Materialism and Green Purchase Intention: A Study of Urban Vietnamese Consumers

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Abstract

This study focuses on examining the impact of three components of materialism on green purchase intention for urban consumers in Vietnam, an emerging economy. An extended Theory of Planned Behavior (TPB) is applied as the conceptual framework for this study. The hypotheses are empirically tested using survey data obtained from consumers in Hanoi, the capital of Vietnam. The regression results show support for most of our hypotheses. The findings indicate that two out of three facets of materialism are significant predictors of green purchase intention. Specifically, success is found to be negatively related to purchase intention, while happiness is related positively to the intention. All three antecedents in the TPB model, including attitude towards green purchase, subjective norm, and perceived behavioral control are also found to have positive impacts on purchase intention. The research findings are discussed and implications for managers and policy makers are provided.

Keywords: Green purchase intention; materialism; theory of planned behavior; urban consumers, Vietnam.

1. Introduction

Materialism is an important concept in marketing and the topic related to this concept has received extensive investigation in the literature (e.g. Belk, 1985; Richins and Dawson, 1992; Strizakova and Coulter, 2013). Materialism has frequently been associated with Western and affluent countries. However, recent research has suggested that materialism exists also in less developed countries and it seems to be growing in the emerging markets while slowing down in the developed markets because many consumers in the developed countries are now moving towards more abstract and less materialistic goals (Burroughs and Rindfleisch, 2002). Vietnam is an emerging economy in Asia where the necessary conditions for materialism are met. The research on materialism in this relatively new context has received increasing attention from researchers (e.g. Nguyen and Tambyah, 2011).

Many previous studies have examined the role of materialism in explaining consumer behaviors, including green consumption, and much past research has indicated the negative side of materialism. However, the findings from the literature are mixed and debatable and that calls for more research efforts (Perera and Klein, 2011; Segev et al., 2015).

In the marketing field, due to environmental problems such as climate change and pollution, studying green consumer behaviors is considered an important topic that has attracted significant research attention from both scholars and practitioners (Narula and Desore, 2016). Past research has investigated many antecedents of environmentally-friendly attitudes and behaviors, including materialism. The link between materialism and green consumption has been explored in different contexts, using different approaches (i.e. materialism is treated as a single construct vs. materialism being broken into different facets), and inconsistent findings have been provided (Segev et al., 2015). It has been suggested that this relationship should be further investigated (Strizakova and Coulter, 2013), especially with the use of the materialism concept unbundled into its facets (Segev et al., 2015).

This research aims to explore the important relationship between materialism at a sub-construct level and green consumer behavior in the context of urban Vietnam. Specifically, we examine the impact of three facets of materialism on green purchase intention among consumers in Hanoi, the capital of Vietnam. We develop a research model extended from the Theory of Planned Behavior (TPB), and test the hypotheses using multiple regression. Our study enriches the extant literature on an important but debatable relationship between materialism and environmentally-friendly behaviors in the context of the emerging economy of Vietnam. In the following sections, we present a literature review and the analytical framework of the study, followed by the research methodology and then the research findings. The paper concludes with discussion of the findings, implications and future research directions.

2. Literature review and analytical framework

2.1. Green consumption

Green consumption has been studied in developed economies since the 1960s (Coleman et al. 2011). In fact, psychological and perceptual environment-related concepts have

become a traditional theme in environmental sociology and psychology. However, this topic has not caught adequate attention in marketing for a long time (Ellen et al., 1991; Pickett et al., 1993).

Recently, studies of green consumption have seemed to regain a better momentum. Some marketing scholars have called for novel research related to environment-related and sustainable consumption (Kotler, 2011; Prothero et al., 2011). Thus there has been more research deepening our knowledge about environment concerns, attitudes, and environmentally-friendly behaviors (e.g.: Dembkowski and Hanmer-Lloyd, 1994; Polonsky, 2011). A recent theme is a stream of research linking environmental concern issues with environmentally-friendly buying and consuming behaviors (e.g.: Biswas and Roy, 2015; Nguyen et al., 2016; Welsch and Kühling 2009). Still, understanding different antecedents to green behaviors is necessary and important theoretically (Nguyen et al., 2016).

In this research, green consumption can be understood as behaviors which are related to environmental and resource-related problems and motivated by both a desire to satisfy individual needs and a concern for the welfare of society in general (Antil, 1984; Antil and Bennett, 1979). Although studies in the field may use different terms such as: socially responsible, ecologically conscious, environmentally responsible, environmentally friendly, pro-environmental, or green consumption, the common theme is a desirable consumption goal to minimize environmental consequences (Kim et al., 2012). Green products can be any kinds which are produced either by (1) minimizing used inputs; (2) utilizing materials that are recycled and non-toxic or not-related to experiment on animals or harmless to protected animals; (3) using less energy for production; or (4) having minimal or no packaging in use (Simon, 1995).

