Examining Energy Poverty in Jordan

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Introduction

- Energy poverty is a complex issue widely studied in the literature, often in conjunction with related concepts such as fuel poverty, energy vulnerability, energy insecurity, and energy justice.
- Definitions of energy poverty vary and primarily depend on the geographical characteristics of the communities where it occurs.

The Global Context of Energy Poverty

- Over 770 million people lack access to basic electricity in 2022, according to the International Energy Agency.
- Energy poverty disproportionately affects developing countries, with sub-Saharan Africa and South Asia facing the most significant challenges.
- Energy poverty hinders development, impacting health, education, economic opportunities, and overall well-being.

What is Energy Poverty?

- In Jordan, it is a situation that arises when a household has poor energy efficiency; is incapable of achieving appropriate energy services which are modern, and sustainable due to economic or social barriers.

Source: Jaber, M., 2024.

Measuring Energy Poverty

- Measuring energy poverty is a challenging task.
- It is a complex and culturally sensitive concept that varies over time and by place and is experienced privately within the home.
- It is shaped by the availability of data and resources to undertake additional empirical research and prevailing policy priorities regarding social groups considered most in need or deserving of support.

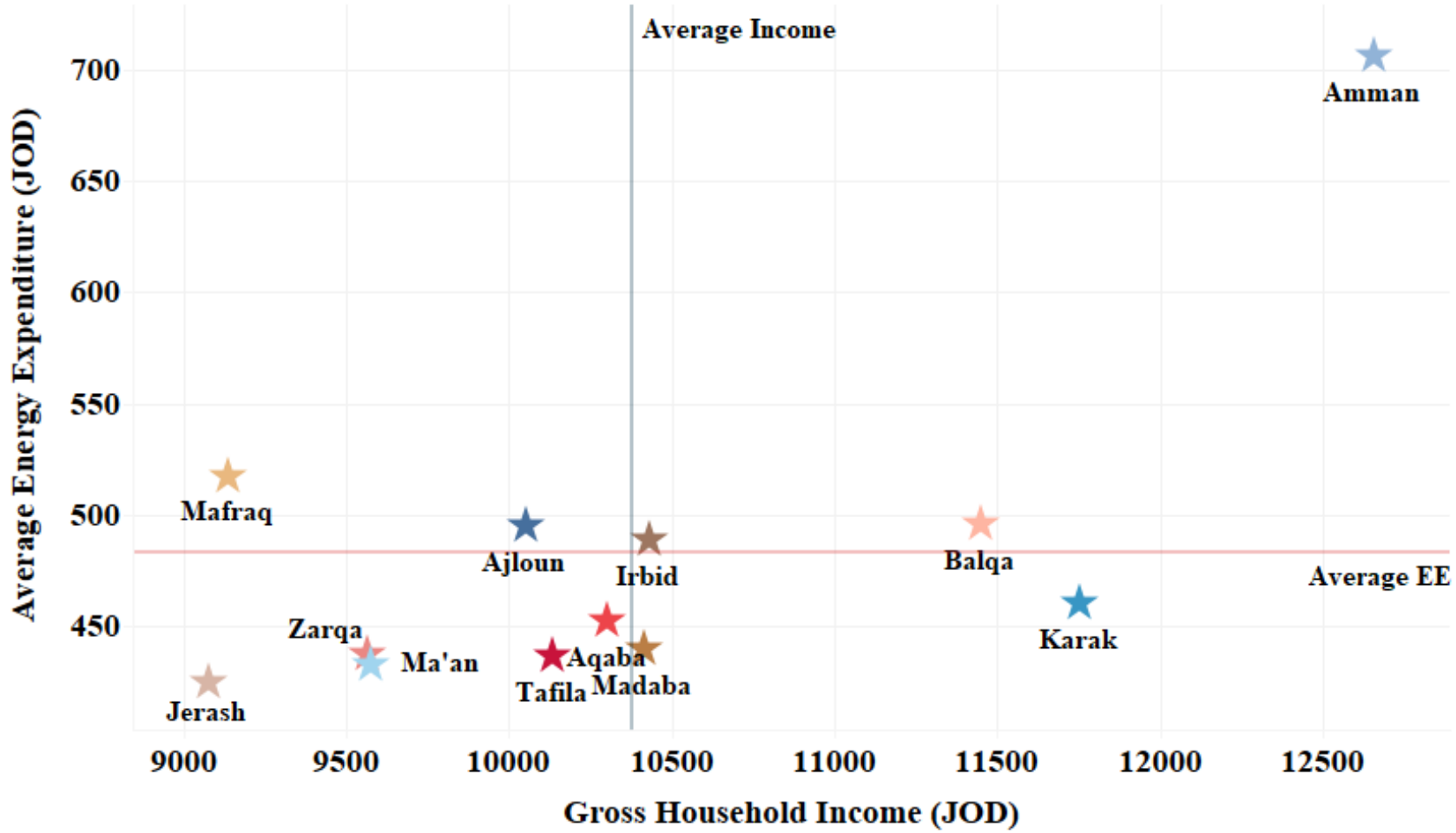
SDG 7 statistics in Jordan for 2019 and 2020

