ORIGINAL RESEARCH PAPER

Investigating the role of green marketing approach in strengthening the food industry branding

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ABSTRACT

No more than three decades of green marketing approach has been considered by the scientific community. It is very obvious that the neglect of the green approach by industry make problems and high costs for society and the environment. This research seeks to place a green approach to determine the proper functioning of the food industry. The main objective of this study is to identify the role of green marketing approach to strengthening food brand. To achieve the main objective of the questionnaire was designed and distributed among 394 students(The study is a simple random sampling And determining the sample size of the population, with the Cochrane statistical sampling of using the equation) Data and information gathered through questionnaires, the study, were analyzed using statistical Spss software .To analyze the data in the study of methods of T-test(To check rates and non-equal or equal to the average of the sample mean) and Friedman test (in order factors priority) is used. Research findings suggest that research hypotheses were confirmed. In other words, reduce waste, use of environmentally friendly materials, reduce environmental pollution, and reduce energy consumption and the use of green packaging in the food production process to strengthen their power of brand.

KEYWORDS: green marketing, reduce waste, environmentally friendly products, green packaging

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1. Introduction

In the new century, finding a fair and sustainable method for producing, consuming and living , is the main challenge of human society.(Petty & Charter, 2008) Among the concerns of consumers about environmental responsibility, which is in line with environmental legislation, has forced a growing number of companies to design and create environmental friendly plans, therefore the companies should decrease their environmental negative impacts on producing, distributing and supplying raw materials and energy consumption considerably .In this context ,the companies should attract customers by inform actions in the field of make their activities green . Thus, this leads to a positive mindset for customers that superior and powerful brands are looking for green approaches and this will strengthen the brand in the industry.

Today, more than ever is heard about Tehran's record of waste material production and Iran as the eighth polluted country in the world, (World Health Organization, September 2011) which instigate the researchers to do their studies in this area to be an effective step in the direction of the country development, this study tries to find an answer to this fundamental question: how green marketing approach is effective in increasing the power of the brand of food industry companies. Since the review of the literature suggests that there are a few researches on the study of ways to increase the strength of the brand and the studies of green marketing approaches is considered more. Therefore In this study, in addition to entering this area of the knowledge, green marketing approaches   has been searched and their impact on increasing the strength of the brand was discussed.

2. Research Theoretical basics

Green marketing is a marketing strategy which supports environment by creating discernible environmental benefits based on what the customer expects. (Salmon and Stewart, 1997). Green design is commenced from planning and includes all materials, material selection, production structure, production process performance, , packaging, shipping methods and how to use the product . (Nazar Ahari, 1995). According to American Marketing Association (AMA) : "a brand (the legal term used for Brand) is a name, term, sign, logo or design or a combination of these to identify the goods or services of the seller or group of sellers and distinguishing the goods or services from competitors. " In short, the brand can identify the vendor or manufacturer. A brand in fact is the permanent commitment of a vendor to provide a set of features, benefits, and special services to buyers. Brands that claim to protect the environment and buying them, consumers show their sensitivity and commitment to the environment, are called green brand. Previous research summarized in table 1.

Table 1- **Summarizes previous research**

Year	Researcher	subject	Research method	Resources	results
2012	Ravindara Psaksen &Pradik Nandlol	Green resources for sustainable development	Exploratory	International Journal of social economy	This exploratory study has been done for cyclical and non-cyclical industries in India. The aim of this study was to understand the perception of industries in India and studding this fact that India's fast growing economy is toward the green philosophy and attention to initiatives for becoming a green industry. The results show that the industry in India has a positive view on acting in the green field. Companies feel they will have sustainable growth and gain a competitive advantage by becoming green. This positive attitude was applied in order to succeed in very challenging and dynamic global markets today.
2008	Comen Li	Opportunities for green marketing	Scientific research	Journal of marketing information &planning	The purpose of this study was to identify the main causes of green purchasing behavior of consumers in Hong Kong , regression analysis in this study shows that Social influence is the greatest predictor of Hong Kong young green purchase behavior .The second factor is environmental concerns, and the third factor is the concern of the self image in front of others in protecting the environment and the fourth factor is the environmental responsibility perception.
2010	Sonia Volva	The study of environmental marketing factors to motivate customers and encouraging them to shopping behavior Compatible with environment	Scientific promotional	IBED	The purpose of this study was to investigate the causes of the gap between the intentions and thoughts of the people and their actual behavior towards environmental issues. More essential part of this research considers how to use marketing tools to eliminate this gap and motivate consumers to turn their intentions and behavior.
2012	Jacob Cheryan &July Jacob	The study of customers 'attitudes toward environment friendly products	Scientific research	Canada studies 'Centre	This study is the integration of various aspects of green marketing, increasing awareness about environmental issues is changing consumers' lifestyles. People actively seek to reduce their harmful effects on the environment. This study investigates the concept of green marketing and different consumers 'attitudes toward green marketing. One of the findings of the current research is that the level of present consumption is very high and unsustainable and therefore the need for green marketing and the need for a change in consumer behavior, attitude and lifestyle is required.