Green consumption may consist of different behaviors including purchase and after-purchase ones such as using and recycling (Rylander and Allen, 2001). Purchase behavior definitely can be considered the first among a chain of green behaviors (Nguyen et al., 2016). Extant research in marketing and this research thus focus on this behavior.

2.2. Theory of planned behavior as the overarching analytical framework

There have been different theoretical frameworks employed to explain green purchase behaviors. Some typical ones include the theory of reasoned action - TRA (Ajzen and Fishbein, 1980) and its extended one of planned behavior - TPB (Ajzen, 1991), the general theory of marketing ethics (Hunt and Vitell, 1986), or involvement theory (Zaichkowsky, 1985). While other theories seem to address some specific groups of antecedents of green behavior, TPB can be a more general one, which helps explain different antecedents of the behavior. In this research, we employ this theory as the overarching analytical framework.

Under TPB, a behavior is determined by the intention to behave. It should be noted, however, that "at its core, the TPB is concerned with the prediction of intention" (Ajzen, 2011, p. 1115). Whether the intention then can help predict behavior or not depends on factors beyond the individual's control (Ajzen, 2011). Thus, in this study we focus on explaining the intention,

rather than the behavior. In its turn, the intention is impacted by three important factors of attitude toward the behavior, subjective norms, and the perceived control of behavior (Ajzen, 1991). This theory has been employed in different fields of behavior and has proved to have wide validity (Ajzen, 2002; Ajzen and Fishbein, 2005). This theory thus can be applied for green purchase behavior.

However, while TPB has been applied in different contexts of consumption behaviors, the three key antecedents in the model usually accounted for no more than 54% variance of the intention variable (Ajzen and Fishbein, 2005). Thus, depending on the specific research context, researchers can explore other independent variables to increase the explanatory variance of the variable. As argued by Ajzen (2011), depending on each area, the potential added variables may include background factors such as individual differences. In the realm of green consumption, materialism has been such a promising factor but the empirical results are mixed (Perera and Klein, 2011; Segev et al., 2015).

2.3. Materialism and green consumption

Materialism is not a new phenomenon in Western societies and has long been attached to the consumerism in the United States. In fact, this concept has caught more attention than socially responsible concepts, including green consumption, because consumption emphasis has been a strategic goal of many multinationals (Sharma, 2011; Strizhakova and Coulter, 2013). This concept seemed to catch even more attention after recent financial crises in the economies (Segev et al., 2015). Scholars have pointed out that materialistic values over-

riding in the Western economies to support the passion for material possessions and becoming rich have led to risky financial behaviors, contributing to the crises (Kasser, 2008; Richins, 2011). Under the ongoing process of globalization and international integration, these values have been becoming more popular and expanded into emerging economies (Ritzer, 2007; Strizhakova and Coulter, 2013). Multinationals in their new market footsteps have contributed significantly to propagandizing the concept into the economies (Sharma, 2011; Strizhakova and Coulter, 2013).

There have been different definitions of materialism (Polonsky, 2011; Segev et al., 2015). For example, materialism can be defined as a pure psychological concept (Belk, 1985). According to Belk (1985) materialism consists of three individual psychological traits including possessiveness, non-generosity and envy. The aspects reflect the extent to which one possesses, controls the possessions, shares them, and the desire to possess the possessions of others (Ahuvia and Wong 2002; Segev et al. 2015). Belk (1985) has shown that these three traits were found among high materialists. Moreover, there can be a negative relationship between materialism and happiness in life.

From a different perspective, materialism can be considered as a system of personal values or value orientation (Richins and Dawson 1992). Richins (1994) defined materialism as "a value that represents the individual's perspective regarding the role possessions should play in his/her life" (Richins, 1994, p. 522). Under this view, possessions and acquisitions as major personal goals would dictate one's way of living (Ahuvia and Wong, 2002). Thus

for materialists, possessions and acquisition are central, proving meaning and the basis for their living (i.e. centrality facet). Possessions then can be essential for their satisfaction with life, well-being and happiness (i.e. happiness facet). Finally, possession can define success and symbolize achievement (i.e. success facet). Notably, though taking the different perspective Richins and Dawson (1992) also pointed out that materialism is negatively associated with satisfaction in life and self-esteem.

