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# The Moderating Effects of Retailers' Green Practices upon Customer Environmental Values and Organic Food Purchasing Intention

Meehee Cho\*, Mark A. Bonn\*\*, Sora Kang\*\*\*

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## Abstract

**Purpose** – The purpose of this study is to understand how retailers' green practices influence customer environmental values and their organic food purchasing intention.

**Research design, data, and methodology** – Data were collected from randomly intercepting retail shoppers (n=719) departing from 33 retail stores selling organic food products located in Florida, USA. U.S. Data were analyzed using descriptive statistics, CFA and Hierarchical regression analyses.

**Results** – Results documented that customer environmental values (social-altruistic values and biospheric values) were determinants of organic food purchasing intention. Retailers' green practices representing 'green self-governance' were found to significantly enhance the effects of customer environmental values upon organic food purchasing intention.

**Conclusions** – This study successfully demonstrated that customers' willingness to purchase eco-friendly products can be greatly increased when having a positive perceptions toward retailers' green practices such as environmental friendly waste management, environmental improvement of packaging, taking back packaging and recovery of the company's end-of-life products.

**Keywords:** Green Retailers, Green supply Chain Management, Organic Food, Environmental Values, and Purchase Intention.

**JEL Classifications:** L10, I30, Q50.

## 1. Introduction

As the world movement towards sustainability continues to gain momentum, the demand for organic products and the way they are produced, distributed, and presented to consumers by retailers has been used as a positioning strategy in order to win the battle for market share.

Green et al. (1996) suggested that the development of sustainable products involving both retailers and consumers, can lead to an outcome that positively influences environmental improvements in supply chain relations. Successful supply chain management suggests that all parties involved share similar philosophies pertaining to sustainability and consumer service demands (La Londe & Masters 1994). Indeed, research documents that sharing environmental information through a collaborative process among all stages in a supply chain is essential to improving many environmental aspects involving production and distribution (Hall 2000; Scott 2007).

Fueled by strong media prevalence, the sustainability impact has caused consumer trends to change their purchasing behavior related to food products (Fotopoulos et al., 2003). As a positive step for improving the process, another body of thought pertains to the fact that consumer willingness to purchase organic products are in strong association with customer environmental values. Agle & Caldwell (1999) defined 'environmental values' as an individual's perceptions about importance of ecological sustainability and protection of the natural environment. Also, customer environmental values have been found to greatly influence their purchasing attitudes and behavior toward eco-friendly products (Grankvist & Biel, 2001; Lockie et al., 2002).

Customer perceptions about 'values' provided by suppliers are a critical determinant of successful businesses. Especially, retailers directly contact consumers and play an important role as the gatekeepers, which indicate their potential to contribute to consumer sustainable consumption. Retailers can promote environmental and social standards and norms by selling eco-friendly products and performing green marketing practices. In addition, retailers strive to provide the best possible values to their customers (Flint et al., 2002). Numerous research studies have demonstrated that customer perceptions about qualities and val-

\* 1<sup>st</sup> Author, Adjunct Professor, Dedman School of Hospitality, Florida State University, United States. E-mail: mcho3@business.fsu.edu.

\*\* 2<sup>nd</sup> Author, Professor, Dedman School of Hospitality, Florida State University, United States. E-mail: mbonn@business.fsu.edu.

\*\*\* Corresponding Author, Associate Professor, Division of Business Administration, Hoseo University, South Korea. E-mail: sorak@hoseo.edu.

ues of products are greatly influenced by retailers' image (Andreassen & Lindestad, 1998; Ledden et al., 2007; Ulaga & Chacour, 2001). Supporting this, retailing is an essential phase in the supply chain to encourage eco-friendly product consumption through green retail management (Jones et al., 2005).

Previous environmental retailing studies suggested that green retailing practices consist of green product sales (i.e., selling organic and wellness-related products), recycling and reducing waste, taking back packaging, eco-labeling, and also, providing consumers with information on environmental friendly products and/or production methods (Rao & Holt, 2005; Yudelson, 2009). In addition, Stern and Ander (2008) asserted that communicating greenness with consumers are important green practices in order to become a successful green retailer and also contribute to the improvement of customers' willingness of purchasing organic products. Therefore, when customers have more positive perceptions about retailers' green practices, they may have more positive willingness to buy eco-friendly products.

