

## **Housing Space of Chinese People in 1993**

### **Research question:**

What were the factors that influenced individual's housing space in China in early 1990s? Was individual income and employment status (economic status), individual's education (human capital), individual's work unit characteristics (institutional characteristic), or individual's administrative and political status more important in determining one's living condition, such as housing space?

### **Data:**

China Housing Survey 1993, obtained from Inter-University Consortium for Political and Social Research (ICPSR).

### **Models:**

*Dependent variable:* Space of housing (Square meters)

### *Quantitative Predictors:*

1. Income determines housing space: regress housing space on income, control for number of people living in the house,

### *Nominal and Ordinal Predictors:*

2. Individual's education and employment status determine housing space: ANOVA analysis.
3. Individual's political affiliation and administrative position determine housing space: ANOVA analysis.
4. Work unit characteristics (nature, industry, administrative rank, and government juris) determine one's house spacing:

**Data check:**

- 1. For regression analysis, check the normality of variables, especially the dependent variable:**

The results show that housing space and earnings are highly skewed. Therefore I made log transformation to make them normal.

- 2. For ANOVA Analysis, check 1) whether the dependent variable is normally distributed in every category within each predictors or 2) whether the sample size of every category is large to make the CLT applicable if the distribution is not exactly normal. 3) if largest sample standard deviation is no more than twice the smallest sample:**

The results show that in most cases, log transformation of housing space is roughly normally distributed among each category of each predictor and the standard deviation of largest sample is no more than that of the smallest sample.

Only the variable of industry nature of present work unit has too many categories, and each category has small sample size, which is not always normally distributed. So I exclude it from the ANOVA analysis.

**Analysis and Results:**

- 1. Correlation:**

Pearson correlation coefficient between log of housing space and log of earning is 0.07489, which is significant at .0008 level. (See output)

- 2. Regression:**

Model: *log of housing space* =  $\beta_0 + \beta_1(\text{number of Cohabitors}) + \beta_2(\text{Log of earnings}) + \text{Error}$ .

Regression coefficient of log of earning is .05143, and it is significant only at .0467 level. R square of the model is only .0772, which means that individual's earning is not a strong predictor of one's housing space. (See output)

### **3. ANOVA:**

Except employment status, the overall test of the predictors of education, political affiliation, nature of work unit, administrative rank of work unit, and government jurisdiction of work unit are significant, which means that both individual's education and party affiliation, and work unit related characteristics have significant influence on one's housing space.

Based on pairwise means comparison test, the following list the significant different mean pairs among each predictor:

- 1) Education: between college degree and either no formal education, or elementary school, or high school degrees.
- 2) Political Affiliation: between communist party members and those without political affiliation.
- 3) Nature of work Unit: between state institutions and state enterprises.
- 4) Administrative rank of work unit: between no rank work unit and all other higher rank work units; between bureau or higher rank and sector or lower rank work unit.
- 5) Government jurisdiction of work unit: between central ministries and either municipal bureau, municipal company, or district company; between municipal government and district company, between district bureau and district company.

### **Conclusion:**

In early 1990s, not long after Tian-an Men Square Accident in 1989, China still allocated housing through a planned system rather than a market system.

Even as a fact of today, the political reform is still a blurry construction in mind which lags far behind the fast development of economy. People are now obviously feeling the nervousness in all kinds of anomaly. Even the CPC and the elites of China are struggling in