

# 'The investigation in effective factors on development of green marketing' (Case Study: Food Industries)

Fereshteh Taherpouran<sup>a</sup>, Hossein abadi<sup>b\*</sup>, Babak Haji Karimi<sup>c</sup>

<sup>a</sup>Department of Business Management, Abhar branch, Islamic Azad University, Abhar, Iran.

<sup>b</sup>Department of Business Management, Abhar branch, Islamic Azad University, Abhar, Iran.

<sup>c</sup>Department of Industrial Management, Abhar branch, Islamic Azad University, Abhar, Iran.

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## Abstract

The concern for destruction of environment has been turned into a critical problem in recent years and in addition to profitability and sales the marketers concern with consumer's health. Dynamism and importance for protection of environment, serious competition, rising concern of consumer, public regulations and increased awareness in customers caused enterprises to produce green products to acquire competitive advantage and to attract eco-friendly customers to protect from it. Thus, coincided with rising concerns and importance of environmental issues, development and analysis of related concepts to green marketing development and improvement are assumed necessary for the post generations. He studied statistical population is composed of customers or food consumers of foods at shopping centers in Tehran and statistical population, including 384 subjects, were tested using conceptual model by structured equation modeling and least partial square methods with AMOS software in which the findings showed that variables of macro environment, marketing mix, social responsibility, environmental knowledge management, green branding, social marketing, interactive marketing, security and vale affected development of green marketing. The results of current research could propose a local model with respect to conditions in Iran.

*Keywords:* Green marketing, Environment, Consumer's health

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\*Corresponding Author: Hossein abadi

*Email address:* F.taherpouran6@gmail.com, drhosseinabedi@gmail.com, babakhajikarimi@yahoo.com (Fereshteh Taherpouran<sup>a</sup>, Hossein abadi<sup>b\*</sup>, Babak Haji Karimi<sup>c</sup>)

## 1. Introduction

The green marketing is a social process in which individuals and groups may estimate their own needs and requests with exchange of their products and values and through an ethical value in order to minimize negative effects on environment [1]. and it includes those activities that are led to production and trade facilitation and meeting of favorable needs for the post generation [2]. The green marketing denotes social process to use a valid green certificate for sales and marketing of products with reliance on green nature of them or sale promotion based on green products [3] and it is focused on developing and marketing of clean products while considering customer's needs with respect to environmental stability; thus, marketers tend to inform customers and to look for customers' requirements [2].

Marketing proceeded by product-centered approach before 1980s and then following to rising level of awareness and welfare in community and competition and higher insight in organizations concerning environment, customer-oriented approach emerged. This new approach toward customer and organization has led to several changes in consumer's purchase and behavior and customer tried to protect from environment and his/her health deliberately and with respect to social responsibility and not legal requirement by the government and community [4]. Since the end of 20<sup>th</sup> century when organizations tended to find new methods to reduce their non-degradable consumer materials and to use recoverable energy resources in the nature the green management and eco-friendly concept emerged [5].

## 2. Subject interpretation

Green marketing is highly important in formation of consumers' approach and their perception and responsibility for environmental state and problems. Following to awareness in consumers regarding eco-friendly products, impact of green management and appropriate green marketing strategies one could predict attitude of consumers and stimulate public environmental awareness to exert minimum damage for environment when manufacturing the products [6].

The environmental protection issue is a moral commitment and damaging it is followed with inadvertent consequences for humans and posterities. Green Purchase Movement, which has emerged throughout the works during recent decades, caused the consumers to rethink about the products they buy and consume. As a result, consumers can highly contribute to protection from resources for the post generation and environment by purchasing green products that are less hazardous for environment [7]. Recently, environmental destruction concerns have been proposed as the main concern for researchers and experts and green marketing concept has emerged and improving corporate manufacturing quality of products is presented as the main origin to introduce green marketing. In this sense, some industries in manufacturing companies have used this opportunity and taken some steps toward reducing negative impacts on environmental destruction and tended to attract eco-friendly customers by manufacturing of green products and they play role of corporate environmental/social responsibility to deal with marketing and developing environment for sustainable development [8]. Due to challenge for progress in most of enterprises, implementation of existing marketing strategies has been addressed by development and creation of marketing plans and the companies tend to enhance quality of products by activities of green management, social responsibility, moral commitment and ethical commerce and protect from natural resources and environment. Today, the problem of climatic change and consumer's health has exposed the marketers and manufacturing companies to several concerns and caused them to look for upgrading quality of product that is led to consumer's health and environmental protection in addition to their own profit and interest. Green marketing may play efficient role in creating competitive advantage for the enterprise by development of green

marketing and process of green trade activities and thereby the companies will be committed to environmental trade and undertake for moral commitment and they will be focused on green marketing [9]. Environmental destruction has been addressed throughout the world and marketers are trying to enhance green marketing system with initiatives of environmental protection programs, financial support from green movement, rising constant awareness of people in society and consumer [10].

