รูปแบบของสิ่งแวดล้อมศึกษาที่มีผลต่อพฤติกรรมการบริโภคสีเขียว
Model of Environmental Education Affecting
Green Consumption Behavior

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Abstract

The objective of this research was to develop the causal relationship model of environmental education affecting green consumption behavior through inspiration of public consciousness. The populations were 18,013 undergraduate students of Ubon Ratchathani Rajabhat University of the first semester of 2013. The Multi-Stage Random Sampling technique was used to collect the sample for 400 undergraduate students. The questionnaire was used as instrument for data collection. Structural Equation model (SEM) was used for model verification. The results revealed that when considering on confirmatory factors of exogenous variable of Environmental Education (EE) was able to explain the variation of endogenous factors of Inspiration of Public Consciousness (IPC) to cause Green Consumption Behavior (GCB) with 98.00 percent. IPC was the most effect with 0.88 and subsequence was EE with the effect of 0.25. Additionally, confirmatory factors Environmental Education (EE) was able to explain the variation of confirmatory factors of Inspiration of Public Consciousness (IPC) with 87.00 percent.

Keywords: model, environmental education, green consumption behavior

บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์ในการวิจัยเพื่อพัฒนารูปแบบความสัมพันธ์เชิงสาเหตุของสิ่งแวดล้อมศึกษาที่มีผลต่อพฤติกรรมการบริโภคสีเขียวผ่านแรงบันดาลใจการมีจิตสำนึกสาธารณะ ประชากรเป็นนักศึกษาระดับปริญญาตรีจำนวน 18,013 คน ของมหาวิทยาลัยราชภัฏมหาวิทยาลัยอุบลราชธานี ในภาคการศึกษาที่ 1 ปีการศึกษา 2556 ใช้เทคนิคการสุ่มหลายขั้นตอน เพื่อเก็บรวบรวมข้อมูลกลุ่มตัวอย่างนักศึกษาจำนวน 400 คนโดยใช้แบบสอบถามเป็นเครื่องมือในการเก็บรวบรวมข้อมูล และใช้ตัวแบบสมการโครงสร้างเพื่อตรวจสอบความตรงของรูปแบบที่นำเสนอว่าสอดคล้องกับข้อมูลเชิงประจักษ์ ผลการวิจัยพบว่าปัจจัยโครงสร้าง (องค์ประกอบ) ของตัวแปรแฝงภายนอก สามารถอธิบายความแปรปรวนของพฤติกรรมการบริโภคสีเขียวผ่านแรงบันดาลใจการมีจิตสำนึกสาธารณะได้ร้อยละ 98.00 แรงบันดาลใจการมีจิตสำนึกสาธารณะมีผลมากที่สุดเท่ากับ0.88 รองลงมาเป็นสิ่งแวดล้อมศึกษามีผลเท่ากับ0.25 นอกจากนี้เป็นสิ่งแวดล้อมศึกษาสามารถอธิบายความแปรปรวนของแรงบันดาลใจการมีจิตสำนึกสาธารณะร้อยละ 87.00

คำสำคัญ: รูปแบบ, สิ่งแวดล้อมศึกษา, พฤติกรรมสีเขียว

Introduction

Environmental education is a learning process that enhances people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action with ultimate goal of behavioral change of global citizen for maintaining the ecological balance and conserving the natural resources and environment for their own generations and future generation with public consciousness (UNESCO, 1978; Thiengkamol, 2011e; Thiengkamol, 2011f). Moreover, environmental education must be implemented through all channels of education process whether in terms of formal education, informal education, non-formal education and lifelong education. Therefore, it is an education of learning management systemically via three patterns and activities that was classified into 3 forms covering (1) to learn in environment with activity management by learning from direct experience in environment (2) to learn about environment with activity management by learning about environment content with different activities and (3) to Learn for Environment with activity arrangements that aimed to real practice and participate in environmental protection and development. There are five essential components of environmental education regarding to (1) raising awareness for environmental problem which is process to assist to perceive, to consider the problem and analyze holistic view approaches of problems and impacts (2) knowledge and understanding the basis of nature and environment with relationship between human and physical environment problems and guidelines of problem solving (3) Attitude as process to help people to be concern with value and intention to participate for environmental maintenance and improvement (4) skill is process to assist for searching problem, monitoring for implementation including help each other to search way

