Chapter – 5 Conclusions and Recommendations

5.1 Introduction

Consumers have become conscious of environment in recent times and therefore, they are now more inclined towards environmental friendly products. The purchase intention of consumers depends on their attitude and behavior towards green products. LED lighting is one such green product that satisfies consumers’ need of environment friendly and energy saving lighting product. The attributes of LED such as energy saving, durability, operational life, controllability etc. encourage consumers to buy LED products over regular lighting products. The study aims to analyze the impact of consumer attitude, consumer behavior, consumer awareness, attributes of LED and demographic factors on purchase intention of consumers towards green products (LED lighting products). This chapter shows the summary of findings and discusses recommendations based on the results of the study. It concludes all the results that are derived from the previous chapters.

5.2 Summary of Findings

The objective of the study is to analyze the impact of consumer attitude, consumer behavior, consumer awareness and attributes of LED on purchase intention of consumers towards LED lighting products across demographic factors, primary analysis was conducted to fulfill the objectives of the study.

Descriptive analysis was done to understand the characteristics of the respondents. It was found in the analysis that majority of the respondents were males, middle aged and belonged to the lower income group. Graduate and post graduate consumers are more inclined towards purchase of green products. It was also observed that almost all people have heard about eco-friendly products and categorize their knowledge about LED products to be medium. Majority of the people are aware of such products and its benefits to the sustainable future. People read eco-labels of the products before making a purchase and are even willing to pay high for eco-friendly products.
Consumers show a positive attitude towards environmental problems. They understand the severity of the environmental problems and feel convenient in using environmentally safe products. People are concerned for environmental issues and prefer buying eco-friendly products over regular products. Consumers perceive LED products to be of superior quality, durability, flexible, having long operation life, energy saving features and controllability. When asked for their purchase intention of green products, people responded positively. People are willing to buy LED lighting products over other non-green products and even willing to pay a higher price for such green products.

The objectives of the study are completely fulfilled. The results of the study have been discussed below:

**Objective 1: To measure the customer’s awareness and perception about green marketing of LED lighting products among the customers of various segments**

Consumer awareness about green products and its impact on purchase intention of consumers was assessed. It was not limited to consumer awareness, consumer attitude and behavior towards green products was also assessed.

The correlation analysis suggested that consumer attitudes, consumer behavior, attributes of LED and purchase intention are all correlated. There is a positive and significant correlation between all independent and dependent factors.

**Result Validation**

Similar results were found in other studies also. Gan et al (2008) found that product attributes and purchase intention are positively related. Studies also found that consumer behavior is related to purchase intention (Gill et al, 1986 and Brosdahl& Carpenter, 2010). Tanner and Kast (2003) and Chan (2001) established a relationship between consumer attitude and purchase intention.

It was revealed from the analysis that attributes of LED, consumer behavior and consumer attitude have a positive significant impact on purchase intention when analyzed individually.

In the combined analysis, it was found that a positive and significant relationship exists between consumer attitude, consumer behavior and purchase intention.
Consumer attitude has a positive but weak relationship with purchase intention while consumer behavior is found to have a strong positive relationship with purchase intention. With this relationship, it can be inferred that people are considerate about severity of environmental problems and believe that it is convenient to be eco-friendly, therefore, are willing to purchase green products. Similarly, people feel convenience in buying green products, therefore, are willing to purchase such products. Consumers having positive attitude and exhibit positive behavior towards green products prefer green products over regular products and are willing to pay a higher price for such products.

**Result Validation**

Banerjee and McKeage (1994) also found that perception of consumers about severity of ecological problems impacts their purchase intention of green products. Banerjee and McKeage (1994) complimented the results found in the study while Laroche et al (2001) contrasted our results. They found that consumers do not find it important to be eco-friendly and do not consider severity of environmental problems while making a purchase decision and therefore, are not willing to pay a higher price for green products. Brosdahl, & Carpenter (2010), similar to our study, found that consumer’s knowledge about environmental issues directly impacts purchase intention.

It was observed that purchase intention, consumer attitude and consumer behavior differ across various age, income, gender and education groups. Females, middle aged (41-45), graduates and professionals with high income have a more positive attitude and behavior towards green products and a higher purchase intention of such products. Graduates within the income bracket of INR 20000-50000 have a more positive attitude and behavior towards green products and a higher purchase intention of eco-friendly products. People who are aware of LED products, its benefits, which read labels and are willing to pay a premium price for green products give more importance to attributes of LED and have a positive consumer attitude, behavior and purchase intention towards green LED products.