With respect to growth and development of technology, social media, science and education in communities, especially in Developed Nations, public awareness has increased about green products. This attention has extremely increased, in turn, collection of environmental information and demand for eco-friendly products in the world markets and is turned into one of the major concerns in purchase and consumption of products. The green product is composed of raw materials free of hazardous chemical elements for the environment with eco-friendly processes and it has the necessary certificate from the relevant organizations [11]. As a result, the best strategy is to give transparent information with full details to the consumers via social and public media and most of foreign beneficiaries about environmental validation of green product [12].

The primary studied done by the researchers may indicate that despite importance and a role played by green marketing in protection from consumers' health, environment and ecologic products, purchase and consumption of green products have been less addressed and welcomed by the consumers and on the other hand supply of such products not only has not been developed, but also it is exposed many limitations. Given this fact in the current research we intend to identify reason or reasons for this problem in addition to conducting needed study and analysis and using from comments of experts and to determine effective variables in this regard and to propose green marketing development model with respect to the existing conditions in our country. It is hoped the proposed model to be addressed and employed by the enterprises and to expand and develop green marketing in our country.

### **3. Necessity for research execution**

With respect to the collected data, it is led to this finding that in the complex and dynamic and highly today changing environment in which lifestyle and consumption model initiate principle of environmental damages the enterprises need to the strategies that can help them to improve ever-increasingly their performance. In such competitive environment, those companies can survive that they are adapted to variable and dynamic conditions of competitive market and the existing concerns for environmental destruction and problems. This concern and environmental problems are related to all citizens, enterprises and institutes throughout the worlds. With respect to the recent concerns for environmental protection and ecologic products and consumer's health, which has been turned into an important and critical issue, the green marketing activities and knowledge of customers have been increased for this purpose. It has been tried in the present study to propose the model of effective factors on green marketing to help the enterprise to be adapted to variable and dynamic conditions in competitive market and the existing concerns for environmental destruction and problems and thereby to increase customers' knowledge to for attentive purchase to select high quality green products which do not damage environment. Green consumption is a type of social responsibility, the effort made by individuals for environmental protection, and represents consumer's attention and concern for environmental protection. This study aims to present a model of effective factors on development of green marketing to improve quality of production and to achieve certain of attention and commitment by consumers to dimensions of green marketing and way of impact on their consuming behavior. The study on green behavior of consumers is necessary because green consumption approaches may lead to some changes in selection for type of purchase of consumer products; as a result, it seems necessary to pay attention to this issue by public organizations and

marketers.

With respect to importance of green marketing development and environmental protection in our country, particularly under current condition, and the fact that upgrading knowledge in this regard and related practice can resolve some of environmental problems and concerns and lead to further satisfaction by green consumers. According to researchers, implementation of current research is especially important and necessary for the following reasons:

- Non-welcoming of purchase of ecologic products by some of consumers;
- Absence of green marketing model based on characteristics of our country that may be accepted by producers and consumers.
- Requisite and necessity for giving information to consumers about advantages of consuming green products and importance of environmental protection;
- Ignoring protection from environmental health and green products by the producers and lack of appropriate strategies in this regard

#### 4. Research literature

Li [13] conducted several studies under title of the factors that affect green behavior in consumers. They concluded that the factors e.g. training background and subject, age, green promotion, consumers' involvement in environmental problems and egoist power and force and self-admiration of consumers might affect green behavior of consumers and these points refers to the fact that consumer like to purchase green products which support from their personal interests[13].

Janel Fleming [14] conduct a study titled 'Perception and attitude of green consumers and effort toward green marketing innovations. This study analyzed inclusively perception, attitude and behaviors of consumers in order to find impact of green marketing innovations made by enterprises on green consumption. They concluded that consumer might try to study and acquire information regarding green product and they do it by symbols e.g. green labels of products[14].

In their survey, Yusangcumsit and Santitracole [15] have tried to explore relationship among attitude of consumers and intent for purchase of green product (organic foods). The attitude of consumers and intent for purchase of organic foods has been analyzed in this study. The research findings show that attitude of consumers toward organic foods is related to some factors including health, local origin, environment and food health. Factor of animal comfort and welfare is the minimum feature considered by the consumers. The variable of local origin is positively correlated to intent purchase of green product at the lowest level. Afterwards, variables of animal comfort and environment and also health and food health eventually are ranked at subsequent positions [15].

Gholipour [16] have prioritized effective factors on green product development and identified these variables as follows: Green marketing, green purchase intention, environmental protection public regulations, and perceived value by consumer and the given results showed that variables of consumers and community had the highest and lowest impact, respectively[16].

In their investigation, Ardakani and Keshavarz [17] surveyed green product development and its impact on subjective image. The findings indicate that green product development may directly affect organizational identity and also green product development may influence in subjective image of consumer and customers' satisfaction could affect subjective image in customers [17].

Chegini, Asli and Ardestani [18] have studied impact of green marketing tools on purchase behavior of consumers. This paper aims to analyze relationship among green marketing, organizational

image and intention for purchase of green organic products and they have concluded that variable of environmental knowledge and image of green organization is related to purchase behavior and at the same time there is relationship among price and perceived quality of product and intention for green purchase[18].

