



# Investigation and recommendations on the promotion of sustainable consumption behavior among young consumers in Thailand



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## ABSTRACT

This study investigated sustainable consumption behavior (SCB) and its determinants among undergraduate youths in Thailand using the theory of planned behavior (TPB) as a theoretical framework. A multistage sampling technique was used to select 1,000 university students in Thailand. Data were collected using a self-administered questionnaire. Descriptive statistics and multiple regression analysis at the .05 level of statistical significance were used to analyze the data. The results showed that all three independent variables derived from TPB (Attitude toward the behavior, Subjective norm, and Perceived behavioral control) can co-predict the intention to perform SCB at 31.1 percent and sustainable consumption behavior at 22.3 percent. For intention, Perceived behavioral control had the most influence ( $\beta = .382$ ), followed by Attitude toward the behavior ( $\beta = .302$ ), and Subjective norm ( $\beta = .228$ ), respectively. For sustainable consumption behavior, Perceived behavioral control also had the most influence ( $\beta = .389$ ), followed by Attitude toward the behavior ( $\beta = .215$ ), and Subjective norm ( $\beta = .133$ ), respectively. The findings strongly suggested that these three independent variables should be considered in planning social marketing communication campaigns to increase effectiveness. "3-Alteration strategies" are described and recommended and a logic model is proposed for the promotion of sustainable consumption behavior among young consumers in Thailand for sustained success.

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## Introduction

At the 1992 United Nations Conference on the Environment and Development (Earth Summit) in Rio de Janeiro, Brazil, the Agenda 21 action plan was adopted. This Agenda recognized that the major causes of deterioration of the global environment and natural resources are the unsustainable pattern of consumption and production, excess demands, and luxurious lifestyles (Blanc, 2010). In order to achieve the goals set forth in Agenda 21, it is necessary to have efficiency in the production system and to change

consumption patterns. Governments should promote effective production schemes and reduce consumption while also encouraging the implementation of policies influencing altered production levels and consumption patterns toward sustainability.

Subsequently, in 2002, the Johannesburg Summit in South Africa formulated concrete operational plans to develop a mechanism accelerating the implementation of the Agenda 21 plan in order to reduce the gap between production and consumption in the world community, as well as to accelerate sustainable production and consumption at the international level, regional level, and the national level (Carrigan, Moraes, & Leek, 2011). These operational plans cover the formulation of policies

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promoting environmentally sound production and consumption with consideration of pollution prevention, reduction of environmental impacts in the full life cycle, conservation of natural resources, and alteration of production and consumption patterns toward sustainability of the global population (Thailand Environment Institute Foundation, 2016).

Sustainable consumption in the Thai context is based on the application of the Sustainable Development principle through the Self Sufficiency Economy philosophy (Chansarn, 2013). Importance is placed on sustainable consumption in the government sector, manufacturing and service sector, media sector, and the general public by using policies, measures, and mechanisms promoting sustainable consumption in every sector through a participatory approach and transparency. The manufacturing and service sector should be efficient in raw material and energy consumption as well as implanting serious, ethical plans for pollution prevention including social-consumer responsibility. The media sector should conduct public relation activities which create awareness on sufficient consumption while the general public should try to change, learn, and develop the values for self-satisfaction.

The general public should take into account natural resource usage for today and in the future through applying diligence and care in the assessment and analysis of each situation in order to identify their limitations and select the consumption pattern that generates a balance between self-sufficiency and the limited resources. The general public should share resources in society with consideration of the ecological system. However, the majority of Thais lack knowledge, understanding, and awareness of sustainable consumption due to globalization and the media which focus on consumerism (Thailand Environment Institute Foundation, 2016).

In order to shift the paradigm of the country to be in accordance with the sustainable development trend in an international context and to reduce the impacts of current consumerism on Thailand's consumption pattern, the Office of the National Economic and Social Development Board (NESDB), an authority responsible for the formulation of the development strategies, has developed the National Sustainable Consumption Strategies and has promoted sustainable consumption patterns among the Thai population emphasizing consumer's participation in environmental management and increasing the consumption of green products.

