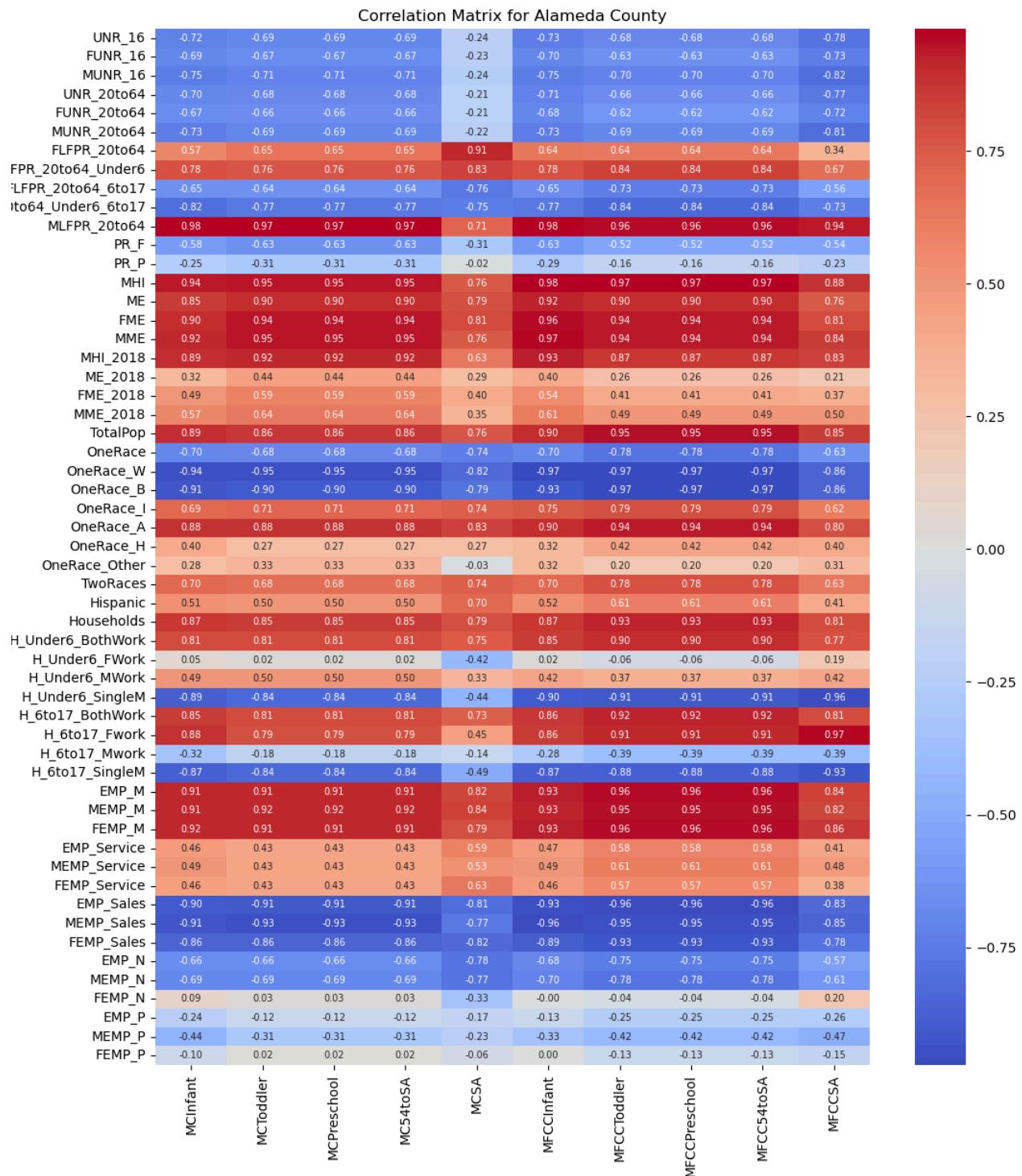












Market Insights and Expansion Opportunities

By: Nathanael Ochoa
November 17, 2024

Introduction

- I was tasked with analyzing the data sourced from the [National Database of Childcare Prices](#) to aid in decision-making for market expansion.
- The database includes childcare cost data for 1,779 U.S. counties, organized by provider type, age group, and county characteristics, spanning the years 2008 to 2018.