Thus the two approaches agree that materialism can be harmful when the goal of consumption interferes with higher goals in life, such as personal growth and relationships with others (Muncy and Eastman, 1998; Segev et al., 2015). However, the latter perspective by Richins and Dawson (1992) with the three facets of success, centrality and happiness have seemed to be better recognized with valid measures (Giddens et al., 2009; Richins, 2004; Ryan and Dziurawiec, 2001) and the three are usually well correlated and contribute relatively similarly to the general construct of materialism (Giddens et al., 2009). Our paper thus takes this perspective about materialism.

The relationship between materialism and environmentally-concerned intention and behavior has been debatable (Perera and Klein, 2011). On the one hand, at the macro level, evidence has been accrued to show that consumerism and materialism may have direct impact on socio-economic issues including environmental problems (Alexander and Ussher, 2012; Brown and Kasser, 2005; Kasser, 2002; Stern, 2000). At the individual level, some empirical evidence also showed that materialism may negatively influence environmentally-responsi-

ble behaviors (Brown and Kasser, 2005; Good, 2007; Kilbourne and Pickett, 2008; Richins and Dawson, 1992). On the other hand, some research pointed out that the negative relationship between materialism and green behaviors cannot be definitely confirmed due to issues related to measurement and definitions in use (Andreou, 2010; Karabati and Cemalcilar, 2010; Segev et al., 2015). In some emerging economies, studies even found a positive relationship, especially for groups of global-cultural identified individuals (Strizhakova and Coulter, 2013). They speculated that with the marketing strategies implemented by multinationals entering the economies, both concepts of materialism and environmentally friendly behaviors now can be reconciled. Thus there have been calls for further research into different facets of materialism (Segev et al., 2015) or exploring contextual variables that can moderate the relationship of the two concepts (Perera and Klein, 2011; Strizhakova and Coulter, 2013). Taking the TBP as the overarching theory, in this paper we examine the relationship between each facet of materialism with the intention to make green purchase.

2.4. Hypothesis development

TPB (Ajzen, 1991) as the extension of theory of reasoned action (Fishbein and Ajzen, 1975) has been tested to explain human behaviors via intention in various fields (Ajzen and Fishbein, 2005). Three sets of constructs to predict intention to behave include attitude, subjective norms, and perceived behavioral control (Ajzen, 1991). First, attitude can be understood as one's positive or negative evaluation of a specific behavior (Fishbein and Ajzen, 1975). Two aspects of instrumental and empirical as-

sessments can be measured for attitude (Ajzen, 2008). Second, subjective norm can be defined as the perceived social pressure that encourages one to engage in a specific behavior (Fishbein and Ajzen, 1975). When predicting a behavior, the norm will be assessed with regards to a reference group (Wu and Chen, 2014). Finally, perceived behavioral control can be defined as the difficulty perceived by an individual to perform a specific behavior (Fishbein and Ajzen, 1975).

A set of constructs have been used to predict intention which can be defined as the extent to which one is likely or willing to perform a specific behavior (Ajzen, 1991; Fishbein and Ajzen, 1975). The theory has been tested in multiple studies in various fields (Ajzen and Fishbein, 2005) and in green consumption (e.g. Wu and Chen, 2014). In this study, we re-test the following hypotheses in the context of green purchase in Vietnam.

H1: The attitude of a consumer towards green purchase is positively associated with green purchase intention.

H2: The subjective norm of a consumer regarding green purchase is positively associated with green purchase intention.

H3: The perceived behavioral control of a consumer regarding green purchase is positively associated with green purchase intention.

Materialism has long been considered as having a negative relationship with environmental behaviors. The main reason probably was that materialism was considered as a negative value, which then would result in unethical behaviors (Muncy and Eastman, 1998). Thus materialism has been found to have a negative relationship with ethical standards among different samples in the developed economies (e.g. Muncy and Eastman, 1998) and with unethical behaviors in developing countries (e.g. Lu and Lu, 2010). Empirical evidence then also showed that materialism may negatively influence environmentally responsible behaviors (e.g. Brown and Kasser, 2005; Good, 2007; Kilbourne and Pickett, 2008).

Still, there has also been empirical evidence to show that materialism was not antithetical to green consumption (Andreou, 2010). First, green consumption may be positively associated with high social status and convey a "costly signal". In addition, it can have a positive appeal regarding fun, happiness and adventure. Practicing green consumption then may mean enjoying discovering alternative means of consumption and the natural environment (Perera and Klein, 2011). A recent study by Strizhakova and Coulter (2013) found a significant positive relationship between materialism and enviromentally friendly tendencies including willingness to pay extra for environmentally friendly products among globally-cultural people in both developed and developing countries. In their study, materialism was measured by Richins' scale (1987) that by nature is the happiness facet of Richin and Dawson (1992)'s materialism concept.