In Thailand, sustainable consumption behavior (SCB) was defined by NESDB as the consumption which responds to basic needs and bring a better quality of life with the consideration of the carrying capacity of the ecological system, creating a balance between the happiness of being self-sufficient and sharing with others, and continuously preserving the resource base for the production and consumption activities of future generations. Strategies of NESDB are based on three principles: change in consumption patterns toward moderation and sufficiency; promotion of the establishment of socially responsible marketing; and promotion of effective production and recycling of resources (Thailand Environment Institute Foundation, 2016).

As mentioned above, one important strategy for changing consumption patterns among the Thai population is using a social marketing communication campaign to promote SCB among Thai youths (aged 15–24 years), especially among university students because university students in deciding which products and services they will adopt, tend to have more freedom than any other youth group, and in particular school students, who often are influenced by their parents. Furthermore, university students are preparing to enter adulthood and become potential consumers in the near future. As a result, university students should be considered as a suitable target population for the promotion of SCB.

However, a problem in Thailand in tackling this situation is the lack of studies on SCB among Thai youths. Therefore, investigating sustainable consumption behavior among university students and developing recommendations for promoting this behavior are urgently needed in Thailand. Hence, the author was very interested in studying this issue for creating knowledge on SCB among Thai youths, as this will be beneficial both for Thailand and for other related international organizations to promote sustainable consumption behavior.

### Research Questions

1. What level of sustainable consumption behavior is there among young consumers in Thailand?
2. What determinants affect sustainable consumption behavior among young consumers in Thailand?
3. What recommendations are applicable for promoting sustainable consumption behavior among young consumers in Thailand?

### Literature Review

In this research, sustainable consumption behavior (SCB) was defined by NESDB as the consumption which responds to basic needs and brings a better quality of life with the consideration of carrying capacity of the ecological system, creating a balance between the happiness of being self-sufficient and sharing with others, and continuously preserving the resource base for the production and consumption activities of future generations.

In reviewing the literature on the determinants of SCB, the author found that all related studies suggested that the variables applicable in the theory of reasoned action and the theory of planned behavior are interestingly able to be good determinants for sustainable consumption behavior (Luchs & Mooradian, 2012; McCabe, Corona, & Weaver, 2013; Scholl, Rubik, Kalimo, Biedenkopf, & Soebech, 2010; Staniskis, Arbaciauskas, & Varzinskas, 2012; Thøgersen & Schrader, 2012). The theory of planned behavior presents frameworks to explain and discover what factors affect actual behavior. It was developed from the theory of reasoned action by Fishbein and Ajzen (1975). According to the theory of reasoned action, attitude toward the behavior along with the subjective norm (his or her beliefs about what significant others think the person should do and how important their opinions are to him or her) form the

individual's intention to engage in a certain behavior and then this intention tends to perform the behavior.

The merit of this theory is that it takes into account the influence other people have over someone's behavior. However, the theory of planned behavior was developed by Ajzen (1988). He takes the theory of reasoned action one step further by adding the construct of perceived behavioral control as another factor affecting intention and actual behavior. According to the theory of planned behavior, perceived behavioral control is considered to be the results of past experience and anticipated problems that determine the person's perceived ease or difficulty of performing behavior. As a result, this further model is very useful in explaining many types of behavior or situations in which the person often finds it difficult to control the behavior voluntarily such as tobacco use, alcohol use, drug use, sexual-risk behavior, inappropriate dietary behavior, physical inactivity, and sustainable consumption behavior as shown in Figure 1.

Therefore, this study aimed to investigate sustainable consumption behavior and its determinants among undergraduate youths in Thailand through theory of planned behavior as a theoretical framework. However, in this study, the author selected Attitude toward the behavior, Subjective norm from friends, and Perceived behavioral control as independent variables while the author selected Intention and Sustainable consumption behavior (actual behavior) as dependent variables as shown in the conceptual framework in Figure 2. Therefore, the research hypotheses are:

- (I) Attitude toward the behavior, Subjective norm from friends, and Perceived behavioral control can co-predict Intention to perform sustainable consumption behavior.
- (II) Attitude toward the behavior, Subjective norm from friends, and Perceived behavioral control can co-predict Sustainable consumption behavior (actual behavior).