Key Findings

- I identified the top 10 counties and cities with the highest change in median weekly pricing over time (delta) and specifically analyzed these areas.
- Some of the demographics provided in the data show strong positive and negative correlations with the median weekly prices.

Interactive Dashboard Overview

- The top section of the dashboard shows the median weekly care prices by county and care type, with filters available for selecting the type of care and year.
- The bottom section of the dashboard displays the median weekly prices over time, with filters available for selecting the type of care.
- https://public.tableau.com/app/profile/nathanael.ochoa/viz/Book2_17281880498040/Ochoa640M3Dashboard

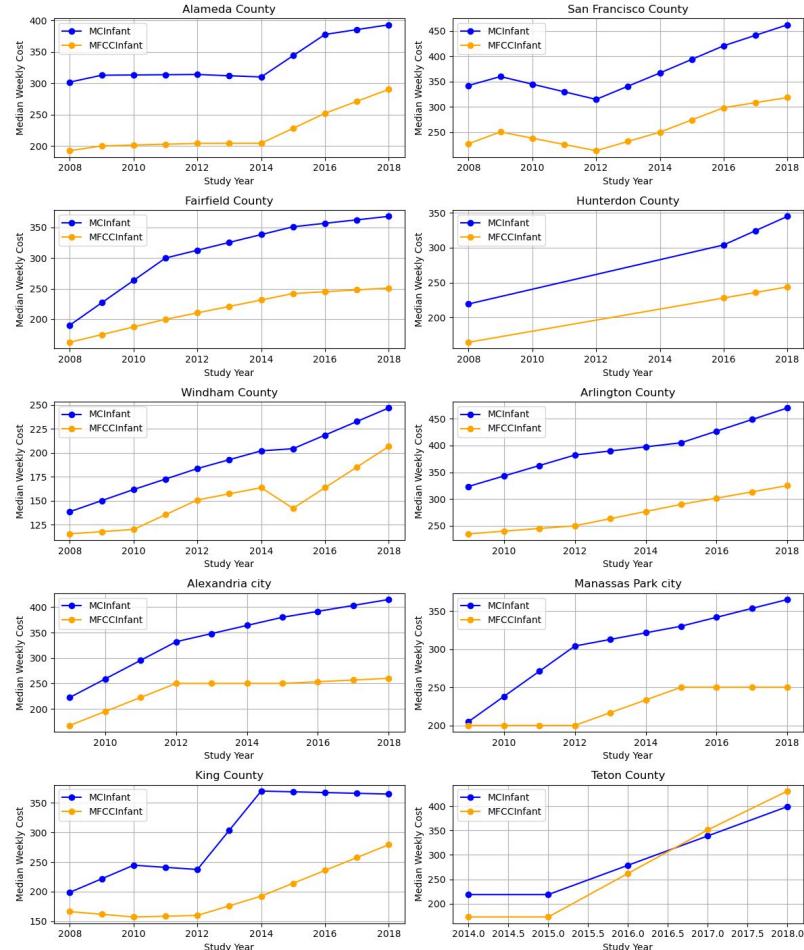
Pricing Trends Analysis

- Note that MC represents median price of center-based care while MFCC is used to denote median price of family childcare.
- The counties that have the best growth for both types of care were considered.
 - Opening a new center that provides services for both types of care will be most profitable.
 - Opening a new center that provides services for multiple age groups will also increase profit margins.

