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Explaining Effective Factors on Consumers Willingness to Pay More for Buying Green Products Based on the Value-Belief-Norm Theory

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ABSTRACT: This study aimed to investigate effective factors on consumers' willingness to buy green products that have a premium price compared with similar products in market. For this purpose, the value-belief-norm theory has been used and conceptual model has been developed accordingly. Required data for testing research model and hypotheses has been gathered through questionnaire survey between 300 citizens of Yazd province. Also, structural equation modeling and path analysis approach have been used for fitting the conceptual model. Findings showed that the value-belief-norm theory, with slight modifications, can predict and investigate consumers' willingness to pay more for green products. Research findings show that altruistic and biospheric values have a significant and positive role in consumers' attitude toward environment. Also, based on results of this study consumers attitude toward environment can increase their awareness about consequences and problems of environment. This increased awareness leads to ascription of responsibility and then personal norm toward preserving environment. Finally, pro-environmental personal norm increases consumers' willingness to buy green products even when they are premium priced compared with similar products.

KEYWORDS: Green Consumer, Green Product, Willingness to Pay, Value-Belief-Norm Theory, Structural Equation Modeling.

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1. INTRODUCTION

In recent years, the environmental problems have been the matter of concern for many governments and citizens; consequently, the expression of related issues in the mass media has dramatically increased. Giving attention to environment has become a key element in political decisions made by states. In addition, various organizations and associations have been established with a variety of laws and regulations to protect the environment. Increased pollution and environmental damages, and thereby increased public concern for the surrounding natural environment have begun to appear in their shopping and consuming behaviors; this has led to the creation of a new group of consumers called green consumer (Do Paco & Raposo, 2010). Green or environmental-friendly consumers refer to those consumers who, in their buying behavior and market related activities, examine the effect of manufacturing and consuming process of products on the environment and decide accordingly (Stern, 2000).

The necessity to pay attention to the needs and behaviors of green consumers and marketing the green or eco-friendly products can be explained in two ways. On one hand, the increasing use and degradation of natural resources such as water, oil and forests, which are essential for human survival, is a serious threat to human beings. The main reason of this destructive trend is increasing population and detrimental consumption habits. This situation calls for designing and producing products that are less detrimental to the environment in their life cycle from the production to consumption. The products should also influence the individuals to have green or environmentally friendly behaviors (Do Paco, Raposo, & Filho, 2009). On the other hand, the green part of the market could be introduced as an attractive target market for manufacturers of environmental-friendly products. What is required for the marketers to take an appropriate strategy to meet the needs of green consumers and encourage them to purchase green products against similar products available on the market is that they should understand the green insight and attitude of the consumers and identify the influential factors on their buying behavior (DSouza, Taghian, Lamb, & Peretiatko, 2007).

Among the characteristics of green or environmental-friendly products is their higher prices compared with similar products without the environmental standards; this is because of the advanced manufacturing technology, more expensive raw materials and more regulation in their manufacturing process. Therefore, the question that is raised by the manufacturers of green products is whether consumers are willing to pay more for green products versus the competing non-green products; the other question is that how they can increase this intent in such consumers? The answer to this question may increase the manufacturers' willingness to produce products that meet environmental standards, develop the markets for these products, keep the environment clean and enhance green economy.

In this study, it is tried to find the factors affecting consumers' willingness to pay more for green products. To this aim, the Stern's (2000) "value-belief-norm" theory is used which is the most widely used theories in predicting and explaining eco-friendly behaviours and attitudes.

2. LITERATURE REVIEW

2.1. Green consumer, Green products and Green behaviors

"Green" is the new term introduced by commercials, TV shows, advertisements, and environmental congresses; regarding marketing concepts, it means environmentally-friendly. Green consumers refer to the consumers who consider the effect of their purchase behavior, market-related activities and consumption habits on the environment. In other words, they express their concern for the environment in their purchase and consumption behavior (Wagner, 2005). However, these concerns are not only about the purchase and consumption of goods; it is possible for the green consumers to select where and how they would travel and work based on the environmentally-friendly factors.