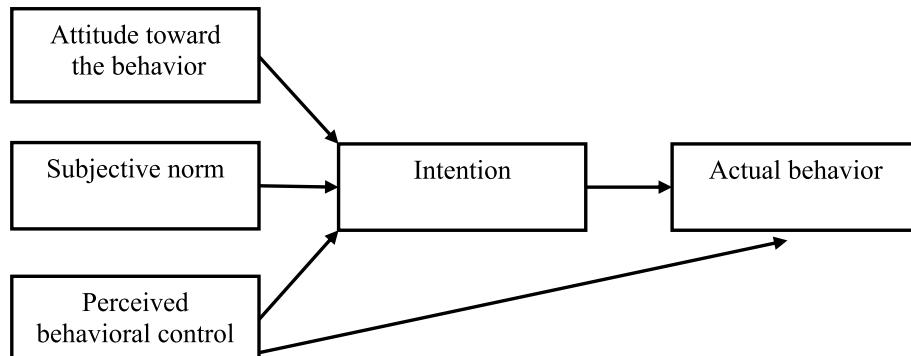
## Materials and Method

A cross-sectional survey was undertaken from August to December 2015 (first semester of 2015 academic year) to

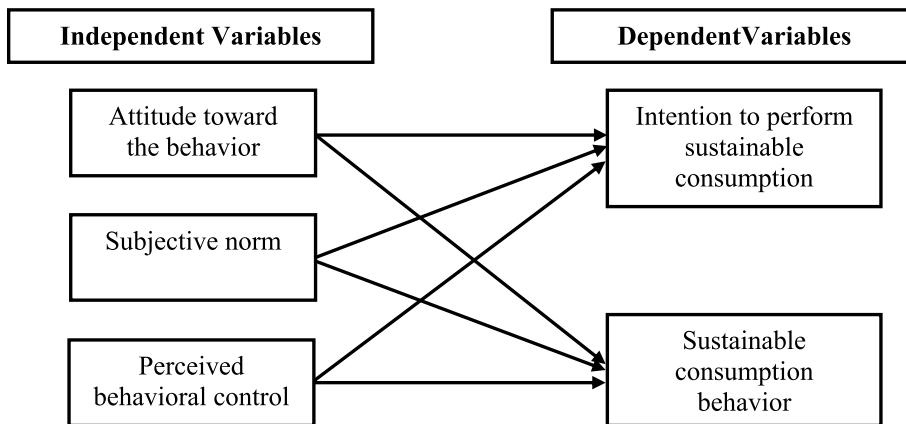
investigate SCB and its determinants among Thai university students. The proposal was reviewed and approved by the research committee in the Department of Communication Arts and Information Science, Faculty of Humanities, Kasetsart University (No. 0513/10503/088). The self-reporting questionnaires were collected from 1,000 undergraduate students in Thailand using a multistage sampling technique.

First, stratified random sampling by area was used in selecting five districts in Thailand—North, South, Northeast, Centre, and Bangkok (200 samples per area). Second, simple random sampling was used to select two universities in each area (100 samples per university). With the simple random sampling, each university had an equal chance of inclusion in the sample. Third, simple random sampling was also used to select two faculties in each university (50 samples per faculty). Fourth, one or two classes in each faculty were selected using simple random sampling, and later all students in each class received an explanation of the details of the study and were invited to participate. The students were asked to complete the questionnaire after they were informed that their participation was voluntary, that their responses were anonymous and confidential, and that results would be reported only in a group format. All participants signed informed consent forms that were then separated from their questionnaires to maintain confidentiality.

