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# GREEN SUPPLY-CHAIN MANAGEMENT AND GREEN PURCHASE INTENTION, THE ROLE OF GREEN BRAND-EQUITY

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## *Abstract*

This study aims to analyze the impact of green supply chain management on customers' green purchase intention in Iranian beverage industry. To this end, this study examines the role of brand equity as a mediator variable. The research paradigm is positivistic, its approach is deductive and its strategy is survey. A questionnaire sample consisting of 48 questions was handed out via e-mail, Telegram software and cyberspace to the sample population consisting of 30 manufacturers and their consumers, Three for each. Facial and content validity of the questionnaires are assured by the review of experts and using standard questionnaires formerly designed. The structural validity also relied on confirmatory factor analysis. Reliability is 0.79 according to Cronbach's alpha. Data analysis is done using smart PLS software and testing by means of correlation matrix, Structural equation model and the model fitness test. The findings of our study showed a significant and positive correlation between Green Supply Chain Management and the Green brand equity. It was also revealed that green brand equity also plays a significant role in determining the customers green purchase intention.



**Keywords:** Green supply chain management, Green purchase intention, Green brand equity, Iran, Beverage Industry.

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## 1. Introduction

Interest of environmental and awareness of the consumers have come to increase, as demand of consumers for green products and services have come risen. Today because government pressure, cost issue, competitive pressure, increase consumer base, subsidies from government and social responsibility business turn to green marketing and it's unavoidable (Kilic & Özdemir, 2018). Regulators set various environmental consumer standards, such as recycling content and environmental performance measures, leading to greater purchase intentions and behaviour (Sarkis & Zhu, 2018).

Green products purchase intention is "possibilities and tendency of an individual to achieve products compatible with the environment" (Ali & Ahmad, 2012; Dehghanan & Bakhshandeh, 2014). Green products purchase intention is a determination to act in a good predictor of actual behaviour in purchasing the product Ramayah, Lee, & Mohamad, 2010). In order to achieve nationally determined contribution targets and sustainable development, the industry should assume a critical responsibility for Environmental Protection (Rimal, Zhang, Stork, Sloan, & Rijal, 2018). Behaviours such as buying drinks contained biodegradable containers, purchasing and consuming recycled plastic and paper, energy-saving light bulbs and detergents containing decomposable materials tending to return back to nature (Zand Hesami & Parvinchi, 2014).

There is some evidence that business become more profitable after transform to green manufacturing system and turn to adopt green philosophies (Taylor, Chuang, & Yang, 2013). If companies seek success by turning green products and services must grow consistent with marketing principles. In this regard, the development of current concepts of marketing and branding within a green framework seems necessary. If companies can provide products and services meeting the customer's environmental requirements, customers will show more interest in their goods and services. Companies should look for opportunities to improve the environmental performance of their products to strengthen their green brand equity (Sanidewi & Paramita, 2018).

Due to public attention, manufacturers tend to shoulder environmental responsibilities. Meanwhile, the consumers' attitudes change simultaneously with changes in the factors influencing the characteristics of green products (Ghosh, 2010). This issue demonstrates that with Green supply chain management, customers green purchase intention can be impressed.

Given the role of consumer, authors suggest that production of green products is only a necessary but not sufficient requirement to protect the environment. Moreover, further attention to the role of consumers in supporting green activities is noted (Dehghanan & Bakhshandeh, 2014).

Haghighi and Khalil (2011), considering the insights and attitudes of Iranian consumers is necessary due to their importance in developing the marketing plan. Deep understanding of the attitudes and customer preferences to participate in green activities could lead to designing more efficient and effective green programs (Baker, Davis, & Weaver, 2014).

Beverage industry was selected as the case of this study, since drinks and beverages are directly linked with human health. Policy makers in the industry have turned to environmental compatibility issues mainly in the delivery of their products due to legal issues and consumer sentiments. This industry, as one of the drivers of the development of food industry is of great importance in Iran. Meanwhile, the Business

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environment is in such a situation that only development of detailed planning in this regard, can guarantee success of beverage Industry for domestic consumption and export.