7 AFFORDABLE AND CLEAN ENERGY

7.1.1.	Share of the population with access to electricity	99.9%
7.1.2.	Share of the population with access to clean fuels for cooking	99.9%
7.2.1.	Share of final energy use that comes from renewable sources	8.17%
7.3.1.	Energy intensity (MJ/$)	3.80
7.A.1.	International finance received for clean energy (million $)	73.76
7.B.1.	Renewable electricity-generating capacity per person (W)	186.5

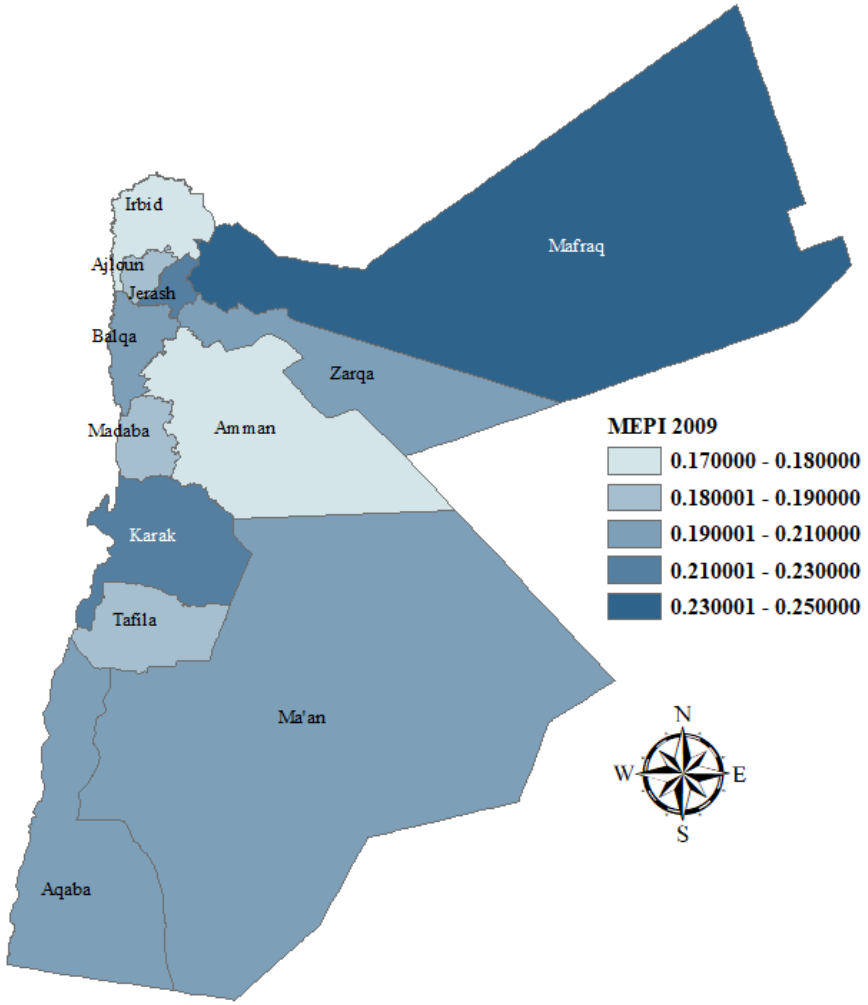
Source: Jaber, M., 2024.

