# EFFECT OF DETERMINANTS ON PURCHASE INTENTION TOWARDS ENERGY-EFFICIENT HOUSEHOLD APPLIANCES

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## ABSTRACT

India is a market that is varied, with different groups of people, varied income levels, geographical regions, different different languages, and urban area /rural area mixtures, which results in a wide range of consumer preferences and likes. Various societal stakeholders have focused on the rapidly deteriorating state of our climate for the past 50–60 years.

**Purpose** – To measure the effect of determinants on purchase intention towards EEHAs in Tirunelveli district.

**Methodology**– The study used a covenience sample of 110 Tirunelvelians aged between 21-60 who were selected for the study. The tool for the data collection is questionnaire used both in Tamil and English for easy understanding of the respondents. The influence of determinants ( Attitude, Environmental Awareness, Subjective Norms, Perceived Behavioural Control, Green Self-Identity, Knowledge of Eco Labels, Willingness to Pay and Green Trust) on purchase intention towards energy-efficient household appliances in Tirunelveli district was examined using multiple regression.

**Findings** – The study concludes that 8 out of 6 hypotheses ($H_1$, $H_2$, $H_5$, $H_6$, $H_7$, $H_8$) were fully supported and two hypotheses ($H_3$,$H_4$)were rejected.

**Practical implications** – This article provides vital information for marketers, governmental organisations, and BEE in encouraging energy conservation through eco-friendly applications. These organisations would raise consumer awareness and educate them about the advantages of energy conservation through EEHAs.

**Keywords**: Convenience sample, Determinants, Effect on Purchase intention.

## INTRODUCTION

India is a market that is varied, with different groups of people , varied income levels, geographical regions, ideologies, different different languages, and urban area /rural area mixtures, which results in a wide range of consumer preferences and likes. Because of this, planning for and anticipating Indian customers' shift in purchase behaviour before the launch of new items is

frequently a challenging process for enterprises. External research conducted by organisations also includes an examination of the business environment and the competitive environment. They must monitor how international corporations are extending their brand's reach in the Indian market, as well as how inventive Indian businesses are in expanding new product offerings, which will reduce the advantages of the key success elements of current items. Various societal people have focused on state of our climate for the past 50–60 years. Globally aware individuals, organisations, and institutions have banded together to stop the climate to a critical level.

**Statement of the Problem**

Power cut is the main problem in Tamil Nadu in the last decades. Even the problem is reduced in some way during the political parties of government changes still the problem not completely eliminated. Government takes lots of steps to increase the production of energy as we individuals have the responsibility to save it by using energy efficient appliances. One of the sectors that uses more energy is domestic sector. Households are responsible for nearly three quarters of global carbon emissions. Therefore, this research is focuses on finding the determinants to purchase energy efficient appliances in Tirunelveli district. Thus, this research helps the government and companies to find where the market gap is.

**Methodology of Research**

Descriptive research design was used. Hard copy of questionnaire both in English and Tamil was used to collect the data from 110 respondents in Tirunelveli District. The questionnaire contains the following:

Section I: Within a survey, qualifying questions—also referred to as in-survey screening questions—were asked first. Use this question type to quickly identify any responders who don't meet the criteria for being part of the target audience and route them to the disqualified in order to best respect the time of all respondents. Therefore, this study includes screening questions to remove participants who are ineligible (not utilising energy-efficient appliances) from the survey. To ensure respondents understand the context of the study, the definition of energy-efficient household appliances was presented at the very beginning of the questionnaire.



Section II: This section is further subdivided into 13 parts A-Attitude, EA- Environmental Awareness, SN-Subjective Norms, PBC-Perceived Behavioural Control, GSI- Green Self-Identity, KEL-Knowledge of Eco-Labels, GV- Green Value, WP- Willingness to Pay, GT- Green Trust, PI- Purchase Intention. In this research the researcher used five- point Likert scale.

Section III: Demographic information contains name, gender, age, taluk they belong to, marital status, education level, occupation, family monthly income and region.