In recent years, many environmental scandals have happened in Vietnam. Two prominent incidents have captured much attention from the whole society: Vedan (Vietnam), a Taiwanese company, heavily poisoned the Thi Vai River, and Formosa Ha Tinh Steel Corporation released toxic industrial waste into the ocean causing serious fish deaths in the central provinces. This has raised much concern among

Figure 1: Conceptual model: the relationships between the facets of materialism and green purchase intention among urban Vietnamese consumers
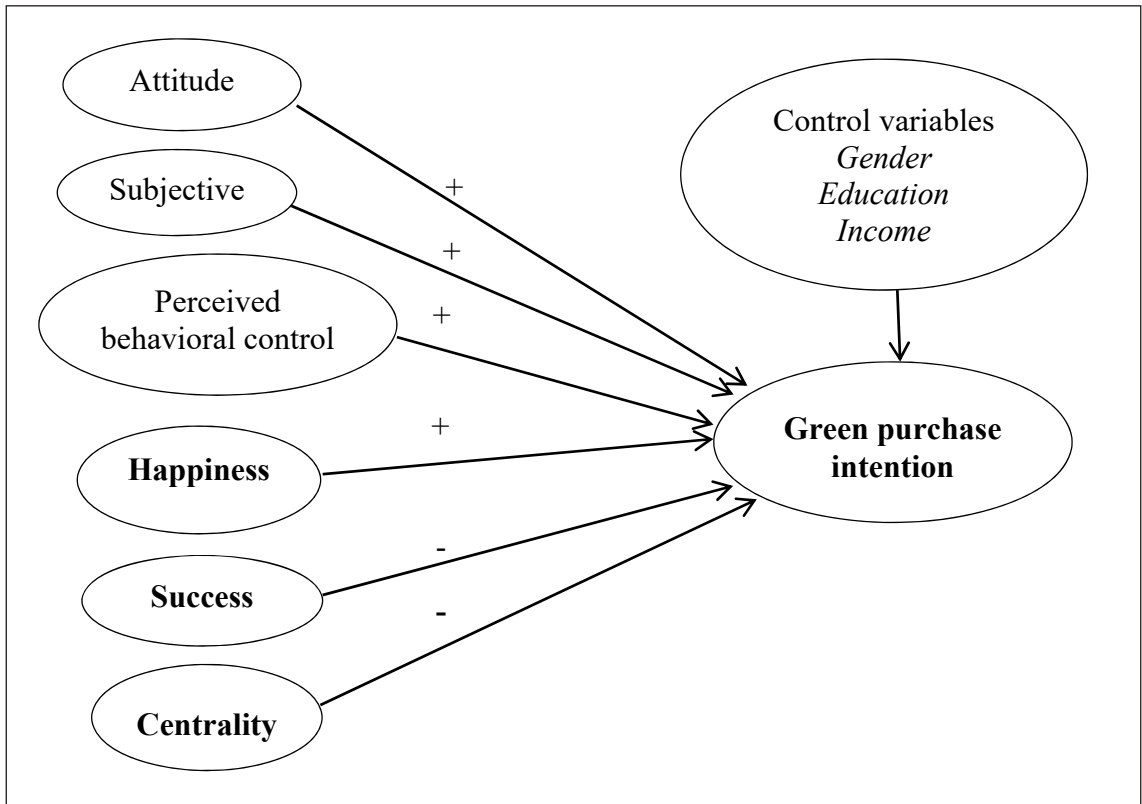
Vietnamese consumers, especially pertaining to food safety and pollution issues. Purchase of green products such as eco-agricultural items and organic cosmetics can bring a comfortable, safe and joyful feeling to consumers and can help them more enjoy product consumption. This is in line with the values associated with the happiness facet of materialism. Based on the above discussion, we hypothesize that:

H4: Of the three facets of materialism, happiness is positively associated with green purchase intention.

On the other hand, the two materialism facets of success and centrality may be negative-ly associated with green consumption. The reason is that these values can be categorized under the values of Power and Achievement under the Schwartz's value system (Schwartz, 1992). These values then are considered as op-posite to the pro-social value of universalism (Burroughs and Rindfleisch, 2002; Segev et al., 2015) and closely related to self-interested values (Grouzet et al., 2005). Thus materialists with these values of success and centrality may show greater concern for self-status, pleasure and a comfortable life than for the environ-ment and society (Saunders, 2007; Segev et al., 2015). Those people then may pursue their

individual achievements at the expense of the common good, including that of the environmental (Richins and Dawson, 1992; Saunders, 2007; Segev et al., 2015).

