



Evaluating the role of rural electrification in expanding people's capabilities in India



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ABSTRACT

This paper reinforces the concept that argues energy services should be evaluated from a ‘capability perspective’ rather than a mere utility point of view. It does so by evaluating the role of electricity in improving the quality of people's lives, using the capability approach, looking at the case of rural electrification in India. This study was carried out in two villages in Chittoor district in the state of Andhra Pradesh, using a qualitative approach. The findings suggest that electricity is a critical input to expand people's choices and opportunities in the pursuit of valued lives. However, the findings also indicate that the benefits of electricity are not equally distributed among all the families in the villages studied. The study recommends that rural electrification policies reconsider what defines an electrified village. Furthermore, this paper also suggests that the policy should promote not only access to electricity but also enhance social and political settings that may help people to transform electricity access into valued capabilities.

1. Introduction

Why is electricity important? A plethora of research identifies that it brings numerous benefits, such as high quality house lighting, access to telecommunications, refrigeration of food, and heating and cooling of rooms. This body of research is concerned only with what services electricity can provide or what appliances it can power, which offers very little understanding of how electricity can help people to achieve what they want to do or be. This paper reinforces the concept energy services should be evaluated from a ‘capability perspective’ rather than a mere utility point of view (see Day et al., 2016). It does so by evaluating the role of electricity in improving the quality of people's lives, using the capability approach (CA), developed by Amartya Sen and Martha Nussbaum (Nussbaum, 2000, 2011; Sen, 1992, 2001), looking at the case of rural electrification in India.

Since 2001, there has been an improvement in access to residential electricity in India. The census of India data presented in Table 1 indicates that between 2001 and 2011, India electrified around 58.8 million houses (more than 32 million in rural and 26 million in urban). In addition, Table 1 also shows that over the ten-year period, the percentage of households using electricity for lighting increased from 55.8 to 67.25. However, India's goal to electrify every household remains

unachieved: nearly 81 million households do not have electricity connections in the country, and almost 93 percent of all un-electrified houses reside in rural areas.

Much of India's recent rural electrification progress has been driven by Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), which was launched in 2005, and then subsumed under Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)¹ in 2015 (Ministry of Power, 2016; Palit and Bandyopadhyay, 2016). Under the scheme, a village is eligible for electrification if it has a population of 100 or more. Households below the poverty line qualify for a free electricity connection (Dugoua et al., 2017). Under the current government, a village is considered electrified when at least 10 percent of its households have electricity connections, irrespective of the quality of electrification (Oda and Tsujita, 2011). To reemphasise, if a village of 100 households has one electrified house, the entire village can be called an electrified village. This is a change from the prior Government which considered a village electrified if a village has irrigation pumps connected to electricity. This definition arose from the government's pre-1997 focus on the expansion of agriculture production through electrification, emphasising economic benefits of electricity.

The current draft National Electricity Plan, 2016 envisions universal access to electricity by 2019 (CEA, 2016), which shows India's

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¹ Unofficial translation: RGGVY – Rajiv Gandhi Rural Electrification Scheme and DDUGJY – Deendayal Upadhyaya Village Lighting Scheme.

Table 1
Electrified HHs in 2001 and 2011, India.
Source: Census of India (<http://www.censusindia.gov.in/>)

Description	2001	2011
Total HHs	191,963,935	246,740,228
Total electrified HHs	107,209,054	165,935,192
%	55.8	67.25
Total rural HHs	138,271,559	167,874,291
Total rural electrified HHs	60,180,658	92,845,936
%	43.5	55.31
Total urban HHs	53,692,376	80,888,766
Total urban electrified HHs	47,028,369	73,089,256
%	87.6	92.68

commitment towards achieving the seventh Sustainable Development Goals² (SDGs). The country, however, previously envisaged electrifying all households by 2010, and providing sufficient power to meet the country's demand for electricity by 2012 (Ministry of Power, 2005). India's prior failure to achieve its electrification targets suggests that its current SDG-driven electrification goal is both ambitious and challenging. Dugoua et al. (2017) note that India may fail to universalise electricity access if its electrification policy does not address the needs of poor and minority households. Their study demonstrates that poor households have lower rates of electricity access as compared to wealthier households; hence, they argue that the policy need to concentrate more on electrifying poor households and villages so that these households can make positive changes in their lives.

The objectives of this paper are to: 1) evaluate the role of rural electrification in people's lives; 2) present qualitative evidence on how electricity access has contributed to the enhancement of valued capabilities; and 3) offer recommendations to address gaps in rural electrification policy.

