

Constraints to the Adoption of Electricity in Rural Areas

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Abstract

Electricity is an essential requirement for all facets of our life. It has even been recognized as a basic human need. It is a critical infrastructure on which the socio-economic development of a country depends. Keeping this in view, a study was conducted in two villages - Achitpur and Chota Mirzapur Khurd - of Jamalpur Block of Mirzapur District to discover the various characteristics of the respondents, and their domestic fuel consumption pattern. 125 female respondents from the two villages were selected randomly. Statistical analyses were done using the Statistical Package for the Social Sciences (SPSS programme). Descriptive statistics including mean, standard deviation and percentage frequency were used to describe background characteristics of the study group.

Introduction

Electricity is the base of rural development. It provides the best means of increasing productivity within the framework of the socio-economic structure and attracts income-generating activities like small scale and agro-industries, provision of safe drinking water and facilitation of employment generation and

better amenities to the rural masses (Rao 2002). It is a matter of shame for all of us that even 64 years after independence, 63% of rural households in India do not have electricity and use kerosene for lighting. Even for those rural areas which are electrified, there is a tremendous shortage of power supply. It is not uncommon for these areas to have 10-15 hours of blackouts and brownouts every day. Life thus moves at a very slow and dull pace (Singh 2007).

The present study was done undertaken to discover the socio-economic characteristics of the respondents, the relationship of respondents between socio-economic variables and the different constraints faced by them in the adoption of electricity.

Research Methodology: 125 rural (16% of total households) were selected randomly from the two villages Achitpur and Chota Mirzapur Khurd of Jamalpur Block of Mirzapur District of Uttar Pradesh.

Result and Discussion:

Table 1 Distribution of the respondents according to their socio-economic characteristics.

Socio-Economic Characteristics	Frequency	Percentage (%)
Age Group (Years)		
≤ 35	57	45.6
36-45	36	28.8
> 45	32	25.6
Average age ± SD =38.90 ±11.97		
Caste		
SC/ST	46	37.0
OBC	69	55.0
Others	10	8.0
Literacy		

Illiterate	83	66.4
Literate	42	33.6
Total Family Annual Income (Rs.)		
≤ 20,000	66	52.8
20,000-40,000	39	31.2
> 40,000	20	16.0
Average family annual income ± SD = 28,604.00 ± 24,414.10 (Rs. 9,600 to 1,10,000)		
Family Type		
Nuclear	81	64.8
Joint	44	35.2

It is evident from Table 1 that 45.6% of respondents were in the younger age group whereas 28.8% and 25.6% were of middle age and above middle age respectively. It was noticed that economic activities were undertaken by a majority of young age (31.%) rural women. The average age and standard deviation of the respondents was 38.90 years and 11.97 years respectively.

Most respondents (55%) belonged to the OBC (Other Backward Caste) category followed by 37% respondents from SC/ST (Schedule Caste and Schedule Tribe) and the remaining 8% from castes of the "Others" category. It can be inferred from the above findings that in our social system, the OBC are dominating.

The majority of respondents (66.4%) were illiterate. The respondents who were educated up to primary, middle, high school and intermediate were 16%, 11.2%, 2.4% and 1.6% respectively. Higher educated respondents such as graduates and post graduates were 1.6% and 0.8% respectively.

Since only 33.6% respondents were literate, it may be concluded that the female literacy rate in the study area is very low. Similar comments were also reported by Prasad et al. (2009).

More than half (52.8%) of respondents had a family annual income below Rs. 20,000 followed by 31.2% with a family annual income of Rs. 20,000-40,000 and 16% with more than Rs. 40,000. The average family annual income and standard deviation of the respondent's household was Rs. 28,604.00 and Rs. 24,414.10 respectively. The trend shows that the economic status of the people was very poor. Parikh and Laxmi (2000) also mentioned the poor economic condition of rural people in their study done in Tamil Nadu. The basic reason for poverty in the present study area was the large population growth.

Most respondents (64.3%) belonged to nuclear families while 35.2 % were from joint families. It shows that the family structure trends to move from joint to nuclear families in rural areas too.