Infant Care Pricing

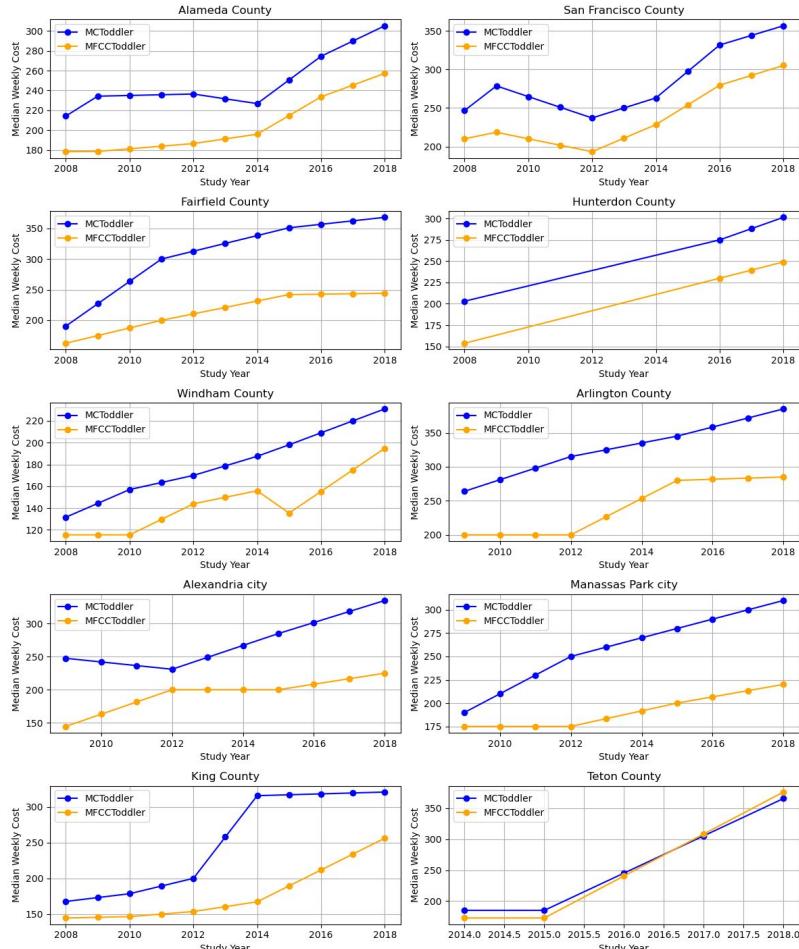
- The counties/cities most suitable to offer both forms of infant care are:
 - Fairfield County
 - King County
 - Alexandria City
 - Alameda County
 - San Francisco County