| 2008	Patric Hartman &Chavier Fordka Saynz	The effect of Green commercial Marks on applied attitude toward Emotional positioning strategies	Scientific research	Journal of marketing information &planning	This study proposes a set of strategic options for green brand commercial positioning in functional brand or emotional benefits. The study also suggested for testing green positioning strategies against each other and the evaluation of these strategies in brand positioning and the perceived attitude of the brand. The overall results show that green brand positioning has positive effect on brand attitude .Functional and emotional factors are effective in shaping the brand's position.
2013	Safari and Rashidpur	the effect of Green marketing mixed elements on the customers	Scientific research	Journal of marketing information &planning	loyalty to the company have concluded that green marketing mixed elements in Naghshe Jahan sugar company influences on company brand customers' loyalty. Green product has a significant impact on Naghshe Jahan sugar company's customers' loyalty. One of the ways to create satisfaction in customers and making them remain loyal to the company is using packaging with less thickness. Green promotion has a positive and significant impact on customer loyalty.

3.Research Methods

The aim of this study is an applied research, but in terms of the type and the way of data collection is a correlational descriptive research. For this study sought to examine the effective factors on brand strengthening in competitive market of Food products .In this study, a questionnaire was used for data collection. Library and field method were used to collect data. Library method was used for achieving the required data for preliminary studies and the development of research literature and field methods was used for collecting data of assumptions used survey questions. To design the questionnaire, some questions were prepared which four questions were designed for each hypothesis and 20 questions have been prepared totally. The research population was the students of Mazandaran, Babol industrial University and Babol University of Rahe Danesh. Simple random sampling was used in this study because of the large size of the sample and because it is a descriptive research. Cochran method was used to evaluate sample size as follows. The sample size is 384

$$n = \frac{10000 * 1.96^2 * 0.5 * 0.5}{9999 * 0.05^2 + 1.96^2 * 0.5 * 0.5} \sim 384$$

3.1. Research Conceptual model

The study to identify factors affecting the strengthening of the names and carpentry through green marketing approaches, including reducing waste, using environmentally friendly materials, reduce environmental pollution, reduce energy consumption and the use of green packaging resources, ideas and Tjbyat is different. Figure 1 is a given pattern research.
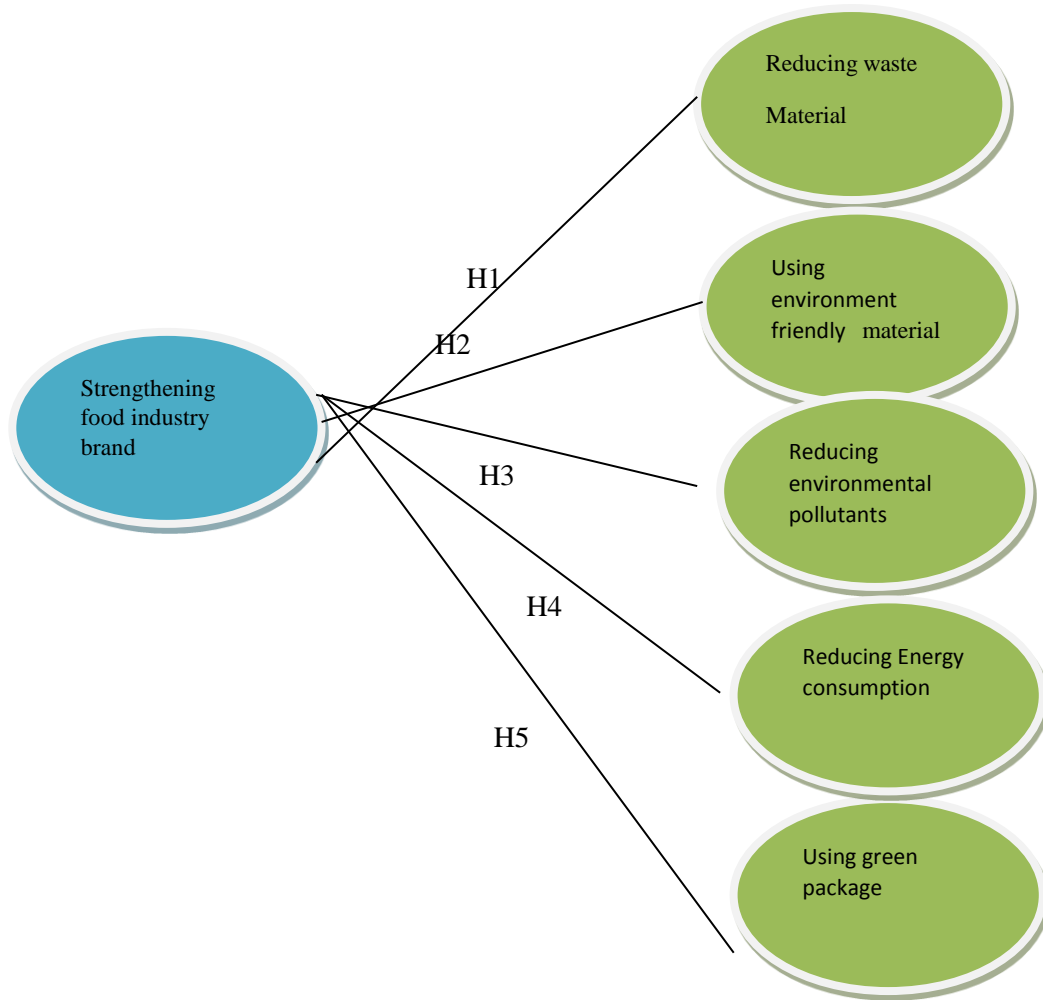
Figure 1. Conceptual model of green marketing approach Research

