

THE INFLUENCE OF SKEPTICISM ON GREEN PURCHASE BEHAVIOR

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ABSTRACT

Marketing managers strive to understand the emerging “green” market and to identify the determinants of their purchasing behavior, in the last 30 years. While demographic characteristics were previously analyzed to explain purchase behavior of the green consumers, psychological variables also began to be used in the near future. However, green purchase behavior was not completely understood so far by the existing literature. In this study, besides to environmental concern and perceived consumer effectiveness, the influence of skepticism on green purchase behavior had been measured. The analyses results show that perceived consumer effectiveness is the most important determinant that positively influence to green purchase behavior. Skepticism has negative influence on green purchase behavior. At the same time, high level of skepticism significantly decreases to perceived consumer effectiveness, environmental concern and green purchase behavior.

Keywords: Skepticism, Green purchase behavior, Environmental concern, Perceived consumer effectiveness

1. INTRODUCTION

Environmentally sensitive behavior involves an individual's efforts to limit negative actions which may harmful to the natural and physical environment. This could be done by decreasing resource and energy usage, by using anti-toxic materials or by decreasing waste production (Kollmuss and Agyeman, 2002). One type of environmentally sensitive behavior is “green purchase behavior” which can be observed in those consumers who scrutinise labels, who use biodegradable garbage bags and biodegradable soaps and natural detergents, who purchase goods with biodegradable packaging and who refuse to purchase from restaurants where styrofoam packages are used (Minton and Rose, 1997; Schwartz and Miller, 1991). Consumer green purchase behavior has become one of the most popular research topics among academics, especially in the last three decades. Once, consumer demographics were one of the most widely used methods. However later literature reviews showed that they have had only limited success to explain consumer green purchase behavior (Mainieri *et al.*, 1997; Schlegelmilch *et al.*, 1996). Therefore, in recent years, the analysis of some psychological variables, such as environmental concern, perceived consumer effectiveness, environmental knowledge, and collectivism have been widely used. Many researchers argue that environmental awareness and concern have increased since the early 1970's, but an attitude-behavior gap still exists (Kilbourne and Pickett, 2008).

While the majority of consumers consider themselves as environmentally sensitive individuals, many studies do not show consistent results with regard to consumer claims and purchasing behaviors. For example, In the U.K. there is a significant gap between environmental awareness and behavior (Young *et al.*, 2010). Consumers, although having favourable attitudes towards organic foods (between 46-67 %), only 4-10 % actually purchase such items (Hughner *et al.*, 2007), and this trend has continued for the last 3 years (Young *et al.*, 2010). Similar results have been established by research conducted in the U.S. (Alwitt and Pitts, 1996; Kilbourne and Pickett, 2008) although it is envisaged that further research is necessary to confirm the attitude and behavioral relationship. For Lee (2009) the results of the studies which investigate to the relationships between environmental attitude and behavior suggest that:

(1) further studies are needed to confirm the relationship between environmental attitude and behavior;

(2) focus may need to be re-gearred to other possible variables that may better predict environmental behavior.

Based on the growing significance of green products in today's market place, this paper seeks to explain the attitude-behavior inconsistency of the consumers' by additional variables. Therefore, in this study, the influence of environmental concern, perceived consumer effectiveness and consumer skepticism towards green purchase behavior are examined. In the first section, the relationships between these three concepts in the perspective of green purchase behavior are explained and a conceptual model was offered which aims to explain the green purchase behavior. Afterwards, the research results of the conceptual model are presented. Finally, the academic and managerial implications of the research results are discussed.

2. THEORETICAL BACKGROUND

Early researchers attempted to identify green consumer's profiles using demographic variables and they briefly categorized them as being young, well-educated and affluent urban dwellers (D'Souza *et al.*, 2007). Moreover, several models have been generated by researchers for estimating green purchase behavior. Some researchers who view green purchase behavior as a pro-social behavior, prefer to use the Norm Activation Model or the Value-Belief-Norm Theory conceptually (Stern *et al.*, 1999) whereas others who view it as self-interested behavior prefer to use rational decision models like the Theory of Planned Behavior (Ajzen 1991) (Bamberg *et al.*, 2007). In addition to these basic approaches, over time, numerous theoretical frameworks have been developed (Table 1) to explain green purchase behavior and its components. For example, using the conceptual relationships between value-attitude-behavior, Kim and Choi (2005) examined to the influences of the environmental concern, perceived consumer effectiveness and collectivism (which is a cultural characteristic) on environmentally sensitive purchase behavior. Research results indicated that collectivism had influence on environmentally sensitive purchase behavior via perceived consumer effectiveness. Moreover, after investigating previous literature, Barr (2007) offered a conceptual model about the environmentally sensitive behavior and tested this model on waste reduction, recycling and re-usage behavior. Barr (2007) grouped the factors which influence on environmentally sensitive behavior in this model under three groups; environmental values, conditional values and psychological values. Generally, if Table 1 is examined, it can be easily seen that environmental concern is the most frequently used variable by researchers which is one of the indicators of environmental attitude.