## 5. Methodology

This study is an explanatory and descriptive research in terms of subject features and it is surveying study in terms of data collection and it is field study in terms of data collection for which the interview and questionnaire have been utilized as tools. This study aims to develop applied knowledge and green marketing model and to identify causal relations between effective factors on green marketing. The statistical population of the study is composed of food consumers at purchase centers in Tehran. Interview and questionnaire have been used as tools for data collection and non-randomized sampling technique was utilized for this purpose. The sample size was obtained using Cochran's formula for unlimited population and calculated as 384 respondents.

$$N = \frac{(Z_{\alpha}^2 * P(1 - P))}{\epsilon^2} \quad (1)$$

In equation above, N denotes number of samples, Z is normal standard at confidence level 95% ( $Z_{\alpha} = 1.96$ ),  $P$  is estimated trait - to - variable ratio with probability (50%), and  $\epsilon$  is rate of allowed error ( $\epsilon = 0.5$ ).

It necessitates for codifying hypothesis to analyze quantitative studies, thus, with respect to the produced variables as green product development, the hypotheses were formulated as follows:

- Macro environment affects green marketing development to improve quality of product.
- Marketing mix affects green marketing development to improve quality of product.
- Value to green marketing development affects improvement of quality of product.
- Green branding affects green marketing development to improve quality of product.
- Security impacts green marketing development to improve quality of product.
- Social responsibility affects green marketing development to improve quality of product.
- Social marketing affects green marketing development to improve quality of product.
- Environmental knowledge affects green marketing development to improve quality of product.
- Interactive marketing affects green marketing development to improve quality of product.
- Green marketing development affects improvement of quality of product.

## 6. Research variables

Given the conducted analyses, the effective factors on green marketing development with the related definitions are as follows and also, they are presented within framework of a conceptual model (Fig 1).

1. Green product: It is product that may damage environment lesser and it is not hazardous and includes some elements which are not potentially detrimental for the environment [19]; and green product strategy comprises of packing recyclable and reusable materials [20].

2. Green price: Price is assumed as an important mixed factor in green marketing. Most of consumers may like to pay higher cost only when they perceive added value of the given product. This value may be related to improvement of performance, efficiency, design, visual attraction or given taste, long lifetime and hazardless nature [21].

3. Green distribution: It is distribution which is compliant to green criteria and it may reduce environmental impacts of products and it includes cooperation with eco-friendly distribution companies to identify opportunity and reduce costs and to encourage customers to use reusable and recyclable commodities. This process includes green supply chain [20].

4. Green packing: It refers to use of eco-friendly materials for recoverable and reusable packs and to reduce packed covers to decrease using materials and resources as possible.

5. Green environmental promotion: Coincided with improving world green movement and following to rising public attention to environmental problems, many organization have selected environmental promotion by media as a green technique to introduce their products to the environmental responsible consumers and environmental promotions are tools to affect purchase behavior in consumers by encouraging them to purchase the products that never damage environment [22].

6. Environmental knowledge management: Environmental knowledge is composed of individual knowledge about environmental subjects and in fact denotes perception of importance of environment. Today, environmental knowledge is not only considered as an ideology, but as an important issue in market competition and it is defined as general knowledge about environmental facts, concepts and relations and related ecosystems [23]. Mr. Gholipour [16] has identified one of effective factors that influenced in green product development as the public sources and information regarding environmental conservation and production that might lead the consumer to pay attention to environmental subjects [16]. Chegini, Asli and Ardestani [18] had concluded that there was relationship among environmental knowledge and image of green organization with purchase behavior [18]. Hosseini [24] concluded that environmental knowledge sometimes might affect green purchase at the highest level [24].

7. Confidence: Security is deemed as one of the basic subjects in social studies and as the foundation for social relations in the community. Today, any customer has his/her specific value and in order to protect from their health and releasing from stress s/he tends to purchase reliable products in the society and this trend has led to rising level of expectations of customers and their power to make decision. As a result, the competition field may become narrower and limited for marketers and enterprises deal with competition to attract more customers to increase their market shares [23].

8. Value: Today, combination of green features of green product and stability has been highly attractive for the customers who emphasize in such values and this has led to increase of value system among such customers [25]. Purchase decision of customer is classified according to their personal value that is often as eco-friendly purchase behavior [26]. The human values may respond to a limited numbers of world challenges with respect to their various cultural conditions at any time interval [27]. Value is the perceived utility by the consumers and it may predict social attitude and behaviors

such as consumer's behavior. It is argued that the values may affect selection criterion created by consumers as well as consumers' recognition of a problem and searching for information and beliefs [28].

9. Environmental factors: Environmental factors affect green marketing growth and development as the main expression and major key of productivity and sustainable development in realization of industrial, economic and social ideals in human communities. Thus, it is necessary to improve environmental paradigm and to create environmental culture in each and every community institution. The enterprise should actively prove organizational eco-friendly image in customer's mind and adjust their performance and potentials based on environmental rules.

