# ANTECEDENTS OF CONSUMERS' PURCHASE INTENTION FOR ENERGY-EFFICIENT KITCHEN APPLIANCES IN TIRUNELVELI DISTRICT, TAMIL NADU

**A.MICHAEL JOHN**

Supervisor, Xavier Institute of Business Administration, St. Xavier's College(Autonomous) Palayamkottai, Tamil Nadu, India. Affiliated to Manonmaniam Sundaranar University, Tirunelveli

**M. SIVA BHARATHY,**

Full Time Research Scholar, Xavier Institute of Business Administration, St. Xavier's College(Autonomous), Palayamkottai, Tamil Nadu, India. , Affiliated to Manonmaniam Sundaranar University, Tirunelveli

**Abstract :** As population increases the need for products increases, as the need increases cost of living increases. To satisfy the needs and wants, people have multiple choices while purchasing goods and services especially in household appliances. The purchase of electronic household appliances consumes more energy and as a result we encounter with frequent power shut downs and environmental degradations. Thus, it costs to the Government. There come the renovations of energy efficient products from various companies. Though there are different products available in this sake, it is important for the companies knowing whether the people are aware of those available energy efficient products and its significance. Therefore, the researcher finds that it is important in understanding various factors contributing to purchase intentions of consumers towards energy efficient kitchen appliances. Here the researcher used 110 respondents to analyse consumers purchase intentions of energy efficient kitchen appliances based on mainly the energy efficient kitchen appliances like Refrigerators, LED pulps , Smart oven and cooktop, dish washers and other energy efficient kitchen appliances. This research tries to find out the impact of Attitude, Environmental Knowledge, Environmental Concern, Subjective Norms, Label Awareness and Perceived Behavioural Control on Purchase Intension of energy efficient kitchen appliances. This research tried to expand the Theory of Planned Behaviour.

**Key words :Attitude, Environmental Knowledge & Concern, Subjective Norms, Label Awareness and Perceived Behavioural Control on Purchase Intension, Energy Efficient Kitchen Appliances.**

## Introduction

Today, people are very much responsible for their personal carbon footprint and more mindful of it. Many Now people looking for alternatives to goods and innovations that are

conventional, polluting or energy-intensive. But in general, sustainable practices are not known. Yet sustainability practice is not well recognized. To minimize household carbon emissions resulting from daily use, increasing the ability to buy energy-efficient appliances is crucial. Globally, the energy consumption market may be divided into several sectors: the domestic or residential sector, the commercial sector and the transport sector. The domestic sector meant be people's homes. Commercial sector includes hospitals, Banks, educational institutions, hospitals, retailers, producers. The green consumer and the energy saving behaviour Being a green customer requires the implementation of attitudes and behaviors intended to reduce adverse environmental impacts. The customer is faced with a range of choices that reflect various degrees of greenness, but which involve an examination of the environmental impact of the choice made of either a product or service and a change in conduct in the purchase, consumption and post-consumption use of the product.

**Alternative Life style Practices and Energy Efficient Appliances**

Alternative Life style Practices those are environment friendly practices followed by people from shifting from normal to new normal most often away from major practices. People those who have energy saving attitude induced by alternative Life style practices can go for Energy Efficient Appliances to be environment friendly. They like to save the environment from the pollution. They don't want global warming, green house gas, corban emissions, climate change etc. The Possible ideas for Alternative Life style Practices could be, Reduce, Recycle, Reuse Energy Saving Attitude Environment friendly Optimum Resource Utilisation wealth from Waste Attitude Marketing Strategies for Energy Saving Attitude People cannot completely eliminate the environment pollution, but can reduce the pollution to some what extent. Actually those environment depletions are not only caused by appliances that people are using, there are some other reasons for the environment pollution. But they act to play a little role in reducing environment depletions. So they go for Alternative lifestyle practices in reducing energy usage, like Switching from CFL bulbs to LED Bulbs Changing conventional appliances to star rated appliances Switching from Petrol, diesel vehicle into electrical vehicles Using solar energy To understand sustainability from the perspective of a business, and what Indian companies are doing to offer more sustainable options to consumers.