With this in mind, this study focuses on green practices conducted by retailers and investigates whether or not retailers' green practices could influence consumer environmental values, and further increase their organic purchase intention. Also, this study expects that retailers will be able to develop effective green practice strategies that encourage customers to purchase and consume eco-friendly products. Therefore, this study aims to 1) obtain a better understanding of the relationships between customer environmental values and their organic food purchase intention and 2) investigate the moderating effect of retailers' green practices upon the relationship between customer environmental values and their organic food purchase intention.

## 2. Theoretical Background

### 2.1. Retailers' Green Practices as Gatekeepers

The concept of green supply chain management (Rao and Holt 2005) has been adopted by many firms in order to practice and demonstrate eco-friendly and environmental service activities. Green supply chain management (GSCM) is defined as "integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life" (Srivastava, 2007, p. 54). Hervani et al. (2005) demonstrated that GSCM is adding the 'green' component to supply chain management deriving from an environmental consciousness and competitiveness motive.

Typically, retailers were regarded as simple distributors and as products' sellers. However food product retailers have begun to appear gatekeepers who play very important roles in coordinating producer cooperation, controlling the flows of products, and providing information between the food industry and its consumers (Wirthgen, 2005). Over the last few decades, the role of

retailers among supply chain systems has been greatly changed as a gatekeeper by being more involved with not only delivering and selling products, but also reflecting consumers' demands and further ultimately affecting consumers' preference and purchasing behavior (Lai et al., 2010). Therefore, retailers are well placed to exert pressure on producers to greatly influence changes in the production processes due to having to understand consumption patterns and needs of their consumers desiring certain product requirements.

One of key aspects to green supply chains emphasizes the importance of green practices perfectly conducted by retailers' environmental consciousness such as green distribution and practices (e.g., environmentally friendly packaging, pollution prevention and transportation). One early study (McArthur, 1994) stated that green practices conducted by retailers attempt to not only encourage customer green consumption, but also improve environmental quality. Especially, because organic food represents products being able to protect and enhance the natural environment by conserving resources and environment, and reducing pollution and waste, retailers' green practices used as a strategic tool could establish an environmental corporate culture (Bowen et al. 2001). Considerable research interest has also centered upon understanding the link between environmental management issues and buyer-supplier relations (Hall 2000). Among the relationships between consumers and suppliers, green retailing practices can be the most enthusiastic tool to fulfill environmental responsibilities (Lai et al., 2010).

### 2.2. Organic Food

In the past several decades, because of customers' concerns about food safety and environment, demand for organic food has increased rapidly (Padel & Foster, 2005). Generally, 'organic' is a labelling term that indicates products produced, handled and processed under the authority of the Organic Foods Production Act. Organic products aim to "enhance the ecological balance of natural systems and to integrate the parts of the farming system into an ecological whole." Organic food is defined "as products by framers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality of future generations" (The U.S. Department of Agriculture).

### 2.3. Consumer Environmental Values and organic food purchase intention

Numerous studies have demonstrated significant relationships between customer perceived values and their attitudes and behavior toward a specific product (Anderson & Mittal, 2000; Shankar et al., 2003). Customer perceived value has received the attention of researchers and practitioners because perceive value is a comprehensive and extensive concept affecting human behaviors, and considered as one of the critical components forming consumer purchasing behavior.

Rokeach (1973) defined values as principles that form in-

dividuals' attitudes and behavior. Perceived values are a comprehensive and extensive concept affecting human behaviors, and are considered one of the key variables producing behaviors (Anderson & Mittal, 2000). Therefore, customer perceived values have received the attention of researchers and practitioners in economics and marketing because perceived values can influence consumer purchasing decision making process (Hoyer & MacInnis, 2004).

Consumers and their perceived value regarding purchasing and consumption of environmental products, is based upon an ideal self-concept of being environmentally responsible (Stern 2000). Previous studies addressed issues pertaining to individuals and their environmental values. It was found that consumers conceptualized environmental values into three unique dimensions (egoistic values, social-altruistic values and biospheric values) based upon their beliefs about environmental justice (Stern et al., 1993; Stern & Dietz, 1994).

