A STUDY OF THE ROLE OF CUSTOMER RELATIONSHIP MANAGEMENT AS A COMPETITIVE ADVANTAGE IN GREEN MARKETING

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Abstract

Customer relationship management is considered as a strategic necessity in all organizations. Today, companies and organizations have to consider the preservation of environment in their activities in order to gain customers' satisfaction, perform social responsibilities, and protect consumers' rights. Regarding these green marketing mixtures, the present research aims at studying the role of customer relationship management as a competitive advantage in green marketing on health and cosmetic products. Here, four marketing mixtures (product, promotion, place, and price) were defined as the research variables. Out of the total subjects that included all shops selling these products in the city of Rasht, a sample population of 131 shopkeepers was chosen to indicate the degree of their attention to selling green products and the degree of customers' attention to buying green products. The present research is an analytic-descriptive one. A researcher- made questionnaire standardized through Cronbach's alpha was used to collect data. Then, the data collected were analyzed by SPSS 15, t-test of tow independent samples, and variance analysis. It was finally indicated that there was meaningful relationship between customer relationship management and the mixture elements of green marketing.

Key terms*: Customer relationship management, Green marketing, Competitive advantage, Green marketing mixture*

I. INTRODUCTION

Nowadays, companies and organizations have to consider issues related to the preservation of environment in their activities in order to gain customers' satisfaction, perform social responsibilities, and protect consumers' rights. [6] Since in today's industry customer relationship management is of great importance, these companies and organizations have turned their attention to this point. On the other hand, regarding the environmental issues like gradual warming of the earth, climate changes highly depend on increase in consumption. [9, 11] It should be noted that environment has converted to a vital and critical issue for all people both as producers and customers while traditional marketing pays too much attention to customer's requirements regardless of social welfare and environmental problems. [13] This issue has overwhelmed all dimensions of manufacturing organizations affecting marketing and has resulted in "green marketing". Thus, they are constantly introducing green products so that they can protect the environment, and the customers can reach their desires. This goal is only achievable through green marketing. [3] Polanski (2001) defines green marketing as all designed activities to create and facilitate exchange for the purpose of satisfying human needs and desires with minimum loss made to the environment.[10] Green marketing is in touch with a vast area of activities such as adjustment of products, change in production process, and change in packing. These changes should match the advertisement of the products. The use of technologies of customer relationship management makes presentation of services to customers and the services presented to partners very practical and efficient. [12] The first step in applying customer relationship management in an organization lies in organizational grounds related to customer relationship management. Otherwise, any attempt to deploy customer relationship management in an organization is in vain. [8] Customer relationship management is defined as collection of steps taken to develop, maintain, and optimize a long-lasting and valuable relationship between customers and organizations. Customer relationship management is a trading strategy for choosing and managing effective relationship with customers in order to

gain more profits. Customer relationship management focuses on long-term and stable relationship that adds values to customers and organization. [4]

A. Statement of the problem

Regarding the importance of green marketing in the world of today, the present research aims at studying the role of customer relationship management as a competitive advantage in green marketing on health and cosmetic products emphasizing the role of customer relationship management in four marketing mixtures (product, promotion, place, and price). Thus, the question to be answered here is:

"Does customer relationship management have any effect on green marketing mixture? If so, what is the extent and type of the effect?"

Based on the research question and model, the following hypotheses were developed:

1. Customer relationship management has meaningful effect on green product.
2. Customer relationship management has meaningful effect on green price.
3. Customer relationship management has meaningful effect on green promotion.
4. Customer relationship management has meaningful effect on green place.
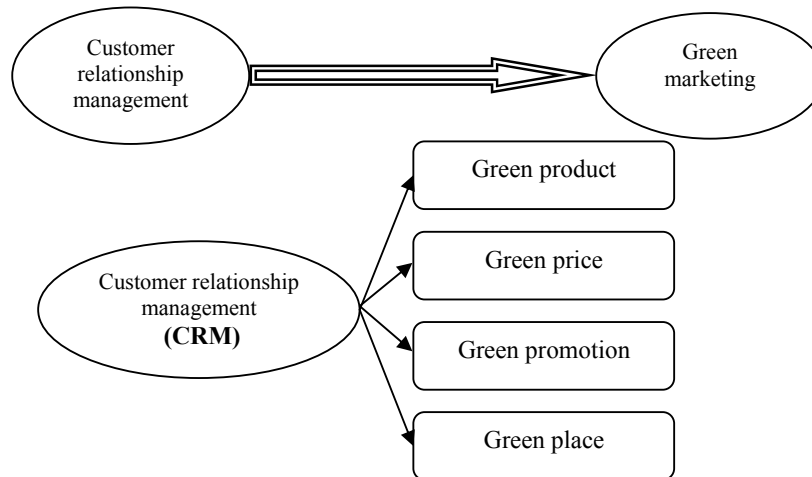