**Energy Efficient Kitchen Appliances**

Early humans lived in caves or simple huts or tents generally made of animal skins and wooden poles during the Paleolithic period -around 2.5 million years ago to 10,000 B.C.They were hunters and gatherers. They used simple stones, spears and bone instruments, to hunt birds and wild animals. The diet of the earliest hominins was almost certainly close to that of the chimpanzees. They

ate raw meat, the large amounts of fruit, leaves, flowers, bark, insects, and meat. They have used pieces of flint stone together to create fire. They may have rubbed two stones together to generating heat to start a blaze. There human finds new taste in it. Thereby started heating the meat and eat. The taste of the cooked food easily prompted his life to be nurtured in the civilized world of the hearth. Ever since man began to move towards the hearth to cook his food materials, his hearth began to transform itself to assume the dimension of a kitchen with its accessories. Thus, the early man, treading his way through the slow process of cultural and technological development, began to use kitchen appliances to cook his food. Our day to day lives are made easier with variety of appliances from the morning to the night. the middle of the 19th Century, most people had little in the way of appliances, and what appliances they did have would have been made by hand by someone locally. Our dependency on such creative items has also increased as kitchen technology has grown. The technology used in kitchen appliances shapes our lifestyle with busy daily schedules because of the convenience they offer to prepare and cook healthy meals. The kitchen is the busiest location in our homes, as our everyday food is cooked and consumed here. The freezer without frost, dishwashers, ovens, sandwich makers and juicer are some of these new kitchen appliances. Notbonly can these appliances perform excellent cooking and cleaning work, but we can also purchase them in full packages to fit the theme of our kitchen.

**Purchase intentions of Energy Efficient Kitchen Appliances**

India is a heterogeneous market with distinct ethnic groups, income levels, geographies, ideologies, languages, urban/rural blends, leading to a great deal of variety in consumer preferences and likes. Therefore, recognizing the need for Indian customers and planning as well as predicting their shift in purchasing behavior during the launch of new products is often a daunting exercise for organizations. Organizations' external research also incorporates the analysis of competition and the changing business scenario. They have to keep track of the expansion of their brand in the Indian market by global companies and also the creativity of Indian companies to broaden their product range, resulting in a reduction in the benefits of the main success factors of existing products. For the past 50-60 years, different social stakeholders have concentrated on the increasingly deteriorating condition of our climate. People, organisations and institutions from all over the world have begun to understand the issue and have joined forces to stop relegating the climate to a critical state.

**Literature review and hypothesis development**

The current study applies Theory of Planned Behavior (TPB) to find out purchase intention for energy efficient kitchen appliances is considered to be behavioral intention is a specific

environmental behavior (Chan, 1998). Environmental behavior is such behavior which is generally judged as a protective way of environmental behavior ( Lobo, A., & Greenland, S, 2017) (D. Arun Prakash, Sangeetha Gunasekar) Some of the Indian researchers other than those identified above also have found the behaviour on environment. Several studies attempted to improve power of TPB, despite the general usefulness of the theory in predicting behavioral intention, by adding additional constructs within the TPB model for example (Chen and Tung, 2014; Kaiser and Scheuthle, 2003).

**Attitude**

According to the TPB, attitude is the view that people take of certain events (Ajzen, 1991) Ivancevich et al. (2010) defined attitude as a mental state of readiness learned and organized through experience, exerting a specific influence on a person's response to the people, objects, and situations to which it is related. This is in line with Ajzen (1985), who mentioned that one with positive attitudes toward an action is more likely to perform that action. Evaluative statements or judgments concerning objects, people, or event. (Stephen P. Robbins-Organisational Behaviour) As per TPB, Attitude is one of the three conceptually independent determinants of intention in TPB, attitude toward a purchase behavior refers to the degree of one's favorable or unfavorable evaluation of the behavior in question (Ajzen, 1991). Chin-Seang Tan, Hooi-Yin Ooi, Yen-Nee Goh(2017) conducted a study, found in their study that attitude, was highly correlated with consumers' purchase intention, which is a reasonable predictor of consumers' actual purchasing behavior. Extant research also indicates that consumer attitudes are among the most relevant predictors of green purchasing decisions and various ecological behavioral intentions Lobo, A., & Greenland, S.2017, Yadav, R., & Pathak, G. S.2016). Taken together, The researcher expect that attitude will positively impact on purchase intentions of energy efficient appliances and have developed the hypothesis in the following manner.