Cost Comparison of MCInfant and MFCCInfant by County



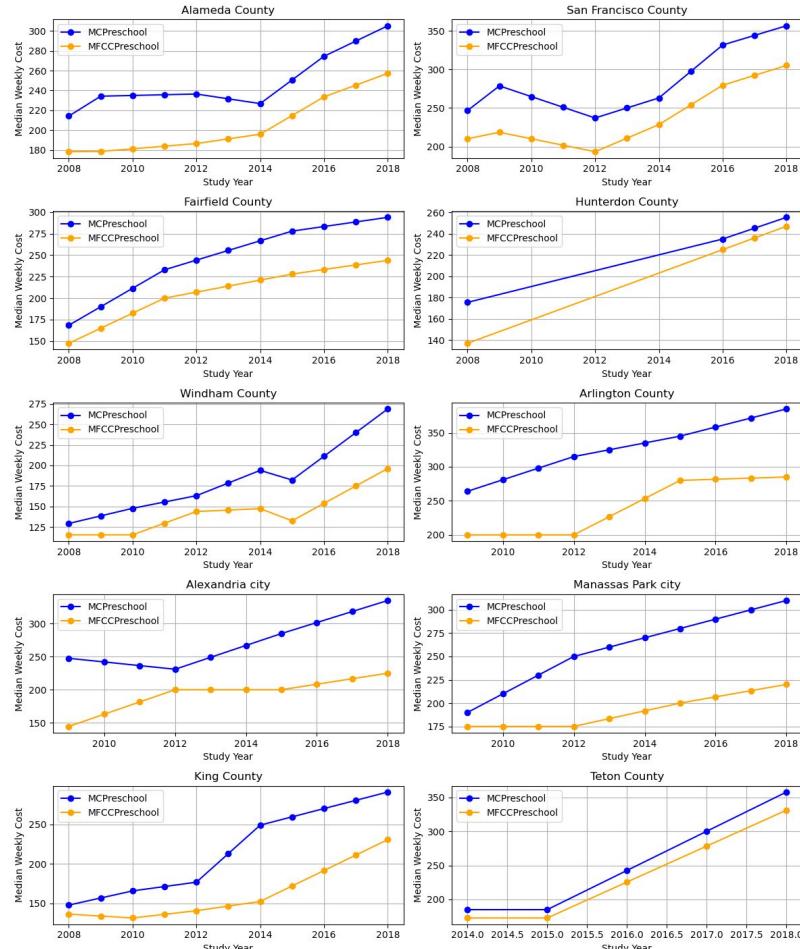
Toddler Care Pricing

- The counties/cities most suitable to offer both forms of toddler care are:
 - Fairfield County
 - Alameda County
 - King County
 - Alexandria City
 - San Francisco County



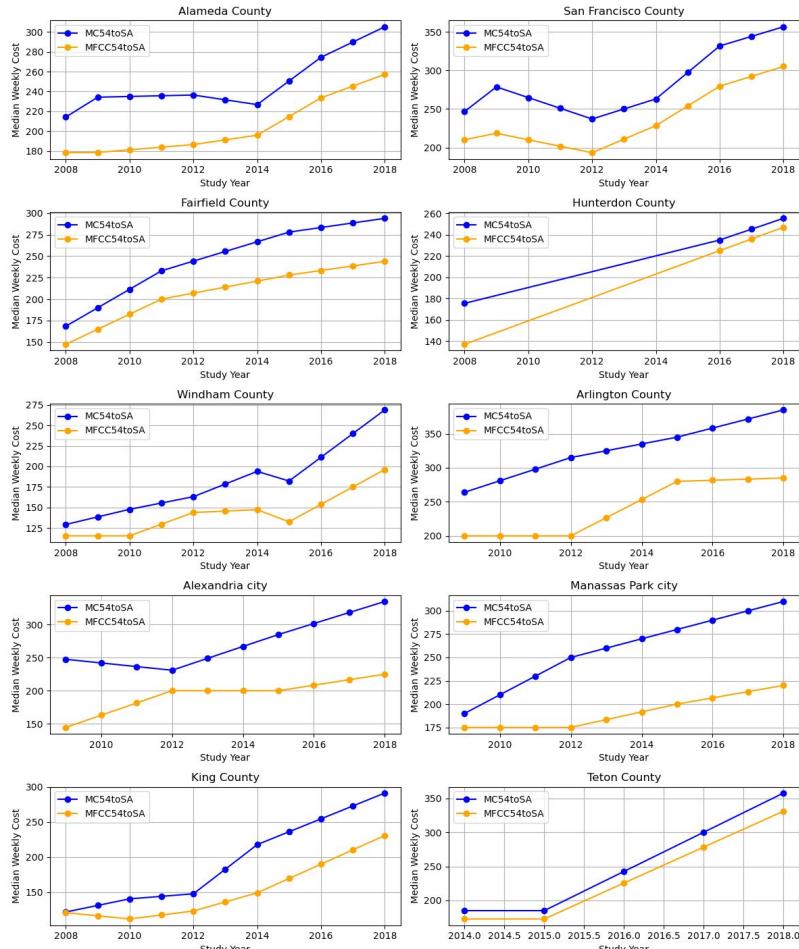
Preschool Care Pricing

- The counties/cities most suitable to offer both forms of infant care are:
 - Fairfield County
 - King County
 - Alexandria City
 - Alameda County
 - San Francisco County