Egoistic values are determined in consideration of costs and benefits of customer environmental significant behavior. People are predisposed to protect environment when they consider that environmental friendly behavior leads to more benefits than costs. But, if they perceive personal costs as being higher than benefits, they would oppose environment protection (e.g., Hammond & Coppock, 1990).

Social-altruistic values are formed based upon moral obligation, for instance, the Golden Rule, "Do unto others as you would have them do unto you" (Heberlein, 1977; Dunlap & Van Liere, 1977). Especially, people with high level of social-altruistic values feel strong responsibility about environmental protection and they express positive environmental attitudes (Heberlein & Black, 1981), leading to a wide range of environmentally relevant behaviors, including purchase of lead-free gasoline, energy conservation and recycling (Heberlein & Black, 1981; Hopper & Nielsen, 1991; Oskamp et al., 1991).

Biospheric values are mainly based upon individuals' pro-environmental behavior, but are not significantly associated with costs and benefits for the environment and biosphere. A "New Environment Paradigm" advocated by Dunlap & Van Liere (1978) claims that not only human being, but non-human species and the biosphere must be protected on basis of moral imperatives. Stern and Dietz (1994) asserted that personal moral norms about the treatment of non-human objects may play a similar role as personal altruistic moral norms. Stern et al. (1993) and Van Vugt et al. (1995) investigated these three environmental values and demonstrated that egoistic values are negatively related to pro-environmental intention and behavior, while social-altruistic and/ or bio spheric values appear to have positive relationships with environmental behavioral intention.

Given the importance of encouraging customer green consumption, consumer perceived value has been more extensively emphasized and thus has become an important factor in attracting customers to eco-friendly products and to organic food markets. Based upon above discussion, this study expects that customer values involving environment would be significantly associated with their attitudes and behavior toward organic products. Therefore, the following hypotheses were developed:

<Hypothesis 1>: Customer environmental values significantly affect organic food purchasing intention.

<Hypothesis 1a>: Egoistic values significantly affect organic food purchasing intention.

<Hypothesis 1b>: Social-altruistic values significantly affect organic food purchasing intention.

<Hypothesis 1c>: Bio spheric values significantly affect organic food purchasing intention.

#### 2.4. Moderating effects of sustainable retailers upon the relationships between customer environmental values and organic food purchasing intention

Acting as gatekeepers, retailers sell eco-friendly products and deliver relevant information to consumers, leading to high consumer demand for organic food. Among many different sustainable practices available in the supply chain, most retailers pursuing environmental responsibilities develop specific marketing and operational strategies and follow their specific processes for 'green retailing' (Lai et al., 2010). Several previous researchers (Rao & Holt, 2005; Stern & Ander, 2008; Yudelso, 2009) suggested that green retailing practices encompass a wide range of eco-friendly sustainable activities and these activities are usually categorized into two dimensions: 'customer education and marketing' and 'sustainable self-governance'. First, the 'customer education & green marketing' dimension consists of eco-labeling, providing consumers with information on environmental friendly products, and/or production methods. Second, the 'sustainable self-governance' dimension comprises of environmental-friendly waste management, environmental improvement of packaging, taking back packaging, and recovery of the company's end-of-life products. In this study, green retailing comprises of two constructs: 1) 'customer education & green marketing' and 2) 'sustainable self-governance'.

Several studies have addressed important roles of retailers as a gate keeper and they asserted that retailers should be a critical phase in the supply chain for encouraging eco-friendly product consumption through sustainable retail management (Flint et al., 2002; Jones et al., 2005). In addition, because customers are directly encountered with retailers, their attitudes and behavior toward a specific product are more likely to be influenced by retailers' marketing strategies (Ledden et al., 2007; Ulaga & Chacour, 2001). Therefore, when retailers as an essential phase in the supply chain perform green practices, consumers are more likely to be encouraged for environmental product consumption (Jones et al., 2005).