The Sampling technique used for the study is convenience sampling. In this research, it was calculated to collect data from 110 people aged 21-60 from Tirunelveli district.

**Objective**

To study the impact of Environmental knowledge, Concern and responsibility on Attitude of Households' to purchase of EEHAs Appliances In Tirunelveli

**Scope of the study**

This research may bring green consumer if possible, in Tirunelveli District which in turn, minimizing the use of energy to save the needs of future generations. Main conclusions will be reported to Bureau of Energy Efficiency, Government of India, for better policy making and energy saving programs.

**Literature Review Research hypotheses**

Over the decades much has been written about the predictors of consumers' attitude towards the adoption energy saving home appliances in developed countries e.g., Ireland, Sweden, USA, Germany, Europe, South Korea, and United Kingdom. In India less authors contributed in the area of EEHAs.

8 hypothesis were framed

**Reliability test**

The reliability test is used to assess the consistency and quality of data in measured items. The reliability was evaluated using Cronbach's Alpha. Cronbach alpha is commonly measured in the range of 0.6 to 0.7. A Cronbach alpha rating of 0.8 to 0.9 is considered to be extremely good. The results demonstrate that Cronbach's alpha values range from 0.927 to 0.6, all of which are higher than Nunnally and Berstein's recommended value of 0.6. (1994). As a result, the measures are determined to have appropriate internal consistency reliability. Refer Table 1

**Table 1: Reliability Test**

| Constructs | Number of Items used | Cronbach Alpha |
|---|---|---|
| Attitude | 5 | 0.638 |
| Environmental Awareness | 5 | 0.639 |
| Subjective Norms | 5 | 0.927 |
| Perceived Behavioural Control | 4 | 0.705 |
| Green Self-Identity | 4 | 0.672 |
| Knowledge of Eco Labels | 4 | 0.621 |
| Willingness to Pay | 4 | 0.765 |
| Green Trust | 4 | 0.6001 |
| Purchase Intention | 4 | 0.609 |

**Table 2: Respondents' Demographic characteristics**

| **Demographic characteristics** | **Classification** | **Frequency** | **Percentage** |
|---|---|---|---|
| Gender | Male | 38 | 35 |
| | Female | 72 | 65 |
| Age | 21 -30 | 33 | 30 |
| | 31 – 40 | 65 | 59 |
| | 41 -50 | 10 | 9 |
| | 51 and above | 2 | 2 |
| Marital Status | Married | 42 | 84 |
| | Single | 8 | 16 |
| Education | Diploma | 1 | 1 |
| | UG | 17 | 15 |
| | PG And above | 92 | 84 |
| Occupation | Business | 33 | 30 |
| | Private | 65 | 59 |
| | Government | 12 | 11 |
| Income (per month) | Below 15,000 | 60 | 55 |
| | 15001 - 30,000 | 22 | 20 |
| | 30,001 – 45,000 | 10 | 9 |
| | 45,000 and above | 18 | 16 |



**Multiple Regression analysis**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.734 | 0.543 | 0.522 | 0.4209 |

Predictors: (Constant) Attitude, Environmental Awareness, Subjective Norms, Perceived Behavioural Control, Green Self-Identity, Knowledge of Eco Labels, Willingness to Pay and Green Trust.

The modified R Square value of 0. 543 indicates that the reliant dependent variable of Purchase Intention on EEHAs is influenced by the independent variables of Attitude, Environmental awareness, Subjective Norms, and Perceived Behavioural Control by 52%. **ANOVA[a]**

| Model i) | total squares | D f | Square of Mean | F | | Signifigance |
|---|---|---|---|---|---|---|
| 1 | Regression | 036.21 | 06 | 5 . 875 | 24 . 543 | .000[b] |
| | Residual | 022.09 | 0103 | 0. 239 | | |
| | | 055.08 | 0109 | | | |

a. Pendent Variable: PI

b. Predictors: Green Attitude, Environment Awareness, Subjective Norms, PBC, Green Self-Identity, Knowledge of Eco Labels, Willingness to Pay and Green Trust.

