
The Role of Knowledge, Policies, and Behaviour in Understanding Consumer Preferences for Energy Efficient Products

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INTRODUCTION:

The worldwide oil calamity in the 1970s and subsequent environmental issues put forward the energy conservation program as a main concern globally. Hereafter, human impact on the environment needs instant attention, and energy conservation practices put forward a time and cost effective answer to lower air pollution and CO₂ (International Energy Agency, 2016). Residential energy consumption contributes to 30 % of the global energy consumption and the same will be increased with the urbanization growth, population, and lifestyle change. The more and more need for electricity is placing further stress on upstream scarce energy resources. According to global studies, dwellers in developing countries are now living a comfortable lifestyle, by utilizing a new electrical domestic device such as room heaters, refrigerators, and air-conditioners, which is also a key driver in the increase in energy consumption in the residential sector (Norzalina et al., 2014).

The recent, Paris Climate Conference (COP21) agreement set out an action plan to avoid the increase in global average temperature to below 2 °C. To attain this objective, energy consumption and greenhouse gas emissions must be minimized globally (Maria et al., 2017). Although consumer awareness about the environmental concerns and need for environment-friendly practices has started. Yet even with adequate knowledge of energy-saving methodology and a desire to do so, many consumers still fail to take obvious steps towards energy efficiency and conservation (Elisha et al., 2015). The first purpose of this term paper is to examine existing empirical research and identification of the consumer preference and barrier for energy-efficient and energy conservation products in the context of knowledge, policies, and behavior. The second purpose is to develop a hypothesis to

SELECTION OF ARTICLES:

Articles were selected through an online search of keywords in the abstract, heading, and keyword segment of the journal database. These words were used: energy efficiency, energy label, energy conservation, energy saving, green purchasing behavior, and green consumption. The period of 2010-20 has been considered for the journal search.

LITERATURE REVIEW:

Traditional economic theory suggests that human decision-making and behavior are based on purely rational choice while a growing body of scientific research exhibits that the rational decision-making sense are rare in people and they are largely driven by cognitive biases, heuristic and other predictably irrational tendencies (Elish et al., 2015). One, an important requirement for rational decision-making in the sphere of electric products is energy literacy, which can be defined as an individual's ability to make informed and deliberate choices in the domain of domestic energy consumption (Julia et al., 2019). There is also empirical evidence of the impact of energy consumption practices in babyhood and early adulthood on later energy consumption habits. It is also presented that growing up in a household with more financial resources has a propensity to consume more energy for hot water and heating later in life (Ander Rhiger, 2018).

Most of the studies used the theoretical approach proposed by the theory of reasoned action (TRA) and theory of planned behavior (TPB) to recognize and predict behaviors and some of the studies determined consumer green purchase behavior by extending the theory of planned behavior (Rambalak and Govind, 2017; Shih-chih and Chung-wen, 2016; Jana et al., 2020; Deepak and Rishi, 2018). Additionally, social cognitive theory, states that behavior is influenced by environmental factors and personality and determined by personal factors (demographics, knowledge, and attitude) and environmental factors (Muhammad et al., 2020).

Energy labels (or Star rating) provide thorough and trustworthy (external certification) details to reduce asymmetric information and ambiguity in expected returns on energy savings, while likely lowering the cognitive cost of the decision-making process upon the purchase of energy-consuming products. The major aims of the energy label programs are to lower energy consumption and enhance the energy efficiency, but studies state strong confirmation of the latter (Cristian et al, 2020). The Big Five personality model (or OCEAN) advocates that these factors (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) capturing an individual's personality, and the foremost personality trait showing a positive relationship with people acceptance of the biogas plant are openness to experience and locus of control. Individuals with a higher level of openness to new experiences trait are more likely to accept new technology (Pan and Marcella, 2017).

ROLE OF BEHAVIOUR:

Energy-saving behavior is defined as individual attempts to reduce overall energy use. Amongst the four determinants of energy-saving behavior, the degree of concern exerts the strongest influence followed by a sense of responsibility, knowledge about energy issues, and perceived energy-saving control (Myat and Dan, 2020). The suggested instrument for the change in energy-saving behavior includes modifying market costs, economic incentives, and other non-monetary behavioral

interventions or ‘nudges’. The nudges and incentives are popular in electricity demand management (Anant Sudarshan, 2017). Due to the intricacy of energy behavior, they are usually studied from a variety of areas such as sociology, psychology, and engineering with both quantitative and qualitative approaches.