In consideration of the concept of "Green" or "sustainability" representing the value added to the environment (Gupta & Palsule-Desai, 2011), this study expects that green retailing practices can greatly not only facilitate the process of forming consumer environmental values, but also transform directly customer values involving environment to their green purchasing behavior. Especially, this study focuses on the possible moderating role of green retailing practices upon customer environmental values,

and further its effect upon customer organic food purchase intention. Based upon this discussion, hypotheses 2 and 3 were developed as follows:

- <Hypothesis 2>: Customer education and green marketing performed by retailers play a moderating role in the relationship between customer environmental values and organic food purchasing intention
- <Hypothesis 2a>: Customer education and green marketing performed by retailers play a moderating role in the relationship between egoistic values and organic food purchasing intention
- <Hypothesis 2b>: Customer education and green marketing performed by retailers play a moderating role in the relationship between social-altruistic values and organic food purchasing intention
- <Hypothesis 2c>: Customer education and green marketing performed by retailers play a moderating role in the relationship between biospheric values and organic food purchasing intention

tailers performed by retailers play a moderating role in the relationship between biospheric values and organic food purchasing intention

### 3. Methodology

#### 3.1. Sample and Data Collection

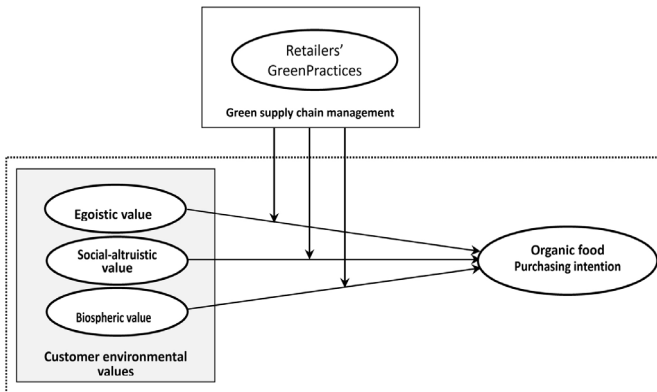
For the survey, data were obtained by randomly intercepting retail shoppers departing from 33 retail stores that sold organic food and other products located in Florida. Using a personally administered questionnaire, professionally trained interviewers screened individuals agreeing to participate in the personal interview with a qualifying question to ensure that all respondent included in the survey had consumed organic wine within the past three months. After eliminating incomplete responses and extreme outliers, a total of 719 questionnaires were used in this study. Respondents represented mostly females (59.4%) having earned an undergraduate or postgraduate degree (58.4%), and were range of age groups with 25.0% being between 40 and 49 years old followed by age groups of between 50 and 59 (22.8%), between 30-39 years old (21.4%), the age group of over 60 (17.2%) and between 20 and 29 years old (13.6%).

<Table 1> Respondents' Demographic Characteristics

Category		Number	%
Gender	Male	292	40.6
	Female	427	59.4
Age	20-29	98	13.6
	30-39	153	21.4
	40-49	180	25.0
	50-59	164	22.8
	60+	124	17.2
	Education	High school graduate	100
	2 year college degree	155	21.6
	4 year college degree	275	38.2
	Graduate	189	20.2
Income	Less than \$50,000	219	30.4
	\$50,000 - \$74,999	155	21.6
	\$75,000 - \$99,999	120	16.7
	\$100,000 - \$199,999	126	17.5
	\$200,000+	99	13.8
Total		719	100.0

#### 3.2. Survey Instrument

The survey instrument for this study included seven sections. The first three sections were developed to measure three con-



<Figure 1> Research model

- <Hypothesis 3>: Green self-governance performed by retailers plays a moderating role in the relationship between customer environmental values and organic food purchasing intention
- <Hypothesis 3a>: Green self-governance performed by retailers performed by retailers play a moderating role in the relationship between egoistic values and organic food purchasing intention
- <Hypothesis 3b>: Green self-governance performed by retailers performed by retailers play a moderating role in the relationship between social-altruistic values and organic food purchasing intention
- <Hypothesis 3c>: Green self-governance performed by re-

structs (egoistic, social-altruistic and biospheric) pertaining to customer environmental values based upon the multi-item scales of Stern et al. (1998) and Van Vugt et al. (1995). The following two sections measured consumer perceptions about sustainable practices used by organic food retailers comprising of two constructs ('customer education & green marketing' and sustainable self-governance) using Rao and Holt's (2005) multi-item scales. Section six was established to measure organic food purchasing intention were measured with four items based on Bredahl (2001) and Laroche et al. (2001). The last section contained questions pertaining to respondent's demographic characteristics (age, gender, level of education). In the first six sections, all items were measured using a seven point Likert- scale(1 = 'strongly disagree' and 7='strongly agree'). Measurement items of this study's constructs are presented in Table 2.

