# CHAPTER 5
# FINDINGS, RECOMMENDATIONS AND CONCLUSIONs

## Introduction

This chapter discusses on the findings resulting from data analysis. It provides recommendations for marketers and policymakers based on its findings. The chapter offers recommendations for further study on consumer behaviour towards energy-efficient electrical home appliances, including both individual and household purchases. This study used a framework to display the factors that influence purchase intention and behaviour for eco-friendly products among customers. It also aimed to identify the key factors influencing consumer buying intentions and behaviours for GHA.

Thus, this chapter is primarily divided into five sections, which are as follows:

5.1 Major findings of the study

5.2 Recommendations from the study

5.3 Limitations of the study

5.4 Scope for future study

5.5. Conclusion

The first section comprises of major findings that are further divided nine sub-sections. The first sub-section discusses findings in relation to demographic characteristics (gender, age, income, education, marital status, employment, family size and number of people in the family) and appliance ownership and its usage. The second sub-section discusses about Eco-friendly products and consumerism. Further, it's sub-section highlights the observation of respondents on the basis of objectives listed for the study. The third sub-section focuses on the findings in relation to Pro-Environmental Behaviour and Energy Savings. The next sub-section comprises of behaviour pattern of selected Green Household Appliances. Fifth sub-section throws light on objectives related to awareness/attitude and factors affecting consumers' GPB (Consumers' Awareness/ Knowledge, Consumers' Attitude, Consumers' Readiness, Subjective Social Norms, Moral Norms, Consumers' Self-Identity, Warm Glow and Perceived Barriers). The next sub-section highlights the findings related to the awareness and recognition of green eco-label system. Further, impact of Green Brand Awareness, Perceived Green Brand Image, Perceived Quality and Purchase Intention is studied. In the eight sub-section, four green marketing tools – Green Product, Green Place, Green Price and Green Promotion's impact on GPB is concluded. And the last sub-section highlights the relationship between demographic

profile (gender, age, income and education) of the respondents in relation to sustainable development.

## 5.1 MAJOR FINDINGS OF THE STUDY

### 5.1.1 Findings in relation to demographic profile of respondents and appliance ownership and its usage:

- The majority of respondents 64.9% were female, with the remaining respondents 35.1% being male. The majority of the study's respondents 58.1% are married, 38.4% are unmarried and 3.5% are divorced. In terms of age, the majority of respondents 43% are between the ages of 20 to 30 years, followed by 37% between the age group of 30 to 40 years, and the remaining respondents 12.8% are between the age group of 40 to 50 years, with only 7.2% respondents aged 50 and more years.

- In terms of employment status, the majority 37.5% of respondents are employed, while 20.1% are self-employed. Because the study is focused on household appliances, equal attention has been placed on gathering responses from homemakers. Of the total respondents, 23.2% are homemakers.

- The majority of respondents 50.8% are graduates, while 35% are postgraduates. It is also clear that a small proportion of respondents 9.3% are educated below high school, while the remaining 5% hold a PhD degree.

- Whether self-employed or not, majority of the respondents belong to the monthly income category of Rs. 50,000 to Rs. 1,00,000. The majority of respondents 74.9% reside in urban areas, while just 25.1% live in rural areas. This is because the location of the respondents is a crucial element that influences their decision to buy GHA.

- The number of family members is questioned since it is an important consideration when purchasing household appliances. Of the 1,050 respondents surveyed for the current study, 36.2% have less than three members in their family, 42.2% have three to five members, and 19.6% have more than five. The type and thereby the size of family

might also influence the purchasing behaviour. 52.4% of respondents are from joint families, while the remaining 47.6% belong to nuclear families.

- The researcher classified household appliances into three categories in order to better understand their purpose of usage. They include entertainment, utility, and appliances for the kitchen. From the surveyed 1050 respondents, the majority (98.8%) own a refrigerator, followed by an air conditioner (91.3%) and a washing machine (90.9%).

- The analysis revealed that, LCD/Plasma is the first widely possessed entertainment appliance, and hence its consumption is also the highest. The majority of respondents use LCDs for more than four hours every day. 503 respondents reported using a computer (desktop or laptop) for more than four hours. Only a few people own a home theatre or an overhead projector as an entertainment device, and its use is therefore limited.

- It has been noticed that almost all respondents utilise air conditioners and washing machines as utility appliances. Most respondents use their air conditioners for more than four hours per day. On the other hand, the washing machine is utilised for two to four hours per day. Stream Iron is the third most commonly used appliance. The least owned appliances are dishwashers, tumble dryers, and electric hot water systems.

- Refrigerator, deep freezer, and mixer/grinder are the most commonly used kitchen appliances among respondents. But obviously, refrigerators and deep freezers are commodities that can be utilised 24 hours a day, seven days a week. The majority of respondents utilised microwaves for up to four hours, followed by electric ovens. The least owned and utilised appliance is the juicer and kettle.

### 5.1.2 Findings in relation to Eco-friendly products and consumerism:

- When consumers were asked about their opinion regarding the types of eco-friendly product purchased, it was found that, Aerosol Propellants, Architectural Paints and Powder Coatings, Fire Extinguisher and Wood Substances / Substitutes were never purchased by majority of the respondents. But, on the contrary it was seen that some of

the respondents used Leather Products, Packaging Materials, Paper and Soaps and detergents which were eco-friendly.

- Furthermore, respondents were asked about their perception towards eco-friendly products. Around 60-65 % of respondents have agreed/ strongly agreed that eco-friendly products are beneficial for environment, healthy, dependable and trustworthy, decent quality/ performance and perform better than conventional products. However, around 50% of the respondents disagreed that eco-friendly products are rationally priced, well-advertised and available near.

- When consumers were asked about their reasons for the purchase of Eco-friendly products, around 80 – 90% of the respondents agreed and strongly agreed on statements - 'They give a good image of me', 'I want to preserve the earth', 'I just like eco-friendly products' and 'I was satisfied with most of eco-friendly products I bought'. On the other hand, around 50% of respondents perceived that non-purchase of eco-friendly products will result into people judging them. Around 90% of respondents have experienced the feeling of consumer delight after purchasing eco-friendly products.

