



Market Segmentation of Rural Electricity Consumers for Mini-Grid Business

Introduction

Research Question:

1. What are the determinants of rural electricity consumption?
2. How can rural electricity consumers be segmented, and served respectively?

Hypothesis:

1. There exists large disparity among rural electricity consumers and they need to be further segmented.
2. 16 factors are studied as electricity consumption predictors.

Methodology:

1. t-test, ANOVA, and regression are used to test the significance level of each factor.
2. Field interviews were conducted individually and in groups



Hypothesized Determinants of Electricity Consumption

Income predictor

- Occupation
- Education
- Gender

Asset ownership

- Acreage of land
- Livestock ownership
- Car ownership
- Motorbike ownership
- House type

Expenditure

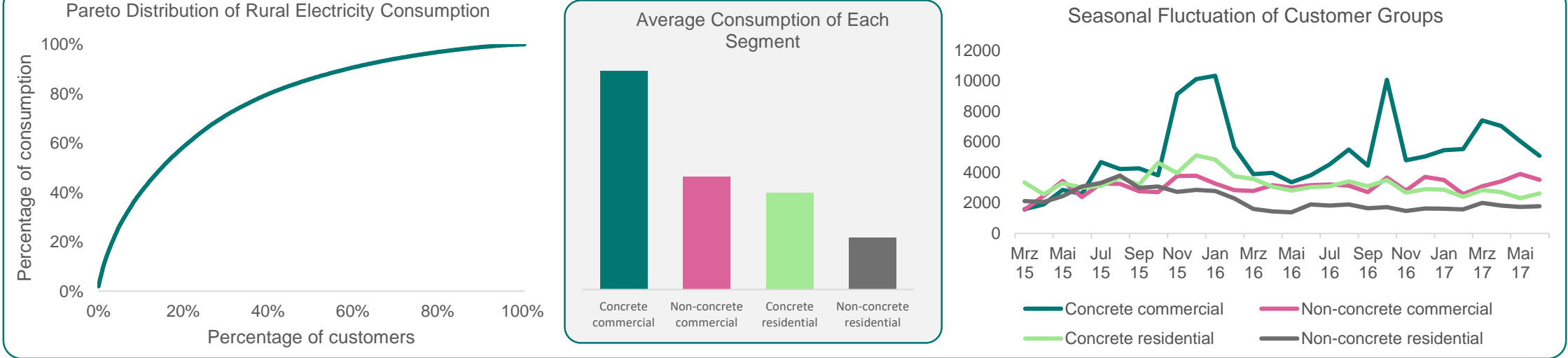
- Mobile phone expenditure
- Transportation expenditure
- Food expenditure
- School fee expenditure

Demand

- Number of household members
- Number of rooms
- Use of other solar energy
- Connection purpose

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Results and Analysis



Value-Added Services

- Commercial consumer**
 - Large variability
 - Large fluctuation
 - High price sensitivity
- Residential consumer**
 - Stable consumption
 - Driven by appliance ownership
 - Limited cash

1. Customised tariff policy
2. Productive use training proven to be effective in stimulating new ventures
3. Push for large investment between Jan - Jun

Main revenue-driving segment

1. Push for appliance sales right after harvest season
2. Provision of financial assistance (e.g. MFI, pay plans)
3. Assistance to agricultural activities is highly appreciated

Largest segment with stable rate of growth

Segmentation in rural market is necessary to guarantee best performance for mini-grid businesses