for solving these problems to ether and (5) Participation is a process to assist for effective problem solving. Therefore, this concept is "thinks globally but acts locally since environmental problem is a global problem but it will be solved with individual level or community level but the best way of problem solving is personal or community actions. For instance, learner might think that they are unable to help for ozone depletion but they realize to their empowerment (WCED, 1987; Palmer & Birch, 2003; Lundegard & Wickman, 2007; Volker, 2007; Watkinson, 2009; Thiengkamol, 2011e).

However, environmental education is used more broadly to include all efforts to educate the public and other audiences, including print materials, websites, media campaigns, etc. Related disciplines include outdoor education and experiential education. It is in relation to education for sustainable development referring to a socio-ecological approach to environmental education with environmental issues (Hart, 2003; Summers et al., 2003; Kyburz-Graber, 2006; Smyth, 2006; Thiengkamol, 2011e; Stohr, 2013).

The United Nations General Assembly declared the period from 2005 to 2014 as the United Nations Decade of Education for Sustainable Development and it is the decade of growing concern for future generations. Additionally, it regards to present generation competency to manage the adverse consequences of decades due to unconscious environmental decisions of our ancestor. Therefore, in various curricula should be integrated with environmental education content with focused on sustainable development. The environmental education concept goes along with sustainable development. Sustainable development contains 18 principles which announced since 1992 that was held by United Nation International Conference at Rio de Janeiro in Brazil. However, these principles are highlighted that "In order to attain the sustainable development, environmental protection shall be a vital part of the development

process. Sustainable development and environmental protection cannot be considered separately from each other. In particular, the millennium development goals for sustainability with eradicating poverty and reducing disparities in living standards in differently global regions are essential to accomplish real sustainable development in order to meet the needs of the majority of global people. It was focus on the beliefs of teachers in teaching about sustainable development as fundamental concepts with action competence approach was identified as a strategy that some researchers believe has the greatest impact on students' learning based on the teacher's role as facilitating students' engagement in critical thinking through an action competence approach (Alsop, 2007; Ravindranath, 2007; Lundegard & Wickman, 2007; Summersm, 2003; Hart, 2003; Jensen & Schnack, 1997; Ballantyne et al., 1998; Rauch, 2002; Barrett, 2006).

Sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own need. Sustainable development according to Agenda 21 (UNCED, 1992; Rauch, 2002), it implies a use of resources that does not considerate on the health of human or environmental quality and regardless to risk of future generations' opportunity to meet their own needs. In common, the definition of sustainable development includes social, economic and environmental features (Summers, 2003). The framework for implementing the Decade for Education for Sustainable Development covers four thrusts in Education for Sustainable Development including the first was the promotion and improvement of basic education for encouraging individuals to lead sustainable lives and the second thrust was the reorientation of obtainable education programs with regenerated curriculum by focusing on sustainability. The third thrust was the development of public understanding and awareness of sustainability issues with understanding the crucial society progress towards more sustainable

communities. Lastly, the fourth and final thrust was concerned with public training in all sectors of the workforce with ensuring the workforce had the capability to perform their work in a sustainable manner (UNESCO, 2003).

In Thailand, environmental education was firstly introduced to the graduate level in Mahidol University, Faculty of Humanities and Social Sciences, Department of Education Under the program of environmental education for master of education degree since 1979. However, the environmental education has not recognized widely until the governmental sector, particularly, Department of Environmental Quality Promotion, Ministry of Natural Resources and Environment had paid attention to environmental education by assigning The Social Research Institute of Chulalongkorn University to formulated project of main plan of Environmental Education for Sustainable Development (EESD) B.E. 2551-2555 had the main goals cover (1) work sectors, organizations and different target groups understand and aware to role of environmental education (2) structured institute to support the development of environmental education sustainably (3) collaboration and cooperation among different sectors to support development of environmental education and (4) develop and exchange knowledge, attitude and skill about environmental education inside and outside educational institute continuously, and introduce environmental education to support the policy, strategy, and implementation in the local and national levels (The Social Research Institute, 2008).