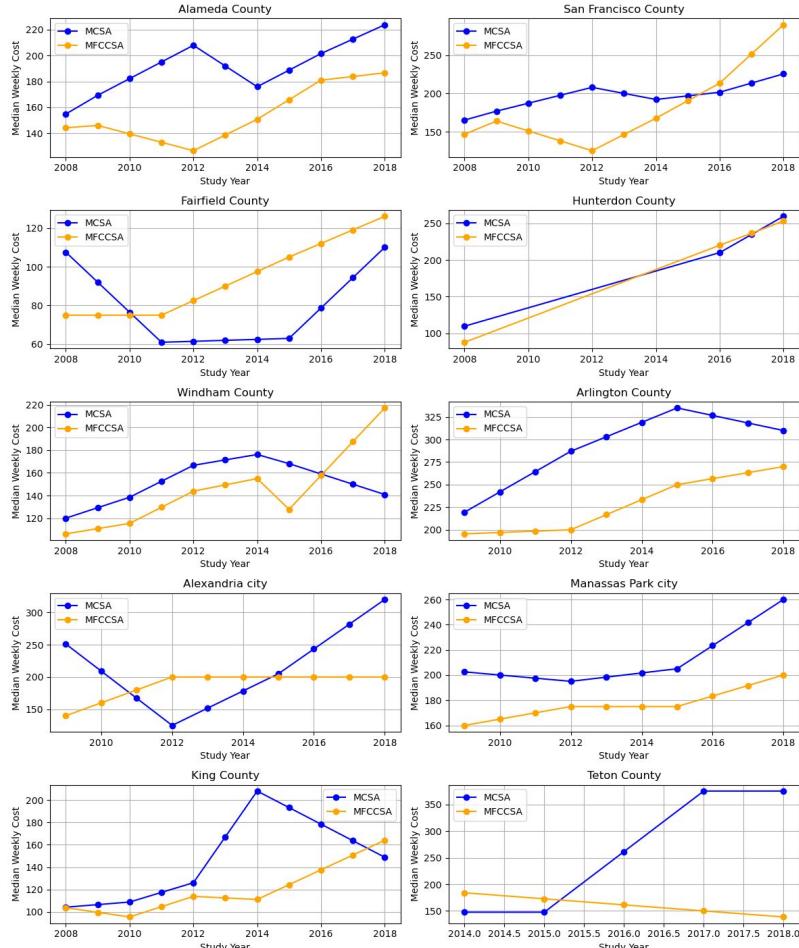
54 Months to School Age

- The counties/cities most suitable to offer both forms of infant care are:
 - Fairfield County
 - King County
 - Alexandria City
 - Windham County
 - San Francisco County