3.2.Research Hypothesis:

The main hypothesis:

Green marketing approach usage is effective in strengthening food industry brand.

-Sub hypothesis:

-The reduction of Waste material produced by the food industry is effective in strengthening food industry brand.

- The use of environment friendly materials in the production of food by the food industry is effective in strengthening the brand.

-The reduction of environmental pollutants of manufacturing companies is effective in strengthening the brand in the food industry.

-The reduction of energy consumption in the production process is effective in strengthening the brand in the food industry.

- The use of green packaging is effective in strengthening the brand in the food industry.

4. The results of data Analysis

4.1.exploratory factor analysis

To investigate the factor structure in this study, exploratory factor analysis was performed with principal component analysis on 20 subtests. Firstly The preliminary tests was performed to assess the suitability of the sample for factor analysis and also the test of Bartlett sphericity. The adequacy ratio of Kaiser-Meyer-Olkin test sampling (KMO) was 0/858 and Bartlett sphericity test was equal to 1029.757 and P <0.0001. This result indicates that the data are suitable for factor analysis .The primary analysis has indicated two factors with eigen Value greater than one. The study of the Scree plot diagram and horn parallel analysis also showed that the 4-factor solution is suitable.

Table1. Kaiser-Meyer & Bartlett sphericity tests

Kaiser-Meyer test (KMO)	0.866
Batlt Sphericity test	2419.969
Degrees of freedom (df)	190
Significant level (sig)	0.000
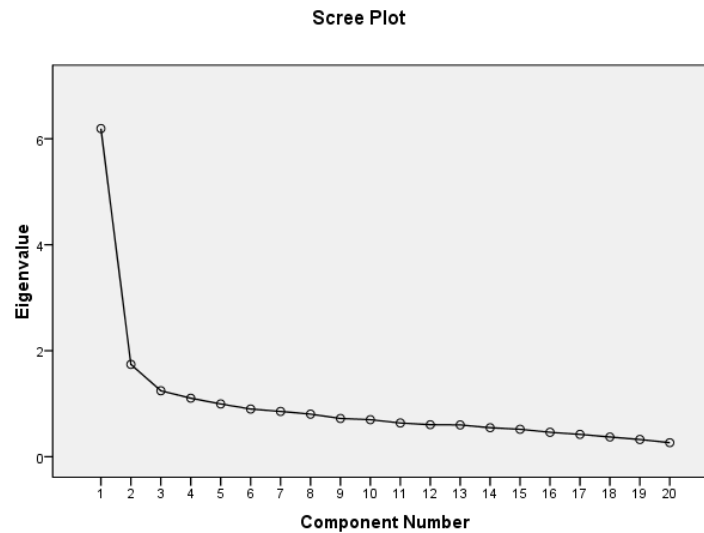
Graph 2. Scree graph

In further analysis for a better interpretation of the factors, varimax rotation was used. The results showed that 20 sub-tests have loads on four factors with Eigen values of 30.961 and 8.710, and 6.221 and 5.522. Totally, these four factors of almost 52 percent have explained the variance of the set wholly. (15.28 percent of the first factor and 14.88 percent of the second factor and 10/78 percent of the third factors and

10.46 percent of the fourth factor) The following table shows the composition of the scales 'sub- tests with each other and their factor loadings on each component.