Generally, green consumers avoid buying products that may endanger their as well as others' health, damage the environment during the manufacturing process, consumes a lot of energy, make a lot of waste, or damage the natural resources and endangered plant and animal species in the extraction process of their raw materials (Haqiqi & Khalil, 2011).

A product is called green or eco-friendly if its environmental performance in the production, consuming and disposition is significantly improved compared with other competing products (Ra'naee Kardshuli & Allahyari Bouzjani, 2012). Green products generally refer to the products that do not pollute the environment, do not waste the natural resources and are recyclable (Do Paco et al., 2009). Products with recyclable or reusable packaging, CFLs, and detergents and cleaners with degradation components are examples of green products. Stern (2000) defines environmentally significant behaviors as a range of behaviors that change the access to natural resources and energies or affect the structure and dynamics of ecosystems or climate. Thogersen (1999) divided the environmentally friendly behavior into three distinct categories:

- Social activities, such as voting for or protesting about the protection of environment.
- Consumers' purchase behaviors such as buying green products
- Post-purchase behaviors such as recycling or energy saving

Stern (2000) classified environmentally friendly or green behaviors more precisely and categorized them in four distinct classes:

- **Environmental activism:** it refers to the activities of individuals who are members of environmental organizations and associations.
- **Non-activist behaviors in the public sphere:** It includes citizens' behaviors and activities in public spheres that are aimed to protect the environment (such as working with environmental groups and organizations, confirming and helping with activities that are taken for the implementation of laws protecting the environment and satisfying individuals to pay more taxes for environmental protection). This class of behaviors indirectly influences the environment by affecting the public policies; however, it is a very important group since it can suddenly modify the behavior of a large number of people and organizations.
- **Private-sphere environmentalism:** In this group, the consumer behavior is investigated in purchasing, using and disposing personal and household goods that have a direct impact on the environment. For example, behaviors associated with buying appliances for heating or cooling houses and how to use them, saving energy, buying cars, traveling, purchasing green goods and recycling the waste are all classified in this group. Some researchers also divide the green behaviors of this group into two different categories: The first category, which is called curtailment behaviors, is related to the behaviors that reduce energy consumption behavior and the second category, which is named pro-environmental purchase behaviors are related to purchase behaviors and decisions (Jansson et al., 2009). There is typically no need to spend extra money for curtailment behaviors, but it is sometimes required to change personal habits (e.g. using personal car less, reducing the heating temperature or reducing water and electricity consumption). Green purchase behaviors in the short-run are usually followed by additional costs such as purchasing green products, home insulation with new equipment, purchasing CFLs and energy efficient and environmentally friendly cars. Consequently, green consumer can be described as an individual who has a set of

curtailment and pro-environmental purchase behaviors according to his motivation, attitude and knowledge about the environment.

- **Environmentalism in organizations:** Individuals can influence the activities that are related to the organization they belong to. For example, engineers of a manufacturing plant design environmentally friendly products, production manager consumes fewer raw materials by his innovative manufacturing plan, and maintenance or repair workers can reduce factory's pollution by their activities.

2.2. Value-Belief-Norm Theory

Since 1970, researchers in the United States have conducted extensive studies to explore people's attitudes towards the environment, its relationship with different types of green behaviors and various factors affecting it (Dunlap, 2002). Researchers in other countries have also tried to generalize the findings to their own culture and have used different theoretical models and behavioral theories to explain how the green behaviors are formed among citizens and consumers in their countries. Value-belief-norm theory is one of the best-known and most widely used theories in this area.