The questions to be addressed are as follows: how much The Green Supply Chain Management impacts green purchase intention? What kind of role the Green brand equity plays as a mediator?

By examining past researches, three main variables as green supply chain management, green brand equity and green purchase intention are detected and their factors and components are examined. Then, the effects of green supply chain management on green purchase intention is investigated by considering Green brand equity, as a mediator variable.

## 2. Problem Statement

In this section, we examine three main variables' theoretical frameworks including Green supply chain management, green brand equity and green purchase intention.

### 2.1. Green Supply Chain Management

Prevention and control of Industry-related environmental pollution, can help to improve the production process, increased profitability (long-term) and access to global markets which has recently been very sensitive to the environmental issues. So, production with minimal waste and environmental damages should be one of the major goals of industries (Sarkis & Zhu, 2018). Industrial activities potentially pollute the environment because the nature of their technology. Therefore, ignoring to pay attention to the consequences of it and environmental issues, will cost hugely to this industry (Wildavsky, 2018).

The main goal of green supply chain management, is to reduce environmental pollution including the purchase of raw materials, production and distribution as well as the sales of products. Other purposes are limiting wastage within the industrial system in order to conserve energy and avoid using hazardous materials which are detrimental to the environment (Zanjirchi, Asadian, Azizi, & Moravej, 2012). The indicators for measurement of GSCM include:

Internal environmental management: refers to the practices about internal organizational such as top management support, environmental compliance programs, and inter-departmental cooperation for environmental improvement (Geng, Mansouri, & Aktas, 2017).

Green purchase: Green purchase includes activities whose purpose is to ensure the appropriateness of purchased materials for the environment. These activities include the ability to reuse, recycle and reduce the use of hazardous materials (Eltayeb, Zailani, & Ramayah, 2010).

Green design: or eco design is a structural process consisting of attributes about ecological and green in products and processes (Geng et al., 2017), Includes activities aiming at minimizing the environmental impacts of product during all its life cycle (Eltayeb et al., 2010).

Green production: Green production is defined as manufacturing processes which uses the entries with relatively low environmental impacts and having high performance as well as less waste, or less pollution (Ninlawan, Seksan, Tossapol, & Pilada, 2010).

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Reprocessing: to reduce the cost of customers and meet their expectations. Some producers improve the company's image and size up the market focus on the recycling of products. Sales of inventory or additional equipment make the other aspects of recycling (Zhu, Sarkis, & Lai, 2008).

Pollution: Water, soil and air pollution control in the process of production is an important factor to reduce environmental impacts (Zhu, Qu, Geng, & Fujita, 2017).

This study used the six above-mentioned criteria to measure the level of being green in Iran beverage industry supply chain.

### 2.2. Green purchase intention

Green purchase intention is related to a consumer's intention to buy a product that is less harmful to the environment and the society at large. Green product intention refers to a consumer's actual purchase of an environmentally friendly product or brand once they are aware of its green attributes (Suki, 2016).

The issue of environmental protection has caused consumers to rethink about the products they buy, and today many consumers prepared to properly protect the environment pay more for products meeting the Environmental standards (Porter & Kramer, 2019). Actually, public concerns for the environment leads to emergence of a new type of consumers that show the importance of the environment in their decisions to buy products (Grunert, Sonntag, Glanz-Chanos, &Forum, 2017). Because of the efforts taken in the field of green marketing, Green products on the market are more popular. When consumers are more and more concerned about the environment, there will be larger numbers of customers who are willing to purchase products with less environmental harms (Dangelico & Vocalleli, 2017).

Previous research has shown that individuals with concerned about the environment are more likely to green purchase intention and leads to purchase green products. Green purchase intention affects on green consumption, express price, quality, norms, values, and beliefs preferences (Sreen, Purbey, Sadarangani, & Hide, 2018).

