Time Allocation to Chores and Childcare Among Employed and Unemployed Guardians

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Background & Research Question

Balancing employment responsibilities with household activities and childcare is a challenge many guardians face, particularly in families with children under 15 years old. Changing workforce dynamics, gender roles, and family structures significantly influence how time is allocated between paid work, domestic responsibilities, and parenting.

This study utilizes a multiple linear model to answer the following research question:

How does allocating time to household activities and childcare in the United States differ between employed and unemployed guardians (ages 27 to 60) of children under 15 years in 2023?

Data

The study uses 2023 data from the American Time Use Survey (ATUS), a nationally representative dataset that provides detailed insights into how individuals allocate their time to various activities over a 24-hour period. The final dataset merges the following files:

- Respondent
- Activity; childcare codes 301, 302, 303, 401, 402, 403; chores TUTIER1CODE == 2
- Roster

The final dataset has 1566 observations and 7 variables including employment status, sex, age and number of children.

Cleaning

As there were no missing values, data cleaning involved filtering out households with no children under 15 and at least one guardian between 27 and 60 years old. Finally, only childcare and household activities were selected, and the result data were combined into one dataset.

Visualizations
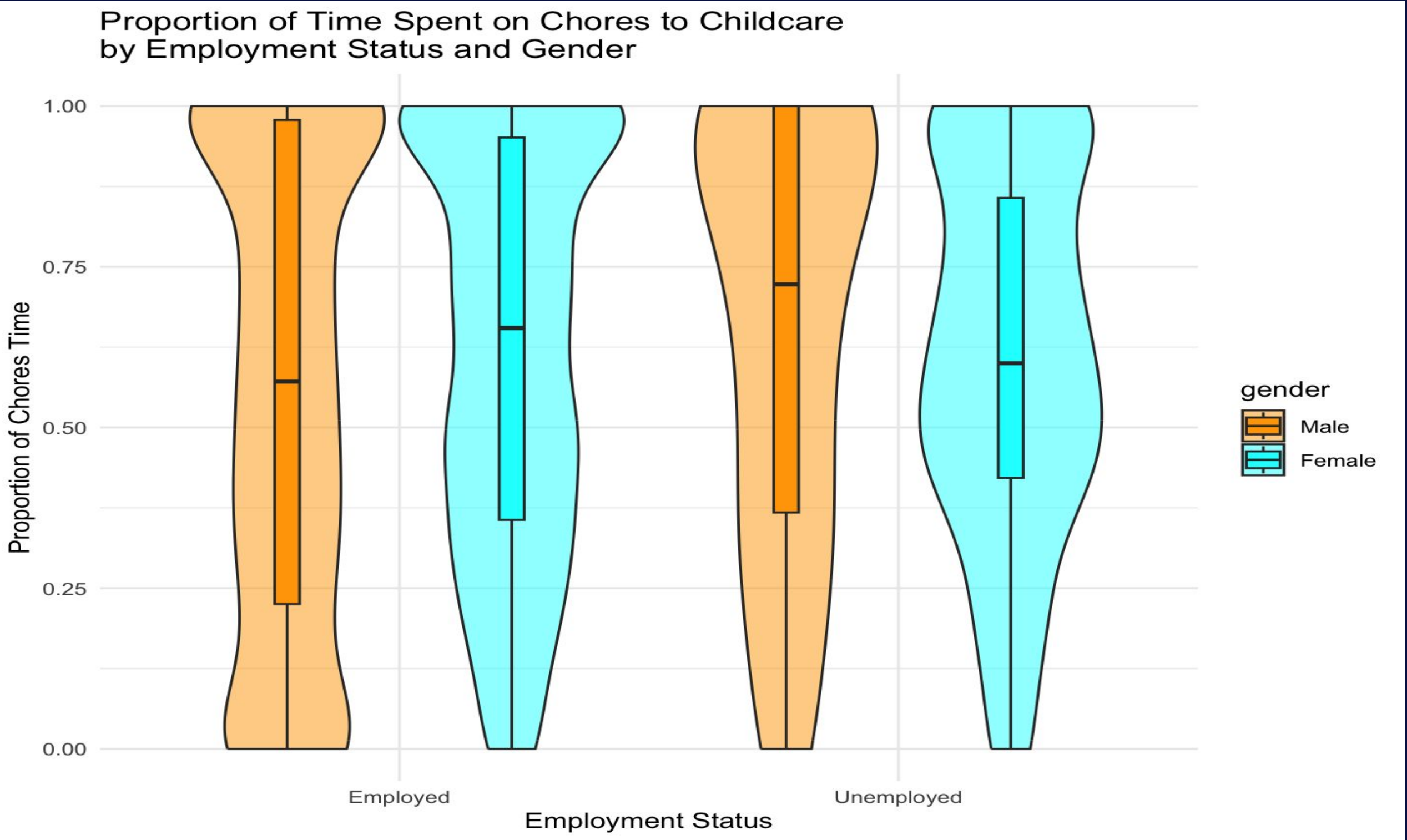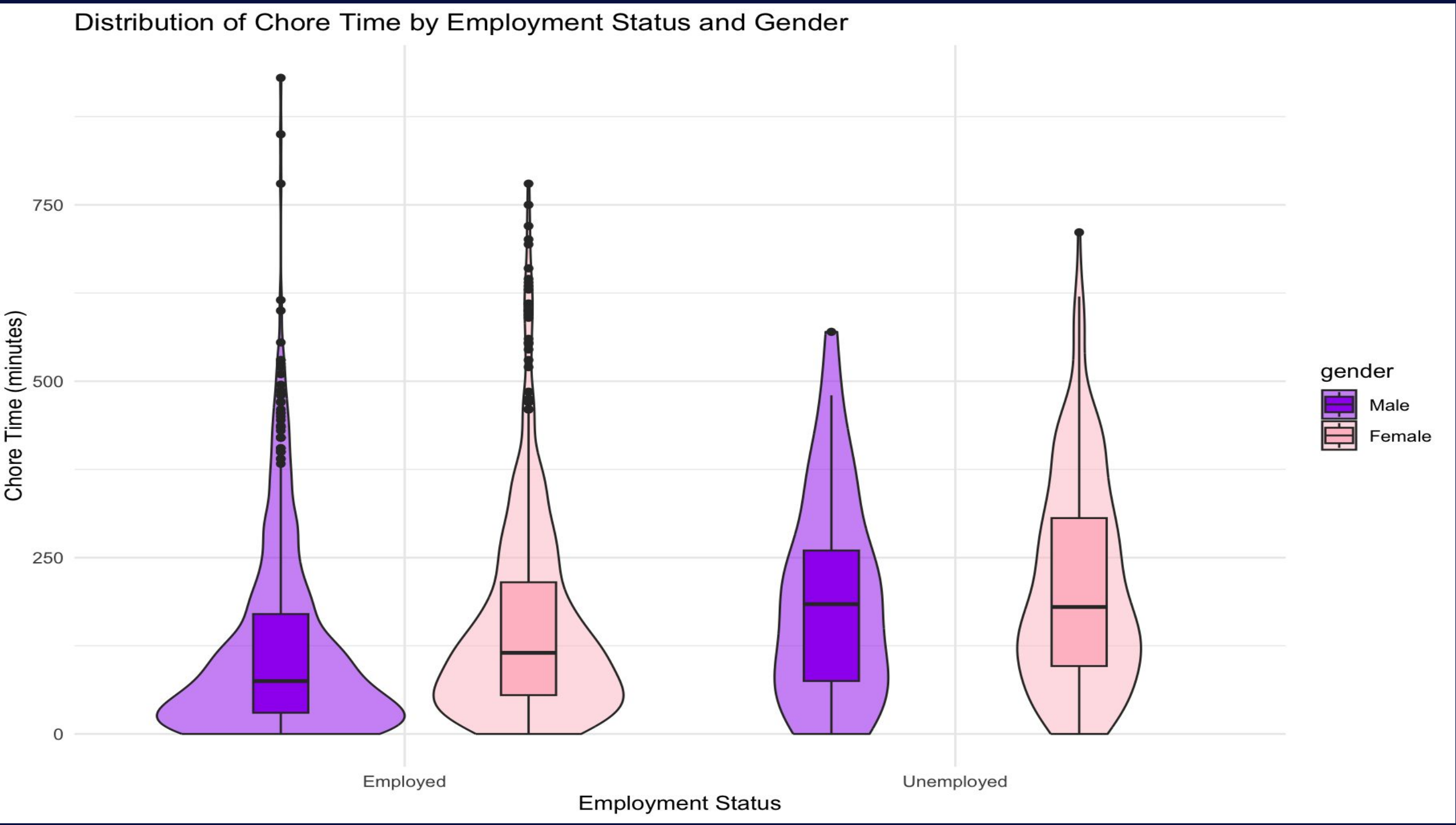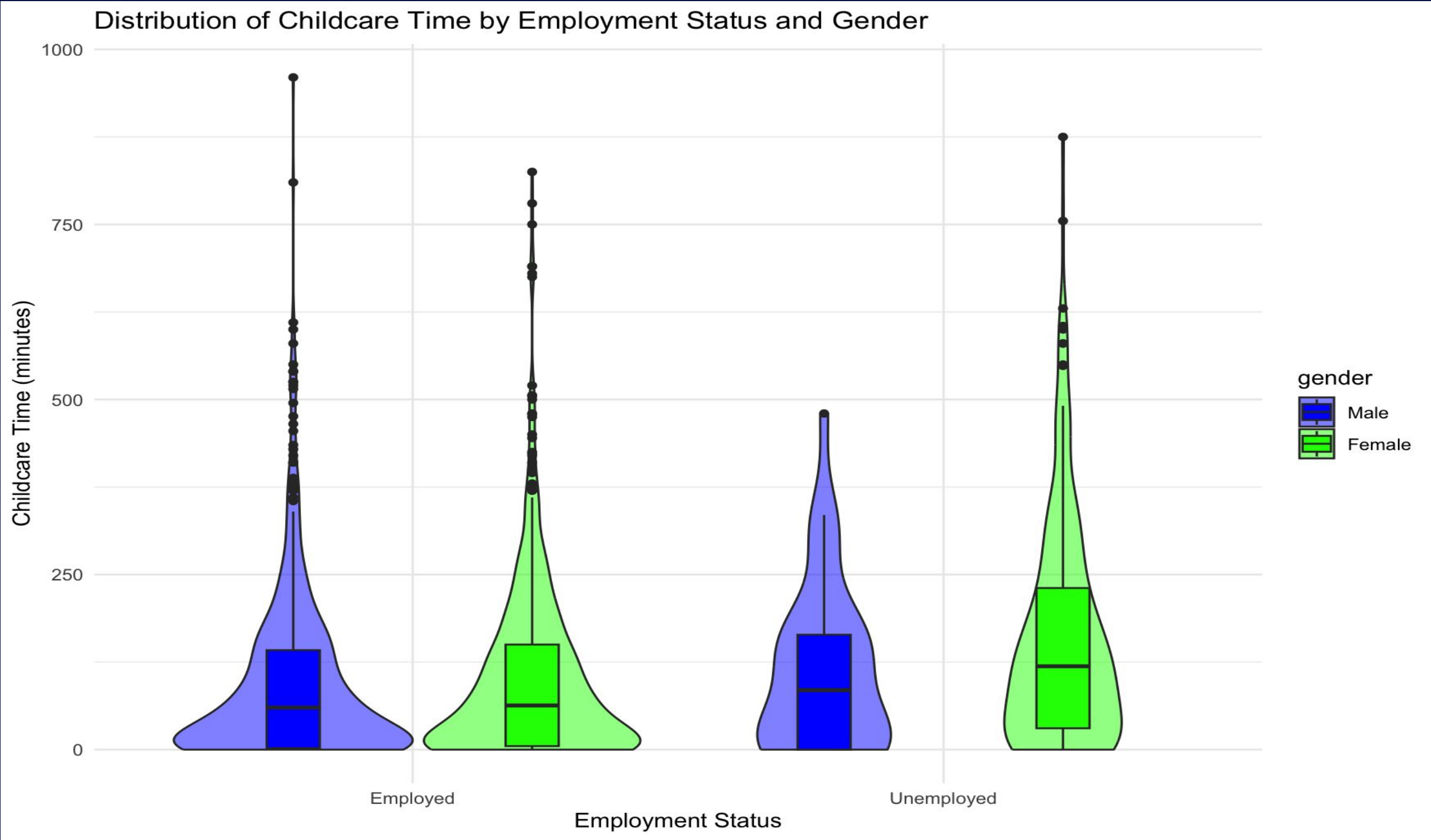
Figures show the distribution of chore time by employment status and gender, the distribution of childcare time by employment status and gender, and the proportion of time allocated to chores by employment and gender, respectively.

