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Analysis of Green Marketing Mix Impact on Consumer Buying Behavior

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Abstract: This study examined the effects of green marketing mixon consumers buying decision process energy efficient appliances containing energy label. Statistical population of this study was buyers and consumers of Lar City. Sampling method in this population was randomanda sample of 382 individuals, decision makers for buying were selected and analyzed. Therefore, in this study, after stating goals and significance of the research objectives and raising related questions, the theoretical and research bases of green marketing and consumer buying decision process were discussed and also the acceptance criteria of green production and environmental standards studied and energy label was introduced. In order to examine the four elements of green marketing mix (green product, green price, green distribution, green promotion) and the impact of these elements on decision-making processof consumers buying and after collecting the data by distributing questionnaires SPSS Software was used to measure and analyze the variables. At the end, it was specified that the most influence belongs to green product also the impact of each green marketing mix characteristics on buying decisions was determined.

Key words: Green marketing, green marketing mix, green product, consumer, buying decision, green buying behavior, environmental standards, energylabel

INTRODUCTION

Designing and manufacturing products proportional to the environment, protection of the environment and management of it, applies increasingly as a new strategy for success in intense global competitions. If a company wants to be successful in the global market needs strategic plans and coordination of concepts related to environmental management and its own performance. That is why today increasing attention to environmental protection is one of the most strategic tools in modern business.

Therefore, it can be considered as one of the customers needs and competitive pressures as well as environmental resources opportunities. Designing and manufacturing comply with the environmental standards has also become one of the common production methods inindustry. Green production merges complete and clean production technology with man agement considerations and has a great power in production processes, product structure, materials, energy consumption, operation of production and management of the workshop. Acceptance of green production can help reduce wastage and pollution and promote environmental protection.

Kotler and Armstrong (1999), the issue of environmental protection has led consumers rethink about the products that they purchase. Many consumers are ready for the protection of the environment, pay more for products that meet environmental standards (Mohammadian and Khotai, 2011).

Such environmental issues such as gradual global warming and climate changes to a large extent depend on increasing the consumption that is possible through international trade. More consumption leads to the environmental impacts caused by production processes, transportation and also wastage. Therefore, a more prosperous economy has led to the increasing consumption of fuel and fossil energies existing on earth so that the environment can not tolerate more and this has led to newer and more dufficult environmental legislation; companies work in accordance with the development of environmentally friendly products and will add new processes for reducing energy consumption and harmful substances.

It should be noted that the environment has become a crucial and very important issue for all classes of people at the customer place or at the manufacturer's place and where as traditional marketing puts too much emphasis on customers' demands and do not consider public welfare and environmental issues, this has entered all aspects of

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organizations and influenced marketing too and has led to the emergence of the concept of "green marketing".

Due to the high energy consumption of house hold appliances such as refrigerators, freezers, washing machines, air conditioners and also various kinds of electric lamps and the increasing number of the mamong families in rural and urban areas, necessity to use them rationally has not only doubled but the design and manufacture of these equipment has been found to conform to the standards of the global optimum. (Saeednia and Firuzian, 2007).

Unfortunately, in not too distant past, lack of attention of domestic manufacturers to quality, good performance and energy consumption in high consumption supplies have caused these equipment use energy to the extent of 30-40% than the most of global optimum models. Also the indiscriminate use of consumers and the lack of information about how to use these tools properly have caused the domestic and commercial sectorsin the country consume over 37% of total final energy in the country. In Iran energy consumption in the domestic sector is higher than other parts while in developed countries the portion of industry and agriculture sectors is higher than the portion of domestic consumption (Iran energy efficiency organization). Hence, the need for efficient use of energy is a social responsibility of consumers that green marketing is trying to accomplish it (Sarvihampa, 2007).

Therefore, we must note that the proper selection and use of appliances not only reduces energy consumption and costs but also longs the life of household appliances and most importantly reduces environmental pollution. To evaluate the effect of each green marketing mix on consumer buying decision process we seek to adopt the most effective mixes of this process.