A major barrier to green consumption behavior is an economic constraint, choice of product, availability of a product, quality issue, lack of information, and cynicism while the major drivers are emotional affinity towards nature, personal circumstances, values, ethical belief and personal norms (Lay et al., 2016) and the impact of energy star labelling on the appliance is positive but consumers give price attribute a high importance, which further concluded that rebate programme on the energy efficient appliance will have positive impact on consumer price decision (Sung-Yoon et al., 2019). Energy saving revenue from the energy efficient residence¹ and incremental cost generation for the same is the key factors for the purchase decision of buying an energy efficient home or not (Jun-Jun et al., 2019).

Energy and investment literacy has a positive and significant effect on the option of investment calculation as the decision approach in energy efficient products. Furthermore, displaying annual electricity expenditure of appliances in approximate annual electricity charges (monetary value) rather than in energy consumption (kwh/units) enhances the chance that consumers carry out an investment analysis and recognize the highest (costwise) energy-efficient piece of equipment (Julia et al., 2019). The direct reduction in the electricity bill of consumers might be regarded as prime motivation for the consumer for the purchase of energy-efficient equipment, but there are other benefits also such as poverty alleviation and subsequently increase of disposal income (Singh et al., 2018).

Research exhibits that residential savings and investments are considerably affected by decision-making power between male and female members. And females exhibit a higher electricity-saving attitude and their involvement in the purchase decision-making process has supplemented efficiently in the electricity-saving of residences (Shrestha et al., 2020).

Variables:

Consumer green purchasing behaviour, energy consumption, green purchase intention and behaviour, behaviour intentions, intention to buy green products, behaviour intentions to use green products, green consumerism were found to be major dependent variables.

Environmental awareness, Environmental knowledge, Consumer attitude, Social norm, Personal norm, degree of concern, Perceived consumer effectiveness, environmental concern, incremental cost, energy-saving revenue, green altruism were found to be major independent variables.

Different moderators' variable has been used to assess the impact on the other variables.

ROLE OF KNOWLEDGE:

The majority of researchers advocate that environmental-related knowledge may have a positive effect on consumer green purchase intention and green purchase behavior. However, results on the significance of knowledge are incoherent, and an increase in environmental-related knowledge does not necessarily lead to environmentally friendly behavior. One can argue that an elementary understanding of environmental-related issues might not be sufficient to encourage sustainable practices. Moreover, the extant methods of disseminating the information related to the benefits of usage of environmentally friendly products have shown an inability to pass the message to consumers. The role of the issue of understanding the perplex energy label related information cannot be neglected (Joshi and Rahman, 2015).

Role of Policies:

Investment in terms of energy efficiency improvement has several long-lasting, circuitous effects such as economic growth and new employment opportunity. Therefore, energy efficiency improvement policies can have impacts on another dimension also, such as energy conservation, new technology growth, and prices. Strong political vision and commitment for the implementation of energy efficiency policies with a top-down approach and involvement of public institutions, business sector, civil society organizations, and media influence the consumer attitude towards energy efficiency (Vesna and Slavica, 2013). Citizen preference for future energy-related policies at the national level could include these major significant outcomes as a) environment quality, b) decrease in electricity prices, c) employment creation, d) Greenhouse gas emissions (Mark and David, 2018). Bush et al., (2020) proved that favorable regulations and external financial enticements are not always enough to enact major transformations. Both, local and national government enterprises should become more involved in various awareness-raising programs through different public and private educational initiatives.

CONCLUSION:

It is important to understand that any type of green endorsement in marketing exercise may enhance consumers' green purchasing intentions in the short run only. But these endorsements tend to decrease consumers' real importance for the environment, which can subsequently reduce their green purchasing intention. Therefore, organizations must accept requisite methods to create consumers'

attention and emotions for the environment. More specifically, the purpose should be to generate consumer's self-interest in green products instead of enticing them with another external reimbursement (F Ali et al., 2020).

Foremost environmental issues and reduction in natural resources compelled individuals to focus on environmentally friendly consumption practices. Production of environment-friendly products has been increased and consumers are keen on the utilization of these products. Numbers of consumers are willing to spend more money on environmentally friendly products. Though, several research studies report that consumer favourable attitude for these products do not convert into real buying activity and the majority of the consumers do not buy these green products.

Most of the study's concentration was on the young generation and urban dwellers, further investigation of the rural area is also required to get conclusive results. The majority of the studies reported the self-reported behavioural measures, hardly any study was found based on actual buyer behaviour. Future research can be conducted with the consideration of the actual purchase behaviour of the consumer.

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