10. Social responsibility: It was believed in that past that the organizations and producers might be responsible only against shareholders and personnel and or they should supply the best product with the lower cost and higher quality but they ignored what secondary consequences their products would have. The serious competition, rising population and scarcity of resources and environmental pollution were led to emerging modern approaches toward organization and management where social commitment and responsibility were also some results of those changes and as responses to environmental needs and challenges. Supporting from external environment is not arbitrary, but it is assumed as an important part of business process. Based on social responsibility, an enterprise looks at customer comprehensively and it may even consider related environmental problem or long-term welfare. Green marketing is assumed as a part of social responsibility and there is strong relationship between moral commitments and green marketing [2]. Kurd Shuli and Ranaei Kurd Shuli [7] concluded that the rate of environmental responsibility of consumers might positively affect their decision for purchase of eco-friendly products [7]. Saini [15] came to the result that the enterprises might need to environmental responsibilities to overcome at green competition scene [15].

11. Social marketing: Social marketing is a new science that deals with change and correction of behavior in line with health improvement and social and environmental development and thus employing commercial marketing techniques to affect behavior of the given audiences. The production companies, society (consumers) and governments form three main point of a triangle, which involved in purchase and use of green products, where each of them are exposed to special challenges. The marketers should consider important factors such as requests of consumers and interests of community, environment and their own in determining marketing goals and policies by means of their commercial marketing techniques.

Although role of governments and enterprises is important and undeniable in environmental protection, consumers play more important role in supporting from environment. In fact, the consumers are one who can contribute to environmental protection by purchase and use of green products.

12. Interactive marketing: Nowadays, maintenance of existing customers is vital for long term profitability and it is the focal point in philosophy of interactive marketing. Keeping and improving customers' relations may play essential role in creating and maintaining competitive advantage in the market. Interactive marketing includes all efforts made in organizations for awareness and giving better services to each of their valuable customers. Social marketing is one of relationship marketing dimensions. In fact, relations are the effort for perception and mutual conception and impact that is marketing relations not to attract new customers, but to maintain and improve loyalty of current customers. Enterprises try to behave more responsible versus environment in order to meet green requirements for the consumers by creating changes in corporate structure and by establishing relationship and presenting information from organization and personnel to the customer. Nakhaei and Kheiri [29] concluded that marketing relationship activities and attitude based on green marketing relations and environmental knowledge and perceived effectiveness of consumer might affect individual intent to green purchase [29].

13. Green branding: In environmental branding, positioning of green trade name should be noticed concerning environmental brand. The nature of green trade name is defined by a specific group of features and benefits of trade name regarding reduced environmental impact and perceptions about the given trade name that seems environmentally healthy [30]. The green brand give identity to the products and green brad should be led toward sensual and functional properties of the product [2]. Elahi and Yaqubi [31] have predicted position of trade name in identifying effective factors on motivation of individuals in green purchase behaviors [31].

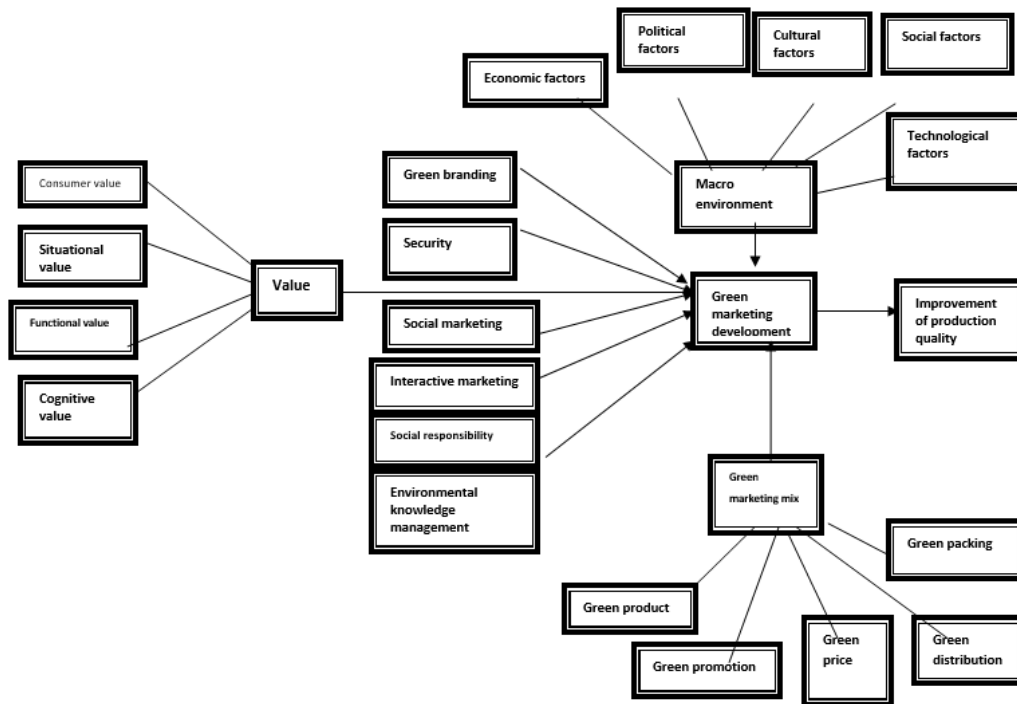


Figure 1: Research conceptual model (32)

## 7. Validity and reliability

The validity of questionnaire has been measured using content validity ratio through expert statistical population (qualitative phase) and also validity and reliability are given by parameter of AVE, composite reliability (Dillon-Goldstein’s rho) and Cronbach alpha in the following table. AVE parameter is greater than 0.5 for all variables and also Cronbach alpha coefficient is higher than 0.7 for all variables. Therefore, potential of measurement tools is approved in terms of validity and reliability. In this study, 30 primary questionnaire forms were distributed among experts (teachers) and according to their attitude all questions (37 items) were perceivable and responsive. Thus, face validity of questionnaire was identified.