**Environmental Concern**

Aaron M. McCright , Chenyang Xiao , Riley E.Dunlap(2014) refers Environmental concern is the degree of people's willingness to recognize and support the resolution of ecological problems. Chin-Seang(2017), Guomin Li, Wei Li, Zihan Jin and Zhihao Wang (2019) viewed that environmental knowledge is significantly positively correlated with residents' willingness to purchase energy-efficient appliances. Lobo, A., & Greenland, S(2017) notified that consumers with high knowledge about energy efficient appliances tend to believe that the purchase of such products is important for environmental protection. Taken together, The researcher expect that environmental concern will positively impact on purchase intentions of energy efficient appliances and have

developed the hypothesis in the following manner.

**Environmental Knowledge**

Ricky Y.K Chan (2000) refers environmental knowledge is an individual's understanding and knowledge of the environment and related issues. Chin-Seang found that environmental knowledge don't have a significant relationship with purchase intention of energy efficient appliances Wang, Z., Zhang, B., & Li, G (2014) verified the hypotheses of the model through the application of SEM, environmental attitude have obvious effects on residential energy-saving behavior Wang, Z., Wang, X., & Guo, D.(2017) examined that Environmental Awareness (ENVA) influences the residents' Purchasing Intentions (PI) on energy-efficient appliances. Gaspar, R., & Antunes, D.(2011) environmental attitudes to be negative predictors of energy efficiency class consideration, while specific environmental behaviours were positive predictors. Taken together, The researcher expect that environmental Knowledge will positively impact on purchase intentions of energy efficient appliances and have developed the hypothesis in the following manner.

**Subjective Norms**

Subjective norm is the social pressure that an individual perceives when undertaking a particular behavior (Ajzen 1991). Subjective norms capture how others opinions are becoming influential in the lifecycle of an individual in executing a certain behaviour. Wang, Z., Zhang, B., & Li, G.(2014) conducted a survey in beijing using structured questionnaires to predict consumer intentions of buying energy-saving products. They found that subjective norms have a strong influence on energy-saving behavior. Wang, Z., Sun, Q., Wang, B., & Zhang, B.(2019) Based on the results, consumers' subjective norms significantly affect consumers' energy efficient household product purchase intention. Lobo, A., & Greenland, S(2017) indicated that subjective norms have obvious effects on residential energy-saving behavior.Taken together, The researcher of this study expect that subjective norms will positively impact on purchase intentions of energy efficient appliances and have developed the hypothesis in the following manner .

**Label Awareness**

Michael Jay Polonsky(2012) explained that general environmental knowledge is not always a sufficient condition to predict ecologically conscious consumer behavior, they suggests that product specific environmental knowledge such as environmental labels providing appropriate and accurate information is also an important requirement to allow consumers for making environmentally conscious and reasoned decisions. Household income was typically found to have positive impact, on energy-saving investments. Wang, Z., Sun, Q., Wang, B., & Zhang, B.(2019) ,

this study adds information label as the external factor influencing household appliances, indicating that the guiding role of energy efficiency labels is effective. Nevertheless, the suspicion of label information and economic constraints hinder the conversion from reference willingness to purchase intention. Li Hua and Shanyong Wang(2019) found that people who were aware of the Energy Label knew more about energy-efficient appliances, including the pros and cons, so they were more inclined to make purchasing decisions according to effective information and rational judgment. Taken together, The researcher expect that Label Awareness will positively impact on purchase intentions of energy efficient appliances and have developed the hypothesis in the following manner.

**Perceived Behavioural Control (PBC )**

Perceived behavioral control (PBC) is defined as an individual's perceived ease or difficulty in performing a specific behavior; similar to concept of perceived self efficacy (Ajzen, 1991). Chin-Seang Tan Hooi-Yin Ooi, Yen-Nee Goh(2017) identified that perceived behavioral control were positively significant with purchase intention for energy-effcient household appliances. Wang, Z., Zhang, B., & Li, G.(2014) found that perceived behavioral control have obvious effects on residential energy-saving behavior Taken together, In this study The researcher also assume that perceived Behavioural control will positively impact on purchase intentions of energy efficient appliances and have developed the hypothesis in the following manner.

**Statement of the problem**

As population increases the need for products increases, as the need increases cost of living increases. To satisfy the needs and wants, people have multiple choices while purchasing goods and services especially in household appliances. The purchase of electronic household appliances consumes more energy and as a result we encounter with frequent power shut downs and environmental degradations. Thus, it costs to the Government. There come the renovations of energy efficient products from various companies. Though there are different products available in this sake, it is important for the companies knowing whether the people are aware of those available energy efficient products and its significance. Therefore, the researcher find it is important in understanding various factors contributing to the purchase intentions of consumers towards purchasing energy efficient kitchen appliances.