There were three independent variables in this study: 1) Attitude toward the behavior, 2) Subjective norm from friend, and 3) Perceived behavioral control. Attitude toward the behavior was measured using a 5-point semantic differential scale for nine items. Subjective norm and Perceived behavioral control were also measured using a 5-point Likert scale with nine items per variable, ranging from "strongly disagree" (1), "disagree" (2), "neutral" (3), "agree" (4) to "strongly agree" (5). They were adapted from past studies (Ferdous, 2010; Heiskanen & Pantzar, 1997; Hobson, 2004; Jones, Hillier, & Comfort, 2011; Tanner & Kast, 2003). There were two dependent variables in this study: 1) Intention to perform sustainable consumption behavior and 2) Sustainable consumption behavior (actual behavior). Intention to perform sustainable consumption behavior was also measured using a 5-point Likert scale with 24 items, using an intention level ranging from "very



**Figure 1** Theory of planned behavior  
Source: Ajzen (1988)



**Figure 2** Conceptual framework

little" (1), "little" (2), "medium" (3), "much" (4) to "very much" (5). Sustainable consumption behavior was also measured using a 5-point Likert scale with 24 items, showing the frequency of performing sustainable consumption behavior ranging from "never" (1), "rarely" (2), "sometimes" (3), "usually" (4) to "always" (5). Like the independent variables, the dependent variables were measured by adapting past studies (Luchs & Mooradian, 2012; McCabe et al., 2013; Pape, Rau, Fahy, & Davies, 2011; Tanner & Kast, 2003; Wang, Liu, & Qi, 2014; Wolff & Schönherr, 2011; Zhao & Schroeder, 2010). Operational definition of all variables and their measurement is shown in Table 1. A pretest was conducted with 50 university students in Bangkok.

The reliability analysis using Cronbach's alpha evaluated the internal consistency of the summed scale. The internal consistency among all five variables was tested. The results showed that their alpha levels ranged from .78 to .92 (Attitude toward the behavior, .92; Subjective norm, .89; Perceived behavioral control, .87; Intention to perform sustainable consumption behavior, .88; and Sustainable

consumption behavior, .78). Scores within this range (more than .7) are considered as an adequate indication of internal consistency of the data (Cottrell & McKenzie, 2005). For statistical analyses, the mean, standard deviation, and percentage were used in describing characteristics of the study sample, and multiple regression analysis (MRA) was used in examining the influences of independent variables on Intention to perform sustainable consumption behavior and Sustainable consumption behavior among university students at the .05 level of significance.

## Results and Discussion

In this section, the results are presented in four parts: 1) the characteristics of the study sample, 2) descriptions of the studied variables, 3) determinants of Intention to perform sustainable consumption behavior among university students in Thailand, and 4) determinants of Sustainable consumption behavior among university students in Thailand.

**Table 1**  
Operational definition of variables and their measurement

Variable	Operational definition	Measurement
1. Attitude toward the behavior	An individual's positive or negative evaluation of self-performance of sustainable consumption behavior	5-point semantic differential scale with 9 items
2. Subjective norm from friends	Beliefs about what his or her friends think the person should perform regarding sustainable consumption behavior and how important their opinions are to his or her sustainable consumption behavior	5-point Likert scale with 9 items <sup>a</sup>
3. Perceived behavioral control	The person's perceived ease or difficulty to perform sustainable consumption behavior	5-point Likert scale with 9 items <sup>a</sup>
4. Intention to perform sustainable consumption behavior	The person's statement of intent with the probability he or she will undertake sustainable consumption behavior	5-point Likert scale with 24 items <sup>b</sup>
5. Sustainable consumption behavior	The consumption behavior which responds to basic needs and brings a better quality of life with the consideration of carrying capacity of the ecological system, creating the balance between the happiness of being self-sufficient and sharing with others, and continuously preserving the resource base for the production and consumption activities of future generations. In conclusion, it is the consumption behavior which creates a state of equilibrium among the economic, societal, and environmental dimensions.	5-point Likert scale with 24 items <sup>c</sup>

<sup>a</sup> "Strongly disagree" (1), "disagree" (2), "neutral" (3), "agree" (4), and "strongly agree" (5)

<sup>b</sup> "Very little" (1), "little" (2), "medium" (3), "much" (4), and "very much" (5).