### 7.1. Research reliability

In order to determine reliability of questionnaire or test of emphasis on internal consistency, Cronbach alpha coefficient was used. The variable for which Cronbach alpha coefficient is greater than 0.7 the reliability of given test is acceptable. The output of Cronbach alpha coefficient is higher than 0.7 for variables of macro environment, value, marketing mix, social marketing, interactive marketing, security, and social responsibility. Thus, questionnaire is reliable, but the value of alpha



coefficient is 0.448 for green branding that is lesser than 0.7 so that those questions, which were less correlated to other questions, were specified and those questions were deleted from group of questions.

Table 1: Validity and reliability parameters of variables

Variables	Cronbach alpha	Composite reliability	Average Variance Extracted (AVE)
1. Environmental factors	0.837	0.991	0.711
2. Marketing mix	0.768	0.896	0.688
3. Value	0.878	0.892	0.575
4. Green branding	0.77	0.871	0.577
5. Trust (confidence)	0.869	0.855	0.712
6. Social responsibility	0.869	0.867	0.706
7. Social Marketing	0.812	0.987	0.592
8. Environmental knowledge	0.705	0.929	0.745
9. Interactive marketing	0.826	0.879	0.581

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Part	Reliability	Number of item
Cronbach alpha at first half	0.92	17
Cronbach alpha at second half	0.84	20
Total	0.88	37
Spearman- Brown's correlation coefficient with equal length	0.912	
Spearman- Brown's correlation coefficient with unequal length	0.911	
Half-split coefficient	0.896	

### 7.2. Convergent reliability

The second criterion for analysis of fitting of measurement models is convergent reliability that analyzes rate of correlation of any construct with related questions (parameters). Given the fit-

Table 2: Results of convergent validity for hidden variables of study

Hidden variables	Average Variance Extracted (AVE>0.5)
Environmental factors	0.59
Social responsibility	0.81
Marketing mix	0.52
Interactive marketing	0.54
Social marketing	0.76
Knowledge management	0.73
Improvement of production quality	0.77
Green market development	0.63
Trust (confidence)	0.62
Value	0.56
Green branding	0.62

ted value for  $AVE^4$  (convergent reliability) is greater than 0.5 and according to findings in table above fitted value has been taken for this criterion regarding hidden variables; as a result, fitness of convergent validity is approved for this study.

### 7.3. Content validity:

Lawshe [33] invented a most usable technique to measure content validity. This method measures rate of agreement between raters or arbiters for fitness or basic nature of specific item. Lawshe suggested that any item or question is given to a group of raters or arbiters and to ask them if the given item was useful or robust to measure the aforesaid construct or not. According to Lawshe, if more than a half of raters express it is basic or robust that item will be useful or robust and therefore that item has some content validity at least. The higher value is determined by raters or arbiters for robustness or useful nature of a certain item, the greater level it has in terms of content validity. Using this assumption, Lawshe invented the following formula to measure content validity that is called content validity ratio [33].

$$CVR = \frac{(ne - \frac{N}{2})}{\frac{N}{2}} \quad (2)$$

In this formula:

CVR is content validity ratio; ne is number of raters or arbiters who express robustness or useful nature of given item; and N is total number of raters or arbiters.

In order to measure face validity and content validity of questionnaire, following methods have been employed:

- Using previously tested questions in similar studies;
- Polling and interview with some of experts about validity or lack of validity of questions;
- Distribution of a questionnaire among related experts about usefulness or non-usefulness of questions to be asked with respect to variables and goal of any variable

<sup>4</sup>Average Variance Extracted.

The completed questionnaires were gathered and whereas the minimum acceptable CVR value is 0.49 for 15 raters or experts thus the used questionnaire is suitably valid as one of data collection tools in this study and one can trust in and rely on validity of measurement tool. The results are given in Table 3.

Table 3: Results of convergent validity for hidden variables of study

Number of questions	CVR	Results	Number of questions	CVR	Results
1	0.86	Acceptable	4	0.86	Acceptable
2	0.73	Acceptable	5	0.86	Acceptable
3	0.73	Acceptable	6	1	Acceptable
7	1	Acceptable	21	0.73	Acceptable
8	0.73	Acceptable	22	0.73	Acceptable
9	1	Acceptable	23	0.86	Acceptable
10	0.86	Acceptable	24	0.86	Acceptable
11	0.73	Acceptable	25	0.73	Acceptable
12	0.86	Acceptable	26	0.73	Acceptable
13	0.86	Acceptable	27	0.86	Acceptable
14	0.86	Acceptable	28	0.86	Acceptable
15	0.73	Acceptable	29	0.86	Acceptable
16	0.73	Acceptable	30	0.73	Acceptable
17	0.86	Acceptable	31	0.73	Acceptable
18	0.86	Acceptable	32	0.86	Acceptable
19	1	Acceptable	33	0.86	Acceptable
20	0.86	Acceptable	34	0.73	Acceptable
35	0.73	Acceptable	37	0.86	Acceptable
0.86	0.86	Acceptable			

Before evaluation of given structured model, it is necessary to examine regressive weight significance (factor loading) in various constructs of questionnaire to predict related items to insure from fitness of measurement models and acceptability of their parameters in measurement of constructs. This was done using Confirmatory Factor Analysis and by means of AMOS software.