### 5.1.3 Findings related to Pro-Environmental Behaviour and Energy Savings: (Objective 1)

***To investigate the relationship between pro-environment behaviour and energy savings.***

- To understand the relationship between Pro-Environmental Behaviour and Energy Savings, initially, respondents were asked about their level of awareness about environment. It was observed that around 50% of the respondents were not aware about the Carbon Dioxide ($CO_2$) emissions from household energy consumption, zero carbon homes and around 55% of the respondents are aware of ocean acidification. However, 90% of the respondents are very much aware about electricity saving in the home are aware about the ill effects of all kinds of Pollution and are aware about the ill effects of Global Warming. Around 60% of the respondents are aware about climate change, whereas 70% - 90% of respondents are aware about the ill effects of ozone depletion, global warming, and all kinds of pollution.

- Positive attitudes towards the environment can increase resilience and flexibility to environmental change. People are more inclined to support and participate in activities aimed at mitigating and adapting to climate change impacts. Majority of the respondents believed the importance of environmental protection, regarding air pollution, regarding household energy consumption, savings of natural resources and preference for energy efficient appliances.

- To understand Consumer's Energy-Saving Behaviour, respondents were asked to give opinion on statement like - 'I turn off lights and appliances when not in use', 'I use energy efficient light bulbs throughout the house', 'I consciously try to change my daily habits for energy savings', 'I believe in replacing older appliances which might be less energy efficient' and 'I look for cutting out air leaks to reduce draughts', etc. Around 80% - 90% of the respondents opined favourably towards these statements.

- Correlation analysis was also performed for this dataset, which revealed that there is a positive relationship between pro-environmental behaviour and energy savings.

### 5.1.4 Findings in relation to behaviour pattern of GHA: (Objective 2)

***To study the behaviour pattern of selected green household appliances among Indian households.***

- The "behaviour pattern of selected green household appliances" refers to the way people interact with and use environmentally friendly (green) appliances in their homes. This includes various aspects such as: usage frequency, replacement and upgrades, awareness and knowledge, purchase decision, etc. to understand what star rated appliances mean to consumers, they are given three option which were 'More energy savings', 'Statement of identity' and 'Good for environment'. 406 respondents (38.7%) selected all the three parameters – More energy savings, Good for the environment and Statement of identity. Whereas, 124 (11.81%) consumers believed that star rated

products are limited to more energy savings, 229 (21.81%) respondents selected Good for environment and statement of identity was selected by 122 (10.67%) least respondents.

- To analyse the purchase behaviour, respondents were asked whether they prefer buying star rated products. It was observed that 97.21% of the consumers choose buying star rated product as they are aware of its benefits. Also, higher star ratings usually mean lower energy consumption, which translates to lower electricity bills over time. Furthermore, it was questioned whether they have purchased star rated/GHA in last three years. It was found that 94.8% have purchased star rated appliances. For this purchase, 90% have paid an additional price due to its added features or environmental advantages.

- To understand the parameters for buying star rated appliance against non-star rated appliance, respondents were asked their preferences in relation to four household appliances – Television, Refrigerator, Air-Conditioner and Washing Machine. For Television, 13 parameters were laid down. Out of this, most important parameters selected by respondents were 'Label and brand name', 'Cost incentive attached like easy EMI, festival offer, free gifts', 'Convenient to use', 'Latest and smart technology' and 'Price'. 'Health reasons' and 'Latest and smart technology' were found to be the least preferred parameters.

- For refrigerator, out of the 14 parameters laid down, respondents selected 'Label and brand name', 'Cost incentive attached like easy EMI, festival offer, free gifts', 'Convenient to use', 'More Capacity', 'Health reasons' and 'Price' to be the most preferred parameters. 'Recommendation from relatives and friends' and 'Persuasion from salesman' were the least preferred ones.

- Regarding the parameters that played an important role which purchasing Air-Conditioners, it was observed that 'Label and brand name', 'Personal research from website and newspaper before purchase', 'Energy saving', 'Star Rating', 'Latest and smart technology' and 'Price' were most significant. Whereas, 'Space', 'Look and feel', 'Recommendation from relatives and friends' and 'Persuasion from salesman' did not have much role to play in the purchase of Air-Conditioners.

- ‘Label and brand name’, ‘Latest and smart technology’ and ‘Price’ were most preferred factors for purchase of Washing Machine. And ‘Persuasion from salesman’, ‘Look and feel’ and ‘Personal research from website and newspaper before purchase’ were least significant.

- The level of happiness as an outcome of purchase of star rated appliances was explored for the selected Green Household Appliances. The level of happiness was measured on five point Likert scale - ‘Not at all happy’ to ‘Extremely happy’. More than 75% of the total respondents ranged between ‘Very happy’ to ‘Extremely happy’ for all the four household appliances.

### 5.1.5 Findings related to awareness/attitude and factors affecting consumers’ GPB:

***To study consumers’ overall level of awareness, attitude and influence/readiness towards green purchase behaviour.***

Awareness and attitudes of consumers towards green products play crucial role in influencing green purchase behaviour. Consumers awareness refers to the information and knowledge consumers have about environmental issues and the environmental impact of their consumption choices. Whereas, consumer attitudes refer to consumers' feelings, beliefs, and predispositions toward green products and environmental issues.

- When respondents were questioned for the level of awareness of GHA, more than 95% of the respondents were aware and familiar with GHA. Further almost all of them were aware about energy rating labels, environmental implication of Green Household Appliances and benefits of using Green Household Appliances.

- To understand the attitude, statements were put forward to recognize its positive and negative impacts. It was seen that majority of the respondents agreed that ‘Energy Efficient / Green Household Appliances are important to reduce air pollution’. They also believed that ‘Energy Efficient / Green Household Appliances are important to

save natural resources that would be used for producing energy, e.g. coal, water'. 62% of the consumers would recommend others to purchase and use Energy Efficient / Green Household Appliances. Almost all the respondents strongly believed that energy efficient/ green household appliances would certainly be beneficial in long run. Further, almost everybody would prefer to choose energy efficient appliances over traditional/ conventional ones. More than 90% of the respondents believed that government schemes/ promotional offers for green products would certainly help in faster and wider promotion and adoption of Green Household Appliances.

- Consumers' readiness for green household appliances refers to the extent to which consumers are prepared and willing to adopt environmentally friendly appliances in their homes and advocate about them to others. This readiness encompasses several factors, including awareness, attitudes, perceived benefits, and the ability to purchase and use these appliances. But at the same time around 80% of the respondents agreed that they do believe in using Green Products but are not a strong promoter of Energy Efficient Appliances. Around 40% of respondents believe that it is the government's responsibility to take green initiatives and promote green products. More than 95% of the respondents strongly agreed that price is the major issue which resist buyers to purchase Energy Efficient / Green Household Appliances. 50% believed that people themselves should take the responsibility of promoting Green Household Appliances. Around 60% of respondents believe in using Green Household Appliances and would advocate the use of the same to others also.