Research questions:

- Do a green product affect consumer buying decision process?
- Do green prices affect consumer buying decision process?
- Do green promotion affect consumer buying decision process?
- Do green distribution affect consumer buying decision process?

MATERIALS AND METHODS

According to the purpose of the present study and as it is considered an applied research in terms of the nature, a survey descriptive research method has been used.

To examine the theoretical and research literature, library and online studies were used and field work techniques and questionnaires also were used for testing and conclusion.

Statistical population consisted of all buyers and consumers of appliances in Lar. Questionnaires were distributed among buyers who intend to buy an appliance from central shops and markets. In the present study, simple random sampling method was selected.

As the number of statistical population was limited and based on deductions the type of population has normal distribution, the sample size calculations were used in the limited population and the sample size was determined by using the following equation:

$$n = \frac{NZ^2_{\alpha/2}P(1-P)}{\varepsilon^2(N-1)+Z^2_{\alpha/2}P(1-P)}$$

Were:

n = Sample size
N = Size of the population under study
P = Expected amount
$Z^2_{\alpha/2}$ = Square of the standard distribution with a significance level of 5%
ε^2 = Accuracy

As the population of the city of Lar was about 65,000 people in the latest statistics announced by the Bureau of statistics in 1390, this number considered as the consumers of energy efficient household appliances.

The p = 0.5 to calculate sample size at maximum level (Parviz, 1999). Also, the amount of 5% was accurately estimated. With replacement of the formula variables, the sample size was about 382 individuals:

$$n = \frac{65000\times(1/96)^2\times(0/5)\times(1-0/5)}{(0/05)^2\times(65000-1)+(1/96)^2\times(0/5)\times(1-0/5)} = 382$$

The 420 questionnaires were distributed that we could finally collect 387 questionnaires (96% return rate). After eliminating the confounding questionnaires, 384 questionnaires (sample size) was used for statistical analysis.

In this study, questionnaires were used to collect data. The designed question naire for thisstudy consists of five sections and thirty four questions, the first part of the questionnaire was allocated to collecting in formation about the sample under investigation and the characteristics of the respondents.

Factors which were significantly evaluated in the next four sections of the questionnaire include: green product, green price, green promotion, green distribution that are listed respectively, fourteen primary questions were allocated to investigating green product variable in fact questions examined the features of products containing energy or environmental labels. The next three questions deal with the measurement of green price factor. Thirteen questions assessed the importance and impact of the green promotion element and the last four questions were assigned to examine the green distribution variable.

RESULTS AND DISCUSSION

In the following, research questions are discussed.

Question 1 (do green product affect consumer buying decision process?): We have added each item of above variables together and we have calculated the statistics. Total score of green product features obtained between 14 and 70 which its averagewas 53.32, median 53.5 and mode 53. Its variance was 54.80 and standard deviation was 6.76. Thus,we can see that the distribution is normal and they have obtained a high score (Table 1 nd Fig. 1).

Adding the indicators related to the effect of green product characteristics together and dividing into low, medium and high groups the above results obtained, so that from 384 respondents 316 of them or 82.3% had considered the effect of green product characteristics in their purchase process at high level and 18.6% at medium level (Table 2 and Fig. 2).

Question 2 (do green prices affect consumer buying decision process?): We have added each item of above variables together and we have calculated the statistics. The total score was obtained between 3-15 which its average was 10.75, median 11 and mode 11. There was a variance of 4.84 and a standard deviation of 2.2. Thus, we can see that the distribution is normal and they have obtained a relatively high score (Table 3 and Fig. 3). Adding the indicators related to the effect of green price characteristics together and dividing into low, medium and high groups, the above results obtained so that from 384 respondents 59.2% had considered the effect of green price characteristics in their purchase process at high level, 40.1% at medium level and just 1.6% at low level (Table 4 and Fig. 4).