Fitness of items of questionnaire is analyzed by means of measurement model after ensuring from normality of data to determine to what extent collected data may support from theoretical model. The results of measurement model are shown in the following figure. (Fig 2)

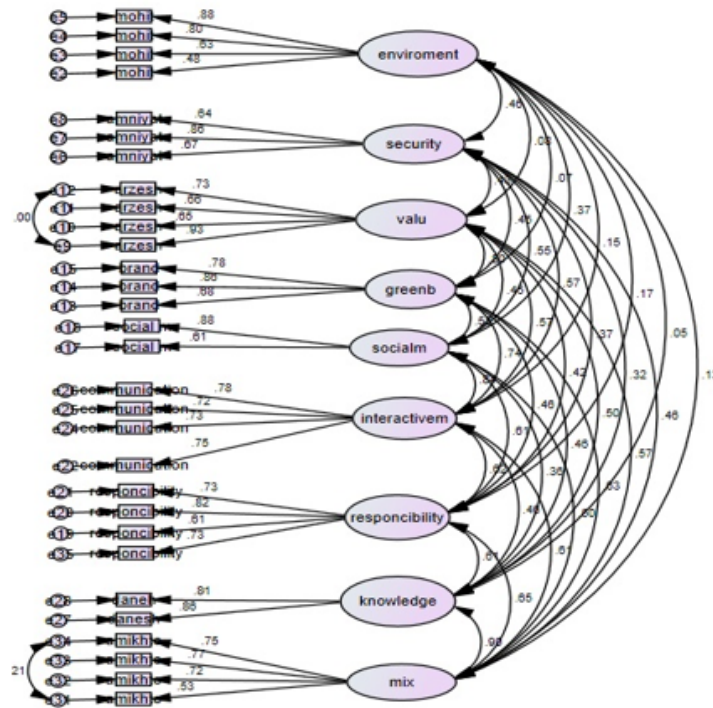


Figure 2: Research measurement model

The standard coefficients are greater than 0.50 for factor loadings and this indicates the questions are valid and there is high correlation among variable and questions. The results of fitness parameters

Table 4: Standard coefficients of factor loadings

Variable	Standard coefficients of factor loadings
Environmental factors	0.83, 0.63, 0.80, 0.43
Social responsibility	0.73, 0.61, 61.82, 0.73
Marketing mix	0.75, 0.53, 0.72, 0.71
Interactive marketing	0.72, 0, 0.73, 0.75, 0.73
Social marketing	0.61, 0.33
Knowledge management	0.85, 0.81
Value	0.66, 0.73: 0.63, 0.65
Brand	0.32
Trust	0.86, 0.64, 0.67
Green marketing development	0.94

of CFA model are given in the following table. Path analysis is proposed to make the model acceptable and before using diagram.

The absolute fitness parameters have been formulated according to difference of variances and predicted covariance in the model and the values higher than 0.9 are suitable for GFI parameter and also root of mean residue (RMR) should be lower than 0.08 and comparative parameters or CFI is one of comparative criteria for which values within range (0.9-0.95) is interpreted as acceptable. The Root Mean Square Error of Approximation (RMSEA) is based on residue matrix analysis. The acceptable models include values equivalent or lesser than 0.08 for this parameter.

Table 5: Fitness parameters for research theoretical model

Title of index	Favorable value	Obtained value in model
Goodness of fit index (GFI)	>0.9	0.915
Comparative fitness index (CFI)	>0.9	0.963
Degree of freedom/ Chi-2: $x^2/df$	<3	2.170
Root mean square error of approximation (RMSEA)	<0.08	0.07

### 8. Structured model test

The fitness quantitative results showed that research theoretical model is acceptable. Thus, it can be now dealt with relations inside the model and regressive values between hidden variables. Test of structured model is shown in Fig (3).