Insert Table (1) about here

2.1. Environmental Concern (EC)

Environmental concern (EC) has various definitions which depend on perspective as well as on its complicated and unstable nature (Chan and Lau, 2004). For example, Crosby *et al.* (1981) defined it first as an intensely protective attitude towards the environment and later, as a general attitude which has an indirect influence on attitude via behavioral intent (Gill *et al.*, 1986). On the other hand, several studies assume that EC is synonymous with environmental attitude (Chan and Lau, 2004). According to Chan and Lau (2004), Dunlap and Jones (2002) offered one of the most inclusive definitions of EC. In their definition, EC is accepted as an individual's awareness of environmental problems and that individual's attempts to solve either them or willingness to contribute to such attempts.

Main research topics about the environmental concern can be combined under three groups: (1) to define the concept and to enable the researchers to analyse this concept in various research areas; (2) to understand the factors which form to environmental concern; (3) to prove the relationships between environmental concern and attitude (Bamberg, 2003). In the last thirty years, research efforts have provided a better understanding of EC's theoretical side (Bamberg, 2003). For example, environmental concern has been, at first, viewed as a unidimensional construct ranging from unconcerned about the environment at the low end to highly concerned at the high end, as measured by the new environmental paradigm (Milfont and Duckitt, 2004).

Nowadays, many researchers (Schultz, 2000; Stern and Dietz, 1994; Snelgar; Roberts and Bacon, 1997) assume that environmental concern is a concept with some sub-dimensions. For example, Schultz (2000) proposed that environmental concern has three correlated factors; concern for the self (egoistic), for other people (altruistic), and for the biosphere (biospheric). However, research results on the influence of EC on environmental behavior, which is the most important aspect of this subject, has been disappointing. Many empirical studies analysing the direct empirical relationships between EC and behavior showed that this relation was low to moderate (Bamberg, 2003). Researchers have attempted to explain the inconsistency between attitude and behavior by attributing them to a number of factors: low correlations among environmental behaviors, different levels of specificity in the attitude behavior measures, effects of external variables and lack of measurement reliability and validity (Mainieri et al., 1997). This weak attitude-behavior linkage led several researchers to consider additional variables such as emotion, cost-benefit, perceived consumer effectiveness, trust and demographics (Lee and Holden, 1999).

Bang et al. (2000) confirm in their study that consumers, who are more concerned about the environmental issues, express more willingness to pay higher prices for renewable energy than those who are less concerned. Kim and Choi (2005) point out that it is much more probable that people who are highly concerned about environmental issues will purchase environmentally friendly products than those who are less concerned. Many studies are also based on the assumption that the degree of EC has a direct and strong influence on people's behavior with regard to recycling and energy saving, environmental friendly product purchase or travel mode choice (Bamberg, 2003).

Given this, we predict the following;

H₁ : EC has a direct and positive influence on GPB.

2.2. Perceived Consumer Effectiveness (PCE)

Although, researchers do not agree on a common definition of perceived consumer effectiveness (PCE), Ellen et al.'s (1991) definition is the most suitable one for the context of this research. According to these authors, PCE reflects the belief of people that their actions (e.g. purchasing environmental friendly products and subscribing to e-invoice campaigns, etc.) will make a difference in helping to solve environmental problems, such as a decrease in pollution. In addition to EC, those people who strongly believe that their environmentally sensitive behaviors may result in positive consequences or outcomes are more likely to engage in environmental sensitive behaviors than others (Kim and Choi, 2005; Lee and Holden, 1999). Ellen et al. (1991), for example, found that PCE has direct effects on environmentally conscious behaviors. In addition, PCE is related to people's knowledge and direct or indirect experiences. As PCE differs from person to person, because of the dissimilarity in their knowledge and life experience, some will believe that their actions have evolutionary results whereas others may have little trust in their abilities to make any difference. Moreover, depending on behaviors and situations, PCE is a changing phenomenon. In other words, dissimilar reflections can be observed in various situations (Kim and Choi, 2005). If a consumer believes that an environmental problem can be solved by a specific behavior, such as distilling aluminium packages for recycling, that belief on this issue may change the consumer's behavior. Therefore high PCE is necessary to evoke consumers to translate their positive attitudes into actual purchase (Ellen et al., 1991; Berger and Corbin, 1992; Lee and Holden, 1999).

