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Data Presentation and Visualization

DSC640-T301

**Childcare Price Analysis**

**Background:**

This project is based on the dataset collected by The U.S. Department of Labor (DOL) Women’s Bureau (WB). The purpose is to collect local level childcare price data and assist the researchers to study childcare price effects on employment.

This is a big dataset and has 227 columns and over 23K rows. It is intended to cover as much information as possible. I am not experienced enough to analysis all of 227 variables and all observations. However, I plan to focus on a region I am familiar with and zoom in to a specific childcare period.

I have raised 2 kids to college level and have co-workers whose children are still in day care stage. My experience is the toddler stage is most expensive for daycare, either done at home or in a daycare center. That’s the period I would like to zoom into.

**Preliminary analysis (**done using **JMP** statistical software**)**

I am particularly interested in 3 variables:

**MHI**: The median household income

The household income plays a crucial role in meeting basic needs, including childcare need.

**MCToddler**: Median Price of Center-Based Care – Toddler

This will reflect the level of care from a daycare (or childcare) center.

**MFCCToddler**: Median Price of Family Childcare – Toddler

This will reflect the level of care from a daycare (or childcare) center.

**Findings**:

I first looked at the income level from all states and identified all states which have above average income levels, which ends up 20 states.

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Figure 1. household income for all states

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Figure 2. household income for ‘rich’ states

Looks like my home state, Texas, is not among the ‘Rich’ states, so I did a comparison of childcare cost (home and center) in Texas with the ‘rich’ states.

No surprise, Texas childcare cost is less than rich states (median on rich states for home care is $125 and Texas is 108, center care is 155 vs 108). Looks like the difference on home care is not too much but center care difference is big.

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Figure3: home care price: Texas vs Rich states

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Figure4: center care price: Texas vs Rich states

**Assumptions**:

Assumption 1: the higher the household income is, the childcare cost will also become higher.

From the above sample comparison, it may be true on center care side but may not be true on family care side.

Assumption 2: the higher the cost is, the higher need for the female to find a job to support the expense.

**Items that still need clarification:**

Need to look for variables represent the female work employment rate to check if my assumption 2 are correct.

**Direction of Story:**

Will show if the childcare cost will impact the female employment rate, especially in Texas. I plan to use chart, data table to provide visual guide to support my story.

**Target Audience:**

The city council who will decide if need to plan a fund to help relieve the daycare cost pressure. Assume they are consider a Bond.

**Mediums:**

1. Presentations
2. Road-side Poster (those type for election)
3. Dashboard (from Power BI)

**Reference:**

**Dataset**:

National Database of Childcare Prices from US department of labor.

<https://content.bellevue.edu/cst/dsc/640/2024Update/Datasets/nationaldatabaseofchildcareprices.xlsx>

**The technical guide**

<https://www.dol.gov/sites/dolgov/files/WB/media/NationalDatabaseofChildcarePricesTechnicalGuideFinal.pdf>

**JMP software (student version)**

<https://www.jmp.com/en_us/home.html>