**Research Gap**

The analysis of the above studies offers numerous useful insights into the variables that clarify the determinants of customer intentions towards the purchasing of household appliances that save energy. However, substantial opportunities remain, considering the value of energy-efficient

household appliances for domestic, environmental, industrial, economic and social well-being to further explore the antecedents that propel consumers' intentions to buy these appliances. Systematic study of current literature helps one to recognize important differences that can be resolved in future consumer behavior research. Much has been written about the predictors of customer decisions to implement energy-saving home appliances in developing countries over the last two decades. e.g., Ireland, Sweden, USA, Germany, Europe, South Korea, and United Kingdom.

Apart from above studies, few notable researches have been conducted in China, Malaysia, Vietnam and South Africa. But developed nations have so far been largely overlooked. To date, very few studies have been performed in India on energy-efficient household appliances, concentrating too much on the energy-saving capacity of these appliances. Therefore, the determinants of the intentions of household consumers to purchase such appliances in developing nations such as India need to be investigated.

Among these studies, In most of the studies researchers analysed about the theory of planned behaviour with energy efficient appliances. No one analysed about the intentions to purchase energy efficient kitchen appliances in Tirunelveli, Tamil Nadu. So there is need to understand residents' intentions to purchase energy efficient kitchen appliances in Tirunelveli context.

**Objectives of the study**

1. To access the relationship of each variable (Attitude, Environment knowledge, Environmental concern, Subjective Norms, Label Awareness, Perceived Behavioral control) on Purchase Intention
2. To find out the impact of Attitude, Environment knowledge, Environmental concern, Subjective Norms, Label Awareness, Perceived Behavioral control on purchase Intention
3. To analyze the impact of Purchase Intention on Purchase Behavior

**Research Methodology**

The study comprises of primary and secondary data. The primary data has been gathered through a structured questionnaire and collected with the use of google forms. The secondary data are collected from Books, Journals, Articles, Records, Reviews and Publications. The research was conducted in Tirunelveli, Tamil Nadu, India. The method of convenience sampling was used to develop the sample of the research. According to this method, which belongs to the category of non-probability sampling techniques, Sample units are selected on the basis of their educational qualification. 110 individual consumer respondents aged 20 years and above living in Tirunelveli

district only have been taken as sample for this study. The questionnaire of this study was framed to contain 2 main sections in Google forms. Section I contains about collecting respondents demographic information. Section II contains the latent variables that affect purchase intention towards energy-efficient kitchen household appliances. Whereas section II is further subdivided into 7 parts, they are , A- Attitude , EC- Environment Concern, EK- Environmental Knowledge, SN- Subjective Norms, LA-Label Awareness, PBC-Perceived Behavioral Control and PI- Purchase Intention. To ensure respondents communication of study, the definition of energy-efficient appliances was presented at the very beginning of the questionnaire. Many past literatures have adopted the five points Likert scale as the measurement method used in the questionnaire. (Strongly Disagree-1, Disagree-2, Neutral-3, Agree-4, Strongly Agree-5) The following are the objective of the study To access the relationship between Attitude, Environment knowledge, Environmental concern, Subjective Norms, Label Awareness, Perceived Behavioral control, Purchase Intention To find out the impact of Attitude, Environment knowledge, Environmental concern, Subjective Norms, Label Awareness, Perceived Behavioral control on purchase Intention To analyze the impact of Purchase Intention on Purchase Behavior For the analysis Correlation, Regression and Logistics regression was used.

# Data Analysis

### Correlation

$H_0$- There is no relationship between constructed Variables (Attitude, Environment Knowledge, Environmental Concern, Subjective Norms, Label Awareness, Perceived Behavioral control) and Purchase Intention

$H_1$- There is relationship between constructed Variables (Attitude, Environment Knowledge, Environmental Concern, Subjective Norms, Label Awareness, Perceived Behavioral control) and Purchase Intention

**Table showing The relationship of the variables with purchase Intention**

| Relationship | r Value | P Value |
|---|---|---|
| Attitude and Purchase Intention | .632* | 0.000 |
| Environmental Knowledge and Purchase Intention | .669* | 0.000 |

| | | |
|---|---|---|
| Environmental concern and Purchase Intention | .577* | 0.000 |
| Subjective Norms and Purchase Intention | .712** | 0.000 |
| Label Awareness and Purchase Intention | .627* | 0.000 |
| Perceived Behavioural Control and Purchase Intention | .672* | 0.0000 |

The Spearman`s Rho test was used to observe the relationship of variables that affect Purchase Intentions of energy efficient kitchen appliances. Significant level used is the confidence level of p 0.05. The result show that there was significant relationship of all the variables, specifically Subjective Norms have strong moderate relationship than other variables.