Thus the effect of PCE on GPB was predicted as follow:

H₂ : PCE has a direct and positive influence on GPB.

2.3. Skepticism (SKEP)

Because of fierce competition at the present time, companies must demonstrate more and more that their products are of the highest quality. Unfortunately, some commercial advertising regulations allow some companies to exaggerate their product's characteristics. As Obermiller and Spangenberg (1998) emphasize, by this means, the free market system increases people's skepticism level. Consumers who consider environmental claims to be exaggerated or to be motivated by profit may think that thus mislead them into forming decisions which are wrong. Thus, some scholars claim that consumers' backlash to environmental marketing is due to those false, unsubstantiated or exaggerated claims (Carlson, Stephen, & Kangun, 1993). Pro-environmental groups or individuals, especially, evoke exaggerated claims, which they affirm, are theoretically correct, but practically incorrect (Ellen *et al.*, 1991). Chase (1991), for example, found that the majority of his research participants called themselves environmentalists and reported participation in a number of environmentally friendly consumptions, such as purchasing recycled products or packaging or using biodegradable garbage bags. In addition, most of these people (73%) were aware of environmental-safety labels on packaging, but 47 % were not confident of the accuracy of the advertiser's information on the environmental impact of the products (Mainieri *et al.*, 1997).

Research reviews show that the majority of the consumers from different countries, such as the United States of America and the People's Republic of China are skeptical about companies' environmental claims (Chan and Lau, 2004). Calfee and Ringold (1988) argue that consumers who are by nature skeptical about the environmental claims can only be persuaded if evidence that contradicts to their beliefs is demonstrated.

Green consumers are thought to make green purchasing decisions either by the level of compromise required to purchase a green product or by the level of confidence for this green product (Peattie, 2001). Generally, consumer SKEP about environmental claims reduces their positive impacts on consumer behavior. For example, Obermiller et al. (2005) remark that proposed link between advertisement and purchase intention does not exist when consumers are skeptical about the advertisements. In his research about the Egyptian consumers' green purchase intentions, Mostafa (2006) also showed that SKEP influences negatively to purchase intention.

As a result of the explanations above, we propose the following three hypotheses:

H_{3a} : SKEP has a direct and negative influence on GPB.

H_{3b} : SKEP has a mediating negative influence on GPB via EC.

H_{3c} : SKEP has a mediating negative influence on GPB via PCE.

Theoretical relationships in the proposed model were oriented by existing literature discussions which are shown in Figure 1. The model provides a summary of the constructs and their relationships with each other.

Insert Figure (1) about here

In this model, EC and PCE are directly and positively related to GPB while SKEP is directly and negatively related to three variables. SKEP has also related to GPB by using EC and PCE as the mediator variables.

3. METHODOLOGY

To test the relationships in the proposed model, a survey was carried out among graduate students of Akdeniz University. Previous studies on GPB show that research results obtained from university students correspond to general consumer behavior in the marketplace (Schultz, 2000; Schultz, 2001). Although some researchers argue that student groups should be carefully identified in accordance with how they represent the general population, using university students as subjects has been a research method practiced worldwide for many years, because of its accessibility and homogeneity (Tan and Tan, 2007). In this study, students were asked to participate to the survey at the end of their lectures, and 191 questionnaires were obtained. The male/female ratio of the sample was 57.6 % and 42.4 % respectively and the average age was 22.2.

Respondents provided the required information on a structured questionnaire based on the pertinent research objectives, classified into five sections. In the first section, some demographics about the participants were aimed to obtained such as gender and age. In the second and third sections, participants were asked to evaluate perceived consumer effectiveness scale with 5 items and green purchase behavior scale with 5 items obtained from Kim and Choi (2005). In the fourth section, the EC scale with 13 items obtained from Stern and Dietz (1994) was given and, in the last section, the SKEP scale with 13 items obtained from Mohr et al. (1998) was figured. Each dimension was measured on a 5 point with anchors of (1) "definitely disagree" to (5) "definitely agree".

