



What affects green consumer behavior in China? A case study from Qingdao



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ABSTRACT

This study develops a theoretical framework of green consumer behavior to determine the effects of personal influence, knowledge of green consumption, attitudes toward green consumption, internal and external moderators and examines whether these effects differ significantly among purchasing, using and recycling behaviors. Correlation analysis and multiple regression are applied to assess data collected by a questionnaire survey. The results indicate that attitudes are the most significant predictor of purchasing behavior. Using behavior is mainly determined by income, perceived consumer effectiveness and age, while recycling behavior is strongly influenced by using behavior. These findings have policy implications and improve understanding of green consumer behavior in China.

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1. Introduction

Environmental technologies, economic policies, and social initiatives are all important to economic sustainability, but their influence rests on achieving changes in actual consumption patterns and behavior (Peattie, 2010). The notion of green consumption has emerged as a key element in the academic and policy debates regarding the environmental impacts of consumption. The concept of green consumption first became explicit in the 1970s (Peattie, 2010), and many research articles since then have extended it.

Various empirical studies on green consumption have attempted to identify the factors that influence green behavior, including demographics (Diamantopoulos et al., 2003), environmental knowledge, attitudes (Chan, 2001), values (Ramayah et al., 2010), and internal and external moderators (Rylander and Allen, 2001). The research on green consumption has also involved applying established theories and models, most commonly those based on the theory of reasoned action (Ajzen and Fishbein, 1980) and the related theory of planned behavior (Ajzen, 1991). Numerous models attempt to incorporate both internal and external elements, including the model of environmental behavior (Hines et al., 1986), the attitude-behavior-context model (Stern, 2000), the models introduced by Rylander and Allen (2001) and Bagozzi et al. (2002),

and especially the model developed by Fishbein and Ajzen (2010). These models help understand the structure of some intentional behaviors.

Although approaches that apply or extend theories like the theory of planned behavior (TPB) are popular in investigating green consumer behavior, several limitations should be taken into consideration. First, the complexity of integrated models makes them difficult to test for green consumer behavior (Davies et al., 2002). Second, some recent empirical literature found that none of the values variables have a significant correlation with actual household electricity conservation (He and Kua, 2013; Kua and Wong, 2012), while subjective norm is generally supposed to be a key variable in the TPB model. The uncertainties that surround previous results make further studies necessary. While a few studies have examined green consumer behavior in developed and developing countries, such research is lacking for China. China has recently followed a track of rapid urbanization and industrialization, and development stage and process could significantly impact the attitudes and behavior of Chinese consumers. Therefore, green consumption in China is of worldwide interest in both policy and scholarly circles. The present study draws on previous research and incorporates internal and external moderators into the model to investigate the impact of the factors that influence green consumer behavior. Moreover, this empirical study does not treat green consumer behavior as an independent category but rather separately analyzes three aspects of such behavior (purchasing, using and recycling). Consequently this study uses a novel approach with

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potential to produce more precise and reliable results, and to recommend viable policy options for the Chinese government.

This paper is organized as follows: following the introduction in Section 1, Section 2 briefly reviews the literature on green consumer behavior. Section 3 then explains the research design and data collection. The empirical findings are summarized in Sections 4 and 5 concludes with policy implications.

2. Literature review

2.1. Demographics

The segmentation and profiling of green consumers can enable not only businesses, but also environmental organizations and governmental agencies to develop positioning and marketing-mix strategies. Varied geographic, socio-demographic and personality characteristics are employed, with the key profiling variables being socio-demographic (McDonald and Dunbar, 2004). Diamantopoulos et al. (2003) comprehensively reviewed six socio-demographic variables (age, marital status, gender, number of children, education, and social class) and suggested that older and higher educated people are more likely to exhibit recycling behavior. Income is another positive predictor of green purchasing behavior (Kinnear et al., 1974). However, debate continues about the influences of age and income (Gilg et al., 2005). Widegren (1998) indicated that green behavior is almost independent of age. A few studies even found a negative relationship between income and environmental concern/green behavior (Roberts, 1996; Samdahl and Robertson, 1989).