Table2. factor loads of subtests after varimax rotation

scales	Components			
	1	**2**	**3**	**4**
Q14	0.697			
Q13	0.685			
Q16	0.682			
Q11	0.639			
Q12	0.575			
Q15	0.500			
Q2		0.781		
Q3		0.779		
Q1		0.716		
Q4		0.609		
Q5		0.471		
Q6		0.458	0.359	
Q20			0.759	
Q19			0.733	
Q17			0.515	0.482
Q18	0.413	0.358	0.460	
Q10				
Q7				0.831
Q9				0.642
Q8				0.510

Factor Load of subtests indicate that the sub-tests Q_{13}‹Q_{16}‹Q_{11}‹Q_{12}‹Q_{15} in a factor and subtests 2 Q_3‹Q_1‹Q_4‹Q_5‹Q_6 in the other factor and Q_{19}‹Q_{17}‹Q_{18} in the next factor , and finally 7 Q_9‹Q_8 in the other factor have high load. As seen on all subtests as the same as the original sample have load in the relevant factors.

4.2.rating factors according to the Friedman test

Table3-rating-related factors

Components	Average rating
Reducing waste	2.96
Using environment friendly materials	3.05
Reducing environment pollutants	2.97
Reducing energy consumption	2.71
The use of green packaging	3.31

Table4.test results Friedman

number	393
χ^2 test	33.945
Degree of freedom	4
The significant rate	0.000

Friedman test are based on factors rankings and in accordance with the table above and Friedman test output, the significant rate (sig) is less than (0.05). Therefore, the results of tests are valid. According to information obtained from these tables, factor rating based on ratings 'Average are as following:

1-Using Green packaging (hypothesis 5): This value 3.31 is in the first place.
2-Using environment friendly materials (the second hypothesis) this value 3.31 is in the second place.

3- The Reduction of using of environmental pollutants (third hypothesis): This value 2.97 is in third place.

4. The Reduction of waste production in manufacturing. (First hypothesis): This value 2.96 is in the fourth place.

5. The Reduction of energy consumption in production (fourth hypothesis): This value 2.71 is in the fifth place.

4.3. Research hypotheses tests

First hypothesis: The reduction of Waste material produced by the food industry is effective in strengthening food industry brand.

According to Table 1, for the first hypothesis, the significance level is less than 0.05, so that H0 hypothesis which considers μ equal to 3 is rejected .After this stage to specify whether μ is larger or smaller than three, we have referred to the differences' mean value. Because the value of this component was positive (1.114) therefore the value of μ is higher than three, and eventually we have concluded that the hypothesis is confirmed.

Table 5.T test outputs for the first hypothesis

	number	Average	Standard deviation	Average deviation Error	T statistics	Degree of freedom	Significant level	Differences' average
Reducing waste material	393	4/11	0/66	0/033	33/448	392	0/000	1/114

The second hypothesis: the use of environment friendly materials in the production is effective in the increase of their brand power.

According to Table 2, the second hypothesis significance level is less than 0.05, so the hypothesis H0 which equals μ to 3 was rejected. After this stage to specify whether μ is larger or smaller than three, we have referred to the differences' mean value. Because the value of this component was positive (1.170)

therefore the value of μ is higher than three, and eventually we have concluded that the hypothesis is confirmed.

Table 6. T test outputs for the second hypothesis

	number	Average	Standard deviation	Average deviation Error	T statistics	Degree of freedom	Significant level	Differences' average
Reducing waste material	1.170	4.17	0.590	0.030	39.347	392	0.000	1.170

The third hypothesis: The reduction of environmental pollutants of manufacturing processes is effective in strengthening the brand in the food industry.

According to Table 3, the third hypothesis significance level is less than 0.05, so the hypothesis H0 which equals μ to 3 was rejected. After this stage to specify whether μ is larger or smaller than three, we have referred to the differences' mean value. Because the value of this component was positive (1.153) therefore the value of μ is higher than three, and eventually we have concluded that the hypothesis is confirmed.