## 4. Results

### 4.1. Tools for Data Analysis

A confirmatory factor analysis (CFA) was first performed using AMOS 20 in order to estimate the measurements to determine whether the manifest variable reflect the hypothesized latent variables (Anderson and Gerbing, 1988). Pearson correlation analysis was then performed to identify the relationships between three (3) independent variables, two (2) moderating variables and one (1) dependent variable. In order to test the research hypotheses, a series of hierarchical multiple regressions were conducted using SPSS 18.

### 4.2. Reliability and Validity

Results of the CFA demonstrated a good fit with the data in Table 2. Since all confirmatory factor loadings exceeded 0.07, and all were significant at the level of 0.001, convergent validity was satisfactory implying the six factors were distinct and unidimensional (Anderson & Gerbing, 1988; Fornell & Larcker, 1981). Also, internal consistency in each construct was tested by Cronbach's alpha estimates. The coefficients of Cronbach's  $\alpha$  ranged from 0.706 to 0.873, which are acceptable (Nunnally, 1978). Composite construct reliability estimates were considered acceptable, ranging from 0.810 to 0.913, above the recommended cut-off 0.70 (Fornell & Larcker, 1981). All values of the average variance extracted (AVE) were acceptable, ranging from 0.583 to 0.725, above the recommended cut-off 0.50 (Forenll & lacrcker, 1981).

<Table 2> Reliability and Validity

Variables		Loadings	CCR	AVE	Cronbach's alpha
Environmental value					
Egoistic value	1. Social power	0.701	0.848	0.583	0.732
	2. Wealth	0.828			
	3. Authority	0.764			
	4. Influential	0.755			
	5. Ambitious	0.750			
Social-altruistic value	1. Equality	0.785	0.862	0.610	0.740
	2. A world at peace	0.755			
	3. Social justice	0.747			
	4. Helpful	0.833			
Biospheric value	1. Preventing pollution	0.835	0.810	0.588	0.722
	2. Unity with nature	0.740			
	3. Protecting the environment	0.720			
Retailers' green practices					
Customer education & green marketing	1. Eco-labeling	0.744	0.881	0.714	0.759
	2. Providing consumers with information on environmental friendly products	0.951			
	3. Providing consumers with information on environmental production methods	0.827			
Green self-governance	1. Environmental friendly waste management	0.835	0.865	0.617	0.706
	2. Environmental improvement of packaging	0.792			
	3. Taking back packaging	0.744			
	4. Recovery of the company's end-of-life products	0.767			
Organic food purchasing intention					
1. Intent to purchase organic food		0.839	0.913	0.725	0.873
2. Intent to pay more for organic food		0.872			
3. Recommend that others purchase organic food		0.865			
4. Willing to influence others to purchase organic food		0.828			

### 4.3. Correlation Analysis and Discriminant Validity

Table 3 presents the means, standard deviations and correlation coefficients of all six constructs. According to the result of the correlation analysis, organic food purchasing intention is strongly related to social-altruistic values and biospheric values. The two constructs of retailers' green practices were significantly associated with organic food purchasing intention. Also, the discriminant validity was supported because all values of the square root of the average variance extracted (AVE) were higher than correlations between constructs (Fornell & Larcker, 1981).

<Table 3> Correlation Analysis and Discriminant Validity

		Mean ± S.D.	1	2	3	4	5	6
Customer environmental value	1. Egoistic value	5.67 ± 0.93	1					
	2. Social-altruistic value	4.57 ± 0.98	0.246	1				
	3. Biospheric value	4.35 ± 0.79	0.153	0.399	1			
Retailers' green practices	4. Customer education & green marketing	3.35 ± 0.75	0.084	0.288	0.250	1		
	5. Green self-governance	4.13 ± 0.74	0.155	0.342	0.319	0.136	1	
	6. Organic food purchasing intention	4.07 ± 1.28	0.213	0.582	0.412	0.357	0.376	1

