



# The Uptake of Clean Energy Technologies – A Case Study of Nairobi City County, Kenya

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## INTRODUCTION

- The global shift towards renewable energy is vital for tackling climate change and reducing energy poverty. However, current strategies are often technocentric, overlooking social, cultural, and political factors that affect energy access.
- In Kenya, where 68% of energy consumption depends on biomass, the adoption of sustainable technologies remains limited, especially in urban areas like Nairobi.
- This study explores the socio-cultural and political barriers to renewable energy adoption in Nairobi City County, emphasising the need for inclusive policies that reflect diverse household realities.

## RESEARCH QUESTION

- What factors influence household adoption of renewable energy technologies in Nairobi City County?
- What are the social, cultural, and political factors shaping the adoption of renewable energy technologies in Nairobi City County?
- What governmental policies favourably impact the adoption of renewable energy technologies in Nairobi City County?

## METHODOLOGY

### Approach:

Mixed-method case study to capture a holistic view of renewable energy uptake in Nairobi.

### Data Collection Methods:

- Primary data from 104 randomly selected households.

### Semi-Structured Interviews:

- 7 respondents purposefully selected for in-depth qualitative insights.
- Institutional Interviews: 2 key institutions interviewed for policy and program perspectives.

### Document Review:

- Analysis of relevant policies, reports, and records to complement field data.

### Data Analysis:

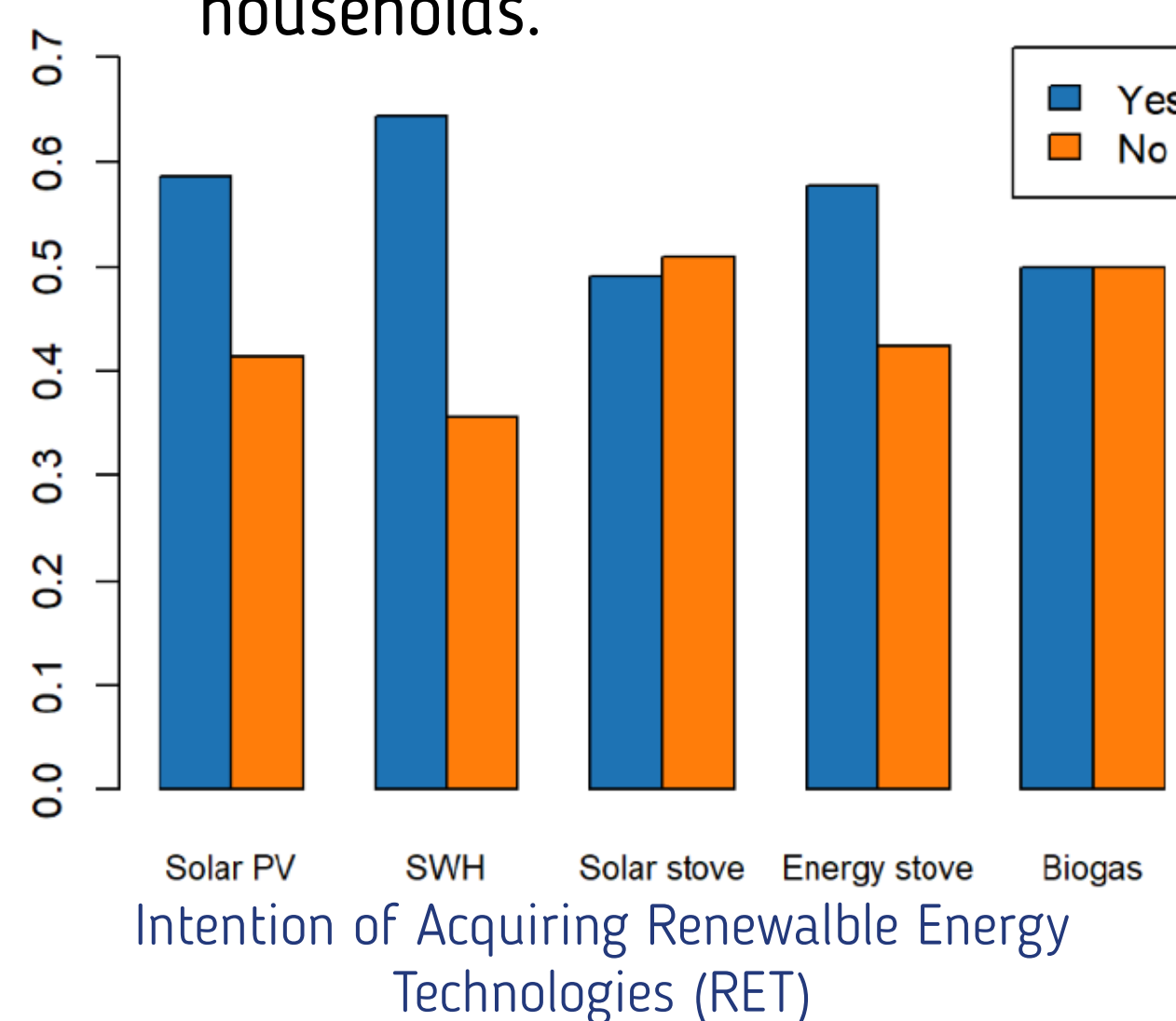
- Quantitative data analysed using R software; qualitative data analysed thematically and integrated for comprehensive findings.

## REFERENCES

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## KEY FINDINGS

- **Social Acceptance Drives Adoption:** High community interest in technologies like solar water heaters (64%) and solar panels (59%) correlates with higher adoption. In contrast, the adoption of solar cookstoves (49%) and biogas (50%) is limited by cultural norms and a lack of policy support.
- **Gender Influences Technology Preference:** Women are more interested in cooking technologies, while men prefer larger household systems like solar PV, water heaters, and biogas
- **Demographics Matter:** Younger people (26–40) are more likely to adopt new clean energy technologies that are modern and convenient. Additionally, higher education levels are correlated with greater awareness and a higher willingness to adopt innovations.
- **Income is a Major Barrier:** The high initial cost of technologies like solar water heaters and biogas is a significant barrier, especially for low-income households.



KOKO Fuel ATM in Nairobi, Kenya

## CONCLUSION

Adopting clean energy in Nairobi is shaped by an interplay of social, cultural, and economic factors. A successful transition requires a holistic approach that integrates:

- **Socio-Cultural Context:** Policies must align with community norms and values to avoid conflict with traditional practices.
- **Private Sector Innovation:** Support for innovative private enterprises can drive social change and increase adoption.
- **Effective Policy & Governance:** Well-communicated and fairly implemented government policies and incentives are essential to bridge the gap between policy goals and household-level adoption

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