An individual's attitudes are affected by values, beliefs and norms; according to researchers, this provides the context for green behavior (Stern, 2000). Stern states the relationship between these factors and green behavior in his value-belief-norm theory, the integrity and validity of which has been proven by different studies carried out in the field of environmental-friendly behavior. Stern's theory combines the value theory (Schwartz, 1992) and norm activation theory (Schwartz, 1997); the overall model is shown in Figure 1 (Stern, 2000).

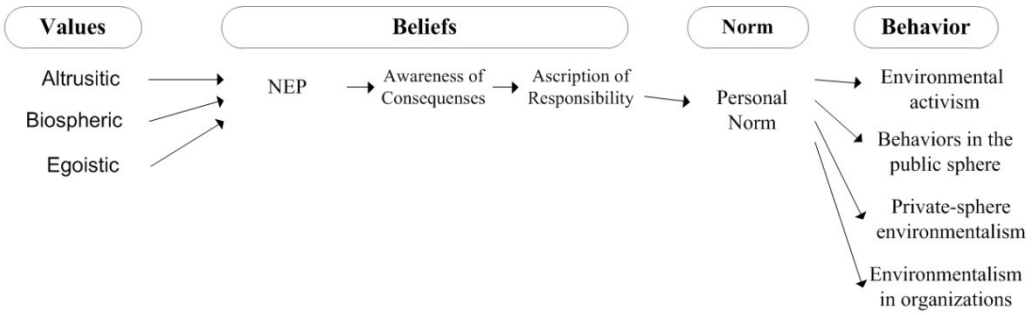

Figure1.Value-Belief-Norm Theory (Stern, 2000)

As can be seen in Figure 1, Stern considers three individual values influencing the formation process of green behavior; this has been confirmed by other researchers. Individuals who place a high value on altruism behave according to the perceived costs and benefits for other people. Those who are more biospheric review the effects of their behavior on living organisms and environment and make decisions accordingly. Finally, individuals who tend to be more egoistic only consider the costs and benefits of green behavior for themselves. In this case, if the costs exceed the gained benefits, they will have environmentally-friendly behavior; otherwise they will have a negative attitude towards these behaviors. Numerous studies have confirmed the positive relationship between being biospheric and altruistic values and also the negative relationship between egoistic value and green behavior in consumers (De Groot & Steg, 2008; Hansla et al., 2008).

According to Schwartz's (1997) norm activation theory and Stern's (2000) value-belief-norm theory, if a person gets to know that an environmental problem or issue can threaten his values

(awareness of consequences) and then understands that he can take an action to reduce this threat (ascription of responsibility) a personal norm will be resulted which means moral commitment to have environmentally-friendly behaviors. In addition, being aware of the consequences and ascription of responsibility is dependent upon a person's overall vision of the environment; this can be measured by new environmental/ecological paradigm (NEP) proposed by Dunlap et al. (2000).

Previous researchers used value-belief-norm theory to predict and explain factors influencing a variety of environmentally friendly behaviors. For example, Stern's theory of value-belief-norm was used to predict people's willingness to save energy (Ibtissem, 2010; Sahin, 2013), preserve natural resources (Kaiser et al., 2005), or to explain factors influencing people's willingness to reduce personal car use (Eriksson et al., 2008; Jansson et al., 2009). The validity of this theory is confirmed in the above-mentioned cases.

In their study, Lopez and Sanchez (2012) used value-belief-norm theory for determining the factors that influence people's willingness to pay for the conservation of nature and suburban parks. Results showed that biospheric and altruistic values, positive attitudes towards the environment and personal norms are factors that affect people's willingness to pay(Lopez-Mosquera & Sanchez, 2012). In another study entitled "Green Transportation: values, beliefs, norms and reduction of using private cars", Stern's (2000) theory was used to explain factors effecting the willingness of citizens to reduce the use of private cars; the accuracy and validity of the relationships in this theory was also confirmed (Jakovcevic & Steg, 2013).