Diagram1. Research model

Customer relationship management emerges from organizational process like relationship marketing and has great effect on maintaining customers through effective management in customer relationship. [7] The main purpose of research is to study the role of customer relationship management as competitive advantage in green marketing. Accordingly, the following objectives have been considered:

1. Development of applied knowledge regarding customer relationship management in green marketing.
2. Presenting scientific evidence with regard to the effect of customer relationship management in green marketing.
3. Identification of green marketing mixture and determining the relative importance of each element of the mixture in customer relationship management as a competitive advantage.
4. Studying the inner relationship of element of customer relationship management and green marketing.
5. Classification of customers and consumers according to their attention to energy and ecology label and environmental factors.

Since the resources are finite and the human needs are infinite, it is important for marketers to use the resources efficiently to fulfill the organizational objectives. Green marketing is a strategy that helps the marketers to achieve this goal. [2]

II. REVIEW OF LITERATURE

To understand the concept of customer relationship management precisely, it is necessary to have a review of trend of developments of approaches and researches regarding marketing so that the grounds of emergence of this concept in new marketing can be recognized.

Nicole's researches: This researcher has studied the role of deployment of CRM in changing the type of services and the increase in the customers' satisfaction in Canadian Post Corporation. This corporation has extended the project of changing businesses in the groups of post companies in Canada to support its strategic priority. Considering the overall view of the organization about increasing customers' value of the companies, not only was the corporation successful in achieving its primary objective but also it succeeded to found method and principle for presenting a future framework called sustainable future. This revolutionary approach has consolidated the success of Canadian Post Corporation as a global leader. [1]

Chen and Popovich (2003) in their article titled "understanding customer relationship management" emphasizing the necessity of preparing the grounds of CRM prior to applying it in organizations argue that the first step in employing CRM is the evaluation of the organizational grounds related to CRM or any effort to apply customer relationship management in an organization would be useless.[5]

III. MATERIALS AND METHODS

Regarding the goal of the present research, it is descriptive-analytic and of applied one. Simply put, the descriptive research here describes the characteristics of customers based on their age, gender, work background, and level of education.

The subjects in this study included all shops selling health and cosmetic products in the city of Rasht which were 156 shops totally. Out of the total subject population a sample population of 111 shopkeepers was chosen to indicate the degree of their attention to selling green products and the degree of customers' attention to buying green products. Since the subject population in question was limited, sampling was conducted by the use of Cochran formula as shown below.

$$n = \frac{\frac{z^2 pq}{d^2}}{1 + \frac{1}{N}\left(\frac{z^2 pq}{d^2} - 1\right)} \qquad \text{...1)}$$

Since the level of significance is 0.5, the subject population was finally totaled to be 111.

The data collection procedure was done through researcher-made questionnaire consisting of five parts and 25 questions. It was designed based on Likert Scale (very low to very high). The first four parts includes the role of customer relationship management as a competitive advantage on health and cosmetic products, and the fifth part involves the demographic characteristics of the subjects.

To evaluate the validity of the questionnaire, surface and content types of validity were utilized. In so doing, the questionnaire was submitted to a number of outstanding professors in management and behavioral science. Based on the views that a questionnaire should be of reasonable length, unambiguous with simple instructions and direction, and most importantly, purposeful, their ideas and views certified the questionnaire fully after making some corrections and modifications.

To evaluate the reliability of the questionnaire, Cronbach's alpha was used. Twenty questionnaires were first distributed among the shopkeepers. One was left unanswered. A total of nineteen questionnaires were evaluated through Cronbach's alpha. The result was 91.7 with the level of significance of .5.

The data collected were analyzed by SPSS 15, one sample t-test, independent samples t-test, and analysis of variance (ANOVA).

IV. DATA ANALYSIS

What follows is the data analysis of the results achieved through the application of related statistical procedures.

1. Respondents' demography

The demographic characteristics of respondents such as gender, age, level of education, and work experience are discussed in this section.

2.   The gender of respondents

59 respondents were male comprising 53.2 percent, and female respondents were 46.8 percent of total population. The following table shows this characteristic.

Table 1. Frequency based on gender

Gender	Frequency	Percent	Cumulative frequency
Man	59	53.2	53.2
woman	52	46.8	100
Total	111	100	

3.   The age of respondents

Regarding the age, respondents were divided into 4 groups. 48 respondents were in age range of 30-40 that comprised 43 percent of total respondents. 17 respondents were in age range of 40-50 with 15 percent. 39 and 7 respondents were under 30 and over 50 respectively.