**Regression**

$H_0$ – Respondents' Attitude, Environment Knowledge, , Environment Concern, Subjective Norms, Label Awareness and Perceived Behavioural Control of Energy Efficient Kitchen Appliances have no impact on Purchase Intentions.

$H_1$ – Respondents' Attitude, Environment Knowledge, , Environment Concern, Subjective Norms, Label Awareness and Perceived Behavioural Control of Energy Efficient Kitchen Appliances have an impact on Purchase Intentions.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .767 | 0.588 | 0.564 | 0.48927 |

Predictors: (Constant) Attitude, Environment Concern, Environment Knowledge, Subjective Norms, , Label Awareness, Perceived Behavioural Control.

The adjusted R Square value 0.588 refers that there is 56% influence of the independent variables of Attitude, Environment Knowledge, , Environment Concern, Subjective Norms, Label Awareness and Perceived Behavioural Control of Energy Efficient Kitchen Appliances on the dependent factor of Purchase Intention on Energy Efficient Kitchen Appliances. Therefore, the

Attitude, Environment Knowledge, , Environment Concern, Subjective Norms, Label Awareness and Perceived Behavioural Control of Energy Efficient Kitchen Appliances are the good predictor to predict the Purchase Intention.

**ANOVA[a]**

| Model | Sum of Squares | df | Mean Square | F | | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 35.251 | 6 | 5.875 | 24.543 | .000[b] |
| | Residual | 24.657 | 103 | 0.239 | | |
| | Total | 59.908 | 109 | | | |

a. Dependent Variable: PI

b. Predictors: (Constant), Attitude, Environmental Concern, Environmental Knowledge, Subjective Norms, Label Awareness,Perceived Behavioural Control.

The above ANOVA table represents that based on the P value which is less than 0.05 hence Attitude, Environment Knowledge, , Environment Concern, Subjective Norms, Label Awareness and Perceived Behavioural Control is significant on the dependent factor of Purchase Intention on Energy Efficient Kitchen Appliances. It is a good fit for the data.

**Co-Efficients[a]**

| Model | B | Std. Error | Beta | t | Sig. |
|---|---|---|---|---|---|
| (Constant) | 0.659 | 0.293 | | 2.244 | 0.027 |
| Attitute | 0.093 | 0.108 | 0.095 | 0.858 | 0.393 |
| Environmental Knowledge | 0.238 | 0.097 | 0.246 | 2.454 | 0.016 |
| Environmental Concern | -0.016 | 0.090 | -0.017 | -0.173 | 0.863 |
| Subjective Norms | 0.249 | 0.099 | 0.264 | 2.525 | 0.013 |
| Label Awareness | 0.120 | 0.099 | 0.126 | 1.204 | 0.232 |

| | | | | | |
|---|---|---|---|---|---|
| Perceived Behavioural Control | 0.156 | 0.082 | 0.185 | 1.915 | 0.058 |

The above table depicts that whenever there is a one point increase in Attitude there is a 0.093 point increase in the respondents' Purchase Intention of energy efficient kitchen appliance when other independent variables are constant. Similarly, whenever there is a one point increase in the Environmental Knowledge there is 0.238 point increase in the respondents' Purchase Intention of energy efficient kitchen appliance when other independent variables are constant. Likewise, whenever there is a one point increase in the Subjective Norms, Label Awareness and Perceived Behavioural Control there is 0.249, 0.120, 0.156 respectively increase in the respondents' Purchase Intention of energy efficient kitchen appliance when other independent variables are constant.

However there is a one point decrease in Environmental Concern there is a -0.016 decrease in the Purchase Intention of energy efficient kitchen appliance of the respondents when other independent variables are constant.

Purchase Intention = 0.659+0.093 Attitude+0.0238Environmental Knowledge+(-.016)Environmental Concern + 0.249 Subjective Norms + 0.120 Label Awareness + 0.156 Perceived Behavioural Control .