<sup>c</sup> "Never" (1), "rarely" (2), "sometimes" (3), "usually" (4), and "always" (5)

### Characteristics of the Study Sample

The sample consisted of 1,000 undergraduate students, aged 18–24 years from five districts in Thailand (North, South, Northeast, Center, and Bangkok). Most of the students were female (60.2%). The average age was 19.89 years, ( $SD = 1.47$ ). The average income per month was THB 7,763.48 ( $SD = 9,369.14$ ) and they were mostly studying in their first year (37.8%), followed by third year (26.4%), second year (20.0%), and fourth year (15.8%).

### Descriptions of the Studied Variables

The author used descriptive statistics in the analysis consisting of the mean and standard deviation ( $SD$ ) to describe the studied variables. For the independent variables, the mean of Attitude toward the behavior was 4.18 ( $SD = 0.63$ ). The mean of the Subjective norm was 3.49 ( $SD = 0.66$ ), and the mean of Perceived behavioral control was 3.81 ( $SD = 0.55$ ). For the dependent variables, the mean of Intention to perform sustainable consumption behavior was 4.09 ( $SD = 0.46$ ) and the mean of Sustainable consumption behavior was 3.80 ( $SD = 0.38$ ) as shown in Table 2.

### Determinants of Intention to perform sustainable consumption behavior among university students in Thailand

Before this analysis was undertaken, checking was performed for multicollinearity by considering all correlations among the independent variables, VIF (variance inflation factor), and tolerance (1/VIF). The results showed that all the correlations in this study were less than .6, all VIF values were not greater than 10, and all tolerance values were not lower than 0.1 as shown in Table 3. These results were considered acceptable and did not support multicollinearity (Hair, Anderson, Tatham, & Black, 1992).

Therefore, multiple regression analysis was performed in which all three independent variables were entered simultaneously to calculate the overall level of variance accounted for by the Intention to perform sustainable consumption behavior among university students. The results, standardized regression coefficients ( $\beta$ ),  $t$ -statistic, and the overall  $R^2$  for this analysis, indicated that all three independent variables affected the Intention to perform sustainable consumption behavior significantly as shown in Table 4. From Table 4, Attitude toward the behavior, Subjective norm, and Perceived behavioral control can co-predict intention to perform SCB at 31.1 percent (adjusted  $R^2 = 0.311$ ). Therefore, hypothesis (I) was accepted. In

**Table 2**  
Mean and standard deviation among the studied variables

Variable	$\bar{X}^a$	SD
Attitude toward the behavior	4.18	0.63
Subjective norm	3.49	0.66
Perceived behavioral control	3.81	0.55
Intention to perform sustainable consumption behavior	4.09	0.46
Sustainable consumption behavior	3.80	0.38

<sup>a</sup> 5-point scale

**Table 3**  
Correlation matrix among independent variables  
( $n = 1,000$ )

variables	Correlation Coefficient		
	Attitude toward the behavior	Subjective norm	Perceived behavioral control
Attitude toward the behavior	1.00		
Subjective norm	.21**	1.00	
Perceived behavioral control	.33**	.44**	1.00
<b>VIF</b>	1.126	1.247	1.338
<b>Tolerance</b>	0.888	0.802	0.748

\*\* $p < .01$

**Table 4**  
Multiple regression analysis of intention to perform sustainable consumption behavior among university students in Thailand  
( $n = 1,000$ )

Independent Variable	$\beta$	$t$
1. Attitude toward the behavior	.302	10.822**
2. Subjective norm (friend)	.228	7.981**
3. Perceived behavioral control	.382	12.582**

Overall  $R^2 = 0.313$ , (Adjusted  $R^2 = 0.311$ ),  $F = 151.43$ ,  $p < .01$

detail, Perceived behavioral control had the most influence ( $\beta = .382$ ), followed by Attitude toward the behavior ( $\beta = .302$ ), and Subjective norm ( $\beta = .228$ ), respectively.

### Determinants of Sustainable Consumption Behavior Among University Students in Thailand

Before undertaking this analysis, checking for multicollinearity was performed by considering all correlations among the independent variables, VIF and tolerance. The results showed that all correlations in this study were less than .6, all VIF values were not greater than 10, and all tolerance values were not lower than 0.1 as shown in Table 3. These results were considered acceptable and did not support multicollinearity (Hair et al., 1992).