Table 2. Frequency based on age

Age	Frequency	Percent	Cumulative frequency
Under 30 years	39	35.1	35.1
30 - 40	48	43.2	78.4
40 - 50	17	15.3	93.7
Over 50	7	6.3	100
Total	111	100	

4. Education level of respondents

The highest frequency refers to those who own diploma degree with 70 respondents, and the lowest frequency goes back to respondents of MA holders or higher with just 3 persons. 28 respondents had post-diploma and 36 were under diploma.

Table 3. Frequency based on Education level

Education level	frequency	percent	Cumulative frequency
Under diploma	36	32.4	32.4
diploma	44	39.6	72.1
BA	28	25.2	97.3
MA and higher	3	2.7	100
Total	111	100	

5.Work experience of respondents

4 respondents had over 20 years of work experience that comprised just 3.6 percent of population. Respondents with 5 -10 years of work experience comprised 47.7 percent of population. 11 respondents had less than 5 years of work experience that comprised just 10 percent of population.

Table 4. Frequency based on work experience

Work experience	frequency	percent	Cumulative frequency
Under 5	11	9.9	9.9
5-10	53	47.7	57.7

10- 20	43	38.7	96.4
Over 20	4	3.6	100
Total	111	100	

6.Hypothesis testing

The first hypothesis: Customer relationship management has meaningful effect on green product.

H_0 indicates that customer relationship management has meaningful effect on green product. The statistical figure of the first hypothesis is displayed as:

$H_0: \mu \leq 3$

$H_1: \mu > 3$ ....2)

The result of testing the first hypothesis reveals that **H_0** is rejected with the level of significance of .5. Thus, customer relationship management has meaningful effect on green product with 95 percent of confidence.

Tabel 5.One sample t-test of the first hypothesis

1st hypothesis	Mean	t	df	P
Green product	3.401	47.566	110	0.000

The second hypothesis: Customer relationship management has meaningful effect on green pricing.

H_0 indicates that customer relationship management has meaningful effect on green pricing. The statistical figure of the first hypothesis is displayed as:

$H_0: \mu \leq 3$

$H_1: \mu > 3$ ....3)

The result of testing the first hypothesis reveals that **H_0** is rejected with the level of significance of .5. Thus, customer relationship management has meaningful effect on green pricing with 95 percent of confidence.

Table 6. One sample t-test of the second hypothesis

2nd hypothesis	Mean	t	df	P
Green pricing	2.967	43.692	111	0.000

The 3rd hypothesis: Customer relationship management has meaningful effect on green promotion.

H_0 indicates that customer relationship management has meaningful effect on green promotion. The statistical figure of the first hypothesis is displayed as:

$H_0: \mu \leq 3$

$H_1: \mu > 3$ ....4)

The result of testing the first hypothesis reveals that **H_0** is rejected with the level of significance of .5. Thus, customer relationship management has meaningful effect on green promotion with 95 percent of confidence.

Table 7. One sample t-test of the third hypothesis

3rd hypothesis	Mean	t	df	P
Green promotion	3.294	45.122	111	0.000

The 4th hypothesis: Customer relationship management has meaningful effect on green place.

H_0 indicates that customer relationship management has meaningful effect on green place. The statistical figure of the first hypothesis is displayed as:

H_0: $\mu \leq 3$

H_1: $\mu > 3$ ....5)

The result of testing the first hypothesis reveals that **H_0** is rejected with the level of significance of .5. Thus, customer relationship management has meaningful effect on green place with 95 percent of confidence.

Table 8. One sample t-test of the fourth hypothesis

4th hypothesis	Mean	t	df	P
Green place	3.660	55.350	111	0.000

7. Analysis of the respondents' view based on gender

To measure the meaningfulness of the mean difference of the respondents' view, based on their gender, regarding the effect of customer relationship management on the four-fold elements of marketing mixture, independent samples t-test was used. The output of this test was calculated by SPSS and Levene's test on the basis of variance homogeneity. In this test, **H_0** indicates that the mean difference between the views of male and female respondents is not meaningful. The statistical figure of these hypotheses is displayed as:

$$\begin{cases} H_0 : \mu_1 = \mu_2 \\ H_1 : \mu_1 \neq \mu_2 \end{cases}$$ ....6)

According to findings of independent samples t-test with level of significance of .5, the view of men and women about the green product and green price is not meaningful. Therefore, both men and women believe that customer relationship management affects green product and green price. On the other hand, men and women have different views regarding the effect of customer relationship management on green promotion and green place. Based on the means observed, women believe that customer relationship management has more effects on green promotion and green place.