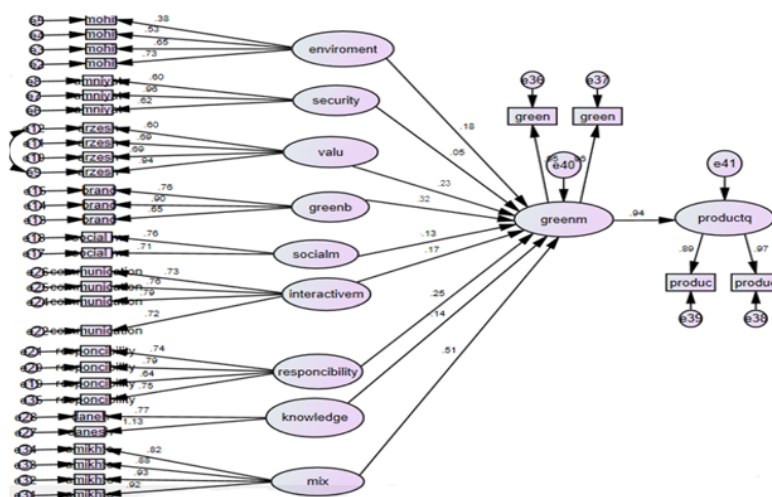


Figure 3: Structured model test for green marketing development based on standard coefficient

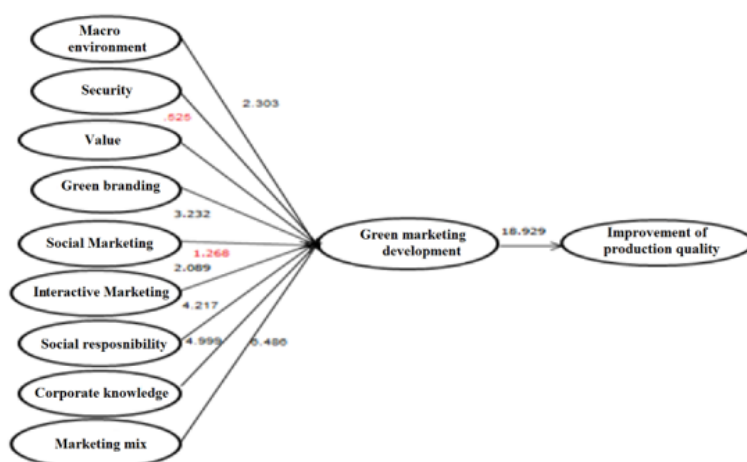


Figure 4: Structured model test for green marketing development based on Significance coefficient

Similarly, output for regressive weight is shown to analyze data and relations between variables in the following table.

Table 6: Standard approximation output

	Impact coefficient	Critical statistic	Significance level	Results
Environmental factors → Green marketing development	0.18	2.303	0.021	Not rejected
Social responsibility → Green marketing development	0.25	4.217	0.000	Not rejected
Marketing mix → Green marketing development	0.51	6.486	0.000	Not rejected
Interactive marketing → Green marketing development	0.17	2.089	0.037	Not rejected
Social marketing → Green marketing development	0.13	1.268	0.205	Not rejected
Knowledge management → Green marketing development	0.14	4.999	0.000	Not rejected
Value → Green marketing development	0.23	2.298	0.009	Not rejected
Brand → Green marketing development	0.32	3.523	0.000	Not rejected
Trust → Green marketing development	0.05	0.635	0.525	Rejected
Green marketing development → Improvement of production quality	0.94	18.929	0.000	Not rejected

Based on the given results from structured equation modeling in Table (6), the effect of environmental factors on marketing development (significance value: 2.303 greater than 1.96) was approved. Therefore, we conclude that macro environment affects marketing development.

According to the given results from structured equation modeling in Table (6), impact of social responsibility on marketing development (significance value: 4.217 greater than 1.96) was confirmed. As a result, social responsibility influences in marketing development.

Based on the given results from structured equation modeling in Table (6), the effect of marketing mix on marketing development (significance value: 6.486 greater than 1.96) was approved. Consequently, marketing mix affects marketing development.

According to the results derived from structured equation modeling in Table (6), the effect of interactive marketing on marketing development (significance value: 2.089 greater than 1.96) was confirmed. Thus, we conclude that interactive marketing may impact marketing development.

Based on the given results from structured equation modeling in Table (6), the effect of social marketing on marketing development (significance value: 1.268 lesser than 1.96) was disproved and we conclude that social marketing has no impact on marketing development.

According to the results derived from structured equation modeling in Table (6), the effect of knowledge management on marketing development (significance value: 4.999 greater than 1.96) was confirmed. As a result, knowledge management affects marketing development.

Based on the results came from structured equation modeling in Table (6), the effect of value on

marketing development (significance value: 2.298 greater than 1.96) was approved. Consequently, the value affects marketing development.

According to the results derived from structured equation modeling in Table (6), the impact of brand on marketing development (significance value: 3.523 greater than 1.96) was confirmed. As a result, brand may impact marketing development.

Based on to the results from structured equation modeling in Table (6), the effect of confidence on marketing development (significance value: 0.635 smaller than 1.96) was rejected therefore we conclude that security has no effect on marketing development.

According to the results derived from structured equation modeling in Table (6), the impact of green marketing development on product quality improvement (significance value: 18.929 greater than 1.96) was confirmed. As a result, green marketing development affects product quality improvement.