4. DATA ANALYSES AND FINDINGS

Empirical testing of the proposed model was performed by structural equation modelling with maximum likelihood estimation. A bi-stage process has been followed during structural equation modelling as suggested by many researchers (Hair *et al.*, 1998). At the first stage, for fulfilling the validity and reliability issues, the measurement model has been estimated by confirmatory factor analysis. At the second stage, the structural model has been analysed for testing the proposed model.

4.1. Measurement Model

The measurement model has been tested by confirmatory factor analysis. First, the goodness-of-fit indices of the model have been examined. While the χ^2 value, which indicates to the overall goodness-of-fit of the model, is very sensitive to the sample size (Bagozzi and Yi, 1988), relative/normed chi-square is used as the indicator of the model fit which has to be lower than 2 (Tabachnick and Fidell, 2007). Comparative fit index (CFI) which is recommended by Steenkamp and Baumgartner (2000) and other model fit measures for identifying the overall goodness-of-fit like normed fit index (NFI); non-normed fit index (NNFI); goodness-of-fit index (GFI); adjusted goodness-of-fit index (AGFI) and root mean square error of approximation (RMSEA) were also assessed. For AGFI, the acceptable fit value is assumed to meet approximately 0.90 or higher; for RMSEA 0.05 or less (Hair *et al.* 1998) (Table 3). While the measurement model could have not met the goodness-of-fit indices, some items which had factor loadings lower than 0.50 were eliminated for improving the model fit as recommended in the literature (Segars and Grover, 1993).

The second measurement model was sufficient to meet all goodness-of-fit indices which were above the recommended cut-off values; χ^2/df (1.1), NFI (0.96), NNFI (0.99), GFI (0.95), CFI (0.99), AGFI (0.92) and RMSEA (0.024). At the next step, internal reliability and convergent validity for constructs were examined and the results were summarized in Table 2.

Insert Table (2) about here

Internal reliability was evaluated by Cronbach alpha coefficient and found between 0.72 and 0.87. These values can be assumed as acceptable, because Hair et al. (1998) state that the acceptable threshold should be 0.70 and above. Convergent validity assesses the degree to which two measures of the same concept are correlated. Factor loading, composite reliabilities, and variances extracted were used to assess the convergent validity (Hair et al., 1998). The factor loading for all items exceeds the recommended level of 0.60 (Bagozzi and Yi, 1988). Composite reliability values, which depict the degree to which the construct indicators indicate the latent construct, range from 0.70 to 0.86. The composite reliability of all latent constructs exceeded threshold value of 0.70 (Hair et al., 1998). Finally, the average variances extracted, which reflect the overall amount of variance in the indicators accounted for by the latent construct, range from 0.53 to 0.71. The average variances extracted of all latent constructs have exceeded to the recommended threshold value of 0.50 as well (Hair et al., 1998).

4.2. Structural Model

The same goodness-of-fit indices of the measurement model have been used for the overall model fit of the structural model which was originated to test structural relationships in the proposed model. All indices exceeded to the cut-off values and structural model displayed a good fit with the data (Table 3).

Insert Table (3) about here

Figure 2 displays all of the structural relationships among the studied constructs in the proposed model. Standardized path coefficients, t values, and variance explained (R^2 value) for each dependent construct are also presented in this figure. Together, SKEP, EC and PCE constructs explain 40 per cent of the GPB variance. The strongest determinant of the GPB was ($\beta=0.46, p < .01$) the PCE. The effect of EC on GPB was significant ($\beta=0.20, p < .01$), while SKEP had significantly and negatively influenced to GPB ($\beta=-0.23, p < .01$). Nonetheless, SKEP indirectly influence to GPB by the mediator constructs of EC ($\beta=-0.30, p < .01$) and PCE ($\beta=-0.24, p < .01$).

Insert Figure (2) about here

The point of interest in this study was SKEP. The analysis results identified that this variable has a strong influence on the constructs of the model, especially on GPB.

4.3. Subgroup Analyses

As the previous analyses by total sample already showed that skepticism is an important variable which negatively influence to green purchase behavior, in the next stage, further analyses had been conducted to compare to the influences of environmental concern and perceived consumer effectiveness on green purchase behavior of the consumers who are skeptical in high and low level. For this purpose, we built a sum index of the four items used to measure skepticism and divided the total sample by the median into the subgroups of high ($n=87$) and low ($n=79$) skeptic participants. In Table 4, means of the EC, PCE and GPB for these subgroups are shown.