Environmental education was perceived as the promotion of "environmentally sound behavior by indoctrination". Education for Sustainable Development refers to all aspects of public awareness, education and training provided to create or enhance an understanding of the linkages among the issues for sustainable development and to develop the knowledge, skills, perspectives and values that will empower people of all

ages to assume responsibility for creating sustainable futures (Ravindranath, 2007). However, sustainable development concept has generally been a recognition of three aspects of sustainable development including (1) an economically sustainable system must be able to produce goods and services on a continuing basis, to maintain manageable levels of government and external debt, and to avoid extreme sectoral imbalances which damage agricultural or industrial production (2) an environmentally sustainable system must maintain a stable resource base, avoiding over-exploitation of renewable resource systems or environmental sink functions, and depleting non-renewable resources only to the extent that investment is made in adequate substitutes. This includes maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources and (3) a socially sustainable system must achieve distributional equity, adequate provision of social services including health and education, gender equity, and political accountability and participation (WCED, 1987).

The environmental education concept refers that people share in narrow band of land, air, and water on the surface of the limited planet. Included in that space are all the resources people will ever have. It is a closed system run by the radiant energy from the sun. The whole populations of living species on the planet Earth which live and consume resources, and die, but humans are unlike any other species, humans have developed an economic system using a technology which has consumed enormous amounts of resources, brought rapid environment changes, and overloaded the environment with waste. Moreover humans have developed the potential to destroy themselves by their decisions and actions to determine the quality of environment. Global peoples have a responsibility to our generation and future generations to preserve a quality of life for a healthful and productive existence for all people. Therefore, it needs essential policy and plan to reach the goals of environmental education that are firstly, to foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas; secondly, to provide every person with opportunities to obtain the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; and thirdly to create new patterns of behavior of individuals, groups and society as a whole toward the environment with public mind and responsibility (UNESCO 1977; Thiengkamol, 2009a; Thiengkamol, 2009b, Thiengkamol, 2009c; Thiengkamol, 2011a; Thiengkamol, 2011e; Thiengkamol, 2011i; Thiengkamol, 2011j; Thiengkamol, 2012a; Thiengkamol, 2012c; Thiengkamol, 2012d; Thiengkamol, 2012h; Thiengkamol, 2012i).

Thiengkamol proposed and proved on inspiration of public consciousness for natural resources and environmental conservations with diverse researches were conducted by herself and her colleagues that inspiration is completely unrelated to motivation because peoples will perform their public consciousness with their desires from their inside to perform for natural resources and environmental conservations. Their inspiration might be taken place from the admiration of good role model of any person, impressive event, impressive environment and various media perception. They do with public consciousness for others without the requisite of rewards, money, nobleness or admiration but they are willing to do with appreciation or impression to do so (Thiengkamol, 2009a; Thiengkamol, 2009b; Thiengkamol, 2011e; Thiengkamol, 2011f) Concurrently, the various researches were implemented by her colleagues, these have also confirmed that inspiration of public consciousness or public mind are essential for environmental conservation in divers target groups about environmental management with integration of environmental education principle (Kyburz-Graber et al., 2003; Donkonchum, et al, 2012a; Donkonchum, &Thiengkamol, 2012; Artwanichakul,

et al., 2012a; Gonggool, et al, 2012b; Jongwutiwes, et al, 2012b; Morrasri, et al, 2012b; Phinnarach, et al., 2012a; Pimdee, et al., 2012a; Ruboon, et al., 2012a; Waewthaisong, et al, 2012a; Mongkonsin, et al, 2013b; Sangsan-anan, et al, 2012a; Tumpracha, et al., 2012b; Udonboon, 2012b).

