

Consumers Purchase behaviour Towards Energy Efficient Appliances: An Empirical Study

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ABSTRACT

Nowadays people are very much curious to purchase household appliances. As opportunity increases to earn income, where individual economic condition is improved which induces them to purchase household appliances. Not only because of the income generation its also because of the necessity to buy those appliances to run day today life easily .Among these household appliances energy efficient appliances are designed to save energy in human life. In this research, the researcher focusses on the technology acceptance attitude of consumers to purchase energy efficient appliances with the combined framework of the theory of planned behaviour. The research was empirically tested using convenience sampling from 50 respondents based on mainly the energy efficient appliances like Air conditioners, flat screen televisions, refrigerators, Washing machines and water heaters. This research tried to find out the purchase intentions based on Technology Acceptance Model and Theory of Planned Behaviour and it found that Using energy-efficient appliances is a social trend under subjective norms, it also indicates that there is no significant relationship between the gender and Purchase intentions like perceived ease to use, perceived usefulness, consumers' attitudes. Subjective norms, perceived behavioural control, in relation to Technology Acceptance Model and Theory of planned behaviour. The study also indicates how the energy efficient household appliances are user friendly and their reasoned action in purchasing those appliances.

Key words : Energy efficient appliances, Technology Acceptance Model, Theory of planned behaviour, Purchase intentions.

1. INTRODUCTION

Latest innovations in technology has improved the standard of living of people all over the world .Its not only because of technology also because of disposable increased income of people and the fast urbanization across the world. India is the fifth-largest economy by nominal GDP in the world and the third-largest by purchasing power parity (PPP). From the 21st century, average GDP growth has been from 6% to 7% in the year end, and from 2014 to 2018, India was the fastest growing majo r economy in the world, passing China. The steady economic growth will continue in consumers higher disposable income which in turn upgrade their lifestyles positively. Indian middle-class people with growing disposable incomes have been the main reason in growing

demand for various consumer household appliances. Among these household appliances energy efficient appliances are designed to save energy in human life and in appliances.

2. LITERATURE REVIEW

Hua, L., & Wang, S. (2019). Antecedents of Consumers' Intention to Purchase Energy-Efficient Appliances: An Empirical Study Based on the Technology Acceptance Model and Theory of Planned Behavior. *Sustainability*, 11(10), 2994. This research is mainly based on the factors that influence the purchasing of energy-efficient appliances with help of Technology Acceptance Model and Theory of Planned Behavior. The measurement scale for the construction of variables are derived from the TAM and TPB, They are perceived ease of use, perceived usefulness, consumers' attitudes, subjective norms, perceived behavioral control, and attitude significantly affect consumers' purchasing intention. The results identified that perceived ease of use and perceived usefulness are the factors influence consumers' attitude toward purchasing. Then subjective norms and perceived behavioral control had a positive effect on purchase intention.

Tan, C. S., Ooi, H. Y., & Goh, Y. N. (2017). A moral extension of the theory of planned behavior to predict consumers' purchase intention for energy-efficient household appliances in Malaysia. *Energy Policy*, 107, 459-471. This article is surveyed from 210 customers from Malaysia based on theory of planned behaviour to predict purchase intention in relation to environmental attitude of respondents.

Li, G., Li, W., Jin, Z., & Wang, Z. (2019). Influence of Environmental Concern and Knowledge on Households' Willingness to Purchase Energy-Efficient Appliances: A Case Study in Shanxi, China. *Sustainability*, 11(4), 1073. This research article tried to extend the theory of planned behaviour in relation to environment. Whereas environmental knowledge and environmental concern takes place in creating attitude to purchase energy efficient appliances with supporting factors subjective norms and perceived behavioural control. Researcher find that environmental attitude and perceived behavioural control are significantly positively correlated in relation to willingness to purchase energy efficient appliances whereas subjective norms don't have any positive influence in purchasing energy efficient appliances.