Authors have examined that positive attitude toward green products leads to green purchase intention. Marketers to formulate their policy with regard to actions which would enhance the purchase and usage of consumer's behaviour towards green products (Sethi, Tandon, & Dutta, 2018).

Also, traditional aspects of products such as price, quality and brand are also among the important factors when people are considering a purchase decision. In addition, the customers who are married or are on the verge of marriage, are more likely to make purchase of green goods and this is because this group of people care about their health and family and the next generations (Gan, Wee, Ozanne, & Kao, 2008). Overall indicators identified from different literature to check the status of the assessment of Attitude and intention to purchase green are as follows: Attitude towards the environment, healthcare, environmental knowledge, tendency to collectivism, Interpersonal affects, attitudes towards green products, Willingness to pay, the need to understand the product and green products purchase intention.

### 2.3. Green brand equity

Green brand refers to the need to comply with the requirements of environmental protection and beyond that, innovations in the field according to the organization industry. It warns the organizations that the very thing that will differentiate them from their competitors in near future is their powerful Green

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brand. Special attention must be paid to green branding, which can guarantee the survival of the organization and its brand in international market.

Green Brand Equity Indices including Green quality and brand reputation and perceived value are mentioned in the following lines:

Perceived quality of the brand: authors stated that the perceived quality is customer's perception about product quality and excellence or services to competitors, which does not include the technical dimension. They also specified that Perceived quality is a key component of brand equity, Hence the high perceived quality can guide the consumer to choose a brand compared to other rival brands (Abrahams, Jiao, Wang, & Fan, 2012).

Brand reputation: Brand reputation refers to the ability of the company and its expertise in providing products and Services which can satisfy their customer demands (Ng, Butt, Khong, & Ong, 2014).

Green brand's perceived value: Chen and Chang (2012) defined Green brand's perceived value as an overall assessment of customers from the net profit of a product or service, between what is perceived and what is offered based on the environmental interests of customers, sustainable expectations and green needs.

Green brand image: Chen (2010) defined Green brand image as a general field of impression, concepts and receptions than a brand in customer's memory, which is associated sustainability and environmental concerns (Farrokh, 2014).

Green brand equity: Chen (2010), defined the Brand Equity Green as "a set of assets and brand liabilities in the field of green commitments and environmental concerns that are linked with name, symbol and logo.

## 3. Research Questions

The questions to be addressed are as follows: how much The Green Supply Chain Management impacts green purchase intention? What kind of role the Green brand equity plays as a mediator?

## 4. Purpose of the Study

As mentioned before, analyzing the correlation between three variables including Green Supply Chain management, Green purchase intention and Green brand equity, shed some light on this field and enables us to have some investigated suggestions to executives and strategists in related industry as well as academic researchers in this field.

## 5. Research Methods

### 5.1. Research Hypothesis

H1: Green supply chain management has a positive impact on green brand equity dimensions.

H2: Green brand equity has a Positive impact on green purchase intention (Figure 01).

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**Figure 01.** Conceptual model

### 5.2. Data Collection Tools

In order to collect information, as it is shown in table 1 to 3 standard questionnaires are used. The questionnaire has acceptable formal validity using experts opinion and also confirmed by confirmatory factor analysis. The reliability of this questionnaire is computed Through Cronbach's alpha and has been approved.

**Table 01.** Questionnaires used in our research

| No | Questionnaires | Author |
|---|---|---|
| 1 | Green supply chain management | Farrokh, 2014 |
| 2 | Green brand equity | Chen, 2010 |
| 3 | Green purchase intention | Nakhaei and Kheiry, 2013 |

### 5.3. The population & sample

Based on the importance of green concepts and increasing attention of different companies towards the issue of environmental and branding in the field, and after an initial investigation, 30 green brands in the beverage industry are selected, according to their environmental compliance and emphasis on delivering their product. According to the study, two types of questionnaires are distributed between the samples of three observers in each factory. Consumers and buyers of green products (Questionnaires, purchase intent and Green brand equity) and the other were distributed among experts and green product manufacturers (Green Supply Chain Management Inventory).