Insert Table (4) about here

Statistically significant differences were found among to high and low skeptic participants means. Perceived consumer effectiveness and environmental concern of the high skeptic participants were lower than less skeptics. Especially about the green purchase behavior, the difference of two groups was in 0.01 level. In other words, the probability of the low skeptics to participate green purchase behavior was higher than other group.

5. CONCLUSION

The main aim of this study was to explain GPB and the role of SKEP on consumer behavior. Although the determinants of GPB have well documented in the literature, they have not yet been sufficiently identified and clarified. Moreover, owing to competition in the global marketplace amongst companies, the illegal attempts of certain firms to overtake their competitors started to cause considerable consumer SKEP about their products and claims. The empirical findings of this study indicated that consumer SKEP was an important determiner of GPB. Besides, two constructs in the structural model of this study (EC and PCE) which are assumed as the other determiners of GPB were found to be negatively influenced by consumer SKEP. On the other hand, PCE was the most important determinant which positively influence to GPB. The influence of the EC was lower if it is compared with PCE. These results indicated that EC explains to very few of GPB.

Even if the consumers behave environmentally sensitive, the probability of their participation to green purchase behavior will be low, if they think that their attitudes does not positively and highly contribute to the protection of environment. When the high and low skeptic participants are compared, it is seen that being high skeptic will reason to decrease EC, PCE and GPB means. Thus, companies should demonstrate some proof of their environmental claims, if they want to minimize the negative effects of SKEP on GPB of the consumers and to guarantee the market success of their environmentally friendly products.

6. DISCUSSION AND MANAGERIAL IMPLICATIONS

This research study is underpinned by three major factors, which are revealed as almost an intertwining entity, which are that human environmental concern is becoming increasingly shaped by the public's skepticism about many of the corporate "green" claims and credentials which might then influence the degree of consumer effectiveness in terms of sustainable, coherent and responsible behavior towards environmental issues. This trio is relatively important as the most important pre-cursor of green consumer behavior is related to the effectiveness of the consumer on sustainability. As expected, environmental concerns perceived by consumers are a precondition of the foundation of responsible consumer behavior. A worrying factor is the inverse relationship found between green consumer behavior and consumer skepticism. This finding, de facto, means that false claims, non-effective actions and dashed expectations caused by inappropriate corporate behavior, has not only triggered a cynical stance by the consumers, but may even be responsible for the public's less-environmental friendly behavior and attitudes.

Nevertheless, there must be an element of consumer self-awareness as their skepticism not only influences their own green consumption behavior, but also acts as a conduit for their own environmental concerns and questions on their environmentally responsible behavior, habits and actions. Consumer green purchase behavior can be restored if companies and organizations can really deliver environmental policies that are truly honest, trustworthy and altruistic. This attitude of corporate social responsibility could then be complemented by a different organizational ethos based on trust-based marketing, marketing with meaning and community based innovation. This would represent a total management paradigm shift – the adoption of new management practices driven by the needs of stakeholders and a marketing philosophy totally driven as a consumer agency.

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Table 1. Some Variables and Their Influences on Green Purchase Behavior (Literature Review)

Author/s	Year	Independent Variables					Dependent Variable
		Know ledge	Attitu de	P.C. E.	Liberalis sm	Pro- social Behavior	
Ellen et al.	1991			+			Environmentally Sensitive Behavior
Berger and Corbin	1992			+			Making More Payment to Environmentally Sensitive Products
Schlegelmilch et al.	1996	n.s.	+				Purchase Environmentally Friendly products
Minton and Rose	1997		+			+	Environmentally Sensitive Purchase
Mainieri et al.	1997		+				Environmentally Sensitive Purchase
Roberts and Bacon	1997		+				Ecologically Sensitive Consumer Behavior
Vlosky et al.	1999		+				Purchase Environmentally Certificated Wooden Product
Bratt	1999					+	Recycling Behavior
Straughan and Roberts	1999		+	+	+	+	Environmentally Sensitive Purchase
Lee and Holden	1999		+	+			Environmentally Sensitive Behavior
Laroche et al.	2001	n.s.	+				Making More Payment to Environmentally Sensitive Products
Çabuk and Nakıboğlu	2003		+				Environmentally Sensitive Purchase
Jain and Kaur	2004	+	+	+			Ecologically Sensitive Consumer Behavior
Kim and Choi	2005		+	+			Environmentally Sensitive Purchase
Haron et al.	2005	+					Environmentally Sensitive Behavior
Ay and Ecevit	2005		+	+			Environmentally Sensitive Consumer Behavior
Mostafa	2006	+	+			+	Environmentally Sensitive Purchase
Tilikidou	2007	+	+				Environmentally Sensitive Purchase
Barr	2007	+	+			+	Recycling and Reusage
Fraj-Andres and Martinez	2007	+	+				Ecological Behavior