3. RESEARCH PROBLEM

As population increase, needs increase, as need increase people buy things for making their life easy. In that part, household appliances take an important role in day today human life. As people started to use household appliances increasingly where it consumes energy increasingly. To reduce this current serious problem energy efficient appliances are introduced world wide. Using energy efficient appliances helps people to reduce their electricity bill and government always insists people that energy saving is equivalent to energy production whereas each and every individual have the responsibility to save energy for future generations and to safeguard from power cuts. So there is need arise to study the people intentions to purchase energy efficient appliances towards TAM And TPB.

RESEARCH GAP

Government always insists people to save energy to reduce power cut problems. A common Household appliance consumes more energy than the energy labeled. So the manufacturers of household appliances have started to produce energy efficient appliances with automatic On/Off to reduce use of energy. Many people are not replacing their appliances into energy efficient ones. The research gap arises here to examine the purchase intentions of customers with regard to energy efficient appliances.

TECHNOLOGY ACCEPTANCE MODEL

The Technology Acceptance Model(TAM) is a well-known theory given by Davis. Davis's research tells that the external variables that determine attitudes toward using technology. The research explained at perceived usefulness and perceived easy to use, and these two belief factors determine the user's attitude toward technology.

PERCEIVED EASY TO USE

Perceived easy to use means that the energy efficient appliance is believed to be simple and convenient to use for consumers. New technology is adopted to energy-efficient appliances, which differentiates from common household appliances. In other words, whether an item is easy to operate will affect consumers' intention to own it.

PERCEIVED USEFULNESS

Perceived usefulness is defined as a belief that energy efficient appliances help to achieve great performance. It is the user's awareness of the improved work performance that technology can bring. Here, "usefulness" means that a product could help simplify work and increase accuracy.

ATTITUDE

Attitude means an individual's positive or negative view of a particular behaviour. It is concerned with judging the possible consequences of performing the behavior and will lead to different decisions based on different evaluations of the behavior. It reflects the positive or negative evaluation of one's perception of using the technology.

THEORY OF PLANNED BEHAVIOR

The theory of planned behavior was proposed by Fishbein and Ajzen. It was derived from the theory of reasoned action. Ajzen and Fishbein explained that behavioral attitude and subjective norms were the most important factors of behavioral intention.

SUBJECTIVE NORMS

Subjective norm (SN) referred to people’s perception of the external stress over whether to perform a particular behavior. The stress mostly comes from individuals who matter a lot.

PERCEIVED BEHAVIORAL CONTROL

The meaning of perceived behavioral control (PBC) can be expressed that a person makes judgements on the degree of difficulty in carrying out a particular action. In most case, it depends on the availability of resources, such as the economic cost, effort, and time that individuals think they need to spend in the process of purchasing.

4. METHODOLOGY FOR RESEARCH

The aim of this study is to find the technology acceptance of consumers in relation to willingness to purchase energy efficient appliances based on theory of planned behaviour. The data were collected through a survey of 50 respondents .Based on the above theoretical analysis, the willingness of residents to purchase energy-efficient appliances under the Technology Acceptance Model and The Theory of Planned behavior may be affected by five factors: Perceived Easy to use and Usefulness , Attitude, subjective norms, and perceived behavioral control. The data collection was done by a survey conducted by self-administered questionnaire and interview. A convenience sample was used.

The interview schedule consists of three parts. The first part is the personal information, the basic information including sex, age, income and education of the respondents .The Second part examines technology Acceptance Model of consumers based on two constructs ease to use and perceived usefulness. In the third part, data are collected about the theory of planned behaviour based on 3 constructs as Subjective norms perceived behavioural control which affect the consumer buying intention. After collection, the data was statistically analysed and interpreted using the statistical software.