Question 3 (do green promotion affect consumer buying decision process?): We have added each item of above variables together and we have calculated the statistics. The total score was obtained between 3-15 which its

Table 1: Statistics on the characteristics of green product

Parameters	Green product characteristics
Average	53.320
Median	53.500
Mode	53.000
Standard deviation	6.760
Variance	45.800
Skewness	-0.232
Elongation	-0.494
Minimum	37.000
Maximum	66.000

Table 2: Classification of green product characteristics effect

The effect of green product characteristics	Frequency	Percent	Cumulative (%)
Low	0	0.0	0.0
Medium	68	17.6	17.6
High	316	82.4	100.0
Total	384	100.0	

Table 3: Statistics on green price characteristics

Parameters	Green product characteristics
Average	10.750
Median	11.000
Mode	11.000
Standard deviation	2.200
Variance	4.840
Skewness	-0.156
Elongation	-0.386
Minimum	5.000
Maximum	15.000

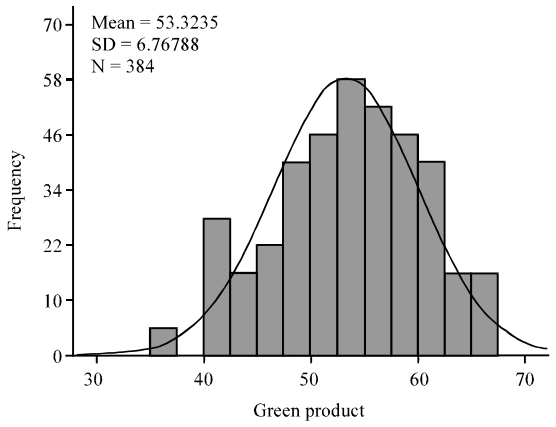

Fig. 1: Normal distribution based on the characteristics of green product

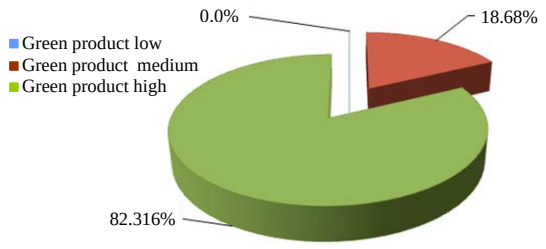

Fig. 2: Pie chart of effect of classification of green product characteristics

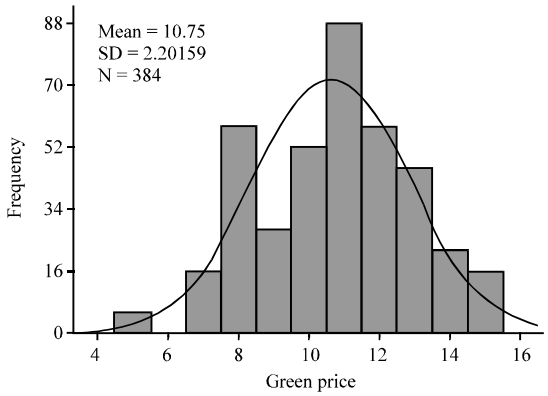

Fig. 3: Normal distribution based on the characteristics of green price

Table 4: Classification of green price characteristics effect

The effect of green product characteristics	Frequency	Percent	Cumulative (%)
Low	6	1.5	1.5
Medium	152	39.7	41.2
High	226	58.8	100.0
Total	384	100.0	-

Table 5: Statistics on green promotion characteristics

Parameters	Green product characteristics
Average	44.410
Median	45.000
Mode	41.000
Standard deviation	6.200
Variance	38.450
Skewness	-0.524
Elongation	0.890
Minimum	24.000
Maximum	57.000

Table 6: Classification of green promotion characteristics effect

The effect of green product characteristics	Frequency	Percent	Cumulative (%)
Low	0	0.0	0.0
Medium	141	36.8	36.8
High	243	63.2	100.0
Total	384	100.0	-

average was 44.41, median 45 and mode 41. There was a variance of 38.45 and a standard deviation of 6.2. Thus, we can see that the distribution is normal and they have obtained a relatively high score (Table 5 and Fig. 5).