P.C.E. : Perceived consumer effectiveness
 n.s.: not significant

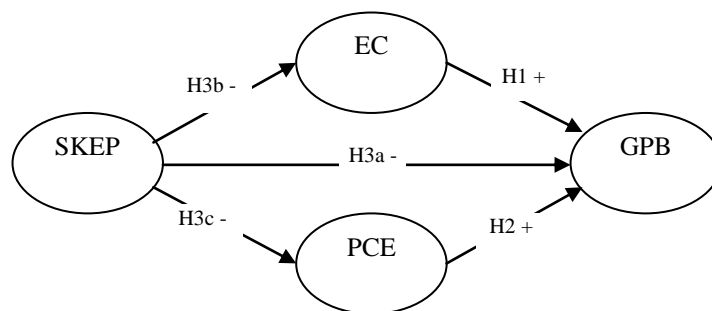


Figure 1. The Proposed Model

Skepticism (SKEP), Environmental concern (EC), Perceived Consumer Effectiveness (PCE), Green Purchase Behavior (GPB)

Table 2. Descriptive Statistics and Results of CFA for Measurement Model

Construct	Item	Mean	SD	Internal reliability Cronbach alpha	Convergent validity		
					Factor loading	Composite reliability ^a	Average variance extracted ^b
Perceived Consumer Effectiveness (PCE)	PCE2	3.81	0.86	0.72	0.66	0.72	0.57
	PCE3				0.84		
	PCE4				0.83		
Green Purchase Behavior (GPB)	GPB2	3.15	0.85	0.75	0.61	0.75	0.51
	GPB4				0.68		
	GPB5				0.58		
Environmental Concern (EC)	EC1	4.53	0.56	0.78	0.58	0.80	0.51
	EC7				0.57		
	EC8				0.82		
	EC9				0.85		
Skepticism (SKEP)	SKEP1	2.80	0.79	0.87	0.87	0.88	0.65
	SKEP3				0.60		
	SKEP9				0.82		
	SKEP10				0.89		

All t-values are significant at 0.01 level

^a Composite reliability = (square of the summation of the factor loadings) / {(square of the summation of the factor loadings) + (summation of error variances)}.

^b Average variance extracted = (summation of the square of the factor loadings) / {(summation of the square of the factor loadings) + (summation of error variances)}

Table 3. Fit Indices for Models

Fit Indices	Recommended value	Initial model	Measurement model	Structural model
χ^2/df	≤ 2.00	2.57	1.10	1.25
NFI	≥ 0.90	0.73	0.96	0.95
NNFI	≥ 0.90	0.82	0.99	0.99
GFI	≥ 0.90	0.69	0.95	0.94
CFI	≥ 0.90	0.83	0.99	0.99
AGFI	≥ 0.90	0.65	0.92	0.91
RMSEA	≤ 0.05	0.091	0.024	0.035

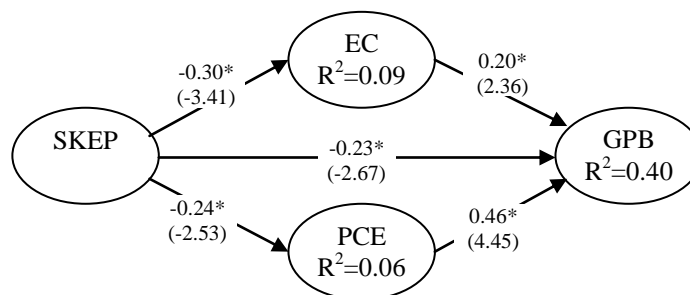


Figure 2. Results of Structural Model

* p<0.01

Table 4. The comparison of the Low and High Skeptic Participants

	Low (n=79)	High (n=87)	p
PCE	3.96	3.70	0.052*
EC	4.65	4.43	0.014**
GPB	3.61	3.09	0.000***

* p<0.10; ** p<0.05; *** p<0.01