### 4.4. Hypotheses test

#### 4.4.1. Direct effects of customer environment values upon organic food purchasing intention

Hypothesis 1 predicted that three constructs (egoistic, social-altruistic and biospheric values) pertaining to customer environment values has a significant influence on organic wine purchasing intention. Table 4 provides the results of the multiple regression analysis. The result showed that social-altruistic values and biospheric values significantly affect organic food purchasing intention. Social-altruistic values ( $\beta = 0.516, p < 0.000$ ) was found to have a stronger effect than biospheric values ( $\beta = 0.203, p < 0.000$ ). However, egoistic values was found to have no significant effect on organic food purchasing intention ( $\beta = 0.052, p > 0.05$ ). These findings indicated that individuals who are highly interested in social-altruistic and biospheric issues are more likely to purchase organic food. On the other hand, customers with a high level of egoistic values are less interested in buying organic food than customers with high levels of social-altruistic and biospheric values. Therefore, hypotheses 1a and 1b

were supported, but hypothesis 1c was not supported.

<Table 4> Direct effects of customer environment value upon organic food purchasing intention

Dependent Variable	Independent Variable	Standardized coefficients ( $\beta$ )	t-value	$p$
Organic food purchasing intention	Egoistic value	0.052	1.743	0.082
	Social-altruistic value	0.516	16.084	0.000***
	Biospheric value	0.203	6.430	0.000***

#### 4.4.2. Moderating effects of retailers' green practices

In our research model, retailers' green practices included two constructs ('customer education & green marketing' and 'green self-governance'). First, the moderating role 'customer education & green marketing' plays upon the relationship between customer environmental values and organic food purchasing intention was tested and the result is shown in Table 5. In doing so, a three-step procedure was employed. In step 1, our three independent variables (egoistic, social-altruistic and biospheric values) were entered. The moderating variable was then entered in step 2 and all three interaction terms were entered in step 3.

Step 2 indicated the moderating variable ('customer education & green marketing') was significantly related to organic food purchasing intention ( $\beta = 0.180, p < 0.000$ ). The value of R2 in the regression model significantly increased, providing evidence that 'customer education & green marketing' performed by retailers exerts additional predictive power. Step 3 demonstrated that all three interaction variables are not significantly associated with organic wine purchasing intention. This result implies that retailers' green practices pertaining to customer education and green marketing may not be able to significantly increase customers' willingness to purchase organic food. Therefore, hypotheses 2a, 2b and 2c were all not supported.

<Table 5> Moderating effects of customer education & green marketing

	Independent Variable	Standardized coefficients ( $\beta$ )	t-value	$p$
Step 1	Egoistic value	0.054	2.015	0.074
	Social-altruistic value	0.483	14.452	0.000***
	Biospheric value	0.210	6.409	0.000***
Step 2	Customer education & green marketing	0.180	5.798	0.000***
$\Delta R^2 = 0.029$				
$\Delta F = 33.617***$				
Step 3	Egoistic value × Customer education & green marketing	0.150	0.803	0.422
	Social-altruistic value ×	-0.046	-0.286	0.775

	Customer education & green marketing			
	Biospheric value × Customer education & green marketing	0.192	1.236	0.217
	$\Delta R^2 = 0.002$			
	$\Delta F = 0.803$			
	Overall $R^2 = 0.412$			

## 5. Discussion

### 5.1. Conclusions and implications

The purpose of this study was to explore consumer perceptions about retailers' green practices and to determine their impacts had upon consumer environmental values and their organic wine purchasing intention. Overall, findings demonstrated positive relationships exist between customer environmental values and their willingness to buy organic products. In particular, customer environmental values pertaining to social-altruistic and biospheric aspects were found to significantly increase organic food purchasing intention. When customers have a higher level of social-altruistic values, they are more likely to purchase organic food products. However, the effect of customer egoistic values upon organic food purchasing intention was not significant.

This study also tested whether or not retailers' green practices could enhance the impacts of customer environmental values upon organic food purchasing intention. In doing so, retailers' green practices were categorized into two dimensions: 'customer education & green marketing' and 'green self-governance'. Interestingly, results failed to demonstrate any significant moderating impact of 'customer education & green marketing' upon consumer environmental values and their organic food purchasing intention. However, retailers' green practices involving 'green self-governance' were found to significantly enhance the impacts of customer egoistic values and biospheric values upon organic food purchasing intention. Surprisingly, the power of egoistic values which used to have no significant influence on organic food purchasing intentions was greatly improved as customers positively perceive retailers' green practices such as environmental friendly waste management, environmental improvement of packaging, taking back packaging and recovery of the company's end-of-life products. This result implies that customers with a high level of egoistic values would be greatly affected by more practical green retailing representing 'green self-governance'. Further they may perceive that green practices may be able to provide more benefits for their further life, and may have a more positive intention to buy organic food.