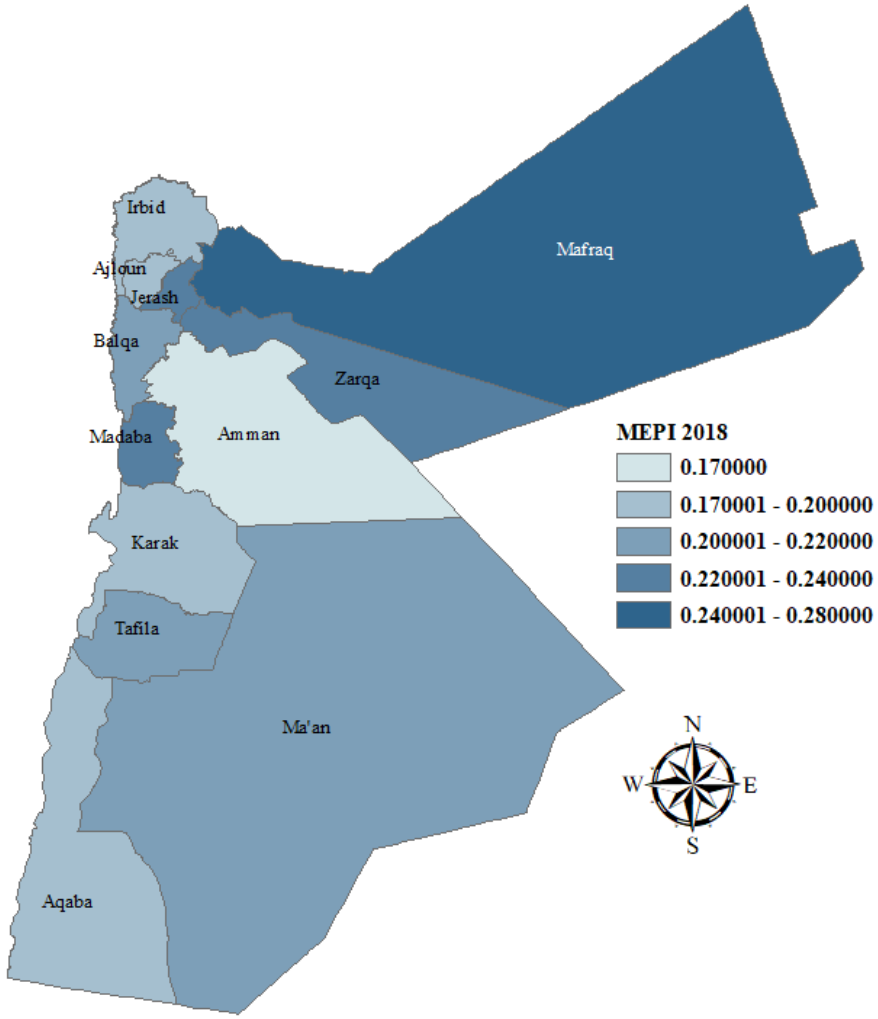
Income vs. energy expenditure (2018)



Source: Jaber, M., 2024.

