Household Fuel Demand for Residential Heating and Cooking in Central Asia

Zhanna Kapsalyamova
Department of Economics
Nazarbayev University, Kazakhstan

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Outline

1. Why Clean Cooking and Heating are Important?

2. Heating

3. Policy suggestions
Why Clean Cooking and Heating are Important?

- Transition to **clean cooking and heating** is imperative due to its multiple co-benefits, health and climate benefits (Goldemberg et al. 2018)

- **Clean cooking and heating** – solutions that don’t generate indoor air pollution (PM, CO) or the air pollution concentration is low.

- **Women** are more likely to adopt modern fuels (Gould and Urpelainen, 2020), as transition to cleaner fuels empowers women and has health benefits.
Heating types in Kazakhstan (KAZ) and Kyrgyz Republic (KG)

- Centralised heat supply, CHP or HOB
- Decentralised heat supply from autonomous sources of heat
- Decentralised heat supply from individual sources: heating stoves and heating boilers

District heating

- 51 percent of households in KAZ, 15 percent in KG

Individual stoves

- 32 percent in KAZ, share of individual stoves based on coal is above 70 percent.
- 72 percent of individual stoves based on coal and wood in KG
Barriers and Solutions

- **Fuel prices**
  - is a significant determinant of district heating and coal demand for cooking and heating

- **Convenience/multiuse: same heating fuel**
  - The significant impact of the heating system on the choice of cooking fuel shows the importance of providing access to clean energy not only for cooking but also for heating in promoting the use of clean fuels for cooking in cold countries.

- **Quality of access to electricity**
  - is important for choice of cooking fuel by households in KG
Barriers and Solutions: continued

- **Energy ladder**
  - Households tend to switch to clean fuel sources as their incomes increase

- **Fuel stacking**
  - Higher income increase probability of choosing natural gas and coal mix in KG (due to heating system)
  - In KAZ, coal-based heating system promotes use of LPG and coal

- **Access to cleaner fuels**
  - Households with access to natural gas and LPG in KG, less likely use solid fuels for cooking
  - Policies promoting gas infrastructure development are needed

- **Gender perspective**
  - Clean fuels are favored by female-headed households
Policy suggestions

- Extension of gas pipeline network
- Subsidize the cost of a gas connection or gas boiler for rural low-income households
- Coal ban can be considered
- Reduce electricity outages