	SLR	MLR 1	MLR 2	MLR Interaction 1	MLR Interaction 2
RMSE (Train)	0.3364	0.3263	0.3254	*0.3252*	0.3253
RMSE (Test)	0.3367	0.3304	*0.3299*	0.3301	0.3301

Modeling

	SLR	MLR 1	MLR 2	MLR Interaction 1	MLR Interaction 2
Employment status	0.4381	0.4245	0.4235	0.4233	0.4235
Age		< 0.0001*	< 0.0001*	< 0.0001*	< 0.0001*
Gender		0.0005*	< 0.0005*	0.007*	0.0072*
Number of children			0.0167*	0.0166*	0.0073*
Employment status * Gender				0.1997	
Employment status * Number of children					0.3309
R^2	0.0008	0.0532	0.0575	**0.0581**	0.0577
Adjusted R^2	0.00016	0.0514	0.0551	**0.0557**	0.0553
BIC	743.26	**690.42**	691.66	697.005	697.71
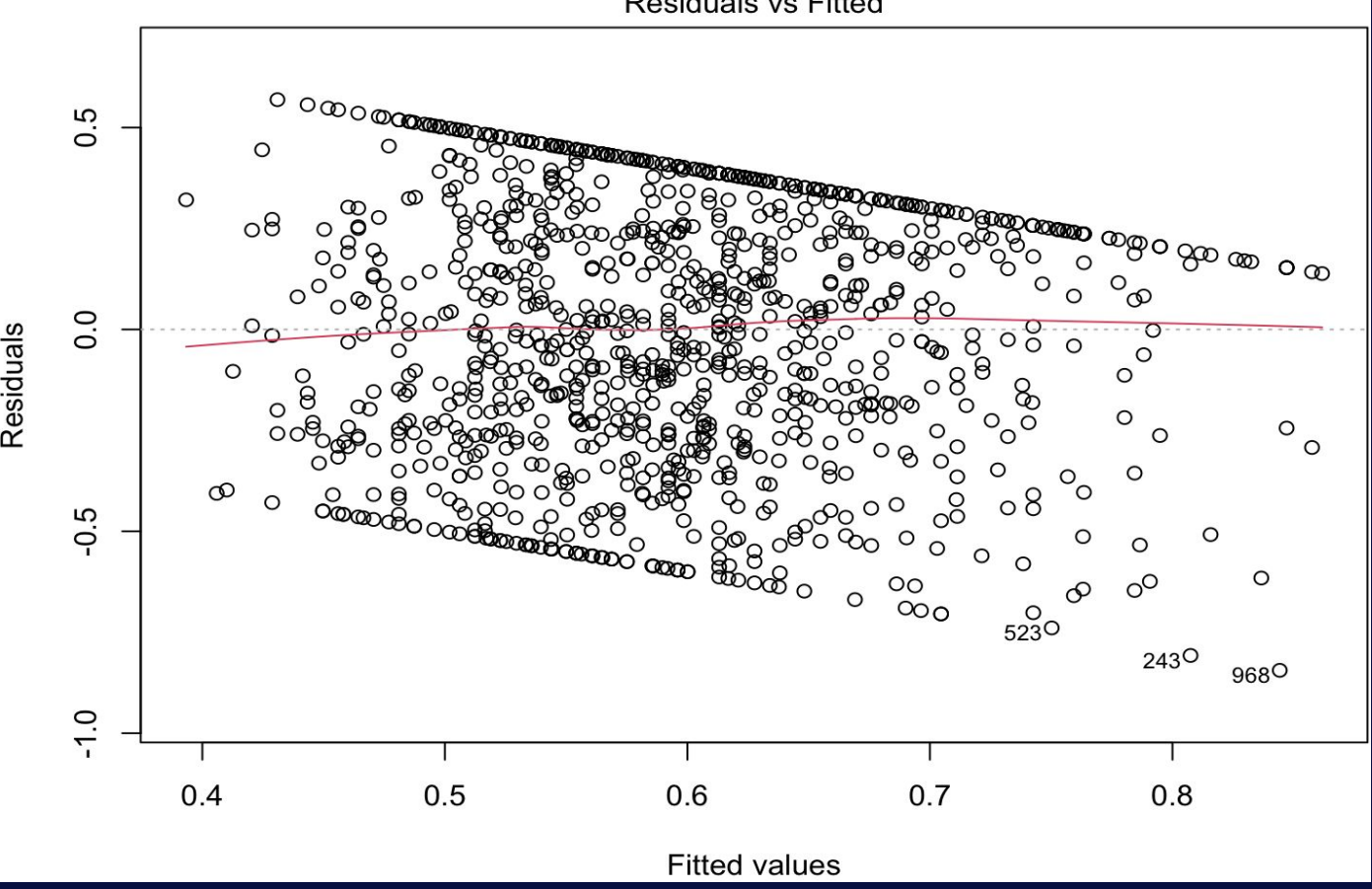
Evaluation of the linear regression assumptions for the first interaction model. The residual versus fitted value plot shows violations to the normality and equal variance assumptions, maintains linearity.