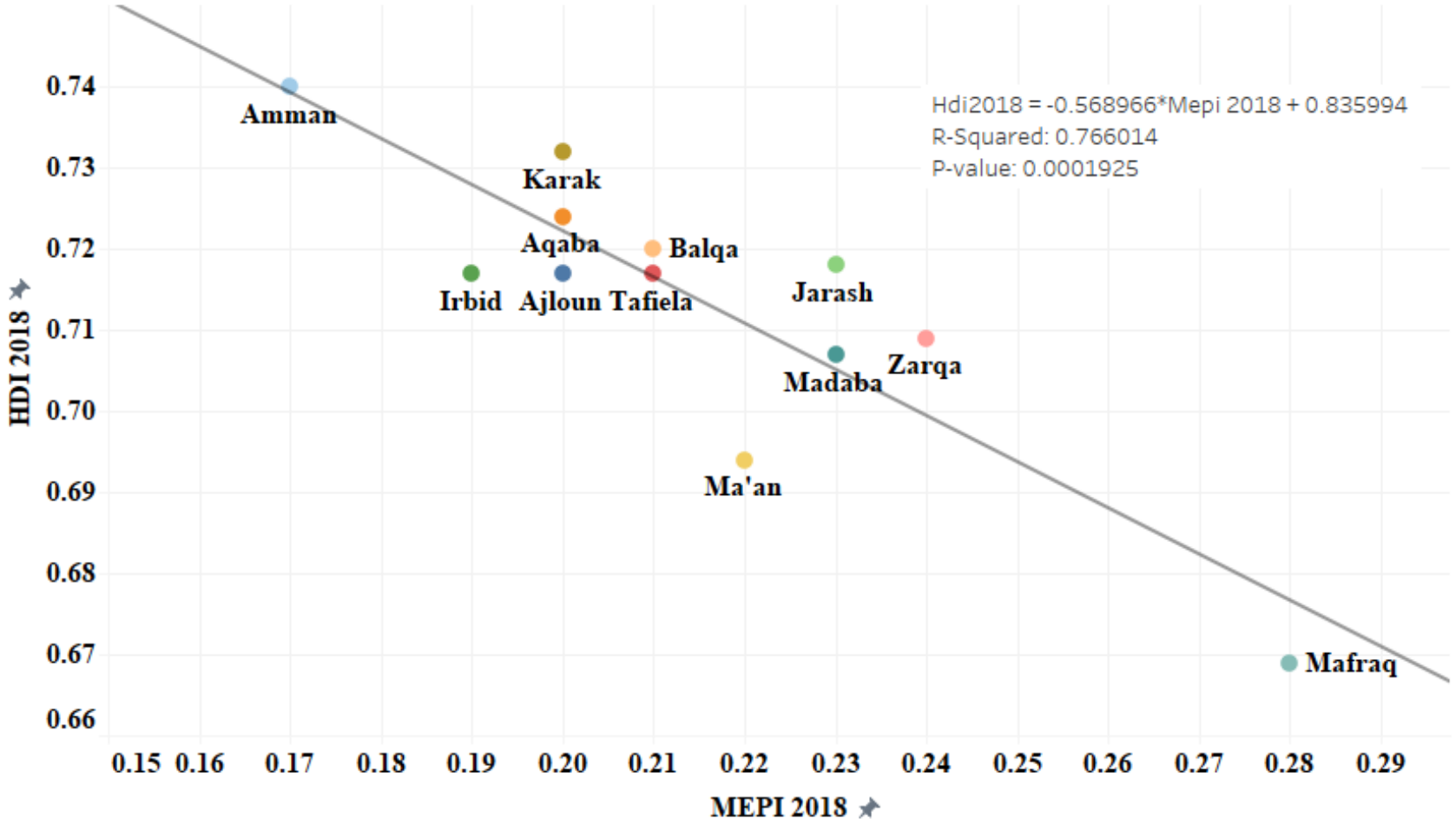
Multidimensional Energy Poverty in Jordan