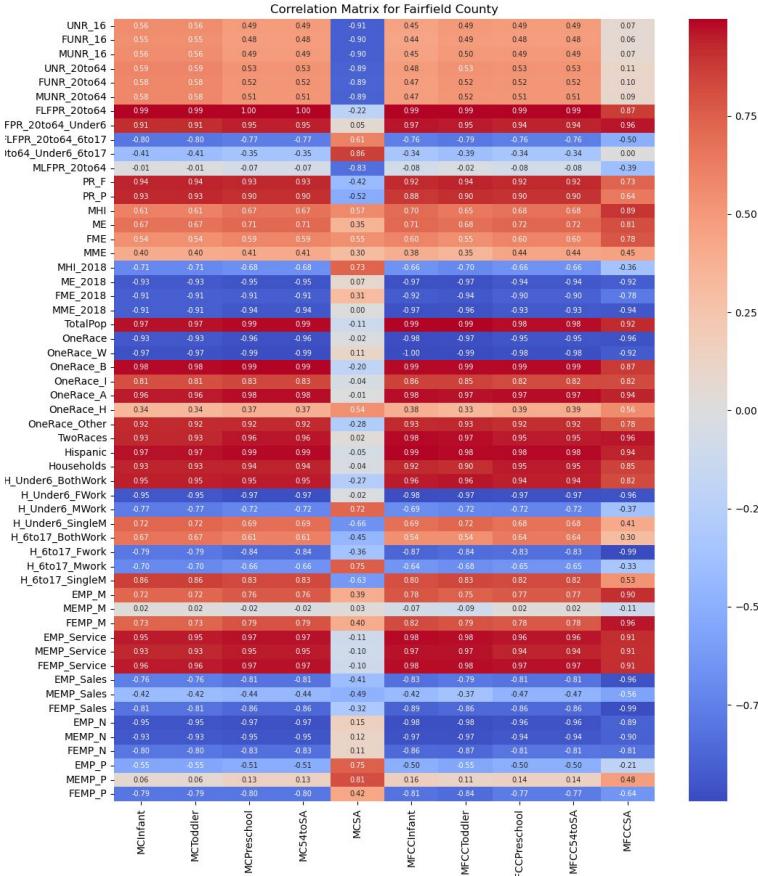
School Age Pricing

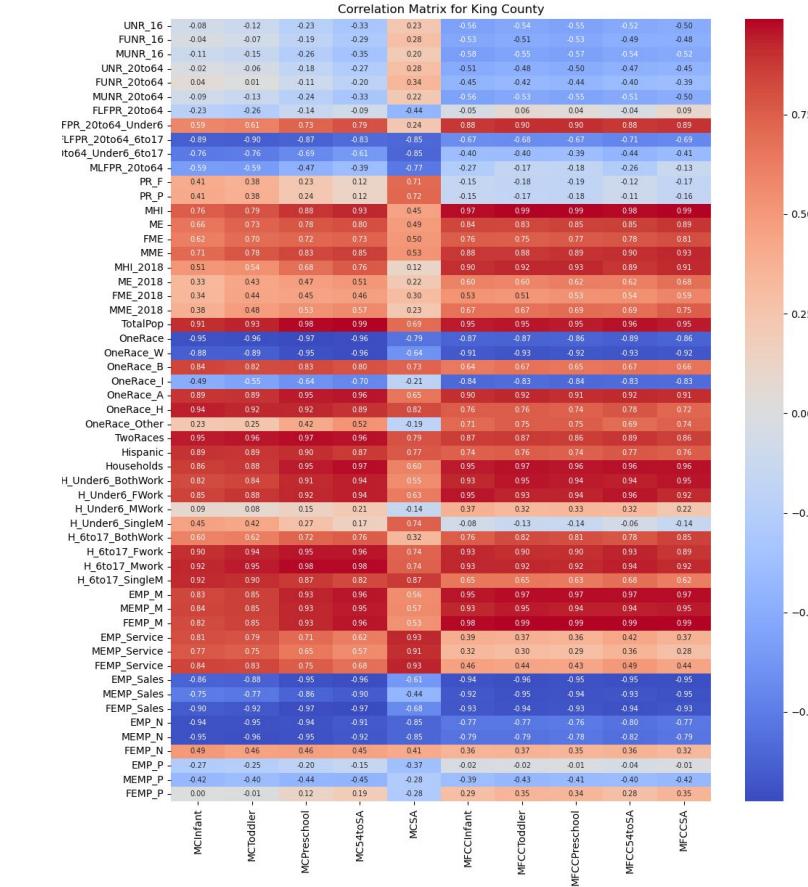
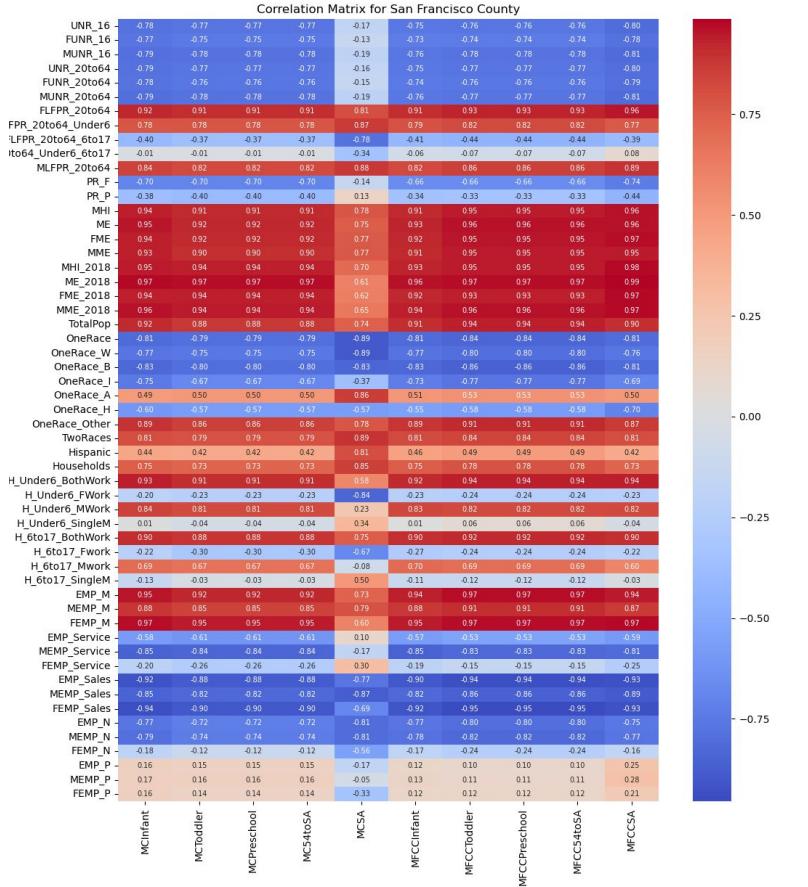
- The counties/cities most suitable to offer both forms of infant care are:
 - Fairfield County
 - Hunterdon County
 - Arlington County
 - Alameda County
 - San Francisco County