Therefore, multiple regression analysis was performed in which all three independent variables were entered simultaneously to calculate the overall level of variance accounted for by Sustainable consumption behavior among university students. The standardized regression coefficients ( $\beta$ ),  $t$ -statistic, and the overall  $R^2$  for this analysis indicated that all three independent variables affected Sustainable consumption behavior significantly as shown in Table 5. From Table 5, Attitude toward the behavior, Subjective norm, and Perceived behavioral control can co-predict sustainable consumption behavior at 22.3 percent (adjusted  $R^2 = 0.223$ ). Therefore, hypothesis (II) was accepted. In detail, Perceived behavioral control had the most influence ( $\beta = .389$ ), followed by Attitude toward the behavior ( $\beta = .215$ ) and Subjective norm ( $\beta = .133$ ), respectively.

The results of investigating SCB among undergraduate youths in Thailand showed that these young consumers still exhibit Sustainable consumption behavior at the high

**Table 5**

Multiple regression analysis of sustainable consumption behavior among university students in Thailand

Independent Variable	$\beta$	<i>t</i>
		(n = 1,000)
1. Attitude toward the behavior	.215	6.852**
2. Subjective norm (friend)	.133	4.487**
3. Perceived behavioral control	.389	12.017**

Overall  $R^2 = 0.225$ , (Adjusted  $R^2 = 0.223$ ),  $F = 96.63$ ,  $p < .01$

level (mean = 3.80, SD = 0.38) because mean the score of sustainable consumption behavior is still in the high range (3.51–4.50) from the 5-point scale. Therefore, this is good news for Thailand to have university students being green consumers at the high level.

Nevertheless, Thailand should have more concrete plans to promote SCB among young consumers continuously. A study by Thailand Environment Institute Foundation (2016) reported that the government still lacks clear and continuous policies, public infrastructure, and mechanisms to create knowledge and awareness of sustainable consumption. For example, there was no curriculum promoting sustainable consumption in the educational system. Moreover, it was found that there was no operational guideline to create such a culture at the household, the

educational institution, and the corporate levels. The community has a lack of strength in the promotion and conservation of a lifestyle with a sustainable consumption pattern at the local level. There was no network and core agency at the local level to conserve a sustainable consumption pattern and to create unity at the community level.

Furthermore, threats to sustainable consumption in Thailand are growing such as the deterioration of natural resources resulting from the overall picture of world consumption, the impact of capitalism which drives the economic system and market mechanism under globalization at the international level, and enforcement of rules, regulations, and international standards through trade and the environment in the international context affecting the effort of the country to adjust with production technology and productivity. Therefore, Thailand should take action on this issue urgently and more strongly for sustained success.

The multiple regression analysis on the determinants of SCB among undergraduate youths in Thailand through TPB found that all of three independent variables (Attitude toward the behavior, Subjective norm, and Perceived behavioral control) can significantly affect the Intention to perform sustainable consumption behavior and Sustainable consumption behavior (actual behavior) among

**Table 6**

"3-Alteration strategies" for promoting sustainable consumption behavior (SCB) among young consumers in Thailand

