



Motivating sustainable consumption among Chinese adolescents: An empirical examination



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ABSTRACT

Sustainable consumption (SC) is key for sustainable development, but only limited studies have examined how to motivate SC among consumers in developing countries. Younger consumers tend to more sustainable consumption while whether they really understand the SC concept is not clear. To explore the role of SC understanding for motivating SC behaviors, this paper develops a concept model with hypotheses to propose that SC understanding mediates relationships between influencing factors and SC behaviors. Based on 623 usable questionnaires collected from junior high schools and senior high schools in three eastern cities of China, five influencing factors for SC behaviors are identified, they are, education, awareness & attitude, social influence, effectiveness of energy saving and emission reduction for sustainable products, and differentiation of sustainable products from regular products. Statistic results through hierarchical regression analysis demonstrate that SC understanding is necessary to motivate SC behaviors with certain influencing factors. Chinese adolescents can understand the SC concept through education and then purchase sustainable products. Only if sustainable products can show benefits of energy saving and emission reduction, Chinese adolescent would like to use these products. Environmental awareness and attitude can bring environmental treatment and disposal of products, but SC understanding is necessary. This paper contributes to extend the TPB to develop a conceptual model including education as one influencing factor for SC behaviors. It also develops three factors for SC behaviors from the product life cycle perspective. Besides, it also contributes to extend the previous studies about motivation of SC consumption to adolescents in an emergent economy of China to examine the role of SC understanding. Statistic results reveal the low implementation level of SC behaviors, and the government should highlight sustainable education to improve sustainable awareness and SC understanding. It is also shown that adolescents would like to purchase sustainable products if environmental performance of such products can be demonstrated, which also provide insights for enterprises to achieve win-win opportunities.

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1. Introduction

Due to resource scarcity and environmental issues, sustainable production and consumption has gained increasing attention all over the world (Corral, 2003; Eleftheriou and Iyanna, 2016; Narayanaswamy and Stone, 2007; Vinkhuyzen and Karlsson-Vinkhuyzen, 2014). Both scholars and practitioners focused on sustainable production (Corral, 2003). In recent years, it has been

found that consumers' willingness to engagement is the key to develop a sustainable production and consumption system (Peattie, 2010), and thus studies have evolved from focus on sustainable production to sustainable consumption (SC) (Clark, 2007; Narayanaswamy and Stone, 2007). Many studies have examined how to effectively motivate SC among consumers. Social pressures drive sustainable food consumption among Italian consumers (Vassallo et al., 2016) while personal values motivate sustainable fashion consumption in England (Lundblad and Davies, 2016). Tailored service is found to be needed to enhance sustainable household consumption in Finland (Salo et al., 2016). Results based on surveys show that SC practices by French is less affected by social norms than those by Slovenian (Culiberg and Elgaied-

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Gambier, 2016). Most previous studies on SC were about developed countries (OECD, 2002). Studies for emergent countries such as China have gained an increasing attention in recent years. Results about surveys in Qingdao show that environmental attitudes are the most significant influencing factor for consumers to purchase sustainable products (Zhao et al., 2014). Surveys among residents in a Chinese city, Hangzhou, demonstrate that emotions such as pride, guilt, respect, and anger have effect on consumers' intention of sustainable consumption choice of household appliances (Wang and Wu, 2016).

Compared to those about developed countries, SC studies about developing countries are still limited. China is an emergent developing country with the largest population. Thus, SC is extremely important for China while experiences in China can also be learned by other developing countries. Moreover, most SC studies target adult consumers in cities (Liu et al., 2012; Lundblad and Davies, 2016). However, young people are more inclined to socially responsible consumption (Gandhi and Kaushik, 2016). Environmental education among children is important and should be a method to motivate SC behaviors (Ollerer, 2015). Besides, SC behaviors among household members can be affected each other (Scott et al., 2015; Zhu et al., 2013). Thus, SC behaviors by adolescents can be supposed to affect families. Therefore, understanding SC behaviors as well as influencing factors and mechanisms among young consumers are needed (Hume, 2010). However, SC studies on adolescents are limited. Surveys among young consumers in Belgium show that sustainable dairy consumption is jointly motivated by personal attitudes as well as perceived social influences, consumer effectiveness and availability (Vermeir and Verbeke, 2008). Social and emotional values are found to be positively related to young adults' green purchasing intentions in Chinese cities (Awuni and Du, 2016).