## 6. Findings

In this section, first all descriptions of questionnaire are provided in the form of table followed by the findings. To interpret the results, many numerical and graphical techniques have been used. In this part of study using smart PLS software and SPSS, several analyses have been conducted.

### 6.1. Research main variables description

In The following table 2 and 3 the Overview of Research main variables and Descriptive indices are presented. Based on this table It is known that most of the variables have an average higher than (3), this means that their statue is assessed Top according to respondents. On the other hand, Supply chain management index has an average of (3.07), Green brand equity index has an average (3.67), and finally green purchase intention index has an average of (4.04).

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### 6.2. The inferential section

In this part the model is discussed. Before examining the model, the normality of main variables must be addressed. This test is done with an error level equal to 5 percent. It is worth noting, as the number of samples is 90, it is optimum that Shapiro-Wilk test used in addition to Kolmogorov-Smirnov test. Based on the results it is clear that some research variables have a significance level higher than 5% and so are normal and others do not.

### 6.3. Research model analysis by PLS software

After running the above model, we can find the values of influence and the factor loads which will be discussed in the following. It is worth noting that, the Software that uses Structural Equation Modelling based on the statistical methods than the existence of conditions such as Linearity of independent variables, Non-normal data and a small sample, are Compatible (Haenlein & Kaplan, 2004). The Software Output After testing the conceptual research model is shown below in Figure 02.