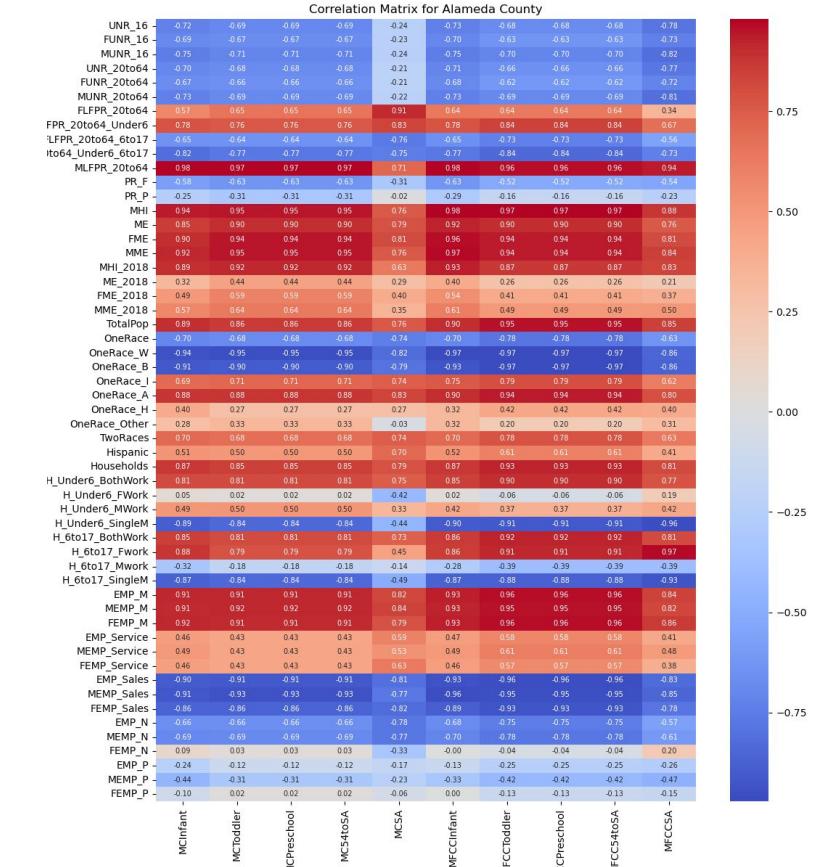
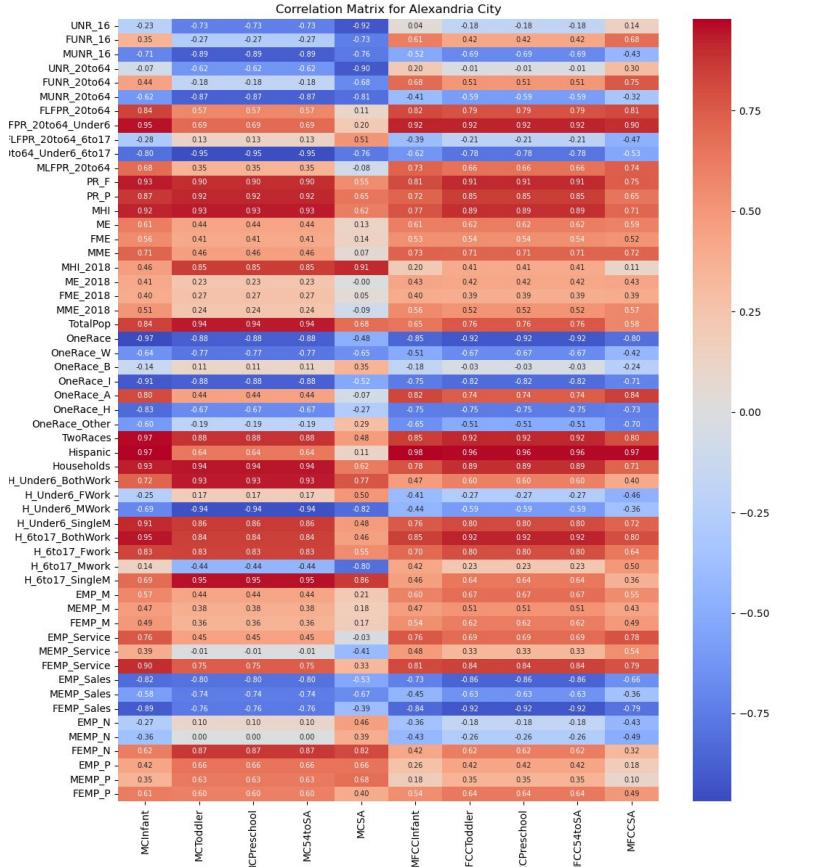


Demographic Insights

- The correlation matrices will focus on the following counties:
 - Fairfield County, CT
 - San Francisco County, CA
 - King County, WA
 - Alexandria City, VA
 - Alameda County, CA
- Correlation does not signify causation.
 - 1: Perfect positive correlation. As one variable increases, the other variable also increases proportionally.
 - 1: Perfect negative correlation. As one variable increases, the other variable decreases proportionally.







Strategic Recommendations

1. Expansions must be sought out in the following counties:
 - a. Fairfield County, CT
 - b. San Francisco County, CA
 - c. King County, WA
 - d. Alexandria City, VA
 - e. Alameda County, CA
2. Offer center-based child care AND family child care services.
3. Update and continue to monitor trends and demographic variables that have strong correlations with the median weekly price variables.

Summary Brief Overview

- Will contain the selected counties and their respective line plots and correlation matrices.
- A link to the technical guide for the data will be provided (page 34).
 - <https://www.dol.gov/sites/dolgov/files/WB/media/NationalDatabaseofChildcarePricesTechnicalGuideFinal.pdf>

Conclusion & Q&A

- Please engage with the dashboard and review the summary brief for further insights.
- Thank you for your time.
- For follow-up questions, please contact me at nochoa@my365.bellevue.edu.