For Vietnamese consumers, it has been suggested that green products may not have the same image as luxury goods or even they may be seen as inferior or less elegant alternatives (Parker et al., 2014). Also, it seems that currently there are very few green products in Vietnam that can be treated as status symbols. Buying and consuming environmentally friendly products may not yet convey a high status image, and thus may not be considered as a means to impress others. Meanwhile, luxury products like expensive cars and famous brand bags that may be environmentally harmful, still are considered as desirable symbols of success in life. In addition, many urban Vietnamese consumers while enjoying buying things and pursuing luxury in life may not care about the environment, and many products they have bought may not be green ones. Formally, we hypothesize that:

H5: Of the three facets of materialism, success is negatively associated with green purchase intention.

H6: Of the three facet of materialism, centrality is negatively associated with green purchase intention.

In sum, this study focuses on examining the relationships between the three materialism facets and green purchase intention. To increase the validity of our empirical findings we integrate three antecedents from the TPB model (i.e. attitude toward green purchase, subjective norm, and perceived behavioral control) to control their impact. We also add some control variables to the model (i.e. gender, education level, and income) based on suggestions from previous studies (e.g. Nguyen et al., 2016). The proposed conceptual model is presented in Figure 1.

3. Research methodology

In order to test the hypothesized relationships we employed consumer survey data. In the following sections, we discuss the sample, the measures used in this study, and the techniques employed for data analysis.

3.1. Sample and data collection

The consumer survey was conducted in Hanoi, the capital city of Vietnam. Previous studies examining urban consumer behaviors in Vietnam often select Hanoi as a research site (e.g., Nguyen and Smith, 2012; Nguyen et al., 2009; Nguyen et al., 2013). This location was chosen to ensure the necessary conditions for the occurrence of green consumption (e.g., the emerging class of consumers with higher incomes and living standards, and the availability of green products in the market).

This study used a self-administered questionnaire and we collected data from a convenience sample of consumers from the inner city of Hanoi. A team of undergraduate students in a marketing class who received careful training and guidance on survey data collection, delivered questionnaires among their friends, family members and acquaintances. To ensure the diversity of the sample, respondents were required to be diversified in terms of gender, age, occupations, education and income levels. This is similar to the approach employed in the study by Segev et al. (2015).

In our sample, there were slightly more females (56%) than males (44%). The sample

Table 1: Demographic profile of respondents

Characteristics		Frequency	% of Total
Gender	Male	155	44.0
	Female	197	56.0
Age group (years)	≤ 35 (16-35)	273	77.6
	> 35 (36-76)	79	22.4
Level of education	≥ bachelor degree	157	44.6
	< bachelor degree	195	55.4
Occupations	Owners/managers	44	12.5
	Production, marketing & sales	11	3.1
	Office staff	275	78.1
	Others (housewife, retiree, student, etc.)	22	6.3
Monthly personal income	VND 1.5mn – 4.5mil	186	52.8
	> VND 4.5mil	166	47.2

covered the range of ages from 16 to 76, with an average age of 28.5 years and the dominant group was younger consumers (77.6% less than 36 years old). More than 44% of the respondents held a high level of education (holding bachelor degree or above), and nearly 50% earned an average monthly income of VND 4.5mil and above. The sample included a variety of occupations with the majority being office staff (78.1%). The demographic profile of our respondents is presented in Table 1.

3.2. Measures and questionnaire development

All the scale measuring variables in our study were self-reported and adapted from the established scales in the literature: the overall materialism scale and three subscales measuring the three facets of materialism were adapted from Richins & Dawson (1992); the scales measuring the three other independent variables (i.e. attitude, subjective norm, and perceived behavioral control) and behavioral intention from the TPB were adapted from Chang (1998) and Armitage and Conner (1999). All the scale items are scored on a 7-point Likert-type format ranging from *strongly disagree* (1) to *strongly agree* (7).

Materialism

The scale developed by Richins & Dawson (1992) was adapted for this study. The scale includes a total of 18 items measuring three facets of materialism (6 items measuring 'success', 7 items measuring 'centrality', and 5 items measuring 'happiness'). This scale has been widely used in the literature, including studies in the context of Vietnam (e.g. Nguyen and Tambyah, 2011).

