Energy poverty alleviation in the ageing society: Evidence from China

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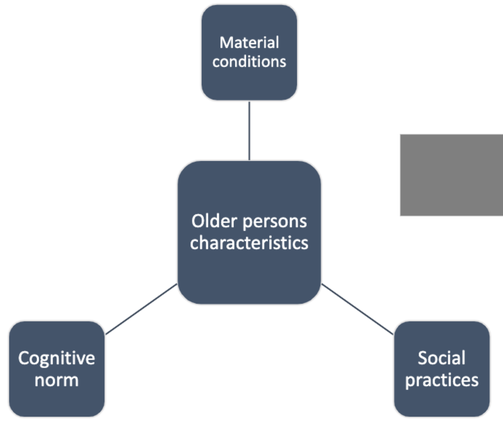
01 Introduction

- Besides income, the **non-monetary and multidimensional poverty** have also been attached great importance to poverty alleviation.
- **Energy poverty** – which occurs when a household experiences inadequate **access** and **unaffordability** of modern energy and basic energy services – has negative impacts on public health, education, economic development, social equity and environment (González-Eguino, 2015; Bouzarovski & Petrova, 2015).
- **Older persons** have been stressed as one of the most vulnerable groups that suffer from energy poverty. However, little attention has been paid to the inherent reasons why a large number of the older persons fall into energy poverty.
- **Research Question: Why are the older persons more likely to struggle with energy poverty ?**
- Under the worldwide population ageing background, the study explores the **drivers** of energy poverty amongst China's elderly populations and develops **policy recommendations** to address this type of poverty

02 Theoretical Framework Setting

Older persons characteristics in energy cultures framework



Based on the energy cultures framework raised by Stephenson et al. (2010)

Energy Poverty Framework

Consumption Energy Poverty

Energy consumption **exceeds** the lifeline threshold.

Unaffordability

- High Consumption
- Low Income

Lifeline Energy Demand

The basic level of energy demand that a household must maintain to subsist life (Barnes et al., 2011).

Lifeline Energy Poverty

Energy consumption **beneath** the lifeline threshold.

(Lin & Wang, 2020)

Inadequate Access

- Traditional energy persistence
- Lack of modern energy adoption
- Lack of basic energy services

03 Methods

- **Semi-structured interviews** with 19 older men & women aged 60~90 through theoretical sampling to construct concepts as they emerged from data collection and categorizations.
- **Participant observation** as an older people service volunteer in 2 local communities to observe older people's daily activities for 7 days in each community.
- **Regional comparison studies** from Wuhan City and Guangzhou City in summer 2021, which represent China's central, and eastern city with different regional development status and different dominant energy carriers: electricity in Guangdong Province; firewood in Hubei Province.
- **Secondary data desk research** from various sources including, but are not limited to, peer-reviewed articles, government data, and media/press releases.

04 Results

			Older people aged 60-79	Older people aged 80+	Older people living alone	Older people living not alone	Older people able to go out	Older people homebound	Older people having no pension	Older people having pension
Cognitive norms	Traditional biomass loyalty		+	+						
	Health concern				+					
	Financial saving								+	
Social practices	Activities	Active in communities	–				–			
	Social relations	Not having people to help learn how to use modern energy			+					
Material condition	Living environment	Having access to traditional biomass nearby					+			
		No elderly-oriented energy facilities			+					
		Housing age				+				
		Small neighborhood area				+				
		Cheap Rental Housing (CRH)				+		+		
	Community environment	Having uncorrupted, efficient and fairness-focused community governance	–							
		Having home care service	–	–	–		–			
	Policy environment	Having beneficial social policy			–	–				

Legends: High Consumption | Traditional energy persistence | Lack of basic energy services

"+": the positive relationship between the factors and energy poverty; "-" : the negative relationship between the factors and energy poverty

05 Sample Interviews

Energy poverty in an older neighborhood X

- **"Isolated island".**
- Just got pipeline natural gas installed
- High housing age – built in 1970s
- Small neighborhood area
- Near lots of decoration companies' stores
- 600-yuan discount for the older person who lives alone.

Energy poverty of the older people who live in CRH and receive Minimum Standard of Living guarantee (dibao)

- Granny Mei is 78 years old, retired at home.
- Her second son has severe diabetes and is severely disabled.
- **Summer is difficult for her to pass.** "I live with my granddaughter with a bunk bed in one room and my son lives in another room because my granddaughter is an adult woman who cannot live with my son in one room any more." She said. Therefore, the partition wall cannot support the weight of the air-conditioner so that only her son's room can have the air-conditioner.

06 Preliminary Conclusions

- The study **extends the energy cultures framework** by integrating older persons' characteristics into the framework to explain the drivers of energy poverty in the ageing urban cities of Wuhan and Guangzhou in China,
- It identified **3 energy poverty types as high consumption, traditional energy persistence and lack of basic energy services, influenced by older persons' characteristics and their cognitive norms, social practices and material conditions.**
- **Regional comparison**

  ➤ Higher government subsidy in Guangzhou; ➤ Firewood usage is found in Wuhan but not in Guangzhou while briquette usage is found in both regions; ➤Older people's energy poverty severity is higher in Wuhan than in Guangzhou
- **Future Plan**

  ➤ Winter season; ➤ rural areas; ➤ northern part of China and more regional comparisons; ➤ policy recommendations

References

Bouzarovski, S., & Petrova, S. (2015). A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary. *Energy Research & Social Science, 10*, 31-40.
González-Eguino, M. (2015). Energy poverty: An overview. *Renewable and Sustainable Energy Reviews, 47*, 377-385.
Lin, B., & Wang, Y. (2020). Does energy poverty really exist in China? From the perspective of residential electricity consumption. *Energy Policy, 143*, 111557.
Stephenson, J., Barton, B., Carrington, G., Gnoth, D., Lawson, R., & Thorsnes, P. (2010). Energy cultures: A framework for understanding energy behaviours. *Energy Policy, 38*(10), 6120-6129.