3. CONCEPTUAL MODEL

The conceptual model for this study is taken from Stern's (2000) value-belief-norm theory. As can be seen in Figure 2, according to Stern's theory (2000) the three values of altruistic, biospheric and egoistic effect the individual's overall attitude of the environment. The individual's attitudes and concerns about the environment impact his awareness about the consequences of environmental problems. This knowledge and awareness enhances one's sense of responsibility towards his surrounding natural environment and strengthens the individual norms or strict commitment towards environmental protection. Finally, this individual norm leads to different levels of green behavior. In the proposed model in this study, the consumer willingness to pay more for green products, which can be classified as a green behavior in the private sphere, based on Stern's classification, is considered as the dependent variable.

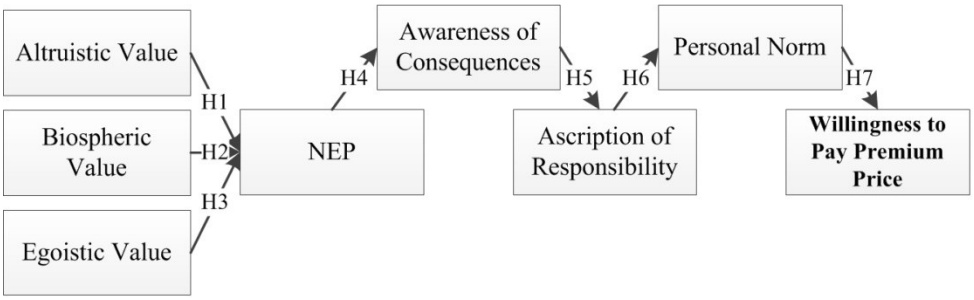

Figure 2.Conceptual model

According to the relationships developed in the conceptual model of the study, the following research hypotheses are proposed:

- Hypothesis 1: altruistic value has a significant effect on the overall view of the consumers towards the environment (NEP).
- Hypothesis 2: biospheric value has a significant effect on the overall view of the consumers towards the environment (NEP).
- Hypothesis 3: egoistic value has a significant effect on the overall view of the consumers towards the environment (NEP).
- Hypothesis 4: consumers' overall view of the environment has a significant effect on their awareness of the environmental consequences.
- Hypothesis 5: consumers' awareness of the environmental consequences has a significant effect on their responsibility towards the environment.
- Hypothesis 6: Consumers' ascription of responsibility towards the environment has a significant effect on green personal norm.
- Hypothesis 7: personal green norm has a significant effect on the willingness of consumers to pay more for green products.

4. METHODOLOGY

The present study aims to have practical application and is classified as correlational-survey study. All people living in Yazd province were included as the study population that is the ultimate consumer of products purchased from different branches of chain stores located in various regions of city. Random sampling was used in the current study. 300 questionnaires were distributed among the consumers and then, after removing the confounding questionnaires, 252 final questionnaires were analyzed.

Scales of the questionnaire were extracted from previous studies; the content validity of the questionnaire was then confirmed by marketing experts and professors. Cornbrash's alpha coefficient was also used to assess the reliability of the questionnaire. Table 1 shows Cornbrash's alpha values and the studies that the related items were taken from.

Table 1.Details of scales used in the survey questionnaire

Scale	Number of items	Source of measure	Reliability
Altruistic Value	3	Steg, et al. (2005)	0.66
Biospheric Value	3	Steg, et al. (2005)	0.68
Egoistic Value	3	Steg, et al. (2005)	0.76
NEP	4	Dunlap, et al. (2002)	0.75
Awareness of Consequences	5	Hansla, et al. (2008)	0.74
Ascriptions of Responsibility	3	Jahnsson, et al. (2010)	0.79

Personal Norm	3	Steg, et al. (2005)	0.67
Willingness to Pay	3	-	0.80

Information provided in the above table shows that the questionnaire consist of good reliability since Cornbrash's alpha coefficient calculated for most variables of the questionnaire as well as the overall questionnaire was above the recommended threshold of 0.07.