Table 2: Relationship of respondents between socio-economic variables and different constraints faced by them in the adoption of electricity (N=125)

Sl. No.	Socio-Economic Variables	Not Always Available	Expensive	Both	Total
		Frequency of Respondents	Frequency of Respondents	Frequency of Respondents	Frequency of Respondents
A	Age (Years)				
1.	≤ 35	5 (16.7)	10 (33.3)	15 (50.0)	30 (100.0)
2.	35-45	3 (15.8)	1 (5.3)	15 (78.9)	19 (100.0)
3.	> 45	3(18.8)	6 (37.5)	7 (43.8)	16 (100.0)
Total		11 (16.9)	17 (26.2)	37 (56.9)	65 (100.0)

$\chi^2=6.96, df=4, P>0.05$					
B	Caste				
1.	SC/ST	8 (22.2)	12 (33.3)	16 (44.4)	36 (100.0)
2.	OBC	3 (10.3)	5 (17.2)	21 (72.4)	29 (100.0)
3.	Others	-	-	-	-
$\chi^2=5.14, df=2, P>0.05$					
C	Literacy				
1.	Illiterate	9 (15.5)	16 (27.6)	33 (56.9)	58 (100.0)
2.	Literate	2(28.6)	1 (14.3)	4 (57.1)	7 (100.0)
$\chi^2=1.05, df=2, P>0.05$					
D	Family Annual Income (Rs.)				
1.	≤ 20,000	8 (16.0)	15 (30.0)	27 (54.0)	50 (100.0)
2.	20,000-40,000	3 (21.4)	2 (14.3)	9 (64.3)	14 (100.0)
3.	>40,000	-	-	1 (100.0)	1 (100.0)
$\chi^2= 2.10, df=2, P>0.05$					
E	Family Type				
1.	Nuclear	9 (18.8)	12 (25.0)	27 (56.2)	48 (100.0)
2.	Joint	2 (11.8)	5 (29.4)	10 (58.8)	17 (100.0)
$\chi^2=0.47, df=2, P>0.05$					

Figure in parenthesis indicate percentages

Previously it was stated that 60 (48%) of respondents were using the electricity facilities while 65 (52%) had no electricity connections in their homes for lighting. Respondents were asked about the constraints on them that stopped them using electricity and then the observations were analyzed according to the socio-economic and demographic characteristics given in the above table. The respondents who reported the constraints 'non-availability' and 'very expensive' were mainly from the upper middle age group in comparison to the lower and middle age group while both constraints were reported by the maximum middle age group of females. The difference in distribution of various types of constraints among various age groups was not found to be statistically significant.

16.9% and 26.2% of respondents reported for "not always available" and "very expensive" whereas both constraints combined together were reported by more than half (57.9%) respondents respectively. The castewise analysis shows that all the respondents of other types of caste had electricity for lighting in their home. Of the respondents who reported non-availability and very

expensive, most were SC/ST caste rather than OBC whereas a reverse trend was observed in the case of both constraints combined together but the difference is not statistically significant.

Literacy wise distribution shows that 28.6% and 14.3% of literate respondents stated that electricity is not always available and very expensive whereas these statements were given by 15.5% and 27.6% illiterate respondents respectively. The differences between literate and illiterate respondents about various constraints were not found to be statistically significant. It shows that there is no association between literacy status and reasons for not using electricity. All the respondents of the higher income group had electricity facilities except one while 21.4%, 14.3% and 64.3% of the middle income group of respondents and 16%, 30% and 24% respondents of the lower economic group reported respectively non availability, very expensive and combined both types of constraints but this difference is not significant at all.

The respondents from joint families who projected the constraints 'not always

available', 'very expensive' and 'both together' were 11.8%, 29.4% and 58.8% whereas 18.8%, 25% and 56.2% of respondents of nuclear families reported the same constraints respectively. It was noticed that there is a difference in the statements of respondents about different constraints between nuclear and joint families but statistically, it is not significant.

Conclusion:

About 52% of rural households in the study area, do not have electricity, and are without the basic amenities. There is an immediate need for new thinking, fresh management approaches and legislative/regulatory changes to restore operational efficiency and financial viability. There is also an urgent need of development programmes of alternative power sources to balance power requirements and conservation practices. One of the possible ways to do this is the increased use of land-based renewable energy resource like biomass. This will help rural development and create tremendous wealth in these areas.

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Change Number: 11

Last Saved On: 01/01/2014 13:24:00

Last Saved By: Janet Wilson

Total Editing Time: 172 Minutes

Last Printed On: 01/01/2014 13:24:00

As of Last Complete Printing

Number of Pages: 4

Number of Words: 1,544 (approx.)

Number of Characters: 8,805 (approx.)