TPB scales

We adapted the scales employed by Chang (1998) and Armitage and Conner (1999) for this study. Specifically, the scales measuring consumer attitude towards green purchase, subjective norm, perceived behavioral control, and green purchase intention each include three items.

To collect data for our study, the questionnaire was developed on the basis of all the scale items measuring the constructs in the research model. In addition, the questionnaire included some demographic questions such as gender, age, education level, occupation and income. Some scale items already used in past research in Vietnam (i.e. 18 materialism items) were adopted for the questionnaire. The rest of the items were translated into Vietnamese through the back-and-forth translation process (cf. Nguyen and Tambyah, 2011). After that, the questionnaire was tested with a small sample of respondents to ensure there was no misunderstanding about the content of the questions, and to make the final changes in terms of format.

3.3. Data analysis

In order to test the proposed hypotheses, we ran multiple regression analyses using green purchase intention as the dependent variable. In Model 1, the control model, the independent variables are three demographic variables including gender (dummy variable: female = 1, male = 0), education level (dummy variable: ≥ bachelor degree = 1; < bachelor degree = 0), and income (dummy variable: > VND 4.5mil = 1, ≤ VND 4.5mil = 0). In Model 2, in addition to the control variables, three antecedents of intention from the TPB (i.e. attitude, subjective norm, and perceived behavioral control) were

added to the model. In Model 3, a full model, three facets of materialism (i.e. success, centrality, and happiness) were added.

Before testing the hypothesized relationships we assessed the reliability and validity of the scales used in this study. Specifically, Cronbach's alpha was calculated for each scale to test the scale reliability. To test the scale's convergent validity and discriminant validity we performed exploratory factor analysis (EFA) on all the scale items measuring independent variables, and on the scale items measuring the dependent variable separately.

4. Research findings

4.1. Scale reliability tests and validity assessment

To assess the scales used in this study, we conducted EFA (PCA with Varimax rotation) and a reliability test using Cronbach coefficient alpha. During conducting the EFA and Cronbach's alpha analysis, one item measuring the 'success' facet and three items measuring the 'centrality' facet of materialism were dropped due to low item-total-correlations, low squared multiple correlations (< .30), and/or confusing loading patterns (loaded highly on several factors or on the wrong factor). The final results of EFA well demonstrated convergent and discriminant validity of the scales used in this study. Specifically, EFA was performed on the items measuring six independent variables. As expected, a six-factor solution emerged, explaining 66.38% of the total variance. EFA was also run on the items measuring the dependent variable (i.e. green purchase intention), and one factor emerged, explaining 71.27% of the total variance. The scale items were highly loaded on the designated factor while lowly loaded on

Table 2: Descriptive statistics and factor loadings for scale items (n = 352)

Constructs and the scale items	Mean	S.D.	Factor loadings
Success (alpha = .80)			
I admire people who own expensive homes, cars, and clothes	4.72	1.52	.741
Some of the most important achievements in life include acquiring material possessions	4.78	1.56	.783
I place much emphasis on the amount of material objects people own as a sign of success	4.61	1.55	.679
The things I own say a lot about how well I'm doing in life	4.87	1.45	.692
I like to own things that impress people	4.63	1.53	.594
Centrality (alpha = .74)			
I try to keep my life comfortable, as far as possessions are concerned	5.53	1.32	.685
The things I own are all that important to me	5.27	1.43	.763
Buying things give me a lot of pleasure	4.99	1.54	.577
I like a lot of luxury in my life	5.30	1.41	.564
Happiness (alpha = .84)			
I haven't got all the things I really need to enjoy life	4.33	1.73	.703
My life would be better if I owned certain things I don't have	4.90	1.63	.722
I would be any happier if I owned nicer things	4.82	1.63	.761
I would be happier if I could afford to buy more things	4.99	1.56	.742
It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like	4.74	1.67	.686
Attitude (alpha = .90)			
Purchase of green products is a smart choice	5.85	1.40	.890
Purchase of green products bring many benefits	5.92	1.29	.864
Purchase of green products is a good thing to do	5.92	1.33	.842
Subjective norm (alpha = .86)			
People who are important to me think I should buy green products	5.31	1.40	.832
People who are important to me would approve of my purchasing green products	5.62	1.33	.745
People who are important to me want me to buy green products	5.32	1.45	.869
Perceived behavioral control (alpha = .69)			
I have complete control of buying green products	5.28	1.44	.742
I meet no difficulties in buying green products	4.53	1.65	.844
If I want to buy, I could easily find green products	4.19	1.60	.678
Green purchase intention (alpha = 80)			
I intend to make purchases of green products	5.25	1.48	.880
I plan to buy green products	4.95	1.60	.842
I want to buy green products	5.72	1.33	.810

the others.