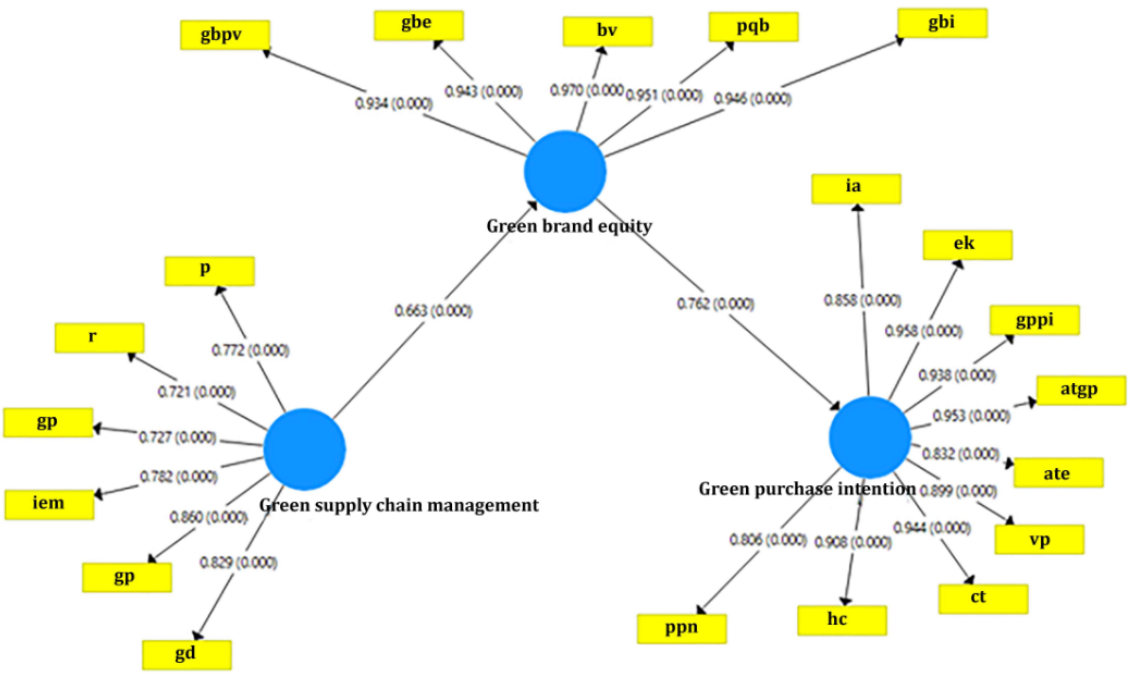


**Figure 02.** Effects model and factor loads on the basis of their significance

### 6.4. Effects model and factor loadings on their T-value

These models differ in terms of their reporting but their result is the same. In the other words, a significant amount must be less than 5% and the t-value should be greater than 2 to be said the effect of hidden variables and the factor loadings between manifest and latent variables are significant. In this model, generally all values are with an appropriate significance level. In this model, it is clear that Supply Chain Management has a great and significant effect On brand equity. In other words, the impact of supply chain management on the variable equity is (0.66). On the other hand, Green brand equity is impacting the green purchase intention significantly. Green brand equity impact on green purchase intention is about (0.76).

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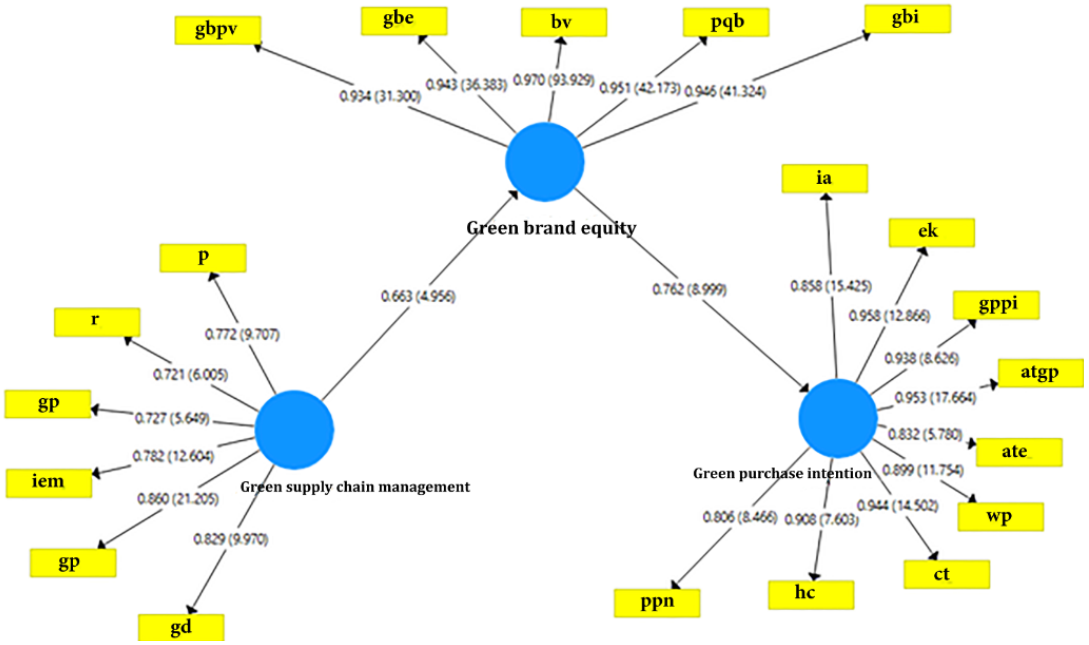


**Figure 03.** Effects model and factor loads on the basis of their t-value

As seen in the research model, all factor loadings are greater than 40% that this issue indicates the appropriateness of the criteria and reliability of the measurement models. The following table 2 shows the values of model variables, which show an acceptable fit of Measurement in presented model.