Nevertheless, in this study, the environmental education affecting to inspiration of public consciousness and green consumption behavior was conducted with undergraduate students of Ubon Ratchathani Rajabhat University in Northeastern region of Thailand. The green consumption behavior was considered on green consumption behavior for food consumption, green energy behavior, green traveling behavior, green knowledge transferring behavior, and green health behavior. However, the environmental education as exogenous variable to cause the green consumption behavior would be include environmental knowledge and understanding, environmental awareness, environmental attitude and environmental participation via inspiration of public consciousness regarding to appreciation of person as role model, impressive event, impressive environment, social expectation , social norm and diverse media receptions (Thiengkamol, 2011e; Thiengkamol, 2011f; Donkonchum et al., 2012a; Pimdee et al., 2012a;Tumpracha et al., 2012b; Phinnarach et al., 2012a; Sangsan-anan et al., 2012a; Kotchakote, 2013a; Petchang et al, 2013a; Saisunantharom et al., 2013a; Suebsing et al., 2013a).

Objective

The objective of research was to develop the causal relationship model of environmental education affecting to green consumption behavior through inspiration of public consciousness.

Conceptual Framework

The EE refers Environmental education, GCB refers Green Consumption Behavior and IPC refers Inspiration of Public Consciousness. The exogenous latent variable of EE was measured by Environmental Knowledge and Understanding (X1), Environmental Awareness (X2), Environmental Attitude (X3), and Environmental Participation (X4). The endogenous latent variable of GCB was measured by Green Consumption Behavior (Y1), Green Energy Utility Behavior (Y2), Green traveling Behavior (Y3), Green Knowledge Transferring Behavior (Y4), and Green Health Behavior (Y5). Moreover, the endogenous latent variable of IPC was measured by Person as Role Model (Y6), Impressive Event (Y7), Impressive Environment (Y8), Social Expectation (Y9), Social Norm (Y10), and Diverse Media Receptions (Y11).
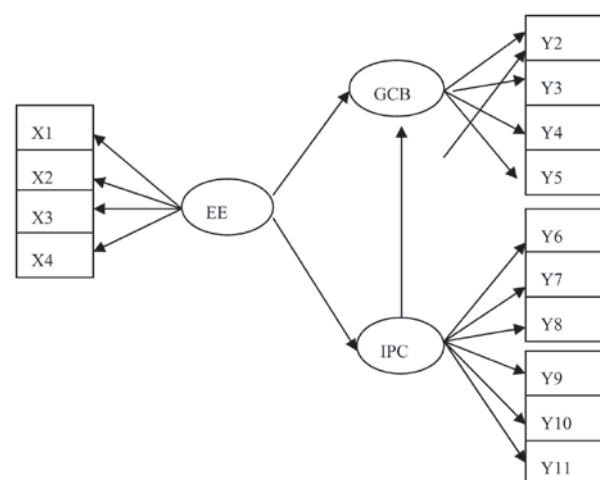
Methodology, Population and Sample

The populations were 18,013 undergraduate students of Ubon Ratchathani Rajabhat University of the first semester of 2013. The Multi-Stage Random Sampling technique was used to collect the sample of 400 undergraduate students from different faculties of Ubon Ratchathani Rajabhat University.

Research Tool

The research tool was the questionnaire with 94 items and it was used for data collection. The content and structural validity were determined by Item Objective Congruent (IOC) with 5 experts in the aspects of green consumption, psychology, social science and social research methodology. The reliability was done by collecting the sample group from 50 undergraduate students of Ubon Ratchathani University which is analogous characteristics to Ubon Ratchathani Rajabhat University. The reliability was determined by Cronbach's Alpha. The reliability of environmental education, inspiration of public consciousness, green consumption behavior the whole questionnaire were 0.967, 0.976, 0.961 and 0.978 respectively.

Data Collection

The questionnaire was used for data collecting from different faculties of Ubon Ratchathani Rajabhat University. during the first semester in academic year 2013.

Statistical Analysis

The descriptive statistics used were frequency, percentage, mean and standard deviation. The inferential statistics used was Structural Equation Model (SEM) and analyzed with LISREL version 8.30 by considering on Chi-Square value differs from zero with no statistical significant at 0.05 level or Chi-Square/df value with less or equal to 5, RMSEA (Root Mean Square Error Approximation) value and RMR (Root Mean Square Residual) with less than 0.05 including index level of model congruent value, GFI (Goodness of Fit Index) and critical number, and index level of model congruent value, AGFI (Adjust Goodness of Fit Index) between 0.90-1.00.

