Study calls for deeper examination of women's role in energy decisions

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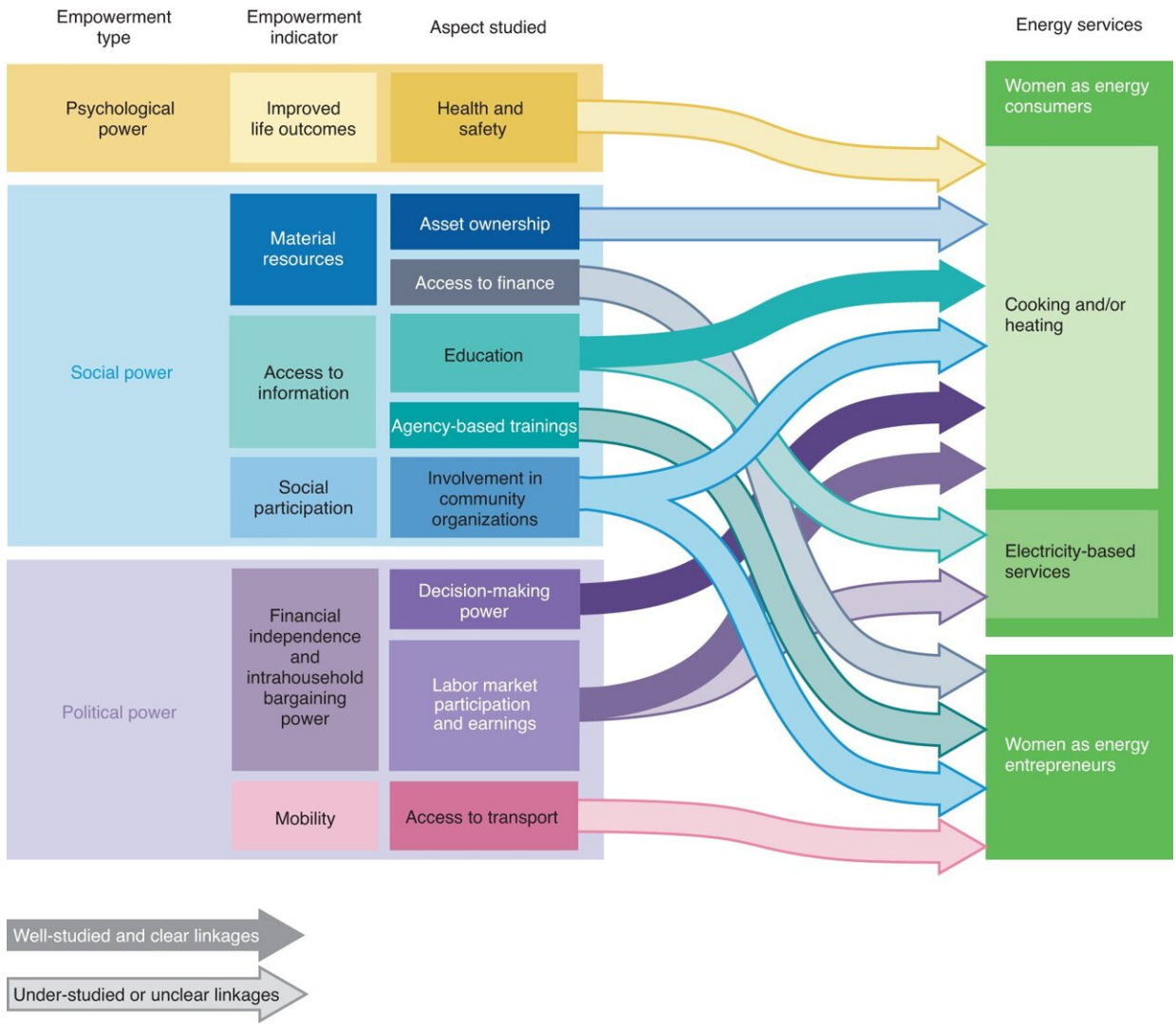

Linkages studied for women's empowerment as a driver of energy adoption. Credit: *Nature Energy* (2023). DOI: 10.1038/s41560-023-01234-7

Most of us woke up this morning, used energy and technology to learn about the weather and the news, got a fresh cup of coffee, and went about our day informed and refreshed.

Imagine if every woman in a poor village in rural Africa or Asia could power on technology for vital information the same way. Yet, they cannot. Lack of energy access disempowers women.

Research demonstrates that empowered people are far more resilient to climate shocks and harms. While energy technology can advance resilience, it can also create new vulnerabilities. Think of disasters that can damage complex energy systems or destroy off-grid solar home systems.

A new review published in *Nature Energy* examining more than 100 research articles concludes that despite the profound importance of and commitment to the UN Sustainable Development Goals for gender equality (SDG5) and universal access to modern energy (SDG7), there are gaps in knowledge about the relationship between gender and energy that could hinder progress toward these goals.

"The world remains far from meeting SDGs on gender equality and universal access to modern energy, and it is clear that these goals are interrelated," said co-author Victoria Plutshack, a senior policy associate at Duke's Nicholas Institute for Energy, Environment & Sustainability.

Duke researcher Ipsita Das said that the large gaps in knowledge about the relationship between gender and energy "limit policymakers' actions, undermine the effectiveness of interventions and increase the risk that current or new interventions could exacerbate inequality."

The researchers found that women's access to finance, education and household bargaining power can increase adoption of more efficient

cooking technologies and cleaner burning fuels. Access to finance, transportation and social networks have also been found to increase women's success as energy entrepreneurs.

The authors recommend further research to address energy and women's empowerment in order to meet global sustainable development goals, including:

- Focusing on richer definitions of energy services access, studying women as energy consumers and energy entrepreneurs, rather than relying on limited measures such as simple access to electricity or improved stoves.
- Creating and using gender equality measures relevant for energy-domain analysis, considering the divergent views on women's empowerment existing in academic and development practitioner communities.
- Researching more about how different energy services affect a broad range of empowerment outcomes, such as quality of life, financial independence, decision-making power and access to information.
- Understanding how power within the household influences the adoption and use of clean energy technology and appliances that provide specific energy services.
- Moving beyond binary definitions of gender and energy access, and considering intersectional approaches that account for class, ethnicity, religion and other social divisions.

"The world remains deeply and unequally divided among those with resources and power and those without," said Duke research scientist PP Krishnapriya. "Some are energy rich, others energy poor. Men still have more power and better pay than women worldwide."

Despite notable progress on electricity access, 733 million people still

lack electricity at home, and about 2.4 billion continue to use polluting fuels and technologies for cooking. Meanwhile, gender inequity persists: women contribute 76% of total hours of unpaid care work, own just 13% of agricultural land, constitute only 24% of national parliaments, and have literacy rates of 83% compared to 90% for men.

This review summarizes the research about linkages for women between empowerment and energy, and the gaps in knowledge. It also considers the myriad ways in which gender empowerment can drive energy adoption, and vice versa. The 2030 Agenda for Sustainable Development, with its 17 Sustainable Development Goals (SDGs), intends to address these and other global challenges.

"Ultimately, it is only through adequately understanding the causal relationships between gender and energy, and how they vary across time, place, and culture, that policymakers and practitioners can design interventions that realize synergies between SDG 5 and SDG 7 and mitigate potential trade-offs," Plutschack said.

More information: Marc Jeuland, Frameworks, methods and evidence connecting modern domestic energy services and gender empowerment, *Nature Energy* (2023). DOI: 10.1038/s41560-023-01234-7. www.nature.com/articles/s41560-023-01234-7

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