**Table 02.** The values obtained for measurement and structural models

| Research's indices | CR | AVE | R2 | Cronbach's alpha |
|---|---|---|---|---|
| Green supply chain management | 0.905 | 0.614 | - | 0.978 |
| Green brand equity | 0.978 | 0.9 | 0.44 | 0.975 |
| Green purchase intention | 0.975 | 0.812 | 0.58 | 0.905 |

**Table 03.** Measurement models Fit index in term of validity (Fornell-locker table)

| Research indices | Green brand equity | Green purchase intention | Green supply chain management |
|---|---|---|---|
| Green brand equity | 0.936 | | |
| Green purchase intention | 0.781 | 0.866 | |
| Green supply chain management | 0.707 | 0.554 | 0.722 |

As can be seen from the above table 3, the square root of latent variables in this study which is in the existing place in the diagonal matrix, is higher than The amount of correlation between them that is the follow places and left diagonal, which indicates good model fit. According to the presentation, Measurement models has a good fit.

In Structural model, the most important indicator is the coefficient of determination (R2) which shows the impact of an exogenous variable on an endogenous variable, and three 0.19, 0.33 and 0.67 values are considered to be strong and average.

To review the overall model fit, only one benchmark called GOF is used. The value of model fitness index should be Greater than 36 percent. By achieving a zero value, it was confirmed that the overall fitness

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of the model is very good. The general fitness of above Model was evaluated by GOF criteria which is equal to 0.514 in this research.

After ensuring the overall fit of the model, it is the turn to examine details of model fit and hypotheses tests. In this phase, the effect coefficient of each variable and its significance are examined. To assess the relationship between the variables in the model, the significant t-values will be used. If the value of these numbers is greater than 2 and less than -2, it shows the validity of the correlation or the effect between variables and thus is confirming the hypothesis of the research. As it has been shown in the model, all t-values are higher than 2. This is an endorsement of the research hypotheses as well as three indicators of the original.

## 7. Conclusion

Iran, as many countries suffer from a high level of air pollution, Poor water quality, sound pollution caused by traffic, great amount of waste disposal and rapid decline in energy resources. Environmental problems are created mainly due to abnormal consumption and unsustainable activities. By making small changes in lifestyle and consumption habits, each person can contribute to the valuable movement of saving the environment. To this end, Iranian government can apply different strategies to encourage sustainable consumption and the development of green behaviour. Due to the increasing environmental problems and the adverse impact of consumerism on the human physical and spiritual state, turning to Green products is a must. By innovating existing products and turning them into green ones, companies can explore this market through sustainable growth (Nejati, Salamzadeh, & Salamzadeh, 2011).

The current research Results Showed that Green Supply Chain Management through Green brand equity impact on green purchase intention and this can increase the overall quality of products and services of companies producing drinks and beverages. Higher quality can increase green brand equity of product, and subconsciously affect the customer green purchase intention. According to our study, it is recommended to managers in the beverage industry that by replacing pollutant materials/components and dangerous in organization, they can focus on reducing resource consumption and the creation of waste during production and distribution. Moreover, they can plan for separation, reuse and recycling, processes that impact the operational and environmental performance of their organizations. In this way they can improve their green brand equity and finally make an impact on purchase intention of customers.

The other proposed ways are improving the ability to launch new products, increasing the quality of products, increasing the flexibility of the organization and capability of responding to the needs of customers, improving product quality and meeting customer expectations.

This can come as a useful starting point for producers, to develop marketing strategies for communication between the consumer perspectives and producers. Attending the green brand equity can increase satisfaction and establish long-term relationship based on trust in the field of the environment. Because green marketing is an effective approach to creating advantage, Manufacturers must establish a green supply chain management to encourage customers willing to purchase. Given that, retailers are as a communication channel between producers and customers, so training and concessions to retailers can lead to the relationship between retailers and consumers in terms of perceived value of the green brand equity for consumers.

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Given that risk in green purchase behaviour must be reduced and by reducing the risk there will be a growth in green purchase, thus manufacturers must have the necessary information to compare their products with other manufacturers' products based on the performance and environmental services.

So it is required that the companies provide more information on their products. Without providing reliable and credible information to customers, manufacturers' attempts to convince customers to choose their products will be very a difficult task. This is because customers may become suspicious and distrustful about the company claims of being green, so the best strategy for marketers is to provide detailed information about the environmental credentials of their products to customers.

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