Table 9. Data of independent samples t-test based on gender

hypothesis	Mean score of men's view	Mean score of women's view	Independent t	P
Green product	3.394	3.409	4.937	0.028
Green promotion	3.225	3.372	1.097	0.297
Green place	3.610	3.717	1..426	0.235
Green price	2.828	3.125	8.120	0.005

8. Analysis of the respondents' view based on age

To measure the meaningfulness of the mean difference of the respondents' view, based on their age, the sample test analysis of variance was used. In this analysis, **H_0** that indicates no difference based on age factor is rejected when one of the means is at least like $\mu_i \neq \mu_j$. The statistical figure of this test is displayed as:

$$\begin{cases} H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 \\ H_1 : \mu_i \neq \mu_j \end{cases}$$ ....7)

Regarding the findings, the calculated P, and the mean score of the respondents based on age in four different age groups, no meaningful difference was observed about all the research hypotheses at the level of P≤%5. Thus, the view of respondents with different age range is the same about the effect of customer relationship management on green marketing mixture with 95 percent of confidence.

Table 10. Analysis of variance to measure the respondent's view based on age

Hypothesis	F	P
Green product	0.339	0.797
Green promotion	0.014	0.998
Green place	0.103	0.958
Green price	.0977	0.407

9. Analysis of the respondents' view based on education level

To measure the meaningfulness of the mean difference of the respondents' view, based on their age, the sample test of analysis of variance was used. In this analysis, H_0 that indicates no difference based on education level factor is rejected when one of the means is at least like $\mu_i \neq \mu_j$. The statistical figure of this test is displayed as:

$$\begin{cases} H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 \\ H_1 : \mu_i \neq \mu_j \end{cases}$$

....8)

Regarding the findings, and since the calculated P is larger than the level of significance, none of the null hypotheses are rejected. Thus, the mean score of the respondents based on education level in four different groups shows no meaningful difference.

Table 11. Analysis of variance to measure the respondent's view based on education level

Hypothesis	F	P
Green product	0.691	0.559
Green promotion	0.020	0.996
Green place	0.535	0.659
Green price	0.673	0.570

10. Analysis of the respondents' view based on work experience

To measure the meaningfulness of the mean difference of the respondents' view, based on their age, the sample test of analysis of variance was used. In this analysis, H_0 that indicates no difference based on work experience factor is rejected when one of the means is at least like $\mu_i \neq \mu_j$. The statistical figure of this test is displayed as:

$$\begin{cases} H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 \\ H_1 : \mu_i \neq \mu_j \end{cases}$$

....9)

Regarding the findings, the calculated P, and the mean score of the respondents based on work experience in four different groups, no meaningful difference was observed about all the research hypotheses at the level of P≤%5. Thus, the view of respondents with different work experience is the same about the effect of customer relationship management on green marketing mixture with 95 percent of confidence.

Table 12. Analysis of variance to measure the respondent's view based on education level

Hypothesis	F	P
Green product	0.789	0.502
Green promotion	1.173	0.323
Green place	0.749	0.525
Green price	0.905	0.442

V. DISCUSSION

Based on the analysis conducted on the results, the following findings based on which some suggestions are recommended, were reached:

All hypotheses were confirmed with a suitable level of significance. In other words, it was revealed that customer relationship management affects marketing mixture.

In addition to the main results, the peripheral results reached are also important to mention. Calculating the frequency of the answers it got clear that men are more active than women in customer relationship management and green marketing.

Similarly, based on the classified age groups in the questionnaire it was clear that the degree of customer relationship management and green marketing has had the highest effect in age range of 30-40 and lower and had the lowest effect in age group over 50.

Regarding the level education of customers, the number of educated customers over MA and PhD was low with just 2.7 percent. The highest degree goes back to diploma group with 39.6 percent. Customers under diploma and customers with BA or BS had a degree of 32.4 and 25.2 respectively. Although customer relationship management has had meaningful effect on marketing with growth in education in diploma group, the lowest percent belongs to the higher education group.

In the next group that were evaluated on the basis of their work background, the highest frequencies, 47.7 and 38.7, go to people with work experience of 5 to 10 and 10 - 20 years of work experience respectively. The lowest frequencies, 3.6 and 9.9 belong to people with work experience of over 20 and under 5 years respectively.

VI. CONCLUSION

Considering the results found in the present study, the following effective points can be recommended: using more advertisements on green products, trying to collect and recycle the pack of products, using ecology labels and other green labels, supplying green products in drugstore and department stores, attempting to update the knowledge of distributers, updating the traditional markets, identifying and introducing the environmental standard labels, requiring the customers the check these labels on the products.

VII. ACKNOWLEDGEMENT

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