

AMERICAN HOUSING SURVEY: HOUSING AFFORDABILITY DATA SYSTEM

Download: [Excel Workbook](#), [ReadMe](#)

Abstract: is a set of files derived from the 1985 and later national American Housing Survey (AHS) and the 2002 and later Metro AHS. This system categorizes housing units by affordability and households by income, with respect to the Adjusted Median Income, Fair Market Rent (FMR), and poverty income. It also includes housing cost burden for owner and renter households. These files have been the basis for the worst case needs tables since 2001.¹

Data Set Characteristics:	Multivariate, Time-Series	Number of Instances:	26376	Area:	Housing
Attribute Characteristics:	N/A	Number of Attributes:	6	Missing Values?	N/A

Source:

<https://www.huduser.gov/portal/datasets/hads/hads.html>

Updated Codebook:

Original Codebook credited to <https://www.huduser.gov/portal/datasets/hads/hads.html>

Updates made by Kim Kirk for Business Statistics and Analysis for Rice University.

¹ <https://www.huduser.gov/portal/datasets/hads/hads.html>

Data Set Information:

The *Housing Affordability Data System (HADS)* is a set of files derived from the 1985 and later national American Housing Survey (AHS) and the 2002 and later Metro AHS. This system categorizes housing units by affordability and households by income, with respect to the Adjusted Median Income, Fair Market Rent (FMR), and poverty income. It also includes housing cost burden for owner and renter households. These files have been the basis for the worst case needs tables since 2001. The data files are available for public use, since they were derived from AHS public use files and the published income limits and FMRs. We are providing these files give the community of housing analysts the opportunity to use a consistent set of affordability measures.²

Data variables include:

Name	Data Type	Explanation
CONTROL	Character	A control variable for Housing Unit. Useful to match data across datasets from different years.
FMR 2005	Numerical (\$)	Fair Market Monthly Rent for 2005
FMR 2007	Numerical (\$)	Fair Market Monthly Rent for 2007
FMR 2009	Numerical (\$)	Fair Market Monthly Rent for 2009
FMR 2011	Numerical (\$)	Fair Market

² <https://www.huduser.gov/portal/datasets/hads/hads.html>

		Monthly Rent for 2011
FMR 2013	Numerical (\$)	Fair Market Monthly Rent for 2013

Data Summaries Calculated:

- Mean
- Standard Error
- Median
- Mode
- Standard Deviation
- Sample Variance
- Kurtosis
- Skewness
- Range
- Minimum
- Maximum
- Sum
- Count

Units for Data Summaries and Variables:

All units are dollars (\$)

Data Transformations:

1. Dataset was downloaded from host website: <https://www.huduser.gov/portal/datasets/hads/hads.html>
2. CONTROL variable and FMR variable over five years was used for analysis.
 - FMR is numeric continuous, normally distributed.
 - CONTROL is categorical, nominal.
3. FMR was determined to be the dependent variable, CONTROL was determined to be the independent variable.
4. FMR data across five years was merged into one data set for each CONTROL housing unit.
5. New variables created include:
 - FMR 2005
 - FMR 2007
 - FMR 2009
 - FMR 2011
 - FMR 2013
6. Worksheets were created to hold four categories for the analysis:
 - Summary Report identifies and answers the business question/what was measured
 - Descriptive Statistics identifies and calculates descriptive statistics
 - Graphs displays histograms and boxplots
 - Tests holds results for statistical tests
7. Hypothesis tested: "did the 2008 mortgage/housing crisis have an effect on fair market monthly rental rates (FMR) over various years? A two-tailed difference in means paired t-Test was run to determine statistical significance between group means; results are listed in the "Summary Report" worksheet.