A STUDY OF MARKET DYNAMICS OF ENERGY EFFICIENT ELECTRICAL HOME APPLIANCES
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ABSTRACT
Throughout the twentieth century, materialism and its other associations have been used as legends of modern culture. Electric home appliances also represent the same descriptors across the world. Electrical home appliances also offer advanced features and more energy efficiency nowadays. Consumers nowadays pay more importance to energy savings. Companies across the world provide variety of options. One of the primary reasons for these developments in the market is improvement in standards of living. These factors have given rise to develop innovative, energy efficient and convenience-oriented electrical home appliances. As it is seen more environment-friendly, energy efficient and smart appliances are making entry into the market. And this will give rise to better energy sustainability.

The research paper attempts to determine impact of certain forces of market dynamics that is making to have specific observations about the energy efficient electrical home appliances in consumers’ mind. A better understanding of energy efficient electrical home appliance sales and the factors affecting it is essential for designing effective and credible marketing and energy efficiency programs.

The study revealed that there are many players and brands present in electrical home appliances market. Consumers have preference towards energy efficient electrical home appliances. Internet, social media and television are found to be important source of information for Energy efficient electrical home appliances. However there is a scope to give a thought regarding a price factor of the appliances for making attempts to reduce it, at the same time maintaining its quality.

Keywords
Energy efficient electrical home appliances, purchase preference, consumer perception, information source, satisfaction.

INTRODUCTION
In any business across the world, the concept of sustainability and sustainable development has gained a prominent place. Energy conservation, environmental protection, health and safety is talk of the town in electrical home appliances market.

In a present modern, entrepreneurial and urban subsistence world, a lot of natural resources are consumed every day. Around 40% more resources are used every year than those put back for the electricity provision. If a perfect relationship is derived among the consumer perception and dimensions of consumer behavior, it would definitely help to balance competing needs and the needs to move forward technologically and economically. At the same time it would also help to protect the environment better in which we live.

Electric appliances industry is a multibillion dollar industry run by many huge brands. There are a lot of products in home appliances market such as washing machines, fridges, televisions, air conditioners, heaters etc. These products are present in the market to help consumers out with their day-to-day
work of their routine life. Households tend to be smaller at present as far as space and number of family members living in a home is considered. Consumers get lesser time in completing domestic work. In view of this and resulting consequences, residential electricity consumption (REC) has increased by 50 times since 1971 and now constitutes about a quarter of total electricity consumption, up from 4% in 1971 in Asian countries. It is increasing further due to speedy electrification, ever-increasing household income and technological developments.

As it is known, each individual in the world is a consumer. Each individual buys and sells or consumes goods and services in life. Therefore consumer perception about a product becomes important to determine about its dimensions. This helps further to have a transparent situation in the market conditions regarding energy efficient electrical home appliances. Necessary steps can be taken based on the transparent situation of the market. To survive in the market, a firm has to be constantly innovative and understand the latest consumer needs and tastes. This will be extremely useful in exploiting marketing opportunities and in meeting challenges that a market offers in energy efficient electrical home appliances segment. Consumer perception organizes and interprets stimuli into a meaningful and coherent picture of the market that includes products, packages, brand names, advertisements and commercials. Just as individuals have perceived images of themselves, they also have perceived images of products and services, prices, product quality, retail stores, manufacturers and brands. Products and services that are perceived favorably have a much better chance of being purchased than products or services with unfavorable or neutral images.

Determination of a product’s quality and product attributes is critical in a specific and complex product-like Energy efficient electrical home appliances.

Despite various benefits that energy efficient electrical home appliances have, it is interesting to see their perception by consumers. Understanding this is fundamental to facilitate a widespread adoption of the related technologies to achieve energy efficiency.

Let us have a look at the global household appliances market turnover in electrical home appliances. It was 240.86 billion USD in 2014 and would reach 342.82 billion USD by 2022 at a Compound annual growth rate (CAGR) of 6.06% for the forecasted period. The global demand for home appliances has increased significantly. It has shown the highest growth rate among all five segments of home appliances in recent past. In mature markets such as Europe, America and Australian market, a demand is accounted for 68% for home appliances. In the same way in most of the Asian countries, there will be the same electrical appliance sales growth. The reasons for this growth are easy availability of finance and rise in per capita income. Electric appliances are making life easier. Increasing urbanization, rising working class population and new product development are also some of the factors for the growth in this market.

