

# An Engel curve analysis of household expenditures on recreation and culture in Perm

## Brief summary

In this paper, we analyze the households that spend money on **recreation and culture**, the actual amount they spend and the potential factors that influence households' recreation and culture expenditures in Perm city using the **2014 Household Budget Survey**. The results suggest that total household expenditures and gender of families' head are significant determinants of recreational and cultural expenditures in **Perm**. Our results also predict recreation and culture to be **luxury goods**.



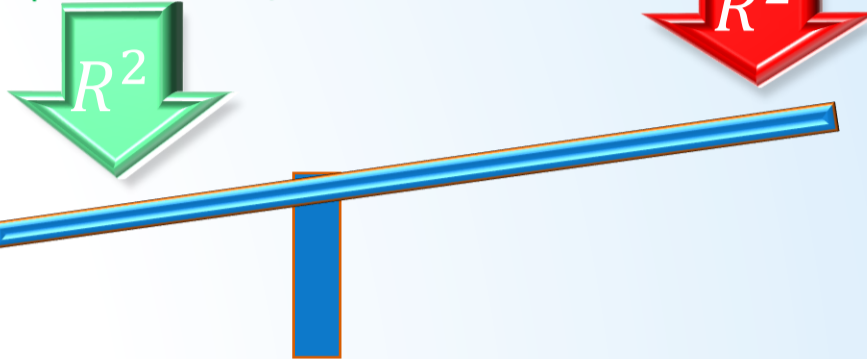
## Economic Model

$$\begin{cases} U(q) \rightarrow \max_q \\ \sum p_k q_k = I \\ p_k - \text{const} \end{cases}$$

## Econometric Model

Working-Leser Model  
(non-linear)

Linear Model



### Hypothesis

Male heads tend to spend more than female heads on recreation and culture due to having relatively more leisure time

Total household expenditures are expected to have a positive impact on cultural spending's

## Data and methodology

Sample  
1000

Outliers  
77

Included  
observations  
923

Marital  
status of  
household  
head

Household  
size

Total  
household  
expenditures

The share of  
household  
expenditures  
on  
recreation  
and culture

Education  
level of  
household  
head

Gender of  
household  
head

Age of  
household  
head

Questionnaires

Cross-  
sectional  
data

OLS

## The Future Model Improvement

How to improve the model?

To include tastes and preferences

To collect more data about people with higher income

To include experience goods\*

\* person needs to form a taste through several exposures

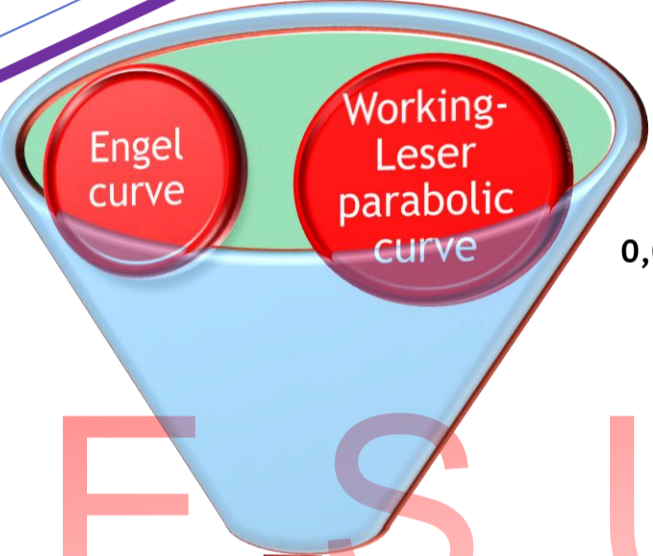
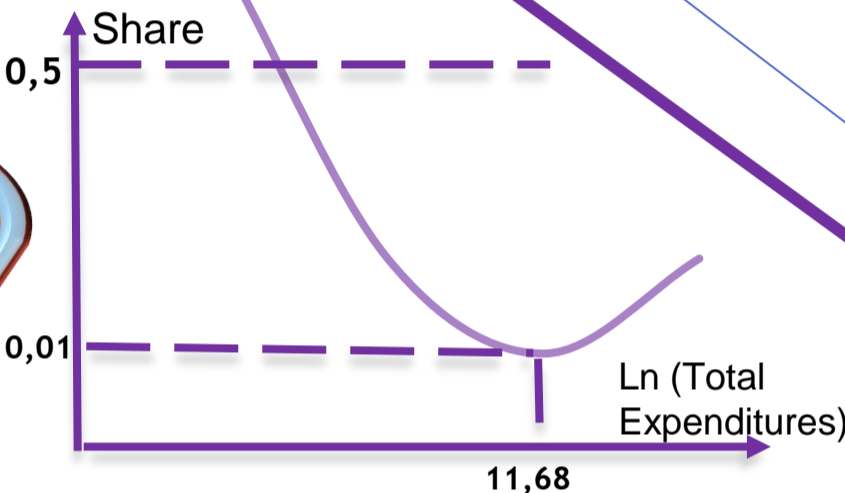
## Coefficients and Model

- Significant
- Insignificant

Variable	$\beta_i$
Constant	• 12,77***
Education	• 0,007
Gender	• 0,14***
Marriage	• -0,0006
Size	• -0,003
Age	• -0,00009
$\ln(\text{Total Expenditures})$	• -2,19***
$\ln^2(\text{Total Expenditures})$	• 0,09***

\*\*\* statistical significance at 1%  
P.S. constant is significant, but not explainable

### Working-Leser relationship



Culture is a luxury good for Perm