Datta (2011) supported our results by finding that educated consumers who are aware of green products can influence purchase intention of consumers to a large extent. Pro-environmental concerns also impact the purchase intention of consumers in case
of green products. Datta, (2011) also found that consumers in India are not willing to pay a higher price for eco-friendly products.

**Objective 2: To explore the basic parameter for development of new marketing strategy encompassing “Green Marketing” of LED lighting products among the consumer of the region chosen for this study**

The results exhibit that consumer awareness of the green product is positively associated with its purchase intention. That is, consumers who are aware of the benefits of green products are more likely to purchase such products. It has been found that people who are aware of green products, its benefits and read eco labels develop a more positive attitude and behavior towards the product and a higher purchase intention.

Moreover, it was revealed from the analysis that people categorize their knowledge about LEDs to be low and are unaware of its benefits to the environment. Awareness among consumers about green products triggers their demand for green products and therefore, efforts should be made to promote the green features of the products. This is true in case of LEDs also, the consumers value the green attributes of LEDs but categorize their knowledge about LEDs to be medium, and therefore, marketers must focus upon promoting the green attributes of LED products to the consumers.

Another factor that triggers consumers to buy a green product is their concern for environment. Marketers must make efforts to make the consumers aware of the environmental problems and pro-environmental concerns must be raised through advertising to influence the purchasing behavior of consumers and have impact on the welfare of the environment.

So, the marketing efforts must concentrate on increasing the awareness of the LED products, its attributes that are different from regular products and its benefits to the environment.

**Result Validation**

Similar results have been found by Datta (2011) that concentrates on Indian producers of green products and suggested that pro-environmental concern is a predictor of consumer buying behavior towards green products. Bhatia and Jain (2013) also
suggested that consumer awareness about green products is important and has the potential to influence the purchase intention of consumers. Rather et al (2014) also revealed that awareness of green products is positively associated with higher purchase intention and the buying behavior varies with the awareness level of consumers. Consumers with high level of awareness of green products show a medium to high level of purchase intention towards green products whereas consumers with low level of awareness show a low to no green buying behavior.

**Objective 3: To measure customer’s willingness to pay extra, if green products cost more**

The results show that consumers are willing to pay more for green products if they have a positive attitude and behavior towards such products. In our analysis, it was found that consumers have a positive attitude and behavior towards the eco-friendly products and therefore, are willing to pay extra for such products. Consumers are concerned for the environmental issues, have preference for green products over regular products and believe that buying green products is convenient, so they are not reluctant in pay a premium price for the green products such as energy saving LED lights. However, a few respondents were reluctant in paying a higher price for green products. Therefore, marketers of green products in India must ensure that they deliver good quality eco-friendly products and try to minimize their cost so that the burden of high price is not shifted to the consumers.

A product that is genuinely offering attributes that are environmental friendly and are contributing to the environment conservation will be easily accepted by the consumers and will be paid high for. Marketers can charge a higher price of the green product if it is benefitting the environment with its green attributes.

**Result Validation**

Datta and Dean (2011), in contrast to our study, proposed that consumers are unwilling to pay a premium price for green products or the segment that is willing to pay a premium price is not very large and therefore, marketers should be able to command a reasonable price for the product. The results of Jacob & Jacob (2012) supported our results in a way that it showed that the demand of consumers for green products has increased as their attitude and behavior towards environment has
changed and therefore, they are willing to pay a little extra price for acquiring green products. Klaus (2005) recommended a role of government in promoting green products that is beneficial for both consumers and producers. Klaus (2005) suggested that government can choose to subsidize the green products or launch a consumer awareness campaign to improve the knowledge of consumers about green products and in a way support the producers in promoting an eco-friendly product and consumers to care for the environment.

The objectives of the study were fulfilled as the impact of attributes of LED, consumer awareness, attitude and behavior on purchase intention of green products has been successfully assessed in the targeted region.
Objective
To measure the awareness and perception of consumers towards LED products and their willingness to pay extra

Need for the Study

To measure awareness and perception of consumers
To develop new marketing strategy for green marketing of
To measure customer’s willingness to pay

Attributes of LED
Consumer Awareness
Marketing factors
Consumer Attitude
Consumer Behavior
Demographic factors

Purchase Intention

Primary Data collection through

Data Analysis
Correlation
Regression
ANOVA

Conclusion & Recommendation

Figure 1: Research Validation Model
5.3 Managerial and Research Implications

5.3.1 Managerial Implications

The results of the study can prove to be helpful to the marketers and researchers in context to the marketing of green products. Marketers and sellers of green products can use the findings of the study to develop their production and marketing strategies for their eco-friendly products. The market for green products is underexploited since the demand for environmental friendly products is rising overtime and a very few companies deliver quality eco-friendly products. Generally, the green products costs high and therefore, demand for such product is low. They can use to information to decide their target market- graduate women, middle aged within a low or high (not medium) income bracket and those who are conscious of the environmental issues. Marketers can use the results of the study and focus on increasing the awareness of the green attributes of LED lighting products. As the results of the study suggests, marketers can adopt the approach of increasing the knowledge of the consumers about the benefits of green products and their contribution in solving environmental problems. On the whole, marketers of LED lighting products can highly benefit from the outcomes of the study in promoting the products.