According to the aforementioned ANOVA table, the dependent variable of purchase intention for EEHAs is significantly influenced by attitude, environmental awareness, subjective norms, perceived behavioural control, green self-identity, knowledge of eco labels, willingness to pay, and green trust. It closely matches the above data.

**Co-Efficients[a]**

| Model ii) | B | Error Value | Bta | t | Signifigance |
|---|---|---|---|---|---|
| | .695 | .293 | | 02.244 | .027 |
| Attitute | .453 | .108 | .0915 | .858 | .000 |
| Environment Awareness | .238 | .097 | .246 | 2.454 | .001 |
| Subjective Norms | .452 | .090 | .317 | 0.173 | .863 |
| Perceived Behavioural Control | .492 | .099 | .264 | 2.525 | .432 |
| Green Self-Identity | .210 | .099 | .126 | 1.204 | .000 |
| Knowledge of Eco Labels | .506 | .082 | .185 | 1.915 | .005 |
| Willingness to Pay | .340 | .456 | .219 | 1.234 | .000 |
| Green Trust | .432 | .423 | .346 | 1.126 | .000 |

The accompanying table demonstrates that if attitude increases by one point, there is a 0.453 point increase in respondents' intention to purchase energy-efficient household appliances when all other independent factors are held constant. Purchase Intention of energy-efficient household appliances increases by 0.238 points whenever Environmental Awareness increases by one point, and all other independent factors remain constant.. Likewise, whenever there is a one



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point increase in the Subjective Norms, Perceived Behavioural Control, Green Self-Identity, Knowledge of Eco Labels, Willingness to Pay and Green Trust there is 0.452, 0.492, 0. 0.210, 0. 0.506, 0.340 and 0.432 when all other independent factors are constant, there is a corresponding rise in the respondents' Purchase Intention of EEHAs.

The table additionally shows that the paths of determinants Attitude, Environmental Awareness, Subjective Norms, Perceived Behavioural Control, Green Self-Identity, Knowledge of Eco Labels, Willingness to Pay, Green Trust on Purchase Intention are significant at 1% level of significance. The hypotheses $H_1$, $H_2$, $H_5$, $H_6$, $H_7$, and $H_8$ are supported. Hypotheses $H_3$ and $H_4$ are not supported. Therefore, the impact of Subjective Norms and Perceived Behavioural Control on Purchase Intention are not significant.

Purchase Intention = 0.695+ 0.453 Attitude+0.238Environmenal Awareness + 0.452 Subjective Norms + 0.492 Perceived Behavioural Control +0. 0.210 Green Self-Identity +0. 0.506 Knowledge of Eco-Labels+ 0.340 Willingness to Pay + 0.432 Green Trust.

## Suggestions And Conclusion

Residents are suggested to replace any home appliances that are at least ten years old with new ones. Make sure that no electricity is being used by household appliances by turning the power switch off or by using the remote to turn them off. However, the reality is that the gadget keeps using electricity as long as the plug point is not turned off. So, switching off the household appliances properly is essential for energy conservation. The BEE may insist companies to market 5 star rated appliances alone in the market at reasonable prices so that the energy consumed will be reduced tremendously to protect the environment indirectly. Government may provide Free LED Bulbs to homes so that energy consumption will be reduced greatly to achieve the goal of protecting the environment. Energy saving and environmental protection should be promoted within the school curricula and make into habit from the childhood is essential. Due to emissions from the electricity sector, which is dominated by fossil fuel-based power generation, India is suffering serious environmental problems. In India, the power industry is responsible for 49% of all CO2 emissions (Das etal., 2021). Understanding the factors that contribute to these emissions is crucial if we are to move toward a low-carbon future. Increasing the purchase and usage of EEAs is one strategy to lower emissions and save energy. The study looked into the environmental variables that affect Tirunelvelians' decisions to buy EEAs.



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