Time Allocation Proportion = 0.1863 + 0.0874.Unemployed + 0.0798.Female +0.0104.Age - 0.0250.Children - 0.0979.Unemployed*Female
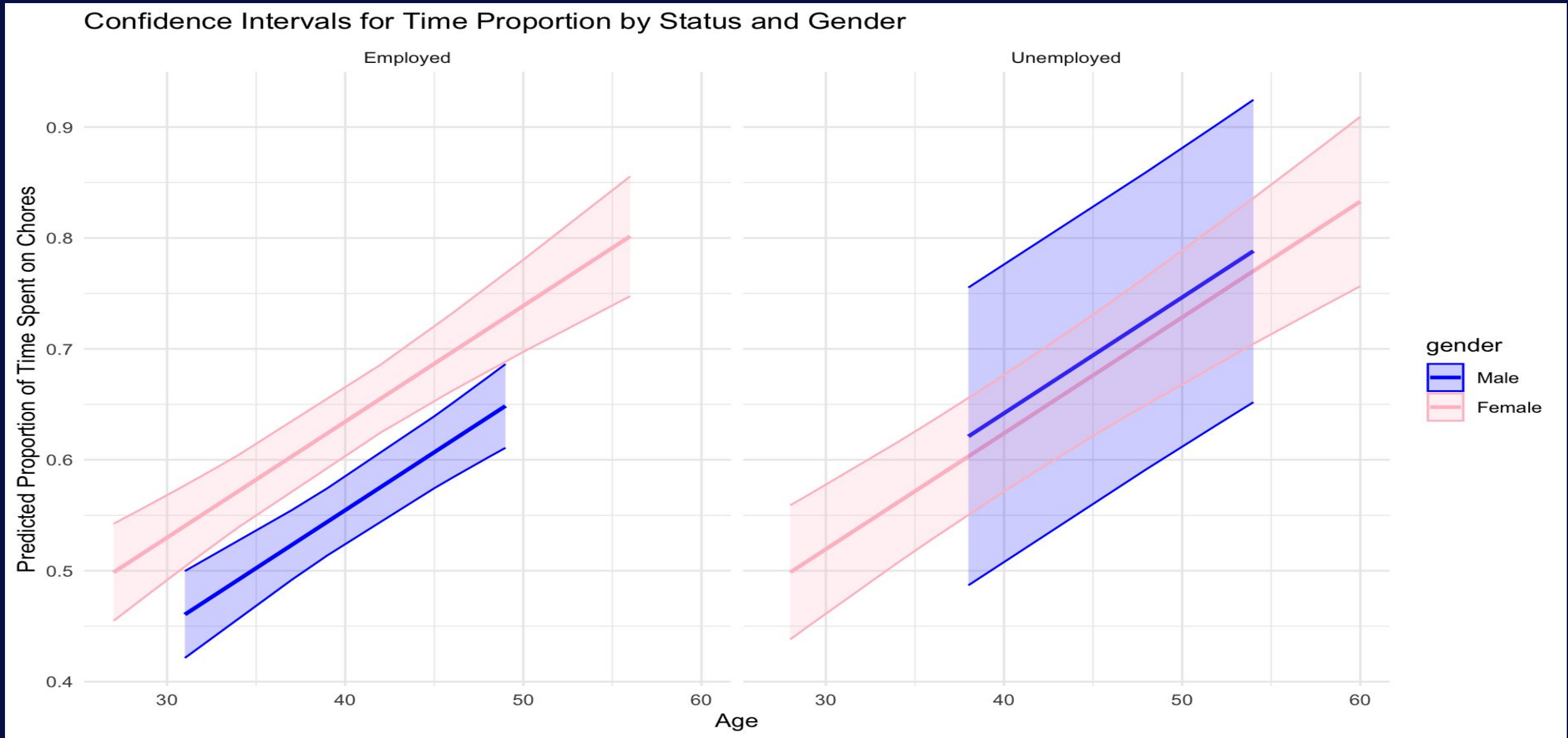
Conclusion

- Employment status significantly reduces time spent on chores and childcare for both genders, but the reduction is more substantial for males, potentially reflecting traditional gender roles and responsibilities.
- Age increases time allocation modestly, while having more children slightly reduces the proportion of time spent on chores and childcare.
- Unemployment and gender interact such that unemployed women, while still allocating more time than employed guardians, do not exhibit as large an increase as expected

References

Data source: https://www.bls.gov/tus/data/datafiles-2023.htm