Determinants of SCB	"3-Alteration Strategies" for Promoting SCB
1. Attitude toward the behavior	<ul style="list-style-type: none"> <li>- Specify perceived severity and describe negative consequences of unsustainable consumption</li> <li>- Reinforce green message overtime, using various media, especially online media which are popular among young consumers</li> <li>- Present the facts about situations of sustainable consumption among youth continuously</li> <li>- Inform benefits of sustainable consumption on youths, their family, their university/college, their community, and their country.</li> <li>- Use appropriate communication channels for university students, such as entertainment, extra-curricular activities, and outdoor activities, as an appropriate vehicle for education</li> <li>- Use a celebrity endorser strategy in communication campaigns</li> <li>- Provide knowledge about environmental problems</li> <li>- Develop and enforce green policies and regulations in universities</li> <li>- Create green activities in universities</li> <li>- Use both rational appeal and emotional appeal to promote sustainable consumption in communication campaigns in universities</li> </ul>
2. Subjective norm	<ul style="list-style-type: none"> <li>- Foster peer-to-peer communication to change social norms about sustainable consumption behavior</li> <li>- Provide peer education programs about unsustainable consumption harm, particularly in groups of students who share an affiliation (e.g. members of athletic team, fraternity house, or dormitory members)</li> <li>- Train student leaders to be aware the problems of unsustainable consumption and to serve as role models for other students</li> <li>- Foster university student networks with green students</li> <li>- Encourage student leaders to serve as role models for their teams</li> <li>- Train student leaders to be aware the problems of unsustainable consumption</li> <li>- Provide student leaders with education programs about unsustainable consumption</li> <li>- Address green rules in student dormitories</li> <li>- Train senior students to be green consumers and to serve as role models for younger students</li> </ul>
3. Perceived behavioral control	<ul style="list-style-type: none"> <li>- Provide training and guidance in sustainable consumption skills</li> <li>- Offer and promote extra curriculum activities, public services options, and other special events (e.g. freshmen orientation and green awareness weeks)</li> <li>- Create a social environment that supports green-promoting norms</li> <li>- Increase beliefs in self-efficacy</li> <li>- Promote green campaign through various media in universities</li> <li>- Coordinate with the communities around universities to promote a green environment among university students</li> <li>- Provide curriculum infusion where faculties and lecturers can introduce sustainable consumption issues into their regular academic courses</li> <li>- Train and ask for participation from the owners of dormitories around universities to provide a green-promoting environment</li> </ul>

undergraduate youths in Thailand. This supported the TPB by Ajzen (1988) and affirmed that intention and actual behavior resulted from the three components.

The results of both intention and actual behavior found that Perceived behavioral control had the most influence, followed by Attitude toward the behavior, and Subjective norm. This was also consistent with TPB, emphasizing the importance of the construct of perceived behavioral control as another factor affecting intention and actual behavior. According to the theory of planned behavior, Perceived behavioral control is considered to be the results of past experience and anticipated problems that determine the person's perceived ease or difficulty of performing behavior. As a result, this model is very useful in explaining sustainable consumption behavior.

## Conclusion and Recommendations

This study investigated SCB and its determinants among undergraduate youths in Thailand using TPB as a theoretical framework. A multistage sampling technique was used to select 1,000 university students in Thailand. Data were collected using a self-administered questionnaire. Descriptive statistics and multiple regression analysis at the .05 level of statistical significance were used in the analysis. The results showed that all three independent variables derived from the Theory of Planned Behavior (Attitude toward the behavior, Subjective norm, and Perceived behavioral control) can co-predict Intention to perform SCB at 31.1 percent and Sustainable consumption behavior at 22.3 percent. For Intention, Perceived behavioral control had the most influence ( $\beta = .382$ ), followed by Attitude toward the behavior ( $\beta = .302$ ), and Subjective norm ( $\beta = .228$ ), respectively. For Sustainable consumption behavior, Perceived behavioral control had the most influence ( $\beta = .389$ ), followed by Attitude toward the behavior ( $\beta = .215$ ), and Subjective norm ( $\beta = .133$ ). The findings suggested that these three independent variables should be considered in planning social marketing communication campaigns to increase effectiveness.

Based on these results, the author would like to introduce and recommend "3-alteration strategies" for promoting SCB among young consumers in Thailand as shown in Table 6. These strategies aim to alter the three determinants of SCB—Attitude toward the behavior, Subjective norm, and Perceived behavioral control. These strategies are also consistent with related literature about changing and promoting SCB among young consumers (Danciu, 2013; Fuchs & Lorek, 2005; Heiskanen & Pantzar, 1997; Hoque, 2014; Kanayo, Nancy, & Jumare, 2012; Minton, Lee, Orth, Kim, & Kahle, 2012; Muster, 2011; Pogut & Micale, 2011; Schrader & Thøgersen, 2011; Seyfang, 2007; Staniskis, 2012; Wolff & Schönher, 2011).