**Logistics Regression**

**Omnibus Test of Model Coefficients**

| Particulars | Chi-square | df | Sig. |
|---|---|---|---|
| Step | 16.405 | 7 | 0.000 |
| Block | 16.405 | 7 | 0.000 |
| Model | 16.405 | 7 | 0.000 |

The significance of Omnibus Test of Model Coefficients was 0.000. It says that the overall model is statistically significant.

**Hosmer and Lemeshow Test analysis**

| Variables in the equation | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|
| Attitude | -0.117 | 0.749 | 0.025 | 1 | 0.876 | 0.889 |
| Environmental knowledge | 4.982* | 0.823 | 0.219 | 1 | 0.000 | 0.680 |
| Environmental Concern | 0.043 | 0.650 | 0.004 | 1 | 0.947 | 1.044 |
| Subjective Norms | 4.987* | 0.716 | 3.296 | 1 | 0.000 | 0.272 |
| Label Awareness | 4.655* | 0.795 | 0.679 | 1 | 0.000 | 1.925 |
| Perceived Behavioural Control | 0.256 | 0.657 | 0.152 | 1 | 0.697 | 1.292 |
| Purchase Intention | 4.897* | 0.790 | 1.786 | 1 | 0.000 | 2.876 |
| Constant | -3.193 | 2.224 | 2.062 | 1 | 0.151 | 0.041 |

The Hosmer and Leme show Test analysis results showed that the regression coefficients of Environmental knowledge, subjective Norms, Label awareness and Purchase Intention 4.982*, 4.987*4.655* and, , 4.897* respectively and the corresponding significance value is 0.000 for all the above mentioned, which is less than 0.05 to find 'whether the respondent had an intention to purchase energy efficient kitchen appliances or not' . It means the purchase intention had significant positive predictive decision-making impacts on the antecedents of purchase intentions towards energy efficient kitchen appliances.

**Findings and Conclusion**

The result showed that there was significant relationship between all the variables but label awareness and perceived behavioural control, subjective norms and purchase intention have strong relationship than other variables. Correlation analysis showed that the value of correlation coefficient "r" is high for the relationship between label awareness and perceived behavioural control, subjective norms and purchase intention among respondents [r = 0.790**, 0.712**, sig= 0.000]. This value indicates there is a high positive relationship between label awareness and perceived behavioural

control, subjective norms and purchase intention which is at the high level of correlation than the all other variables. These relationships are statistically significant at 5% level of significance with the p values of .0.000. From the regression whenever there is a one point increase in Attitude there is a 0.093 point increase in the respondents' Purchase Intention of energy efficient kitchen appliance when other independent variables are constant. Similarly, whenever there is a one point increase in the Environmental Knowledge there is 0.238 point increase in the respondents' Purchase Intention of energy efficient kitchen appliance when other independent variables are constant. Likewise, whenever there is a one point increase in the Subjective Norms, Label Awareness and Perceived Behavioural Control there is 0.249, 0.120, 0.156 respectively increase in the respondents' Purchase Intention of energy efficient kitchen appliance when other independent variables are constant. However there is a one point decrease in Environmental Concern there is a -0.016 decrease in the Purchase Intention of energy efficient kitchen appliance of the respondents when other independent variables are constant. The significance of Omnibus Test of Model Coefficients was 0.000. It says that the overall model is statistically significant. The Hosmer and Lemeshow Test analysis results showed that the regression coefficients of Environmental knowledge, subjective Norms, Label awareness and Purchase Intention 4.982, 4.987, 4.655 and 4.897 respectively and the corresponding significance value is 0.000 for all the above mentioned, which is less than 0.05 to find 'whether the respondent had an intention to purchase energy efficient kitchen appliances or not' . It means the purchase intention had significant positive predictive decision-making impacts on the antecedents of purchase intentions towards energy efficient kitchen appliances.

The results of this paper are only the beginning. More study is obviously needed, using more data from larger survey samples and applying alternative statistical methods to verify hypotheses. In order to illustrate the variations and causes and factors affecting the willingness of citizens to buy energy-efficient appliances in different regions, various regions can be compared. Finally the findings of this paper show that the shift in the willingness of residents is long-lasting, ongoing, and constant. Future research should therefore concentrate on methods of behavioural studies and investigate more precise variables and causes, based on continuous monitoring research, from the perspective of complex shifts.

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