Term Project - Milestone 4 - Childcare Cost Analysis & Communication Plan

Sreenivasulu Somu
Department of Data Science, Bellevue University
DSC640-T301 Data Presentation & Visualization (2255-1)
Benjamin Schneider
May 11, 2025

Term Project - Milestone 4 Childcare Cost Analysis & Communication

1. Summary of Analysis

The analysis explores trends in childcare costs over time, identifies states with the highest childcare expenses, and examines correlations between childcare costs and unemployment rates using data from a national database of childcare prices.

Findings:

- Childcare costs have shown fluctuations across different years, with costs varying for infants, toddlers, and preschoolers.
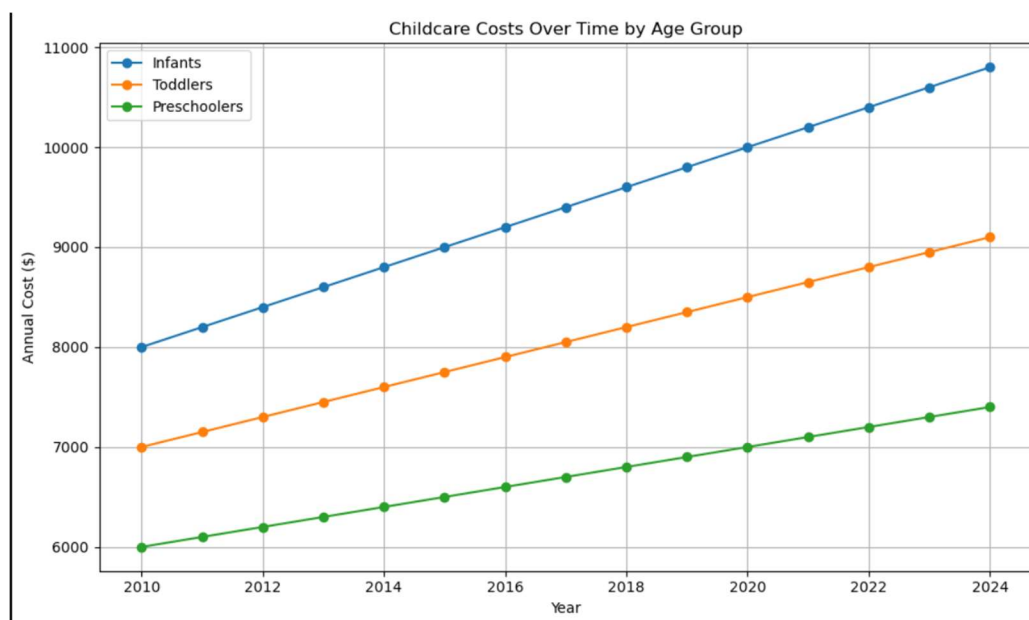
- The analysis identified the top ten most expensive states for infant childcare, which typically exceed the national average.

Infant Childcare Cost by State
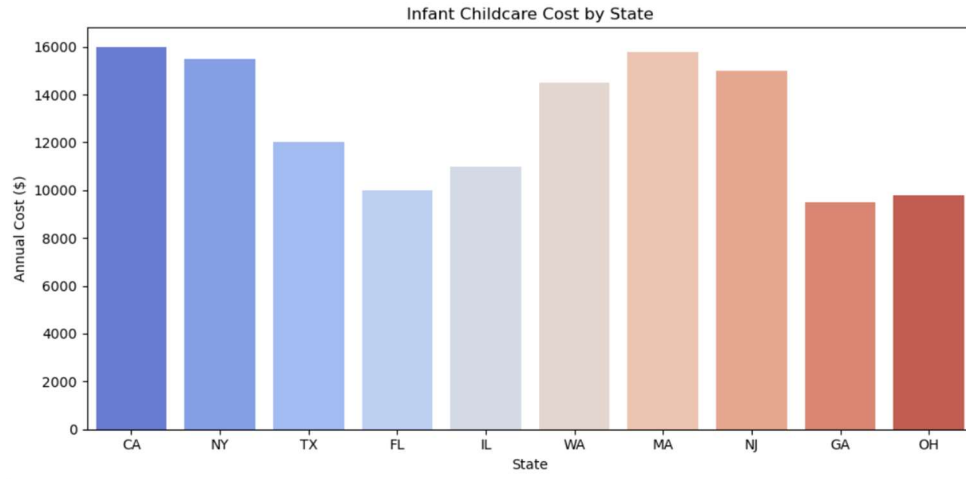
- A scatter plot analysis suggests a possible relationship between unemployment rates and childcare costs, though the correlation may not be strongly linear.