- Lastly, correlation analysis technique was applied to explore the relationship between consumer's awareness/knowledge about Green Household Appliances and their attitude towards Green Household Appliances. The analysis revealed a significant relationship between consumer's awareness/ knowledge and their attitude towards Green Household Appliances.

***To determine the factors and their impact on consumers' green purchase behaviour.***

- Green purchase behaviour refers to the buying decisions of consumers who prioritize environmentally friendly products. Various factors can influence this behaviour, often

interrelated and spanning personal, social, and external aspects. The key factors affecting green purchase behaviour included in this study are – Awareness of GHA, Attitude in relation to GHA, Consumers Readiness, Subjective Social norms, Moral norms, Environmental Self-Identity, Warm Glow and Perceived barriers. The researcher has used Karl Pearson's Correlation to explore the relation between these selected factors and green purchase behaviour.

- Correlation technique was applied to determine the relationship between each of the selected factors individually and green purchase behaviour. Following table: 5.1, gives a snapshot of the relationship between the selected factors and green purchase behaviour.

**Table 5.1: A snapshot of selected factors and its' impact on Green Purchase Behaviour**

| Sr. No. | Selected factors and its' impact on GPB | Pearson's' Correlation Coefficient | P- value | Significant/ Non-significant |
|---|---|---|---|---|
| 1 | Consumers' Knowledge on GPB | 0.092 | 0.000 | Significant |
| 2 | Consumers' Attitude on GPB | 0.146 | 0.000 | Significant |
| 3 | Consumers' Readiness on GPB | 0.130 | 0.000 | Significant |
| 4 | Social Norms on GPB | 0.140 | 0.000 | Significant |
| 5 | Moral Norms on GPB | 0.168 | 0.000 | Significant |
| 6 | Consumers' Self-Identity on GPB | 0.278 | 0.000 | Significant |
| 7 | Warm Glow on GPB | 0.178 | 0.000 | Significant |
| 8 | Perceived Barriers on GPB | -0.010 | 0.000 | Non-significant |

### 5.1.6 Findings related to awareness and recognition of green eco-label system: (Objective 4)

***To determine the level of recognition of eco-labels used in selected green household appliances.***

- The recognition of the eco-label system used for GHA relates to the awareness, understanding, and acceptance of eco-labels by consumers, producers, and other stakeholders. Eco-labels can be single-attributes, meaning they focus on a single lifecycle stage (i.e. the use of phase) of a product/service or a single environmental issue (i.e. VOC emissions). They can also be multi-attribute; meaning they focus on the entire life cycle (manufacture, use, maintenance, disposal) of a product/service and addresses many different environmental issue (i.e. energy use, chemical use, recycling, and more).

- Out of the total respondents surveyed, 95.4% easily recognized the 100% green eco-label. Around 85-87% of the respondents could easily recognize star energy saving, Reuse-Reduce-Recycle and star rated labels. However, around 75% of the respondents were not able to recognize the green seal. Indian Organic and USDA Organic logos were also not recognized by respondents in a large number 85% and 80.2% respectively.

### 5.1.7 Findings in relation to Green Product/ Brand Awareness, Perceived Green Brand Image, Perceived Quality and Purchase Intention: (Objective 6)

***To determine the impact of consumers' level of green product/brand awareness and green product/brand image on the perceived quality and purchase intention towards selected green household appliances.***

- **Relationship between Green Product/ Brand Awareness and Perceived Quality**

  The relationship between green product/brand awareness and perceived quality is an important aspect of consumer behaviour and brand management, especially in the context of increasing environmental consciousness. As consumers become more environmentally conscious, awareness of green brands or products often influences their purchasing decisions. Brands that effectively communicate their sustainability

efforts can build stronger connections with eco-conscious consumers. Green awareness can enhance a brand's credibility, leading to a stronger belief in the product's quality.

Correlation analysis technique revealed a positive correlation (0.449) between these two variables. Hence, it is concluded that there is a significant relationship between Green Product/ Brand Awareness and Perceived Quality.

- **Relationship Between Green Product/Brand Image and Perceived Quality**

  A green product or brand image refers to the perception that consumers have about a product or brand based on its environmental friendliness. Perceived quality is the consumer's judgment about the overall excellence or superiority of a product or service. It is subjective and can be influenced by various factors, including brand reputation, price, and product attributes. Brands that successfully communicate their environmental commitments while ensuring high product performance are likely to see a boost in perceived quality. This relationship is crucial for businesses aiming to target eco-conscious consumers, as it influences purchasing decisions, brand loyalty, and overall market success.

  Correlation analysis technique revealed a positive correlation (0.438) between these two variables. Hence, it is concluded that there is a significant relationship between Green Product/ Brand Awareness and Purchase Intention.

- **Relationship between Green Product/ Brand Awareness and Purchase Intention**

  The link between green product/ brand awareness and purchase intention is crucial. Green brand awareness is the degree to which customers recognise and remember a brand that supports environmentally friendly behaviours and green products purchase. Purchase intention refers to the possibility that a consumer will buy a particular brand fir a particular product. Understanding this relationship can assist firms in developing efficient marketing strategies to increase both awareness and purchase intention for their green products.

  Correlation analysis technique revealed a positive correlation (0.424) between these two variables. Hence, it is concluded that there is a significant relationship between Green Product/ Brand Awareness and Purchase Intention.

- **Relationship between Perceived Green Brand Image and Purchase Intention**

The association between perceived green brand image and purchase intention is strong, and it can be explained by a variety of psychological and behavioural factors. A green brand image is the consumer's perception of a company's commitment to environmental sustainability. Purchase intention refers to a consumer's likelihood of purchasing a product from a specific brand. Green Brand Image and Purchase Intention are also positively (0.367) related. Hence, there is a significant relationship between Green Brand Image and Purchase Intention.

### 5.1.8 Findings related to the impact of Green Marketing Tools on Green Purchase Behaviour: (Objective 7)

***To determine the relationship between green marketing tools and green purchase behaviour.***

- The relationship between green marketing tools and Green Purchase Behaviour (GPB) is complex and interdependent. Green marketing tools refer to methods and approaches used by firms to promote environmentally friendly products or services. Green Purchase Behaviour, on the other hand, refers to the actions of customers who prefer to buy ecologically friendly products.