With many studies on SC and a few studies focus on adolescents, it is still under explored whether adolescents really understand the meaning of SC and how such understanding affects motivation of SC behaviors. This paper aims to examine the understanding level of SC as well as its role for motivating SC behaviors among adolescents. This paper contributes to develop a conceptual model to propose mediation effect of SC understanding on the relationship between influencing factors and SC behaviors. Results of statistical analysis based on 623 usable questionnaires reveal a low understanding level of the SC concept while it is also shown that SC understanding is important to stimulate SC practices among Chinese adolescents.

To achieve these research objectives, Section 2 develops a conceptual model as well as hypotheses based on theoretical examination and literature review. Section 3 presents items development, data collection and factor analysis. Results and discussion are introduced based on statistic analysis in Section 4 followed by implications in Section 5. In Section 6, conclusions are presented, followed by future research directions.

2. A conceptual model and hypotheses development

Based on Theory of planned behavior (TPB), Section 2.1 extends to develop a conceptual model as well as five influencing factors for motivating SC behaviors. Section 2.2 develops three factors for SC behaviors from the product life cycle perspective, and then it proposes one hypothesis that presumes the positive effect of influencing factors on SC behaviors according to the previous studies. Section 2.3 further develops three hypotheses considering the mediation effect of SC understanding.

2.1. A concept model

TPB indicates that consumers' behaviors are determined by

influencing factors of environmental attitude, subjective norm and perceived behavior control (Ajzen, 1985). Thus, sustainable awareness and attitude is included as an influencing factor. Subjective norm comes from social influence. Thus, we include one influencing factor considering effect from families, classmates, the public and the government. Perceived behavior control for SC behaviors can include those for environmental performance and use by consumers themselves. Thus, we include two influencing factors, effectiveness of energy saving and emissions reduction for sustainable products, and differentiation of sustainable products from regular products.

However, Mullan et al. (2013) demonstrated that a large proportion of variance is not revealed by the TPB model. Other factors such as environmental knowledge can be important (Ben and Potter, 2007). Limited knowledge about sustainable development is the first barrier for stakeholders such as the public to be involved in the development of a sustainable society (Leal et al., 2016). Consumers may not understand the SC concept, and as a result they are not clear how SC can benefit the environment. Thus, we extend the TPB model to include education as the first influence factor while understanding is proposed as a mediator.

Fig. 1 shows a conceptual model which will be used to examine the mediation role of SC understanding for motivating SC behaviors under five influencing factors among Chinese adolescents. Younger people may be more proactive for SC practices (Gandhi and Kaushik, 2016). Our samples will cover students from both junior and senior schools. Thus, we consider age as a control variable.

2.2. A hypothesis for SC behaviors and influencing factors

SC has been promoted to reduce environmental impact of products through their life cycles (De Camillis and Goralczyk, 2013; Hertwich and Peters, 2006). As a result, this study defines SC for adolescents as behaviors from the product life cycle perspective. Thus, SC behaviors include three factors related to purchasing, use and treatment & disposal of products.

Education is necessary for people to know responsibility for sustainability (Manoliadis, 2009), and education is the first factor which can motivate SC behaviors (Jung and Jin, 2016). Both sustainable awareness and attitude affect SC behaviors (Annunziata and Scarpato, 2014). Sustainability awareness together with values can bring SC practices (Shadymanova et al., 2014) while personal attitude is one of key factors to motivate SC behaviors (Vermeir and Verbeke, 2008).

Related people such as families and friends can affect SC behaviors (Culiberg and Elgaied-Gambier, 2016). Besides, efforts by the government and non-governmental organizations can also play the role to motivate SC behaviors among Chinese young consumers (Awuni and Du, 2016). Consumers' product knowledge significantly affects SC intention of sustainable apparel (Kang et al., 2013). People, even in developed countries, implement SC practices not only because of ecological advantages of products, but also because of perceived personal benefits (Marchand and Walker, 2008). Performance, compatibility are two necessary factors for green products to be accepted by consumers (Ahn et al., 2016).

Based on discussion above, the first hypothesis is developed.

Hypothesis 1. *Influencing factors can be positively associated with SC behaviors.*

2.3. Hypotheses development on the role of SC understanding

A mediator is a variable that is necessary for the relationship between a dependent factor and an independent factor. All influencing factors in Fig. 1 have been demonstrated to bring SC

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