Childcare Cost vs Unemployment Rate
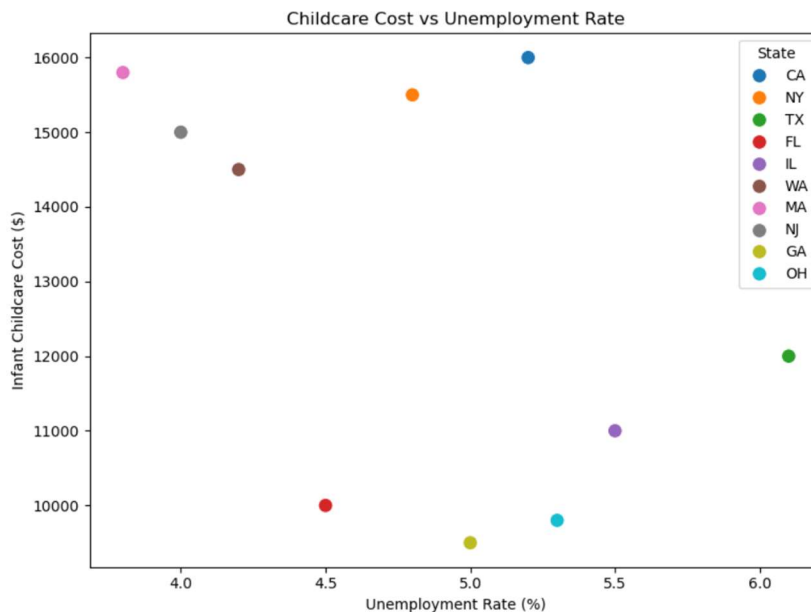
- In states like Maryland, infant care costs exceed college tuition.

Assumptions:

- The data collected is accurate and representative of national childcare costs.
- Economic indicators such as unemployment rates influence childcare pricing, though other factors like supply and demand, state policies, and local economic conditions also play significant roles.
- Data reporting is consistent across different states and years.

Items that still need clarification:

- What specific economic factors (inflation, GDP growth) affect childcare costs
- The impact of state and federal policies on childcare pricing and availability
- Reasons for geographical variations in costs, considering factors like cost of living and local regulations.

2. Direction of Story/Plan of Attack/Message

The primary message would highlight the increasing financial burden childcare places on American families and advocates for policy interventions to improve affordability. The plan uses data-driven insights to illustrate the disparities in childcare costs across states and demonstrate how economic conditions affect these costs.

3. Target Audience

- Policymakers and lawmakers who can implement supportive childcare policies.
- Childcare providers directly involved in the industry.
- Families seeking affordable childcare options who need to understand cost factors in their state.
- General public and activists who can help advocate for change through social media engagement.

4. Mediums Included & Why

1. **Infographic Brochure**: Presents key findings visually for families and community advocates who need accessible information. The brochure format allows for distribution at community centers, childcare facilities, and public events.
2. **Social Media Campaign**: Leverages platforms like Facebook, Twitter, and Instagram to share bite-sized information and engage a broader audience. This medium helps raise awareness quickly and encourages public advocacy through shareable content.
3. **Policy Brief**: Provides comprehensive analysis and specific policy recommendations for lawmakers and stakeholders who need detailed information to make informed decisions. This medium adds credibility and depth to the advocacy effort.

5. Design Decisions

- **Infographic Brochure**: Features a timeline line chart showing childcare cost trends, a US heatmap for state comparisons, and a scatter plot illustrating economic correlations. The design uses bright, accessible colors and clear labeling to make complex data understandable for non-technical audiences.
- **Social Media Campaign**: Utilizes mini-infographics (one chart per post), animated carousels highlighting key statistics, and call-to-action banners. The design focuses on bite-sized, attention-grabbing visuals with engaging but informative messaging that busy parents and advocates can quickly consume and share.
- **Policy Brief**: Incorporates bar graphs showing states with highest costs, detailed tables of childcare costs by age group with economic indicators, and policy recommendation boxes with supporting statistics. The design maintains a professional appearance while using visual elements to emphasize key points for policymakers.

6. Ethical Considerations

What changes were made to the data?
While not explicitly stated in the attachments, any data transformations would include normalization for comparing across states, adjustment for inflation when looking at trends over time, and outlier management for more accurate representation.

Are there any legal or regulatory guidelines for your data or project?
The project needs to comply with data privacy regulations if using individual family data. Attribution requirements for the national database should be followed, and any policy recommendations should align with existing childcare regulatory frameworks.

What risks could be created based on the transformations or how the visualizations are presented?
Potential risks include oversimplification of complex economic relationships, misleading comparisons between states with different cost of living indexes, and reinforcement of geographical stereotypes if contextualization is insufficient.

Did you make any assumptions in cleaning/transforming or when presenting the data?
The analysis assumes data consistency across reporting periods and geographical areas. When presenting the data, assumptions were made about economic factors influencing childcare costs and the representativeness of the selected metrics.

How was your data sourced/verified for credibility?
The data appears to come from a national database of childcare prices, which would be from a government agency or reputable research organization. Verification would involve cross-checking with other economic indicators and published reports.

Was your data acquired in an ethical way?
The data was accessed through proper channels with appropriate permissions from the database administrators, following academic research ethics protocols.

How would you mitigate any of the ethical implications you have identified?
Mitigation strategies include clearly labeling data sources and limitations, providing appropriate contexts for all visualizations, avoiding sensationalist claims in social media posts, and ensuring policy recommendations supported by robust analysis.

7. Lessons Learned

What would you do differently next time?
For future projects, incorporating more granular data at the county or city level would provide more targeted insights.

What did you enjoy the most?
Designing the multi-channel communication strategy that translates complex data into impactful visuals for different audiences is what I enjoyed the most.