Adding the indicators related to the effect of green promotion characteristics together and dividing into low, medium and high groups, the above results obtained so, that from 384 respondents 63.2% had considered the effect of green promotion characteristics in their purchase process at high level, 37.1% at medium level (Table 6 and Fig. 6).

Question 4 (do green distribution affect consumer buying decision process?): We have added eachitem of above variables together and we have calculated the

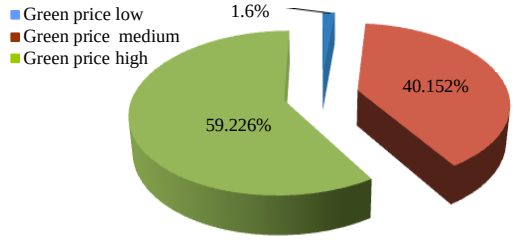

Fig. 4: Pie chart of classification of green price characteristics effect

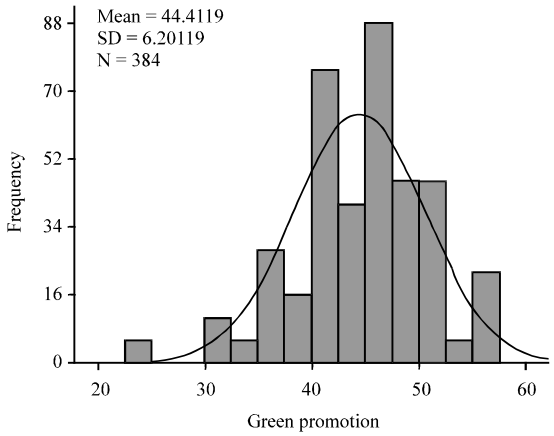

Fig. 5: Normal distribution based on the characteristics of green promotion

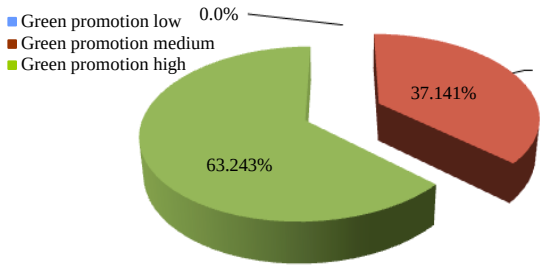

Fig. 6: Pie chart of classification of effect of green promotion characteristics

statistics. The total score was obtained between 4-20 which its average was 15.04, median 15 and mode 18. There was a variance of 9.2 and a standard deviation of 3.03. Thus, we can see that the distribution is close to normal and they have obtained a relatively high score (Table 7 and Fig. 7).

Adding the indicators related to the effect of green distribution characteristics together and dividing into low, medium and high groups, the above results obtained so that from 384 respondents 78.2% had considered the effect of green distribution characteristics in their purchase process at high level, 22.8% at medium level (Table 8 and Fig. 8).

Table 7: Statistics on green distribution characteristics

Statistics	Green product characteristics
Average	15.040
Median	15.000
Mode	18.000
Standard deviation	3.030
Variance	9.2.0
Skewness	-0.512
Elongation	-0.393
Minimum	7.000
Maximum	20.000

Table 8: Classification of green distribution characteristics effect

The effect of green product characteristics	Frequency	Percent	Cumulative (%)
Low	0	0.0	0.0
Medium	85	22.1	22.1
High	299	77.9	100.0
Total	384	100.0	