The Cronbach alpha was calculated for each scale, ranging from .69 (for perceived behavioral control) to .90 (for attitude). These results demonstrated an acceptable level of reliability with coefficient alphas exceeding .60 (Hair et al., 1998). The results of EFA, Cronbach's alpha and descriptive analysis are presented in Table 2. We also checked correlations among the constructs used in this study. There was no multicollinearity problem found since all bi-variate correlations were less than .25. Some facets of materialism were found to be significantly correlated with some antecedents from the TPB model. Specifically, the most salient correlations are between attitude towards green

Table 3: Regression results

Dependent variable: Green purchase intention

	M1 β (standardized)	M2 β (standardized)	M3 β (standardized)
Independent variables			
Gender	.034	.024	.021
Education	.028	.010	.017
Income	.183*	.078	.093
Attitude		.346***	.367***
Subjective norm		.188***	.204***
Perceived behavioral control		.335***	.347***
Happiness			.118*
Success			-.131**
Centrality			-.043
R^2	.043	.447	.464
Adjusted R^2	.035	.437	.450
R^2 *change*		.404***	.017*
F	5.22**	46.574***	32.913***

Notes: * p < .05; ** p <.01; *** p <.001

purchase and the success facet (r = -.14, p < .01), and the centrality facet (r = .25, p < .01).

4.2. Regression results

We performed three regression models (M1, M2, and M3) with green purchase intention as the dependent variable. All three regression models were found to be significant: F = 5.22, p < .01; F = 46.57, p < .01; and F = 32.91, p < .01, respectively. Model 1 accounted for 4.3% of the variance in the data. The figure was 44.8% for Model 2 and 46.4% for Model 3. R^2 of the full model (i.e. Model 3) was significantly improved compared with the one without materialism facets although it is modest: the R^2 change was .017 (p < .05).

The regression results showed that only income contributed positively towards green purchase intention (β = -.183, p < .05) in Model 1. With regard to the impact of three antecedents from the TPB, consistent with the findings from the literature, the regression results demonstrated a significant contribution of attitude, subjective norm, and perceived behavioral control in both Model 2 and Model 3 (p < .001), lending support to H1, H2, and H3. Among these three predictors, attitude consistently showed the strongest impact, followed by perceived behavioral control, and then subjective norm.

In this study, our main interest is the relationships between the materialism facets and green purchase intention. As our prediction, happiness was found to positively contribute to purchase intention (β = .12, p < 0.5), lending support for H4. The results also confirmed the significantly negative impact of success on purchase intention (β = -.13, p < .01). Thus, H5 was supported. However, centrality was not found to be significantly related to purchase intention although the relationship was in the predicted direction (β = -.04, p > .05). Thus, H6 failed to receive support from the data. This will be

discussed subsequently in the next section. The results of hypothesis testing are summarized in Table 3.

5. Discussion

5.1. Discussion on the findings

In this study, we proposed and tested an extended TPB model with the addition of three facets of materialism: success, centrality and happiness. Six hypotheses were tested and five of them were supported. Specifically, all three antecedents from the TPB model were found to positively contribute to green purchase intention. This is consistent with the findings from previous studies (e.g.: Wu and Chen, 2014). Among these three antecedents, the level of attitude was highest and the findings provided empirical evidence showing it as the strongest predictor. Meanwhile, the level of perceived behavioral control was just a little above the average, suggesting that there may be still some barriers for urban Vietnamese consumers to access and buy green products.

This study focuses on examining the relationships between materialism's facets and green purchase intention among urban Vietnamese consumers. The research context is urban Vietnam (i.e. Hanoi), where consumers have both motivation and opportunities to engage in green consumption. An extended TPB model was tested and materialistic values demonstrated significant, albeit modest, contribution to the model. From a theoretical perspective, this study examines an important and debatable relationship between materialism and green consumption (i.e. green purchase intention) at an individual level, using the materialism sub-constructs separately (i.e. success, centrality, and happiness). This helps to understand better this relationship in the context of Vietnam, an emerging economy.