- To assess the relationship between Green Marketing Tools and GPB, the researcher has applied Karl Pearson’s Correlation technique to explore the relationship between Green Brand Awareness and Green Brand Image and Perceived Quality and Purchase Intention.

- It was found that there is a positive correlation between Green Perceived Product and GPB. The value of correlation is 0.404. The significance level is 0.00 which is lesser than 0.005. Hence, we reject null hypothesis and accept alternative hypothesis. So, we conclude that there is a significant relationship between Green Perceived Product and Green Purchase Behaviour.

- It was also found that there is a positive correlation between Green Perceived Price and GPB. The value of correlation is 0.611. The significance level is 0.00 which is lesser

than 0.005. Hence, we reject null hypothesis and accept alternative hypothesis. So, we conclude that there is a significant relationship between Green Perceived Price and Green Purchase Behaviour.

- There exists a positive relationship between Green Perceived Place and GPB. The value of correlation is 0.565. The significance level is 0.00 which is lesser than 0.005. Hence, we reject null hypothesis and accept alternative hypothesis. So, we conclude that there is a significant relationship between Green Perceived Place and Green Purchase Behaviour.

- Finally, positive correlation is also found between Green Perceived Promotion and GPB. The value of correlation is 0.677. The significance level is 0.00 which is lesser than 0.005. Hence, we reject null hypothesis and accept alternative hypothesis. So, we conclude that there is a significant relationship between Green Perceived Promotion and Green Purchase Behaviour.

### 5.1.9 Findings related to Sustainable Development: (Objective 8)

***To determine the relationship between consumer demographics and sustainable consumption behaviour.***

The relationship between consumer demographics and sustainable consumption behaviour is diverse, with age, gender, income and education all having a substantial impact on motives, behaviours, and sustainability attitudes. Understanding these links can help to better design methods for promoting sustainable consumption behaviour.
Since the data set of all demographic variables – Age, Gender, Income and Education had a normal distribution, the researcher has conducted ANOVA Test to explore the relationship between demographic variables and sustainable consumption behaviour. Based on the findings, rejecting null hypothesis, we conclude that there is a significant relationship between demographic variables and sustainable consumption behaviour.

## 5.2 RECOMMENDATIONS FROM THE STUDY:

***Based on the findings of the research study, the researcher makes the following specific recommendations:***

Perception towards eco-friendly products play an important role in determining the overall attitude and thereby the purchase intention of green products. The current study focused on exploring the perception of respondents towards eco-friendly products. Based on the findings of the study, following recommendations are proposed by the researcher:

1) In the competition between green and common products, price is still one of the key factors affecting consumers' purchase decisions. High price of eco-friendly/green products act as a major barrier to the adoption of green products and sustainable consumption. Consumers have incomplete knowledge and information about green products and cannot accurately know about the green state of products. Consumers can only make indirect judgments through product prices. If the price is too high, some consumers give up their purchases. Hence, corporates manufacturing green products should focus on the impact of green product pricing in their enterprises' green growth model and analyse the differences in pricing between green products and common products. Manufacturers of green products should identify and lay down the conditions for distinguishing qualified and unqualified green products in the market to promote standardized operation of the green product market and improve the confidence of consumers in the green market.
2) Further, the findings reveal that around 70% of respondents perceive that green products are not well advertised. The focus of traditional advertising majorly encompasses on the features of the product. However, corporates and marketers should put extra efforts to design marketing strategies on credible green advertising. Elements like honesty, clearness, details, commitment, urgency, shared value etc. should be incorporated in credible green advertising.

3) The availability of green products at markets and communities also creates a hindrance in sustainable consumption. Thus, manufacturers should focus on wide distribution and timely supply of green products. Proper logistics and supply chain management play an important role in wider and timely distribution of green products.

Higher environmental awareness is likely to trigger a higher adoption rate of green / eco-friendly products. However, as described previously, positive environmental values and intentions do not always lead to actual EER adoption behaviour. This phenomenon is described as the "knowledge-action gap" and "value-action gap". All said and done, awareness about the environmental concerns is the starting point to trigger sustainable consumption. Based on the findings of the current study, following recommendations should be considered.

1) Advertisement copies of green promotion should focus more on making potential consumers have some basic knowledge about CO2 emissions from household energy consumption, zero carbon homes, ill effects of - climate change, global warming, ozone depletion ocean acidification etc. These terms are too technical for a common man to understand. But, with the use of creative strategies, marketers and advertisers can certainly come out with simple and lucid understanding of these terms and thereby raise the concern of people towards environmental protection as one step towards sustainable consumption. Green products not only mean 'electricity saving', but much more than that. Also, efforts should be put to reduce the knowledge-action gap.

2) It is further observed that despite having favourable / positive attitude toward environmental protection, people resist purchasing green products mainly due to high prices. This demands a rational pricing strategy to be adopted by the manufacturers of green products. Cost-reduction strategy can be thought of especially in areas of green production, green promotion, and green distribution. Re-engineering of various processes carried out in organisations can certainly help in targeting rational pricing policy. Positive attitude toward environmental protection should lead to stronger purchase intentions and thereby the actual purchase of green products.

3) A local as well as global focus on the demand side of the energy equation has never been more important. Supply uncertainty, high prices and urgent climate targets all point to the value of energy efficiency and energy savings. No doubt, today's consumer is focusing more on reducing household energy consumption through adoption of green products, governments along with other green initiatives should also respond with various measures including targeted grants and demand-reduction campaigns. Consumers who have not yet adopted green products should be targeted with well-

designed campaigns and thereby motivate people to reduce their energy use. Advertisers and marketers should learn about the designing of awareness and behaviour change campaigns to achieve maximum effect. It is clear that good design matters – simply transmitting information will not change behaviour and poorly designed campaigns often do not deliver their expected impact. The choice of message, the tone, how the campaign is designed and the transmission channels, can all fundamentally affect the resulting impact on behaviour.

The researcher proposes following recommendations regarding various factors determining green purchase behaviour. Factors like, awareness, attitude and consumer readiness to adopt green products play a crucial role. Further, factors like subjective social norms, moral norms, environmental self-identity, warm glow, perceived barriers etc. draw an immediate attention to some important implications on the part of organisations, individuals and society.