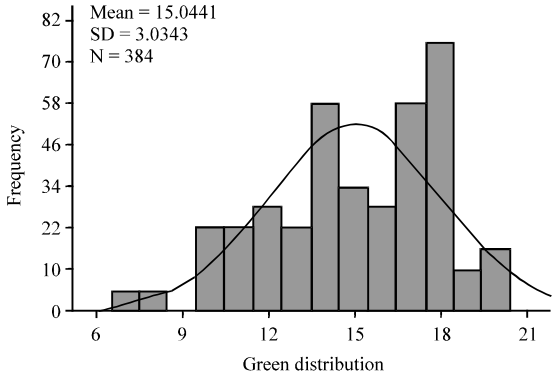

Fig. 7: Normal distribution based on the green distribution characteristics

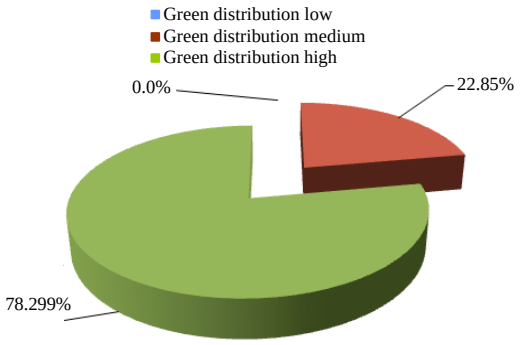

Fig. 8: Pie chart of classification of green distribution characteristics effect

CONCLUSION

With regard to the descriptive evaluation conducted in this study it was specified that all green marketing mix elements on consumer buying decision process of energy efficient appliances (containing energy label) are effective. But the impact of green marketing mix on consumer buying behavior, according to statistical data sample, green product with average of 53.32, green promotion with average of 44.41, green distribution with average of 15.04 and green price with average of 10.75 listed, respectively are important and thus the most effect belongs to green product.

According to the obtained data, the green price factor was determined: high costs of unlabeled appliances, subsidy support of energy efficient appliances, suitability of energy efficient appliances price, respectively are important. It means that increasing energy costs has a great influence on consumer buying decision to choose energy efficient products. And there is a direct relationship between increasing energy costs and choosing energy efficient products (containing energy label).

One of the strategies to increase the impact of last two factors is increasing government support subsidy prices and monitoring on prices of energy efficient appliances and adjusting the prices of some of the most commonly used appliances such as cooling devices due to geographical conditions of a determined region.

The results obtained also indicate that the green promotion components: advertising and television information, informative commercials about saving through the media, personal selling of goods, the role of advertising in training the pattern of proper consumption, sufficient knowledge of personal vendors about products, purchasing from a fair, government support of training the pattern of proper consumption, advertising and informing through news papers and magazines, trust in personal vendors, advertising and informing through brochures and billboards, tend to purchase through email, internet and web sites respectively listed have a degree of importance. It seems tobe required on advertisements and commercials of broad casting about energy label special attention should be paid to aspects of informing and the advantage of media training compared to other sources and to benefit this media, according to obtain the highest rank and also its effectiveness on consumer buying decision process in its best form to enhance the knowledge of the society about energy labels and to promote optimization culture and public participation in this context.

According to the data obtained, green distribution components were specified: quick and easy access to places to repair energy efficient goods, availability of the product in stores of the city, access to places and facilities for the recycling of energy efficient goods respectively listed are important. This means that if there are facilities for the repair of the goods listed in the region (Lar) can affect consumers purchasing decision

to choose energy efficient products. Also access to places and facilities for the recycling of energy efficient goods compare to other components has little effect on buying energy efficient appliances.

RECOMMENDATIONS

Based on research findings the following recommendations need further discussions: creating organizations and environmental associations and establishing green marketing department and structure design as well as the mobilizing appropriate resources and facilities through establishing green fund and allocating budgets to this fund by relevant organizations and in return granting facilities for financial supports and encouragement of social organizations and institutions to protect the environment and consumer's health and knowledge.

Use all efforts, resources and the latest technology for appropriatede signing, production, pricing, promotion and distribution in line with green marketing.

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