## 9. Discussion and conclusion

The results showed that 13 factors could be identified for green marketing development. These factors included macro environment (economic, social, technological and cultural factors), marketing mix (green product, green promotion, green packing, and green distribution), social responsibility, green branding, environmental knowledge management, interactive marketing, value, security and social marketing. Among these factors, variables of macro environment (economic, social and cultural factors), marketing mix (green packing and green promotion), social responsibility, green branding, environmental knowledge management, and interactive marketing have been mentioned in previous studies. Social marketing and interactive marketing were identified as local factors in the current study but factors of social marketing and security were disproved in current Iranian community after analysis on statistical population.

Nowadays, following to increase in awareness and concerns of consumers, their concerns have been added toward environment and the related negative impact on the post generation and caused the customers to consider environmental issues in their purchase and to collect information upon their purchase and also it seems necessary to identify effective factors on green marketing development by rising importance of environmental problems and concept of social responsibility among the consumers. With respect to above-said cases, green marketing concept becomes more popular among consumers and the enterprises. It has been tried in this study to propose an applied model for green marketing development hoping that it can be addressed and utilized by the enterprises and led to spreading and development of green marketing in our country.

Paying attention to environment is deemed as necessary in today highly competitive world in the macro environment at community including in political, economic, security, cultural and social and technological fields. Green marketing is deemed as an effort made for protection from consumer's health and attention to the environment serves as a type of social responsibility. The findings of present study suggest that it necessitates for the government to play role regarding legal requirements and financial standards and supports and culture-building by trainings and changing of lifestyle and these environmental controls and governmental supervision may enable the producers to improve their performance better with competitive preferences and opportunities. Some of the issues that should be noticed with regard to research findings are as follows:

- 1- Using social media for viral green promotion, briefing and giving information to consumers, and expressing advantages and information about defective effects of environmental pollution on health and cost of treatment for diseases and their health and of the next generation (environmental knowledge management);

- 2- Non-use of hazardous and irrecoverable packs and reducing expiry date and preservative materials in products for environmental protection (green packing);
- 3- Creating moral commitment and green tendency to create special value for green brand by emerging trust in green brand so that customer to be encouraged for green purchase (social responsibility);
- 4- Rational pricing by governmental financial supports and creating tendency to pay cost for the customer with justifying benefits of these products (green pricing);
- 5- Paying attention to social factors and subjective norms of consumers in their attitude upon purchase and formation of eco-friendly associations and groups (social factors);
- 6- Employing green marketing mixes and creating a distinctive position in customer's mind and satisfaction in customer (green marketing mixes);
- 7- Systemic green thinking and training in human resources (social marketing)
- 8- Tendency to modern marketing and green innovations and focusing on design and reducing consumption of resources and wastes during product consuming time, isolation and recycling, reusability of products to improve environmental performance (Technological factors);
- 9- Expert shops for distribution of organic materials to create ease of access for the customer (green distribution)

## 10. Suggestions based on research findings

- Creation of innovative software and applications in cellular phone shows potential for measurement of green nature of products so that the customer to be able to trust in those products s/he measures rate of their green nature.
- With respect to findings of previous studies, academic trainings should be done for students attractively in the schools and specialized course should be held.
- The sense of security and trust should be created in consumers by tangibility of goods and the packs should be designed with full information transparently to enhance environmental knowledge.
- The colored labels (red, green and orange) in green products in packaging of organic products.
- The legal requirement of government and determination of standards should be increased more for environmental protection and public organizations should be established to give green licenses to the producers and supervision and strict financial penalties should be determined for producers who put false green label on their products. This policy-making and governmental regulations, which include compulsory use of green product, will cause growth for green brands and entrepreneurship to manufacture green products.
- Traditional and current open packs of green products should be changed into modern ones with green labels and glassy or edible packs e.g. bread should be designed to be eaten with food.



- Culture-building and training of families for disposal of degradable wastes in parks or orchards to produce herbal fertilizer and plans for separation of wastes in origin and creation of protected areas;
- Governmental supervision to prevent from manufacturing of genetically modified products synthetic and false green products and production of raw materials by producer and incurrance of some part of high costs by the government to reduce price of green products;
- Formation of supportive groups for environment and supportive projects and participation of individuals in these groups by giving prizes for collection and especially separation of wastes that cause social attractions friendship in consumer;
- Establishing specialized shops for organic products and omission of broker and wholesaler to prevent from misuse and rising price;
- To hold training seminars to introduce green activities and by expressing efficiency of green behavior to direct subjective norms and standards of consumers' mind to green concept;
- Giving ID card or document of green product to customer for which all information is written fully from origin of product;
- Giving permission to consumers to visit production process and raw materials in factories and putting results of tests on organic products at their disposal to create sense of confidence in them;
- It is required for the government to exempt from tax those enterprises that are active in manufacturing of organic products thereby to reduce final cost of the given products and to justify payment of these prices for the consumers;
- To hold training seminars to introduce green activities and to express efficiency of green behavior to direct subjective norms in consumers' mind toward green concept;
- To give ID card or a document of green product to the customer for which all information is written totally there from the origin of product;
- To change packing of organic products from open and traditional form to packs with green labels;
- To permit customer to visit from the factories and location of manufacturing of products to create sense of trust in them;
- The government should exempt from tax those companies which create brands for organic products to reduce final cost.
- The price of products should be decreased for the consumer and payment of prices should be justified for the consumers.

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