Hence sustainability of electric energy would achieve a prominent place because of its more possible consumption. So it is quite imperative to market electric appliances which are energy efficient and would help in electric energy sustainability.

In this scenario it is imperative to provide value to consumer in the form of energy efficient electrical home appliances and contribute towards electric energy sustainability to some extent. In line with this, it is inevitable to understand some factors of market dynamics and consumer perception towards energy efficient electrical home appliances.

**Objectives of the study**

1. To understand present energy efficient electrical appliances market scenario.
2. To determine consumer preference for star rated electrical home appliances.
3. To identify the most popular source of information for energy efficient electrical home appliances.
4. To resolve customer price perception towards energy efficient electrical home appliances.
5. To verify consumer satisfaction towards energy efficient electrical home appliances

Review of Literature
Sales of household appliance to maintain hygiene and kitchen appliances increased recently as many consumers were in their homes due to a Covid-19 Pandemic as per an article ‘Home Appliances See Surge in Sales’ (2020), published on the Research and Markets which provides market insights and analysis. As per the experts sales of home appliances which have novel hygienic features will increase. This includes appliances such as washing machines equipped with sanitizing cycles and Freezers for stocking up frozen foods.

When the effect of gender wise classification of consumers is concerned, there is no difference in their usage of appliances as such. In a survey of Canadian residents, Ritchie and Claxton (1981) found that people’s attitudes had no significant impact on their energy consumption behavior. In a survey of citizens in Washington State, Olsen showed that gender had nothing to do with acceptability of energy-saving strategies.

B. Ganesh and Mahesh M. Vanjeri (2015) in their research study revealed the challenges in the market. It was observed that in many occasions, father was the decider. Friends, relatives influenced purchase decisions and wife was the initiator. This implies the importance of developing innovative and Customized marketing strategies.

According to Paramanand Dasar (2013), understanding consumer behavior is very essential for efficient and effective marketing management as consumer is the nerve of today’s modern marketing system. Needs and wants may be stated by the consumers but they may act otherwise. They may not have feel with their deeper motivations. Consumer market has been increasing as it is driven by young population with access to disposable incomes and easy finance options.

In a research study, ‘Improving customer loyalty through a strategic value-focused approach’, by Christopher D. Ratcliff and Elizabeth Horn (1998), argued that the focus should be on consumers who maximize company’s financial return, instead of measuring performance among the whole consumer community. Consumer attitudes and values must also be included in satisfaction research in the era of growing diversity. Behavior is the direct result of values, beliefs and attitudes. They found that independent variables such as overall quality, usage experience, pre sales, sales person’s behavior, repair, reliability, after sales service and product compatibility are important factors. These variables were found to be statistically significant and had positive impact on consumer satisfaction, worthiness, responsiveness, warranty and loyalty.

Based on the study, ‘ Consumers’ perceptions of energy use and energy savings’, done by Vedran Lesica, Wändi Bruine De Bruina, B. Matthew C. Davisc, Tamar Krishnamurti and Inês M.L. Azevedob (2018), a Centre for Decision Research, Leeds University Business School, states that policy makers and program managers need to better understand consumers’ perceptions of their energy use and savings, to design effective strategies for promoting energy savings. They found that: (1) Electricity use is often overestimated for low-energy consuming appliances and underestimated for high-energy consuming appliances (2) Curtailment strategies are typically preferred over energy efficiency strategies (3) Consumers lack information about how much electricity can be saved through specific strategies (4) Consumers use heuristics for assessing the electricity use of specific appliances. They have also mentioned that there is a need to better compare consumers’ perceptions to their actual appliance energy use. Measures of households’ actual energy consumption should be taken at the individual household’s appliance level.

Understanding consumers’ perceptions and misperceptions about energy use and savings may help to address design of curtailment and energy efficiency policies. The use of smart technology and
associated services, such as in-home displays, mobile apps and other information and communication technology-related services could facilitate improved measurement as well as improved feedback to consumers as stated by Krishnamurti et al. (2012). Research should also be developed to test whether correcting misperceptions through feedback helps consumers to make more informed decisions about curtailment and energy efficiency. Thus, continued research on the topic of how well consumers can assess appliance energy use brings some promise of informing consumers’ decisions to implement curtailment and energy efficiency behaviors.

