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Determinants of Household Consumers' Intention to use Alternative Energy Systems for Power Generation in Pakistan

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Energy has played a crucial role in formation and development of modern economies. It is central to practically all aspects of human welfare, including access to basic necessities, agriculture, health care, transportation, industry, employment generation and sustainable development. The progress, this world has made, can be attributed to the unrelenting and secured supplies of energy. Pakistan, an underdeveloped and populous country, require a sustained and uninterrupted source of energy to fulfil its domestic electricity requirements and meet the developmental targets. Conversely, the country is unable to match its rising energy needs and power shortages for the industry and household have become a norm.

The power failures and absence of electricity from the grid, for hours, have forced consumers to opt for alternative energy systems for power generation. To this end, the country has seen a significant rise in the usage of self-generation systems such as generators, UPS, solar panels and other equipment that can provide electricity when the power is cut-out from the main grid. The objective of this study is to explore the factors influencing household consumers' intention to choose alternatives for power generation. In order to understand the buying behaviors and choices made, we have adopted the diffusion of innovation model and theory of planned behavior. Findings are based on the primary data collected from 250 households through survey questionnaires. The proposed hypotheses are tested and analyzed using Pearson correlation and linear regression. The results obtained from the data revealed a significant positive influence of the factors such as awareness, relative advantage, perceived benefit, attitude, norms and social influence, whereas factors such as cost, perceived risks and perceived behavioral control to have negative effects on the purchase decisions.

Finding of this study will help energy companies, distributors, investors and other stakeholders identify the key factors that encourage/discourage consumers to opt for alternative energy system. The study will provide a good understanding and assist policy makers in devising strategies that can encourage the use of sustainable energy technologies for household power generation.

Keywords: consumers, alternative energy generation, intention to use, renewable energy, Pakistan