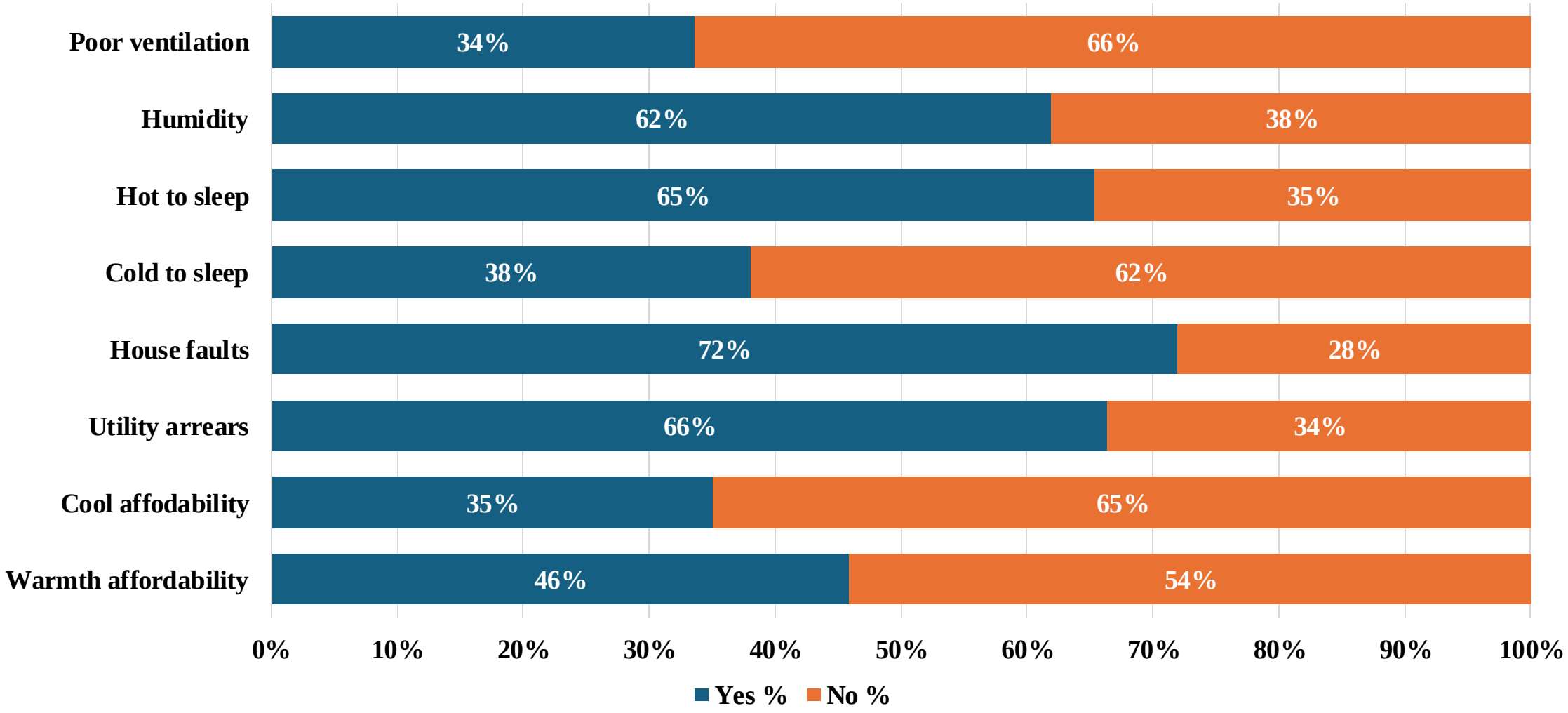
Source: Jaber, M.M., 2023.

Energy poverty and human development in Jordan (2018)



Source: Jaber, M., 2024.

Subjective indicators of energy poverty in Zarqa Governorate



Source: Jaber, M.M., Szép, T., 2024.

Summer vs. winter

	$Inability_W$	$Inability_S$	Arrears	House faults	EPI
Equal Weights (0.25)	0.14	0.16	0.17	0.18	64.27
Summer EPI		0.32	0.17	0.18	**66.97**
Winter EPI	0.27		0.17	0.18	61.58

Source: Jaber, M.M., Szép, T., 2024.

Energy poverty and socio-demographic indicators

- In Jordan, higher income is associated with lower energy poverty, as income increases and energy poverty decreases (based on modeling subjective indicators in Zarqa and MEPI in Jordan).
- Being a female household head increases the potential of being in energy poverty in Jordan (based on modeling the MEPI and demographic data in Jordan).
- Households who own solar panels are less likely to suffer from energy poverty (Zarqa study).
- Rural households are more likely to suffer from arrears on utility bills compared to urban households.

Conclusions and recommendations

- In Jordan, we cannot discuss energy transition without discussing the side effects.
- Transition in Jordan should be gradual and consider sector-wise consumption patterns
- Future energy plans should consider user perspective, population growth, and regional energy consumption differences
- Development projects should target governorates with high energy poverty scores
- Energy poverty should be included in future policies and laws
- Policies should aim to improve energy efficiency and investigate fuel pricing and affordability
- Research results shed light on a neglected issue, showing that households in Jordan face different forms of energy poverty

Thank you for your attention!