RANKING OF PURCHASE INTENTIONS ASSOCIATED WITH TECHNOLOGY ACCEPTANCE MODEL AND THEORY OF PLANNED BEHAVIOUR

CONSTRUCT	MEASUREMENT ITEMS	TOTAL SCORE	WEIGHTED AVERAGE	RANK
PEU	I think there is no difference between energy-efficient appliances and common household appliances. Energy-efficient	228	4.56	8
		236	4.72	3

	appliances are easy to use for me.			
PU	I think using energy-efficient appliances save energy& protects environment.	219	4.38	12
	I think energy-efficient appliances give greater performance than that of common appliances.	215	4.3	15
	I think using energy-efficient appliances decrease electricity bill.	225	4.5	10
	I think using energy-efficient appliances improve my standard of living.	227	4.54	9
CA	I am interested to use energy-efficient appliances.	238	4.76	2
	I have positive attitude about energy-efficient appliances.	236	4.72	3
	I recommend energy-efficient appliances to people nearby.	231	4.62	7
SN	If neighbours use energy-efficient appliances, am also use them.	215	4.3	14
	If my family and friends use efficient appliances, I like to use them more.	221	4.42	11
	Using energy-efficient appliances	246	4.92	1

	is a social trend.			
PBC	My family earns enough income to buy energy-efficient appliances.	412	3.92	16
	I have enough time and effort to purchase Efficient Appliances	216	4.32	13
PI	I will buy energy-efficient appliances	232	4.64	6
	If I want to purchase home appliances infuture.I am ready to pay more prices for energy-efficient appliances in future. In the future, I look forward to buy appliances with better energy efficiency.	233	4.66	5

It is observed in the table that Using energy-efficient appliances is a social trend under Subjective Norms has been ranked as the first intention to purchase energy-efficient appliances followed by the customers interest to use those appliances has been ranked second, followed by the customers have positive attitude about energy-efficient appliances has been ranked as third , and the respondent families don't earn much income to purchase energy appliances as it has been ranked as last rank.

PURCHASE INTENTIONS IN RELATION TO TECHNOLOGY ACCEPTANCE MODEL AND THEORY OF PLANNED BEHAVIOUR IN COMPARISON WITH GENDER OF CONSUMERS

In order to test whether is there any relationship between gender of consumers of energy efficient appliances and their purchase intentions the following hypothesis is formulated ,

Null hypothesis : There is no relationship between gender and purchase intentions of consumers in buying energy efficient appliances.

Alternative Hypothesis: There is relationship between gender and purchase intentions of consumers in buying energy efficient appliances.

The results from Chi-Square test is applied to prove the hypothesis.

PARTICULARS	CALCULATED VALUE	TABLE VALUE	INFERENCE
Purchase intentions in relation to Technology Acceptance Model and Theory of planned behaviour in comparison with gender of consumers	1.796	5.99	Not Significant

From the above table its understandable that The Calculated value is less than the table value So the null hypothesis is accepted, hence there is no significant relationship between the gender and Purchase intentions in relation to Technology Acceptance Model and Theory of planned behaviour.

5. CONCLUSION AND IMPLICATIONS

This study explains the TAM and TPB towards energy efficient appliances in Tirunelveli. First, this study focuses on the concepts of attitudes, ease to use, perceived usefulness, subjective norms, perceived behavioral control, and purchase intention for energy-efficient household appliances. A survey questionnaire was used to collect data from consumers in Tirunelveli Tamil Nadu. Findings in this study helps the marketers for main brands of household appliances such as Samsung, Panasonic, LG, Whirlpool, Haier, Godrej, IFB, Bosch, etc., to find what the purchase intentions of consumers before they go for shopping on energy efficient household Appliances.

The results show that , Using energy-efficient appliances is a social trend got first ranked under subjective norms, The major household appliances marketers should notify this and have to gain more customers by mass media, social media to be trend and energy savings should cultivated from the school itself to disseminate knowledge on energy savings. Further more these household brand can always tie with government organisations like BEE, and Ministry of power So that they can participate in their programs of energy efficiency through they can reach people indirectly and can create favourable image about the brand among consumer those who are looking for energy appliances.

6. REFERENCES:

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