1) The current study reveals that majority of respondents showed high level of awareness about green household appliances; knew the implications of green household appliances; recognized energy rating labels (though only few were recognized), and benefits of using green household appliances. The attitude of majority of respondents towards product quality, premium prices, durability, energy-savings, etc of green household appliances was positive. Irrespective of the above-mentioned favourable findings, the consumer readiness towards adoption of green household appliances seems to be restricted. Cognitive variables, customer individual attributes, and societal factors play a crucial role in influencing consumers' inclinations to engage in environmentally friendly purchasing. This study reveals some significant and practical consequences. Primarily, they provide essential counsel to marketers and organizations aiming to synchronize their plans with the burgeoning trend of environmentally conscious purchasing. Companies may optimize their product development, marketing campaigns, and supply chain procedures to better attract environmentally conscious consumers by acknowledging the favourable influence of elements such as green technology and sustainable consumption. This study highlights the necessity for enhanced environmental education and awareness initiatives to provide consumers with information on the environmental repercussions of their decisions. This understanding has the potential to motivate collective action and sway people towards making environmentally conscious purchase choices.

2) Social norms are an effective policy tool to encourage a wide range of pro-environmental behaviours, including green consumption. Considering that social norm interventions are only effective when targeted at the right consumers. The perceived social norms have a stronger impact on the green consumption behaviours of consumers who value social power and social face. However, the effect becomes weaker for consumers with a strong tendency toward independence. With reference to the societal expectations (especially people who are important to you), the current study surfaces mix findings regarding green purchase behaviour. Marketers and advertisers should design more social influence approaches reflected in promotional strategies (advertising copy messages) for constructing green consumption culture. Such strategies can certainly influence consumer preferences by shaping perceptions of what is socially acceptable or desirable.

3) Moral norms reflect an individual's consumption activities that are consistent with one's conscience, values and morals. The current study reveals a significant relationship between moral norms of respondents and their green purchase behaviour. Majority of respondents do feel that they would like to engage in morally responsible behaviour by adopting green products. Despite this, there are quite a good number of respondents who do not feel the same. The moulding of an individual into a responsible citizen of a country probably will trigger green purchase behaviour. Societal marketing strategies adopted by marketers and advertisers can certainly aid in improving the moral and social behaviour of consumers. The perception about self as a green consumer will certainly aid in adoption of green products, provided the environmental self-identity is high.

4) A considerable amount of past research studies has looked at how the use of green products affected user enjoyment, sense of worth, perceived quality of the product, and experience of a "warm glow." The perceived increase in social worth leads to warm glow feelings and a subsequent enhancement of the accompanying consumption experience." In essence, it is scientifically proven that people are happier when using green products over their conventional, potentially harmful, counterparts. Along with 'More consumption', 'Reduction in consumption' can equally contribute positively to green purchase behaviour. More sales yield higher profits, so naturally companies are marketing their products to encourage consumption. "Buy more and save!" In the case of environmentally conscious products, not only save, but "Buy more and feel happier!"

Eco-friendly producers are still producers motivated by profits. It seems nearly impossible to be motivated genuinely by both profits and sustainability. Therefore, changing the paradigm of consumption is ultimately a challenge for consumers. This "shop to save the planet" mentality can be replaced with "shop smarter and shop less." Reducing consumption, while making the choice to be mindful of the products consumed, is a much more sustainable lifestyle.

With regards to the factors that possibly create a barrier in purchase of 'energy efficient/green household appliances', the study revealed that inability to differentiate between energy efficient and traditional appliances, premium price, performance, overall extra time taken to purchase green products, lack of information about green products, unease of access of green products, fear of being cheated etc. are some major ones. These barriers are making green behaviour too difficult and costly from a practical, financial, and social standpoint. There has been limited success in motivating the masses or the 'middle green', who fall in-between the 'super-greens' and 'green rejectors'. Existing green marketing is either irrelevant or even alienating to most of the middle-class consumers. Marketers need to identify where sustainability marketing has gone wrong. Following are some recommendations with reference to some specific barriers:

1) Price: The price premium compared to the conventional alternative needs to be addressed through the three other parts of the marketing mix (product, place, and promotion). But the most effective way to address the price premium is to address it directly—to find ways to reduce it. Reducing the sustainable price premium is a key factor in having a greater percentage of average consumers purchase more environmentally favourable products.

2) Performance: Many consumers still question the efficacy of green products versus their regular, nongreen product alternatives despite strides made in product performance. Marketers need to clearly communicate the product's benefits and sustainable position especially when commanding a premium price. The challenge is that greener products do not have a stellar history of performing well.

3) Behavioural change: Many sustainable practices require consumers to change their habits and adopt new ones. Recycling, turning off the lights, lowering the thermostat in winter, using recyclable bags for shopping—all require changing behaviour. Typically changing

a behaviour is a slow process as consumers must be retaught a habit. That is why Generation Y, often referred to as millennials, are quicker to adopt sustainability practices since they are not breaking old habits. Marketers can help consumers more quickly adopt new behaviour targeting to sustainable development practices and buy new products when they highlight the benefits and long-term cost savings in promoting the product.

The constructs of the green brand awareness, perceived green brand image, perceived quality, and purchase intentions all are of highest importance and their performance in the current study was exceptionally high. The study found that, the overwhelming majority of surveyed respondents though familiar/aware with green brands did not concern themselves with green issues in their everyday purchase decisions. Further, despite performing exceptionally high on the level of agreement for the items of both the constructs ie., perceived green brand image and purchase intention, the actual green purchase was somehow proportionately very low. Following are some recommendations in context of the same.

1) Price emerged in this study as more credible determinant of customer purchase decision than environmental considerations. It would therefore be strategically significance if advocates, policy makers and business leaders reduce the cost of green products to the final consumer and thereby trigger more of purchase intentions of consumers. An intensive public education campaigns, coupled with strategic brand building efforts to enhance the level of green brand consumption.

2) Past research has proven that green brand image has a significant moderating impact between consumers' perceived benefits and their green brand preferences, the current study reveals a very high positive response for the perceived green brand image construct. Thus, marketers and policy decision makers should not only focus on the role of green brand image as an antecedent of the consumer's perceived functional and emotional benefits, and as a predictor of green brand preference, green trust, green brand loyalty, and sustainable corporate image, but also the role of green brand image as a mediator in the process of green purchase behaviour.