5. DATA ANALYSIS RESULTS

Structural equation modeling and path analysis were used in the present study to test the developed conceptual model and proposed research hypotheses. To this aim, AMOS software version 20 was used; the outputs of the software, after testing the study's conceptual model, are shown in Figure 3.

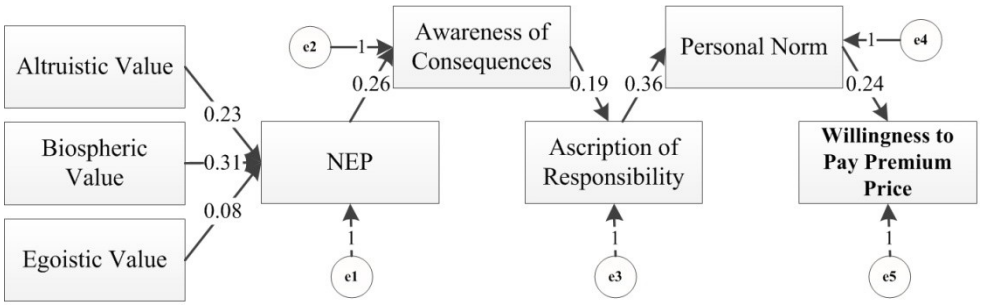

Figure 3.The initial results of model testing

Before testing the research hypotheses, the overall fit of the conceptual model was done. The purpose of the overall fit of the model is to find whether or not the collected experimental data support the conceptual model of the study. Therefore, AMOS calculated different indices that indicate the overall fit of the model. Table 3 shows the values reported in software output for a number of widely used fit indices and their acceptable values.

Table 2.Initial model fit indices

Fit Indices	RMSEA	NFI	CFI	AGFI	GFI	χ
Recommended Threshold	RMSEA<0/1	NFI>0/9	CFI>0/9	AGFI>0/9	GFI>0/9	1-3
Model Results	0.20	0.89	0.73	0.76	0.85	12.4

As shown in Table 2, the initial model fit indices do not show acceptable values; this means that the collected experimental data do not support the initial conceptual model of the study. Thus, the model proposed by the researchers needed to be revised. Since the overall fit of the model must show an appropriate value before the research hypotheses are tested, the initial model is modified according to more detailed information provided by AMOS software and then the research hypotheses are tested. Results of testing the model suggest that, in addition to the relationships defined in the conceptual model, two other relationships should be added to it. Also, one of the developed relationships which is based on the effect of egoistic value on the overall view of consumers toward the environment is not significant and must be removed from the model. Figure 4 shows the final conceptual model of the study after the suggested modifications by the software were done and the non-significant relationship was removed.

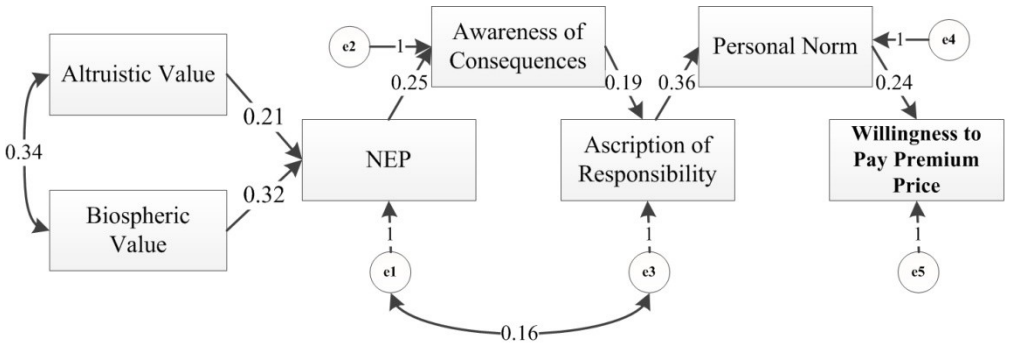

Figure 4.Final model results

Also, table 3 shows the fit indices reported for the final research model that presents an acceptable fit.