5.3.2 Research Implications

The result of the study provides a basis for further studies by researchers. Researchers can use the findings of the study about green attributes of LED and its contribution to the environment. They can also understand the impact of consumer behavior, consumer attitude, attributes of LED and demographic factors on purchase intention of green LED products. This combined impact has not been depicted in previous studies in the literature which can prove to be quite helpful for researchers and academicians. The research proposes the marketing strategy to be used by producers and marketers and the willingness of people to pay a premium price for eco-friendly products. Researchers will also gain insight about consumer attitude and behavior towards green products, their concern about environment issues and their awareness of benefits of green products and its impact on their purchase intention of green products. This can enhance the current knowledge about LEDs and consumer
behavior towards such products and provide guidance to the researchers to further work upon these findings.

### 5.4 Recommendations

- Marketers can gain from the results by creating more awareness about its products, its green features and the benefits it provides over other competitive but non-green products. Consumers have little knowledge about the attributes of green products available in the market and marketers can take advantage by ensuring that people have sufficient knowledge about their product. Efforts must be made to raise consumers’ consciousness and investment must be made in consumer education and awareness.

- Consumers seek quality in their products. Green products having better attributes than regular products certainly win the market. Therefore, marketers of green products should ensure better or at least similar quality as regular products and other attributes that make the green product a good option.

- As the results suggest that people in a higher income group are generally more inclined towards the green products. One of the reasons for this could be high price of the green product. Indian marketers should therefore try to cut their cost and make available the green products at a reasonable price.

- Moreover, females who fall in the middle age group and a higher income bracket must be the targeted audiences of the marketing efforts of the companies selling green products.

- Also, it should be ensured that the product label depicts that the product is environmentally safe as majority of the consumers read product labels before buying.

- The attributes of LED must be highlighted and consumers must be made aware of the benefits of attributes of LED to the environment.

- It must be made convenient for the consumers to buy green products by making it available in the market as this has been found to have an impact on their purchase intention.
5.5 Limitations of the Study

Although the study has been conducted extensively considering all aspects of consumer perception of green marketing, it still suffers from certain limitations:

- The study was dedicated to a single segment of products, that is, LED lights. The results, therefore, cannot be generalized to all eco-friendly products.
- The geographical region of the study is also kept to be limited because of less availability of resources.
- The study is limited to the analysis across only four demographic factors of the respondents which could have been increased with time and responses.
- There exists a possibility of subjective judgment since the responses have been collected through questionnaires.
- The study has been conducted in the Delhi-NCR region of India. The sample size of the study is small representing a small population of the country.

5.6 Assumptions of the Study

The methodological assumptions made for the study are as follows:

a) The sample size has been assumed to be a representation of the population/universe.

b) The statistical methods and techniques are assumed to be the best approach for the data analysis based on quantitative nature of the research.

c) Quantitative nature of the research and the data collected tool used (questionnaire) has been assumed to be sufficient to fulfill the research objectives as compared to the addition of qualitative research for the enhanced research.

d) Although normality distribution has been tested, but the analytical approach for the current research has been kept as parametric in nature.

e) It was also assumed that variables are normally distributed with no outliers and variables are measured without any error.
5.7 Future Scope

- The scope of the study can be expanded by considering more geographical location in future research.
- Also, the sample size could be expanded to make the results more generalizable.
- More segments of products can be incorporated in future study to make it more comprehensive.
- More demographic factors can be included to expand the scope of the study.
- More quantitative and qualitative tools of data collection can be used to make the data more reliable.
- The results of the present study are encouraging and motivating to conduct a future research with more number of variables and an exhaustive data set.

5.8 Conclusion

The results of the study are concrete and motivate. Significant and motivating relationships have been found of attributes of LED products, consumer awareness, attitude and behavior with purchase intention. Therefore, it can be concluded that consumer awareness, attitude and behavior must be enhanced to improve the purchase intention of consumers towards green products. People must be educated about better attributes of LED lights to enhance their preference of eco-friendly products. Moreover, females, middle aged with high income must be the target audience for marketers of green products. Lastly, marketers and sellers must make efforts to capture the underexploited market and fulfill the increasing demand of genuine eco-friendly products.