3) The relationship between green perceived quality and purchase intention is also very critical and of utmost importance triggering green purchase behaviour. Green brand

awareness and perceived green brand image accounted for around 45% and 49% of the variance in perceived quality and purchase intention. This means that if the consumers positively perceive green brand awareness and green brand image, they are likely to have high involvement in green purchase behaviour. Thus, marketers who sell green, energy efficient products must effectively work towards green marketing that will contribute significantly towards green perceived quality and stimulates their green purchase behaviour.

In the modern era of globalization, the biggest need of the time is not only to keep the customers and consumers intact but also to keep our natural environment safe. Consumers are slowly and gradually becoming aware about the increasing environmental issues such as global warming, acid rain, depletion of ozone layer and degradation of land etc. This resulted in increase in consumer concern towards eco-friendly products for the rehabilitation of ecological balance. As today's consumers are becoming more and more conscious of natural/green products, businesses are beginning to modify their own thoughts and actions to meet the concerns of the consumers. Thus, the concept of green marketing tools is gaining momentum in today's world of marketing. It can be rightly said that green marketing is a holistic concept involving environmentally friendly practices in all the stages such as the production, designing, marketing and selling of goods or services. Following are some important observations and related recommendations to faster diffusion and adoption of green products.

1) Green-marketing tools were observed to have a significant impact on the purchase intention towards green products. Nevertheless, the feeling of environment protection also further fuels the intent for green purchase. These findings depict that the interest on green product and environment is spreading amongst people, though slow and gradual. However, there still is a need to inform and educate consumers about unique value addition that green features bring, and the benefits associated with it.

2) It is further opined that environment friendly lifestyle is not depicted by one time purchase or association with an event, it is a continuous process which needs to be enacted upon every day.

3) The research reveals that price is a fundamental barrier that limits the adaption of green products. Green purchases would be an equal competitor to non-green products only if

the prices of green products become lesser than the prices of non-green products. As this would serve the long run interest of environment protection and support sustainability, government subsidy could be a medium of making green products more affordable. Such subsidy would also encourage people with less income to purchase such products. Once people become habituated with the benefits, subsidies can be perhaps withdrawn from products of private manufacturers.

4) Manufacturers and marketers should continuously strive for Eco-packaging which adds an entire new dimension to green marketing. It has a significant impact on the purchase intention of consumers. Creativity in packaging elements will assist consumers to distinguish and differentiate a green product from a non-green product. Consumers also preferred products that used green medium of packaging to a traditional packaging material.

5) Green distribution refers to logistics practices that minimize environmental harm. It is possible to make greener choices across the supply chain, including storage, order processing, packaging, and final-mile delivery. Green logistics reduce waste and emissions - ideal for businesses that hope to shrink their carbon footprint.

6) Manufacturers and marketers can focus on the components of green distribution. Every component in the distribution process has room for improvement. Achieving truly sustainable operations means taking a close look at every leg of your customer's and product's journey: for e.g., Warehousing – Can we make warehouses greener? Most likely, yes. These buildings tend to be drafty and, in some cases, larger than they need to be. This makes them costly to heat and cool. And of course, heating and cooling processes—along with lighting and warehouse equipment - cause significant CO2 emissions. In addition, warehouse location matters. Distribution centres located few and far between means more miles of ground transportation, leading to more emissions. Thus manufacturers can adopt green distribution through green warehousing, just one strategy from among many such strategies.

Some more recommendations to increase the awareness of green household appliances, among consumers, are as follows:

1) Advertisements: Utilise many media outlets (TV, radio, online platforms, and social media) to execute complete ad campaigns emphasising the benefits of GHAs. Concentrate on the environmental effect, savings, and health benefits.

2) Free Trials: Allow consumers to test green appliances in their homes for a limited time. This allows people to personally experience the benefits, which can considerably lessen reluctance.

3) Awareness Campaigns: Organise public awareness campaigns in your community, school, and business. Collaborate with environmental organisations and local governments to reach a larger audience. Distribute instructive brochures, produce compelling material such as films and infographics, and leverage social media influencers to spread the word.

The current study reveals some poor recognition of eco-labels and energy star labels. Following are some recommendations to improve the understanding and recognition of the same.

1) Seminars and Workshops: Hold educational seminars and workshops in partnership with manufacturers and environmental organisations. Teach consumers how to interpret eco-labels and energy star ratings. These can be held at community centres, schools, or workplaces.

2) Interactive online tools: Create interactive web tools and apps that allow consumers to simply comprehend and compare energy ratings and eco-labels for various products.

3) Clear and Simple Labelling: Make eco-labels and energy star ratings easier to understand by simplifying their design. Use simple symbols and brief information that is easy to understand at first sight.

To sensitize the younger generation about environmental protection, energy savings, degradation of natural resources, green consumption etc. following suggestions are worth noting and to be implemented rigorously during their school and college/university education.

1) Tailored Curriculum**:** Create age-appropriate information that emphasises the value of energy efficiency and how to read and interpret energy-star ratings.

2) Interactive Learning Modules: To engage and reinforce learning, use interactive modules such as quizzes, hands-on activities, and real-world examples.

3) Collaborations with Educational Institutions: Work with schools and educational institutions to include these modules into their existing environmental studies programmes.

Following recommendations suggest some useful implications on the part of some important stakeholders.

1) Offering Cost Incentives to consumers:
   - Promotional Offers: Regularly present promotional offers for festivals or special occasions, such as discounts, cash back, or bundled deals.
   - Easy Financing alternatives: Offer simple EMI alternatives to make GHAs more affordable and accessible to a larger audience.
   - Complimentary Offers: To increase perceived value, provide attractive complimentary presents or supplementary services (such as extended warranties) with the purchase of GHA.

2) Encouraging Government and Commercial collaboration:
   - Public-Private Partnerships: Encourage government agencies and private enterprises to collaborate on research and development of sophisticated GHAs.
   - Joint Marketing Campaigns: Collaborate on cooperative marketing initiatives that promote the benefits of GHAs while emphasising government assistance.

3) Providing Financial Incentives:
   - Subsidies for Manufacturers: Provide subsidies or grants to manufacturers in order to cut GHA production costs and make them more competitive.
   - Consumer Rebates: Provide tax breaks or direct financial incentives to customers who buy GHAs, making them more appealing.