Previous studies have provided inconsistent results pertaining to the relationship between materialistic values and pro-environmental attitudes and behaviors (e.g. Perera and Klein, 2011; Strizhakova and Coulter, 2013). In this study, the findings show empirical evidence for the positive relationship between happiness and green purchase intention that is consistent with the suggestion from Strizhakova and Coulter (2013). In practice in Vietnam, especially in big cities, an increasing number of consumers understand more about green consumption and the benefits that green products bring to them as well as to the whole society. In the minds of many consumers, green products are better and nicer compared with others in terms of safety, hygiene and harmlessness, etc. If consumers could afford to buy, acquiring these nice products would help them have a happier life.

In this study, the success facet was found to be negatively related to consumer green purchase intention. This finding seems to be inconsistent with past suggestions of no evident relationship between success and environmentalism (e.g.: Segev et al., 2015). Our finding regarding the negative relationship between success and green purchase intention suggests that perhaps currently Vietnam is still in the stage that green products are not yet considered as status symbols by many consumers, and even a commitment to buying green products may represent some opposite values (i.e. frugality and less success) and it may get criticism from others (Parker et al., 2014; Perera and Klein, 2011).

With regard to the negative relationship be-

tween the centrality facet and green purchase intention, our study could not find support for this hypothesis. This means that urban Vietnamese consumers, who hold a high level of centrality values, may not necessarily have a low level of green purchase intention. It can be explained that producing green products or including green components in the product is a trend in practice, even in Vietnam. Also green products, from daily vegetables and food to luxury items, can bring comfort to consumers' material life. Thus consumers who enjoy buying things for the sake of a more luxurious life still consider green products as alternatives. For better understanding the role of centrality, perhaps further research should continue to investigate the relationship between centrality and purchase intention.

The findings from this study also show that some facets of materialism (e.g.: success and centrality) are significantly correlated with some antecedents from the TPB model, especially with attitude towards green purchase. This may imply some possible indirect effect of materialism on attitude. This issue should be further investigated.

5.2. Implications and future research directions

Implications

Based on the findings from this study, managers can develop relevant and effective marketing strategies. Specifically, in terms of market segmentation, marketers can segment the consumer market based on understanding each facet of materialism and its impact on consumer green purchase intention (e.g. higher vs. lower level of success, of centrality, and of happiness). By targeting the group of con-

sumers holding dominant values of the success facet, managers should consider the challenges associated with consumers' low level of purchase intention. Meanwhile, marketers may have more opportunities to attract green consumption by targeting groups of consumers for whom happiness facet values are dominant.

Managers also should develop effective communication strategies pertaining to green product recognition and the benefits that engaging in green consumption can bring to consumers and their families, as well as the whole society. Marketers may consider developing communication messages focusing on building the image of green products as items conveying desirable status for the consumers who buy and use those products. Messages could be developed based on both rational and emotional appeals such as consumers buying and using green products associated with good characteristics, such as: being smart, knowledgeable, highly responsible for self, family members, and success in life. In addition, marketers can also promote the benefits that consuming nice things; such as, green products can make consumers' lives more joyful and comfortable, and thus can bring happiness in life.

The findings of this study also confirmed the strong impact of attitude, the subjective norm, and perceived behavioral control on green purchase intention. Especially, the findings suggest that urban Vietnamese consumers may still face some difficulties in finding green products when needed. Marketers should develop distribution strategies so that green products can be more easily recognized and more available in the market.

Policy makers can use the findings to devel-

op relevant policies to facilitate firms to engage in offering green products to the market. The policies supporting green businesses in terms of tax, land use, capital, technology, and trade promotion may be necessary so that more green products can be produced and more consumers can access these products. On the other hand, long-term communication campaigns can be developed to provide consumers with knowledge about green products and the benefits of environmentally-friendly consumption. Policy makers also need to work on effective regulations to better control the quality of green products to gain consumer trust and to build their habit of buying and using green products sustainably.

Future research directions

This study has some limitations that could be improved in future studies. First, this study used a convenience sample that might affect the generalizability of its findings. In addition, the data for this study were collected only from Hanoi, the capital of Vietnam. Future studies may want to employ a broader and more representative sample drawn from other big cities also, such as Ho Chi Minh City and Da Nang.

In this study, we tested the impact of three of the facets of materialism on green purchase intention, using an extended TPB model. Future research may want to integrate some mediators and/or moderators into the model to explain better the intention and the behavior. Both the direct and indirect impact of materialistic values should be investigated and Structural Equation Modeling could be used to simultaneously test these links. Also, future studies can examine the impact of materialism and its facets on other important consumer behaviors such as fake consumption and status consumption. Another avenue for future research is that a cross-cultural study could be conducted between Vietnam and some country in or out of the region. By doing so, it can significantly enhance our understanding of the interesting and important relationship between materialism and consumer behaviors.

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