Table 3.Final model fit indices

Fit Indices	RMSEA	NFI	CFI	AGFI	GFI	χ^2/df
Recommended Threshold	RMSEA<0/1	NFI>0/9	CFI>0/9	AGFI>0/9	GFI>0/9	1-3
Model Results	0.058	0.92	0.91	0.92	0.96	1.93

After being ensured about the overall fit of the model, the research hypotheses could be tested. At this stage, the effect of each variable and significance of its path coefficient is investigated. Table 4 shows the path coefficients estimated for the developed relationship of the model and the significance of these coefficients. Accordingly, the research hypotheses can be either accepted or rejected.

Table 4.Path coefficient and hypothesis testing

H.N.	Relationship	β	T-value	Sig.	Hypothesis Results
1	Altruistic Value → NEP	0.21	5.12	***	Accepted
2	Biospheric Value → NEP	0.32	7.34	***	Accepted
3	Egoistic Value → NEP	0.08	1.02	0.09	Rejected
4	NEP → Awareness of Consequences (AC)	0.25	6.32	***	Accepted
5	AC → Ascription of Responsibility (AR)	0.19	2.76	***	Accepted
6	AR → Green Personal Norm (GPN)	0.36	8.62	***	Accepted
7	GPN → Willingness to Pay	0.24	4.65	***	Accepted

As can be seen in the data presented in Table 5, the collected experimental data confirm all the research hypotheses except for the third. Since the t-value calculated for the third hypothesis (1.02), which indicated the effect of egoistic value on the overall view of consumers toward the environment, was less than its critical value at 95% confidence level (1.96), it can be concluded that the experimental data do not support this hypothesis and estimated path coefficient is not significant.

6. CONCLUSION

The purpose of the present study was to explain factors influencing consumers' willingness to pay more for green products compared to similar products. To this aim, a conceptual model was proposed based on the value-belief-norm theory which is the best-known and the most widely used theory in predicting and modeling environmentally friendly behaviors. Results of testing the model showed that the value-belief-norm theory is to be capable of explaining factors that influence Iranian consumers' willingness to pay more for buying green products. Given the ultimate and modified model of the study, biospheric and altruistic values had significant effect on the overall view of the consumers toward the environment and egoistic value had no significant effect in this relationship. The following recommendations are proposed according to the study results.

Results of the present study shows that among the values proposed in Stern's (2000) value-belief-norm theory, altruistic and biospheric values play a positive role in forming a view in consumers about the environment. This improved view finally leads to the increase in consumers' willingness to pay for environmentally friendly products. Consequently, altruistic and biospheric values can be regarded as outstanding features of green consumers who are a proper and profitable target market for green products. Marketing managers can use these findings to attract green consumers through advertising policies, increasing consumers' awareness about positive outcomes of using green products for society and the environment. On the other hand, given the significant and positive impact of altruistic and biospheric values on establishment of green behaviors, it is suggested that targeted training be presented at all levels of school and college to develop and strengthen these values in the society.

The other findings of study was the ultimate and modified conceptual model of the study which presented factors influencing consumers' willingness to buy green products with higher prices compared with their similar ones. According to the proposed model, individuals' awareness of the consequences of environmental problems is considered as an influential factor in this regard which calls for informing and increasing the society awareness about the environmental issues. In their advertisements, manufacturers of green products can inform about the serious consequences of environmental pollution, overuse and destruction of natural resources and the detriments of using hormones and industrial chemicals in food production. In this way, they can persuade their target consumers to buy and use their products that conform to environmental standards.

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ETHICAL CONSIDERATION

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

AUTHOR CONTRIBUTIONS

Planning and writing of the manuscript was done by the authors.

CONFLICT OF INTEREST

Author/s confirmed no conflict of interest.

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