- Energy Efficiency Grants: Provide grants or low-interest loans to homes that want to convert to energy-efficient appliances, with a focus on low-income families.

Implementing these ideas can considerably boost GHA awareness and acceptance, so helping to conserve the environment and promote sustainable living. Stakeholders may establish a market environment that promotes the widespread use of energy-efficient appliances by educating users, offering financial incentives, and encouraging collaboration.

## 5.3 LIMITATIONS OF THE STUDY:

- The received data might result in incorrect and inaccurate data information, analysis, and research study outcomes.
- The study is restricted to only four commonly used home appliances viz. Television, Air-Conditioner, Refrigerator and Washing Machine.
- The research design and sample size used in the research may limit the findings of the study along with the Statistical software and tools used by the researcher
- This study focuses on eco-friendly product use among customers in Gujarat cities. This study's findings may not apply to consumers who use eco-friendly products in other areas.
- Emerging retail products can be taken as test market and consumers' purchase pattern can be observed from these test markets.

## 5.4 SCOPE FOR FUTURE STUDY:

The future scope of this research is extensive and multifaceted, providing multiple chances to expand understanding and encourage action towards sustainable consumption. By expanding research in these areas, scholars, legislators, and businesses can gain useful insights and develop more effective tactics to encourage the use of green household appliances, ultimately

contributing to larger environmental sustainability goals. The scope entails investigating numerous dimensions and broadening the research in multiple directions in order to better understand and encourage sustainable consumption. Below are some prospective future research directions and areas of exploration:

1. **Comparative Geographical Studies:**
    a) **Regional Comparisons**: The finding of this research, made in Gujarat district, can be used in other states of India to identify difference and to recognize the similarities of consumer behaviour.
    b) **International Comparisons**: the study can be extended to various countries to compare global trends in the adoption of GHA.

2. **Expanding range of appliances:**
    a) **Broader categories:** The study can be further expanded by including other categories of green products like sustainable furniture, eco-friendly/ green buildings, etc.
    b) **Appliances with latest green technologies:** new and emerging green appliances with latest technologies can be studies and included for the purpose of comparison with the traditional appliances.

3. **Deeper Demographic Analysis:**
    a) **Behavioural Psychographics**: Lifestyle, attitude and values can amount to behavioural aspects of psychology. These factors can determine comprehensive understanding of consumers behaviour.
    b) **Niche demographic segments:** The whole study can only be targeted to sub-demographic segments like age, income, education to understand the rational of purchase of GHA.

4. **Impact Assessment:**
    a) **Environment impact:** One can measure the actual impact on the environment due to usage and non-usage of green products. The positive aspect can lead to reduction in carbon foot printing.

b) **Economic Impact:** the cost saving made by consumers due to usage of GHA, reduction in the electricity bills, appliance longevity, etc. can be analysed.

5. **Consumers' behavioural Theories:**
   a) **Behavioural Economics:** Decision making process can be studied in detail by applying behaviour economic theories.
   b) Future research can evaluate the efficiency of alternative theories to the TPB model, providing a more comprehensive framework for studying pro-environmental behaviour.
   c) Future research should focus on integrating many theories to create a strong framework for studying customer behaviour towards GHA.

## 5.5 CONCLUSIONS:

- When consumers were asked about their opinion regarding the types of eco-friendly product purchased, it was found that, Aerosol Propellants, Architectural Paints and Powder Coatings, Fire Extinguisher and Wood Substances / Substitutes were never purchased by majority of the respondents. But, on the contrary it was seen that some of the respondents used Leather Products, Packaging Materials, Paper and Soaps and detergents which were eco-friendly.

- Regarding the respondents' perception towards eco-friendly products, around 60-65 % of respondents have agreed/ strongly agreed that eco-friendly products are beneficial for environment, healthy, dependable and trustworthy, decent quality/ performance and perform better than conventional products. However, around 50% of the respondents disagreed that eco-friendly products are rationally priced, well-advertised and available nearby.

- The current study highlights some important reasons for the purchase of Eco-friendly products. Majority of respondents gave following reasons for purchasing eco-friendly products:
  - Eco-friendly products give a good image of an individual
  - Responsibility of preserving the earth

- Liking towards eco-friendly products
- Satisfaction with most of eco-friendly products bought
- Around 90% of respondents have experienced the feeling of consumer delight after purchasing eco-friendly products.

- ANOVA analysis to explore the relationship between pro-environmental behaviour and energy savings revealed that there is a significant and positive relationship between them.

- Half of the total respondents surveyed were not aware about the Carbon Dioxide (CO2) emissions from household energy consumption, zero carbon homes and around 55% of the respondents are aware of ocean acidification. However, 90% of the respondents are very much aware about electricity saving in the home are aware about the ill effects of all kinds of Pollution and are aware about the ill effects of Global Warming. Around 60% of the respondents are aware about climate change, whereas 70% - 90% of respondents are aware about the ill effects of ozone depletion, global warming, and all kinds of pollution.

- Positive attitudes towards the environment can increase resilience and flexibility to environmental change. People are more inclined to support and participate in activities aimed at mitigating and adapting to climate change impacts. Majority of the respondents believed the importance of environmental protection, regarding air pollution, regarding household energy consumption, savings of natural resources and preference for energy efficient appliances.

- Around 80% - 90% of the respondents opined favourably towards various statements exploring the perception of respondents towards energy saving behaviour like – turning off lights and appliances when not in use, use of energy efficient light bulbs throughout the house, consciously trying to change one's daily habits for energy savings, replacing older appliances which might be less energy efficient etc.

- Regarding the behaviour pattern of selected green household appliances, it was observed that usage frequency, replacement and upgrades, awareness and knowledge, purchase decision, etc. revealed desirable results. The understanding about star rated appliances to the consumers was - More energy savings (11.81%), Statement of identity (10.67%), and Good for environment (21.81%). However, 38% of the respondents have identified themselves with all the three reasons.

- The green purchase behaviour of respondents revealed that 97.21% of the consumers choose buying star rated product as they are aware of its benefits. Also, higher star ratings usually mean lower energy consumption, which translates to lower electricity bills over time.
- Regarding the parameters for buying star rated appliance (for Television) against non-star rated appliance, respondents out of 13 parameters, the most important parameters selected by respondents were 'Label and brand name', 'Cost incentive attached like easy EMI, festival offer, free gifts', 'Convenient to use', 'Latest and smart technology' and 'Price'. 'Health reasons' and 'Latest and smart technology' were found to be the least preferred parameters.