Organic food consumptions are strongly related to environmental values and an inherent promise from suppliers and consumers exists that organic food is always produced with environmental quality in mind and is distributed in line with regulatory requirements. This promise can be effectively proved by retailers' green practices. Customers may be more encouraged to buy eco-friendly products through their experiences about retailers' green self-governance. Therefore, this study provides clear evidence that retailers should rely on self-regulation to address a range of issues, from establishing green retailing standards. Also, organic product retailers should develop and apply codes of professional environmental ethics in order to ensure their consumer confidence in purchasing their organic products.

This study's findings contribute to developing more practical and efficient green retailing practices, which also contributes to

Table 6 showed the result of testing the moderating role of 'green self-governance' upon the relationship between customer environmental values and organic food purchasing intention. In step 2, 'green self-governance' was found to be significantly associated with organic food purchasing intention ( $\beta = 0.180$ ,  $p < 0.000$ ). Also, the increase in R2 of this regression model was significant, which confirmed that 'green self-governance' played role in increasing predictive power. In step 3, among three interaction terms, two variables (egoistic values × 'green self-governance' biospheric values × 'green self-governance') were found to significantly affect organic food purchasing intention however, the interaction term (social-altruistic values × 'green self-governance') was not.

These results imply that customers with high levels of egoistic values ( $\beta = 0.379$ ,  $p < 0.05$ ), and biospheric values ( $\beta = 0.276$ ,  $p < 0.05$ ) are more likely to be influenced by 'green self-governance' performed by retailers, and further their willingness to buy organic food would increase. However, customers who have already had a high level of social-altruistic values would not be affected by retailers' green practices pertaining to 'green self-governance'. This finding might indicate that these customers may constantly purchase organic products regardless of their perceptions about retailers green practices. Therefore, hypotheses 3a and 3c were supported, but hypothesis 3b was not supported.

<Table 6> Moderating effects of green self-governance

	Independent Variable	Standardized coefficients ( $\beta$ )	t-value	$p$
Step 1	Egoistic value	0.054	2.015	0.074
	Social-altruistic value	0.483	14.452	0.000***
	Biospheric value	0.210	6.409	0.000***
Step 2	Green self-governance	0.160	4.961	0.000***
	$\Delta R^2 = 0.021$			
	$\Delta F = 24.607***$			
Step 3	Egoistic value × Green self-governance	0.379	1.923	0.023*
	Social-altruistic value × Green self-governance	0.203	1.259	0.200
	Biospheric value × Green self-governance	0.276	1.869	0.032*
	$\Delta R^2 = 0.007$			
	$\Delta F = 2.640^*$			
	Overall R2:0.409			

further study for the development of the eco-friendly product sector in the rapidly increased organic industry. Based upon this, organic product retailers will have a better understanding of consumer perceptions toward green retailing practices, so that they can develop effective strategies involving organic food promotion of social and environmental benefits.

## 5.2. Limitations and Recommendations for Future Research

All studies have limitations and also, this study is no different. This study's findings will not be able to be generalized to all population of organic consumers because data was gathered by convenient sampling. Especially, our respondents were limited to residents in Florida. Therefore, the same application of this survey in many different geographic regions would be necessary to verify this study's findings. In addition, this study failed to demonstrate a significant moderating effect of 'customer education & green marketing' upon the relationships between customer environmental values and their organic food purchase intention. Considering the importance of green marketing to the development of green retailing strategies, this finding should be carefully interpreted. Thus, future research is recommended to examine more comprehensive green retailing and its effects in the different business context.

Lastly, this study addressed only organic product retailers' green practices. Therefore, another supply chain components such as organic product producers should be examined in terms of this study's objectives. Therefore, much more research needs to be performed to better understand how comprehensive green supply chain management influences customer attitudes and purchasing behavior toward organic products.

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