TUM School of Management
Chair of Corporate Sustainability

Master/Bachelor Thesis
"Mini-Grid Developers in the Global South: Investigating Outcomes and Impacts"

Background

More than 700 million people around the world lack access to electricity. While global electrification rates have improved over the years, many individuals are still projected to remain without access, with "9 out 10 of them likely to live in rural Sub-Saharan Africa" (World Bank, 2022). Mini-grids have emerged as an option to provide electricity access and accelerate universal energy access. A mini-grid developer is an entrepreneurial venture that builds, owns, and operates mini-grids for energy access in off-grid areas. Mini-grid developers in SSA have been struggling to coin a profitable business model. Productive Use of Energy (PUE) has emerged as a crucial pathway to increase electricity demand at mini-grid sites, eventually leading to the profitability of mini-grid developers. PUE "*involves the application of energy […] to create goods and/or services directly or indirectly for the production of income or value*." (Cabraal et al., 2005). Different mini-grid developers have adopted different approaches to PUE, which we investigate in Kenya and Uganda.

Introductory Readings

- Cabraal, R. A., Barnes, D. F., & Agarwal, S. G. (2005). Productive Uses of Energy for Rural Development. *Annual Review of Environment and Resources*, 30(1), 117-144.
- Terrapon-Pfaff, J., Gröne, M.-C., Dienst, C., & Ortiz, W. (2018). Productive use of energy – Pathway to development? Reviewing the outcomes and impacts of small-scale energy projects in the global south. *Renewable and Sustainable Energy Reviews*, 96, 198-209.
- Zahra, S. A., & Wright, M. (2016). Understanding the social role of entrepreneurship. *Journal of Management Studies*, 53(4), 610-629.

Tasks and Goals

This master thesis is closely related to the current research of the chair, part of the TUM SEED Center, and you will conduct your data collection and analysis in close collaboration with our doctoral students. The thesis will be based on case studies with private mini-grid developers in SSA. You will review the relevant scientific literature on social entrepreneurship and its outcomes, potentially also literature on hybrid organizations. You will collect and analyze data on mini-grid developers and their sites in Kenya or Uganda.

Requirements

- Excellent English skills and interest in entrepreneurship, development, and sustainable energies.
- Independent, reliable, and diligent working style with the ability to work in multi-cultural settings.
- Eagerness to travel to Kenya or Uganda to collect data in challenging rural environments.
- Advanced Seminar *Sustainable Entrepreneurship* with a minimum grade of 2.0 (for Master Thesis)
- Course *Corporate Sustainability* with a minimum grade of 2.0 (for Bachelor Thesis)

Details

- Supervisors: Prof. Dr. Frank-Martin Belz and Mohammed Bendaanane, M.Sc.
- Start: Flexible / As of now.
- Working time: 6 months, with 3-4 weeks of fully-funded research stay in Kenya or Uganda.

Contact

If you are interested in writing your thesis at our chair or have questions about this topic, please contact Mohammed Bendaanane (m.bendaanane@tum.de). To apply, send an email including your CV, and the current transcript of records (as one PDF file). We are looking forward to working together with you!