

1 Data Description

1.1 Data Source

The data used for this assignment is the 'Adult Data Set' from the UCI Machine Learning Repository, also known as the 'Census Income' data set.[1] The data is comprised of census information for 32,561 individuals from the United States, taken in 1994.

1.2 Variable Details

The data set originally has fifteen variables, but some were removed for this analysis, bringing the total down to 10. The variables removed were either redundant or not pertinent to the association rules analysis. For example, removing years of education as it can be described by the highest level of education achieved. The other variables removed were: 'Final Weight' which is a control (for race, age, and sex), 'Relationship' which can be described by using 'Marital Status', as well as 'Capital Gain' and 'Capital Loss'. Data cleaning was also performed to better organize the remaining variables into more succinct categories.

The remaining variables used in the analysis are:

- **Age:** Continuous variable measuring individuals age in years
- **Work class:** Industry worked in (Private, Government, Self-employed, Other)
- **Education:** Highest level of education achieved (Preschool, Elementary, Highschool, Highschool Grad, College, Bachelors, Masters, Doctorate, Associate)
- **Marital Status:** Relationship descriptor (Divorced, Married, Never Married, Separated, Widowed)

- **Occupation:** Field of work (See Section 1.3)
- **Race:** Identified Race (White, Black, Native, Asian/Islander, Other)
- **Sex:** Identified Sex (Male, Female)
- **Hours Per Week:** Total work hours each week (<40, 40, >40)
- **Native Country:** Country of Origin (See Section 1.3)
- **Income:** Yearly income level (<=50k, >50k)

1.3 Descriptive Analysis

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Figure 1: Age Sex

2 Problem Description

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3 Technique Description

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4 Result Description

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5 Conclusions

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References

- [1] Dheeru Dua and Casey Graff. *UCI Machine Learning Repository*. 2017. URL: <http://archive.ics.uci.edu/ml>.