

ECONOMICS OF ENERGY CONSERVATION: ADAPTION OF COMPACT FLUORESCENT LAMPS IN HOUSEHOLD SECTOR

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Energy efficiency improvement has been widely considered as a major option for developing countries in achieving the goal of environmentally sound and sustainable energy consumption. This is because there is rapid increase in energy demand and electricity consumption, particularly in developing countries (DCs). Furthermore, energy consumption in most DCs is relatively less efficient. A large number of efficient electrical technologies (EETs) are reported to be cost effective at current appliance and electricity prices (Shama 1983; Shrestha, et al. 1998). However, such EETs are not widely used because of various impediments to their adoption. Only a few empirical studies exist on barriers to EETs in the case of DCs. (e.g. Parikh et al, 1996, Reddy and Shrestha 1998, Shrestha and Karmacharya 1998). However most of these studies are limited to the ranking of the barriers without any statistical analyses.

In this study a statistical analysis is carried out to test whether the adoption of Compact Fluorescent Lamps (CFLs) in the case of the residential sector of Sri Lanka is related to various factors that are hypothesized to be influential.

This study is based on primary data, for the collection of which a questionnaire survey was carried out among 200 households, which were randomly selected from the Kandy Municipal area.

A Multiple Regression model was developed to evaluate the factors affecting the adoption of CFLs. Total expenditure on CFLs was used as the dependent variable with eight independent variables, (i.e total monthly income of household, age of decision-maker, education level of decision-maker, ownership of the house, size of the house, family size, attitudes towards the adoption of electricity conservation method and technical knowledge of decision-maker). SHAZAME statistical program was used to analyze the data.

The findings of the present study confirmed the results of the previous studies of adoption of energy-efficient technologies in other countries. All the independent variables are significant. Thus, one can arrive at the conclusion that all these variables affect the adoption of CFLs.

This analysis shows that, to change the attitude toward the adoption of energy conservation methods, there is need of more emphasis on extensive education among electricity consumers of Sri Lanka.