This study was carried out in two villages in Chittoor district in the state of Andhra Pradesh from November 2016 to February 2017. One of the reasons for selecting these villages is that they belong to the 'other backward class' (OBC), which, according to the GoI, is socially, economically and politically disadvantaged (Ministry of Law Justice and Company Affairs, 1993). A case study approach was employed, and data was collected using in-depth interviews and participant observation. All (100 percent) of the houses in the two villages were electrified under the rural electrification scheme of the state, which makes them suitable for the aim of the study.

The remainder of the paper is organised as follows. Section 2 describes the CA and the conceptualisation of energy services underpinned by the theory. Section 3 provides a brief overview of the study area and the methods used in data collection. Section 4 presents the results of the study. Section 5 interprets and discusses the significance of the findings. Section 6 concludes the paper with some policy recommendations.

2. Theoretical framing

The CA is a normative framework, pioneered by Amartya Sen (see Sen, 1992, 2001), and then further expanded by Martha Nussbaum (see Nussbaum, 2000, 2011) and others. A central idea of the CA is that an individual's quality of life should neither be assessed based on how much resources she possesses nor on how much she has consumed. An individual's quality of life should be assessed based on what opportunities are available for her to lead a life she has reason to value. The CA entails two important concepts: a person's 'functionings' and her 'capabilities'. A functioning is a person's beings and doings; for example,

being literate and nourished. The associated capabilities arise from opportunities to realise these functionings. Robeyns (2003) differentiates these two as "an achievement and the freedom to achieve something" (p. 63); the former is a functioning, and the latter is a capability. To elaborate further, if being literate and nourished are two valued functionings, then the opportunity to choose these functionings is a capability. The CA emphasises the maximisation of capabilities and providing a range of opportunities to pursue a valuable life, rather than functionings.

There is an ongoing debate regarding whether there should be a defined set of essential capabilities for universal application. Nussbaum's CA has a specific list of Central Capabilities³ (Nussbaum, 2011). She argues that the list is highly abstract, and it can be translated into specific lists for any context. The CA, as she underscores, provides a platform to compare the quality of life, and having a common capability set is critical for this purpose. Sen, on the other hand, refuses the idea of having a universal set of capabilities, but acknowledges the need to identify basic capabilities that indicate a minimum level of crucial functionings for evaluative purposes (Sen, 2004). What concerns Sen is the process for identifying capabilities, and he firmly argues that the capability set should not be prescribed externally. Rather it should be defined through a democratic process that engages public reasoning and social reality.

The CA, in both Sen and Nussbaum's conceptualization, rejects the utilitarian approach for measuring well-being by focusing on people's happiness, pleasure or satisfaction (Nussbaum, 2011; Sen, 1992). Such an evaluation, according to the CA, only concentrates on aggregate utility without considering inequality in the distribution of utilities. Consider two persons, P, a peasant, and K, a king. P is happy but unhealthy and poorly educated, whereas K is happy, healthy and educated. Utilitarianism counts the happiness of person P the same as the happiness of person K, which can be misleading in the evaluation of well-being because being unhealthy and illiterate can never be equivalent to being healthy and literate (Nussbaum, 2011). The utility-based approach fails to differentiate the profound inequality between the quality of lives of P and K. The CA recognises that these individuals do not have the same level of freedom to pursue a life they have reason to value.

Another shortcoming noted by Nussbaum (2011) regarding the utilitarian approach is its tendency to aggregate people's satisfaction with different elements of their lives into a single metric. If a person is happy with most of the aspects of her life, such as income, job and education, but unhappy in some other important aspects, such as political freedom, her 'overall' well-being, according to the utilitarian approach would be ranked as good. But Nussbaum (2011) argues that this sort of approach is a mistake because a lack of political freedom cannot be justified with having good income; they are just completely different components of a flourishing life. Rather than measuring everything under the single metric of 'satisfaction', the CA emphasises that we should make sure that people have sufficient capabilities in all the important aspects of life.

The CA also declines evaluations of well-being based only on the consumption of commodities or material resources (Robeyns, 2003). Theories concerning resource-based evaluations put emphasis on commodities and overlook the possibility that the conversion of resources into capabilities is affected by people's abilities, such as physical and mental health, social norms and customs (Robeyns, 2003). For example, income as a resource does not translate into the same type of capabilities for both an able-bodied person and a physically challenged person. The CA argues that a focus on capabilities is crucial because it not only concentrates directly on people's freedom but also

² Countries around the world adopted 17 Sustainable Development Goals in 2015; its seventh goal is to ensure universal access to affordable and clean for all by 2030 (For more information, visit <http://www.un.org/sustainabledevelopment/energy/>).

³ Nussbaum's capability list comprises: life; bodily health; bodily integrity; senses, imagination and thought; emotions; practical reason; affiliation; relating to other species; play; and control over one's political and material environment (Nussbaum, 2011, pp. 33–34).

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