2.2. Knowledge and attitudes

Environmental knowledge has frequently been assumed to be the main motivator of green consumer behavior (Peattie, 2010). The behavioral literature finds a positive relationship between knowledge and behavior (Bartkus et al., 1999; Chan and Yam, 1995; Haron et al., 2005; Hoch and Deighton, 1989; Park et al., 1994). However, findings about the importance of knowledge are inconsistent, and increased environmental knowledge does not necessarily result in more environmentally friendly behaviors (Bartiaux, 2008; Pedersen and Neergaard, 2006). Zsóka (2008) demonstrated that such mixed empirical findings might reveal a more complex relationship between knowledge and behavior. Ecological knowledge may be a mediating variable for attitudes toward green consumption and behavior (Arbuthnot and Lingg, 1975; Cohen, 1973). In general, the foregoing empirical results support the conventional view that knowledge and behavior are positively related (Mostafa, 2007).

Attitudes toward green consumption reflect individual beliefs regarding the consequence of green consumer behavior (Ajzen and Fishbein, 1980). Studies have noted a significant association between attitudes and green consumer behavior (Arslan et al., 2012; Barr et al., 2005; Gadennan et al., 2011; Tanner and Kast, 2003). Attitudes clearly crucially determine pro-environmental behavior, while much of the research on the theory of reasoned action and planned behavior showed a gap between attitudes and behavior (Ozaki, 2011; Pickett-Baker and Ozaki, 2008). Zsóka (2008) suggested that attitudes determine actual behavior only if all influencing factors and conditions are favorable. Gadennan et al. (2011) attributed this gap to the economic cost of green consumer behavior. This is consistent with the research of Kollmuss and Agyeman (2002), who proposed that people favor the least economically costly pro-environmental behavior.

2.3. Internal and external moderators

Many people claim pro-environment attitudes and intentions but fail to act on them because of various internal and external moderators (Rylander and Allen, 2001). In our empirical study, internal moderators mainly consist of environmental concern and perceived consumer effectiveness. Environmental concern denotes the orientation of individuals toward the environment and their level of concern with environmental issues (Kim and Choi, 2005). Individuals who demonstrate strong environmental concern are more likely to undertake waste recycling and green purchasing behavior (Barr, 2003; Lin and Huang, 2012). However, reviews of the literature on the relationship between concern and behavior all agree that this relationship is low to moderate (Mostafa, 2007). Straughan and Roberts (1999) found environmental concern explained only 1.1% of the variance in behavior.

Similar to the concepts of self-efficacy (Bandura, 1986) and locus of control (Kollmuss and Agyeman, 2002), perceived consumer effectiveness (PCE) measures the subject's judgment of the influence of individual consumers on environmental problems (Antil, 1984). Findings are fairly conclusive that high PCE results in greater levels of green consumerism (Roberts, 1996; Straughan and Roberts, 1999).

Green consumption research focuses on the nature of consumers and their actions as individuals (Peattie, 2010). However, external moderators may also influence behavior. Kollmuss and Agyeman (2002) highlighted that pro-environmental behavior is more likely to occur if governments and corporations promote a sustainable lifestyle. Bonini and Oppenheim (2008) suggested that low availability of green products may impede green consumer behavior. Besides government promotion and commodity availability, situational factors also contribute to explaining pro-environmental behavior. Hines et al. (1986) identified situational factors as economic constraints, social pressures and the choice of available actions. Bartelings and Sterner (1999) demonstrated that economic factors strongly influence people's decisions and behavior.

3. Method

3.1. Research hypotheses and model

Although green consumption is subtly intertwined with social and economic factors (Peattie, 2010), here we assume that it is only tied to environmental issues. Inspired by the work of Zhang et al. (2007) and Liu et al. (2009b), we divide green consumer behavior into three forms according to stage of the consumption process, namely purchasing, using and recycling. The framework (Fig. 1)

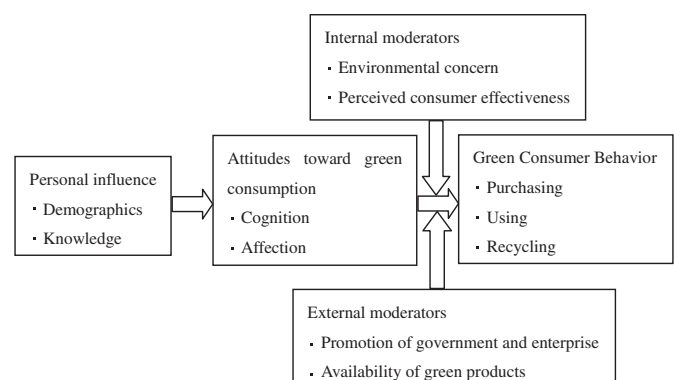


Fig. 1. The proposed model.

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