Table 7. T test outputs for the third hypothesis

	number	Average	Standard deviation	Average deviation Error	T statistics	Degree of freedom	Significant level	Differences' average
Reducing Environmental pollutants	393	4.15	0.869	0.044	26.313	392	0.000	1.153

The fourth hypothesis: The reduction of energy consumption in the production process is effective in strengthening the brand in the food industry.

According to Table 4, the fourth hypothesis significance level is less than 0.05, so the hypothesis H0 which equals μ to 3 was rejected. After this stage to specify whether μ is larger or smaller than three, we have referred to the differences' mean value. Because the value of this component was positive (1.031) therefore the value of μ is higher than three, and eventually we have concluded that the fourth hypothesis is confirmed.

Table 8. T test outputs for the fourth hypothesis

	number	Average	Standard deviation	Average deviation Error	T statistics	Degree of freedom	Significant level	Differences' average

Reducing Energy consumption	393	4.03	0.646	0.033	31.647	392	0.000	1.031

Fifth hypothesis: The use of green packaging is effective in strengthening the brand in the food industry.

According to Table 5, the fifth hypothesis significance level is less than 0.05, so the hypothesis H0 which equals μ to 3 was rejected. After this stage to specify whether μ is larger or smaller than three, we have referred to the differences' mean value. Because the value of this component was positive (1.234) therefore the value of μ is higher than three, and eventually we have concluded that the fifth hypothesis is confirmed.

Table 9. T test outputs for the fifth hypothesis

	number	Average	Standard deviation	Average deviation Error	T statistics	Degree of freedom	Significant level	Differences' average
Using green package	393	4.23	0.634	0.032	38/586	392	0.000	1.234

5. Discussion and Conclusion

As pointed out in different parts of this study, the purpose of this research was to evaluate the effect of the use of green marketing approach on strengthening food industry brand. Given that the concerns of environment protection is a major issue in the world today, because of different problems that Environmental pollution has created in human societies ,related agencies in different countries have applied strict rules for the industries activities. Green marketing approach could be the solution to resolve the current environmental crisis and issues. Green marketing is a multidimensional concept which in this study five dimensions of reducing waste in production, using environmentally-friendly materials in the production process, reducing environmental pollution, reducing energy consumption and green packaging are intended.

However, the commercial brand is an important concept in today's business and is as a company's profile. In fact, brand is like a traffic sign which rates the unique and valuable features of the products in the crowded market for costumers. Therefore it is very important for the different industries; people have positive and suitable attitudes toward them. According to the study, the use of green marketing approach is the solution to achieve this aim. If green marketing is applied (factors such as reducing waste, using environmentally friendly materials, reducing environmental pollution, reduce energy consumption and green packaging) it will strengthen the company's brand power among the society than the rival brand. Because nowadays with the current developments, people are aware of the environment awful situation and when they see a company performs measurements such as green packaging to protect the environment it makes an ideal mindset of the company in their minds.

6. Suggestions

-Manufacturers have tried to produce products that have longer lives to remove later from consumption cycle and return as waste back to nature. Waste Recycling and reuse of materials that can be re-used.

Reengineering the production process to prevent the loss of raw materials and the creation of waste products. Planning for government financial support to help the industry to invest in the purchase harmless raw materials for nature. Detailed rules on the use of the material in each industry and monitoring the implementation of these laws by the related companies. The Assignment of A specific budget from company's revenue for advertising eco-friendly products. Proper selection of raw materials that are used in the manufacturing of some products in the food industry due to a variety of pollutants that are produced. The Transfer of innovative and environmentally friendly products technologies to replace traditional and inappropriate practices. Using clean energy instead of fossil energy such as oil. The establishment and development of institutions necessary for the efficiency and optimization of energy consumption in the food industry. The Identification of the places of wasting energy in production-distribution-consumption process and creating strategies to prevent it. The determination of the rate of Energy consumption in the industry due to the efficiency rate of existing technologies and necessary designs in the field. Using Packaging which increases food longevity. Using cellulosic materials instead of plastic products packaging. Using recyclable wax paper in some industries that have the usability of the substance.

This research could be done with other tools such as interviews, observation. Special Inspection of methods to prevent an increase in waste production in the food industry. examining the feasibility of widespread use of environmentally friendly materials in the production of the food industry. Special Inspection of the ways to reduce environmental pollution. The study of the methods and solutions to prevent the loss of energy.

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ETHICAL CONSIDERATION

Authenticity of the texts, honesty and fidelity has been observed.

CONFLICT OF INTEREST

Author/s confirmed no conflict of interest.