According to Energy efficient appliances and energy efficient behaviors from consumer’s assessment to behavior intervention, Dalila Antunes, Lisboa, Portugal Rui Gaspar (2012), have mentioned that almost all our actions require more energy consumption. And this could be a threat not only to the world resources but also to the countries that need to assure energy for their population to use, either by producing it or buying it from other countries. Home energy efficiency depends both on energy efficient appliances and their use. So this can improve or reduce both energy consumption and energy bill. Psychologically this refers to two kinds of behavior. The first refers to conscious single choice behaviors while the second refers to habitual automatic behaviors. These studies provided evidence that knowledge and tools can be developed in order to improve energy-efficiency at residential level.

In a customer encounter, an electrical appliances stores and their employees are important in aiding consumers towards an energy efficient choice.

**Scope of the study**

This research study covers Pune city of Maharashtra, India to understand impact of some factors of market dynamics of Energy efficient electrical home appliances on consumer perception and to understand the current market scenario. The research also aims to verify Consumer satisfaction towards energy efficient electrical home appliances.

**Research Methodology**

The research study is done by using a structured questionnaire, to understand the market scenario of energy efficient electrical home appliances, consumer perception and their satisfaction towards it.

**Research Design:** The research design used in this study is Descriptive research design.

**Data Collection:** Primary Data is collected through well-framed structured questionnaire.

**Sampling:** Convenience snowball sampling technique is used.

**Survey instrument:** The questionnaire consisted of Likert scale as it was easy to determine the intensity levels of feeling of respondents for different factors of energy efficient electrical home appliances.

**Data analysis** is presented using the tools; Pie chart and Bar charts of Microsoft Excel.

**Data analysis and interpretations:**

Various factors covered for the analysis are as mentioned below.

It is then followed by presentation of consumer responses and interpretations.

1. **Energy efficient electrical home appliances are easily available in the market.**
Interpretation: There is an easy availability of energy efficient electrical home appliances in the market. Consumers don’t face problem regarding availability of the appliances.

2. Many Brands are available in the market.

Interpretation: This definitely shows that companies try to promote energy efficient electrical home appliances in the market. Hence there is competition in the electrical home appliances market.

3. I bought the energy efficient electrical home appliance during festival season.
Interpretation: The reason is these periods are considered auspicious time to buy.

4. I have preferred star rated electrical home appliance than the appliances not having star rating.

Interpretation: Consumers are well aware of the benefits of star rated appliances. Majority of the respondents thus preferred the same. Still there is some percentage of respondents who are not very well aware about star rated appliances.
5. Give the score 1 to 5 for following sources of information for energy efficient electrical appliances. (Where 1 = minimum score and 5 = maximum score).

![Bar chart showing scores for different sources of information]

**Interpretation:** The most dependable and popular sources of information for energy efficient electrical home appliances are found to be Television, Social Media and Newspapers, as it can be seen on the chart. Consumers use these sources of information with great deal. Consumers have given the next preference to Commercial websites, Company websites and Magazines.

6. It is costlier than the appliances that do not have star rating.

![Bar chart showing responses to the statement]

**Interpretation:** It is felt significantly by the consumers that star rated appliances are costlier.

7. I have availed Price discount on the appliance.
Interpretation: As seen from the Analysis 2 about the presence of many brands in the market, there is competition. Each company tries to see to it that no consumer is left without its sales closing. And it is reflected from consumers’ response that price discounts on the appliance are availed by them.

8. I am satisfied with the energy efficient electrical home appliance.

Interpretation: It is clear that consumers are convinced by the quality and performance of energy efficient electrical home appliances. Majority of the consumers are satisfied with the energy efficient electrical home appliance.

Conclusion and Discussion:
From the data analysis and interpretation, it is clear that there are many companies in the market which make attempts to grapple market share. The companies, most of the time offer price discounts to close the sales.
Consumers are very well aware about the advantages of energy efficient electrical home appliances. Companies can adopt strategies to promote to all the consumers who are yet to purchase these appliances.

Energy efficient home appliances are felt to be costly by the consumers; hence there is a scope to neutralize this perception by any appropriate action without sacrificing the quality. This will also lead to increase in the business of energy efficient electrical home appliances.

Companies can take advantage of Social media, Television and Newspaper as much as they can, as these are the most popular sources of information to consumers.

As seen since past to presentera, festivals are the most productive periods for the business, companies can strive hard to use various marketing strategies to encash this opportunity.

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