- For refrigerator, out of the 14 parameters laid down, respondents selected 'Label and brand name', 'Cost incentive attached like easy EMI, festival offer, free gifts', 'Convenient to use', 'More Capacity', 'Health reasons' and 'Price' to be the most preferred parameters. 'Recommendation from relatives and friends' and 'Persuasion from salesman' were the least preferred ones.

- Regarding the parameters that played an important role which purchasing Air-Conditioners, it was observed that 'Label and brand name', 'Personal research from website and newspaper before purchase', 'Energy saving', 'Star Rating', 'Latest and smart technology' and 'Price' were most significant. Whereas, 'Space', 'Look and feel', 'Recommendation from relatives and friends' and 'Persuasion from salesman' did not have much role to play in the purchase of Air-Conditioners.

- 'Label and brand name', 'Latest and smart technology' and 'Price' were most preferred factors for purchase of Washing Machine. And 'Persuasion from salesman', 'Look and

feel' and 'Personal research from website and newspaper before purchase' were least significant.

- The level of happiness as an outcome of purchase of star rated appliances was explored for the selected Green Household Appliances. The level of happiness was measured on five-point Likert scale - 'Not at all happy' to 'Extremely happy'. More than 75% of the total respondents ranged between 'Very happy' to 'Extremely happy' for all the four household appliances.

- The level of awareness of Green Household Appliances data observed that more than 95% of the respondents were aware and familiar with GHA. Further, almost all of them were aware about energy rating labels, environmental implication of Green Household Appliances and benefits of using Green Household Appliances.

- To understand the attitude towards GHA, majority of the respondents agreed that 'Energy Efficient / Green Household Appliances are important to reduce air pollution'. They also believed that 'Energy Efficient / Green Household Appliances are important to save natural resources that would be used for producing energy, e.g. coal, water'. 62% of the consumers would recommend others to purchase and use Energy Efficient / Green Household Appliances. Almost all the respondents strongly believed that energy efficient/ green household appliances would certainly be beneficial in long run. Further, almost everybody would prefer to choose energy efficient appliances over traditional/ conventional ones. More than 90% of the respondents believed that government schemes/ promotional offers for green products would certainly help in faster and wider promotion and adoption of Green Household Appliances.

- The consumers' readiness for green household appliances was also explored in the current research study. Several factors, including awareness, attitudes, perceived benefits, and the ability to purchase and use these appliances etc. were studied. Around 80% of the respondents agreed that they do believe in using Green Products but are not a strong promoter of Energy Efficient Appliances. Around 40% of respondents believe that it is the government's responsibility to take green initiatives and promote green

products. More than 95% of the respondents strongly agreed that price is the major issue which resist buyers to purchase Energy Efficient / Green Household Appliances. 50% believed that people themselves should take the responsibility of promoting Green Household Appliances. Around 60% of respondents believe in using Green Household Appliances and would advocate the use of the same to others also.

- Correlation analysis technique was applied to explore the relationship between consumer's awareness/knowledge about Green Household Appliances and their attitude towards Green Household Appliances. The analysis revealed a significant relationship between consumer's awareness/ knowledge and their attitude towards Green Household Appliances.

- The key factors affecting green purchase behaviour included in this study are – Awareness of GHA, Attitude in relation to GHA, Consumers Readiness, Subjective Social norms, Moral norms, Environmental Self-Identity, Warm Glow and Perceived barriers. The researcher has used Karl Pearson's Correlation to explore the relation between these selected factors and green purchase behaviour. Correlation and ANNOVA analysis, factor analysis techniques were applied and the findings revealed a positive and significant relationship between these factors and green purchase behaviour.

- Regarding the recognition of green eco-labels, the findings revealed that out of the total respondents surveyed, 95.4% easily recognized the 100% green eco-label. Around 85-87% of the respondents could easily recognize star energy saving, Reuse-Reduce-Recycle and star rated labels. However, around 75% of the respondents were not able to recognize the green seal. Indian Organic and USDA Organic logos were also not recognized by respondents in a large number 85% and 80.2% respectively.

- Correlation analysis technique was applied to study the relationship between green product/brand awareness and perceived quality revealed a positive correlation (0.449) between these two variables. Hence, it is concluded that there is a significant relationship between Green Product/ Brand Awareness and Perceived Quality.

- Correlation analysis technique was applied to explore the relationship between **g**reen product/brand image and perceived quality revealed a positive correlation (0.438) between these two variables. Hence, it is concluded that there is a significant relationship between Green Product/ Brand Awareness and Purchase Intention.

- Correlation analysis technique was applied to explore the relationship between Green Product/ Brand Awareness and Purchase Intention revealed a positive correlation (0.424) between these two variables. Hence, it is concluded that there is a significant relationship between Green Product/ Brand Awareness and Purchase Intention.
- The association between perceived green brand image and purchase intention is strong, and it can be explained by a variety of psychological and behavioural factors. A green brand image is the consumer's perception of a company's commitment to environmental sustainability. Purchase intention refers to a consumer's likelihood of purchasing a product from a specific brand. Green Brand Image and Purchase Intention are also positively (0.367) related. Hence, there is a significant relationship between Green Brand Image and Purchase Intention.

- The relationship between green marketing tools and Green Purchase Behaviour (GPB) was explored individually. Following conclusions are arrived at:
  - There is a positive and significant correlation between Green Perceived Product and GPB. Hence, we reject null hypothesis and accept alternative hypothesis.
  - There is a positive and significant correlation between Green Perceived Price and GPB. Hence, we reject null hypothesis and accept alternative hypothesis.
  - There is a positive and significant correlation between Green Perceived Place and GPB. Hence, we reject null hypothesis and accept alternative hypothesis.
  - There is a positive and significant correlation between Green Perceived Promotion and GPB. Hence, we reject null hypothesis and accept alternative hypothesis.

Since the data set of all demographic variables – Age, Gender, Income and Education had a normal distribution, the researcher has conducted ANOVA test to explore the relationship between demographic variables and sustainable consumption behaviour. Based on the statistical findings, we conclude that among all four demographic variables viz., age, gender, income, and education, only income is found to have significant impact

on sustainable consumption behaviour. The other three demographic variables – age, gender, and education are not strong predictors of sustainable consumption behaviour. Thus, we accept null hypothesis for Income and reject null hypothesis for age, gender, and education.