Furthermore, a logic model for action to promote SCB among young consumers in Thailand is presented in Figure 3. From Figure 3, the university (Input) is the starting point of campaigns to promote SCB among university students through the 3-alteration strategies (Process) to change Attitude toward the behavior, Subjective norms, and Perceived Behavioral Control. Later on, university students are exposed to green-promoting

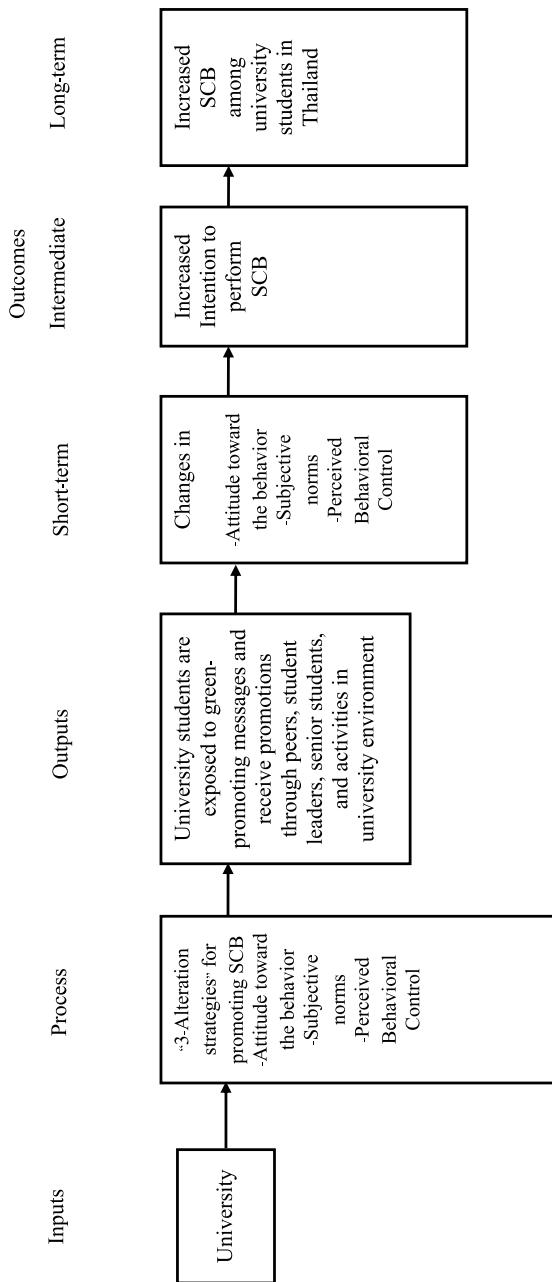


Figure 3 Logic model of "3-alteration strategies" for promoting sustainable consumption behavior (SCB) among university students in Thailand

messages and receive promotion through peers, student leaders, senior students, and activities in the university environment (Output). Outcome in the short term is represented by changes in Attitude toward the behavior, Subjective norms, and Perceived Behavioral Control. After that, outcome in the intermediate term is the increased intention to perform SCB. Lastly, outcome in the long term is the increased SCB among university students in Thailand.

However, there are at least two limitations to note. First, this research was limited by the sampling group being only university students which reduces the generalizability of the findings. Future research may need to be broadened to get a more representative picture of all Thai youths by extending the study to school students. The second limitation is due to the measures being self-reported; the respondents may have over-reported their sustainable consumption behavior, possibly because of shame and guilt. However, the anonymous nature of responses in this study reduces the likelihood of such biased responses. Despite these limitations, the main strength of the present study is that it provides practical implications of the 3-alteration strategies and the logic model showing inputs, process, outputs, and outcomes for promoting sustainable consumption behavior among young consumers, which can be considered as a cutting-edge finding. As a result, this paper has many benefits not only for Thailand but also for other countries to promote sustainable consumption behavior among young consumers for a sustained success. For further research, investigating the effects of the 3-alteration strategies on sustainable consumption behavior among young consumers is needed to extend and strengthen knowledge in this growing field.

## Conflict of interest

There is no conflict of interest.

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