Results

1. Results of Confirmatory factors Analysis of Exogenous Variables

1.1 Confirmatory factors Analysis of Exogenous Variables of Environmental Education (EE)

Confirmatory Factor Analysis of Exogenous Variables of Environmental Education (EE) affecting to Green Consumption Behavior (GCB) was revealed as the followings.

Confirmatory factors of Environmental Education (EE) had Bartlett's test of Sphericity of 1004.583 statistically significant level (p< 0.01) and Kaiser-Mayer-Olkin Measure of Sampling Adequacy/ MSA) of 0.794.

2. Confirmatory Factors Analysis of Endogenous Variables

2.1 Confirmatory Factors Analysis of Endogenous Variables of Inspiration of Public Consciousness (IPC)

Confirmatory Factors Analysis of Endogenous Variables of Inspiration of Inspiration of Public Consciousness (IPC) affecting to Green Consumption Behavior (GCB) was revealed as the followings.

Confirmatory Factors of Inspiration of Consciousness (IPC) had Bartlett's test of Sphericity of 2037.565 statistically significant level (p< 0.01) and Kaiser-Mayer-Olkin Measure of Sampling Adequacy/ MSA) of 0.918.

2.2 Confirmatory Factors Analysis of Endogenous Variables of Green Consumption Behavior

Confirmatory Factors of Green Consumption Behavior (GCB) had Bartlett's test of Sphericity of 1234.515 statistically significant level (p< 0.01) and Kaiser-Mayer-Olkin Measure of Sampling Adequacy/MSA) of 0.875.

3. Results of Effect among Variables in Model in Terms of Direct Effect

3.1 Confirmatory factors of Environmental Education (EE) had direct effect to Inspiration of Public Consciousness (IPC) and Green Consumption Behavior (GCB) with statistically significant at level of 0.01 with effect of 0.82 and 0.25. Moreover, confirmatory factors in aspect of Environmental Education (EE) had indirect and total effects to Green Consumption Behavior (GCB) with statistically significant at level of 0.01 with effect of 0.74 and 0.99.

3.2 Confirmatory factors of Inspiration of Public Consciousness (IPC) had direct effect to Green Consumption Behavior (GCB) with statistically significant at level of 0.01 with effect of 0.90.

3.3 Considering on structural model of confirmatory factors of Environmental Education (EE) was able to explain the variation of endogenous factors of Inspiration of Public Consciousness (IPC) to cause Green Consumption Behavior (GCB) with 98.00 percent as the following in equation (1).

$$GCB = 0.88*IPC + 0.25*EE\ldots\ldots (1)$$

$$(R^2 = 0.98)$$

Equation (1) factors that had the most effect to Green Consumption Behavior (GCB) was Inspiration of Public Consciousness (IPC) with effect of 0.90, and subsequence was Environmental Education (EE) with effect of 0.25. These were able to explain the variation of Green Consumption Behavior (GCB) with 98.00 percent.

Moreover, confirmatory factors Environmental Education (EE) was able to explain the variation of confirmatory factors of Inspiration of Public Consciousness (IPC) with 87.00 percent. Therefore, the equation can be written as the following equation (2).

$$IPC = 0.90*EE\ldots\ldots (2)$$

$$(R^2 = 0.87)$$

3.4 Considering on Chi-Square value/df was 1.804 that was less than 5, therefore it was accepted that hypothetical model of research was congruent to empirical data. Moreover, it was considered on other statistical values to verify the congruence that were Goodness of Fit Index (GFI) and Adjust Goodness of Fit Index (AGFI) were 0.97 and 0.93 respectively (GFI > 0.90 and AGFI > 0.90), RMSEA <0.05 (0.045), RMR <0.05 (0.014), and critical number = 306.66 which was more than 200. It indicated that model was congruent to empirical data.

The results of analysis of causal relationship model and analysis of path effect as presented in figure 1 and table 1.
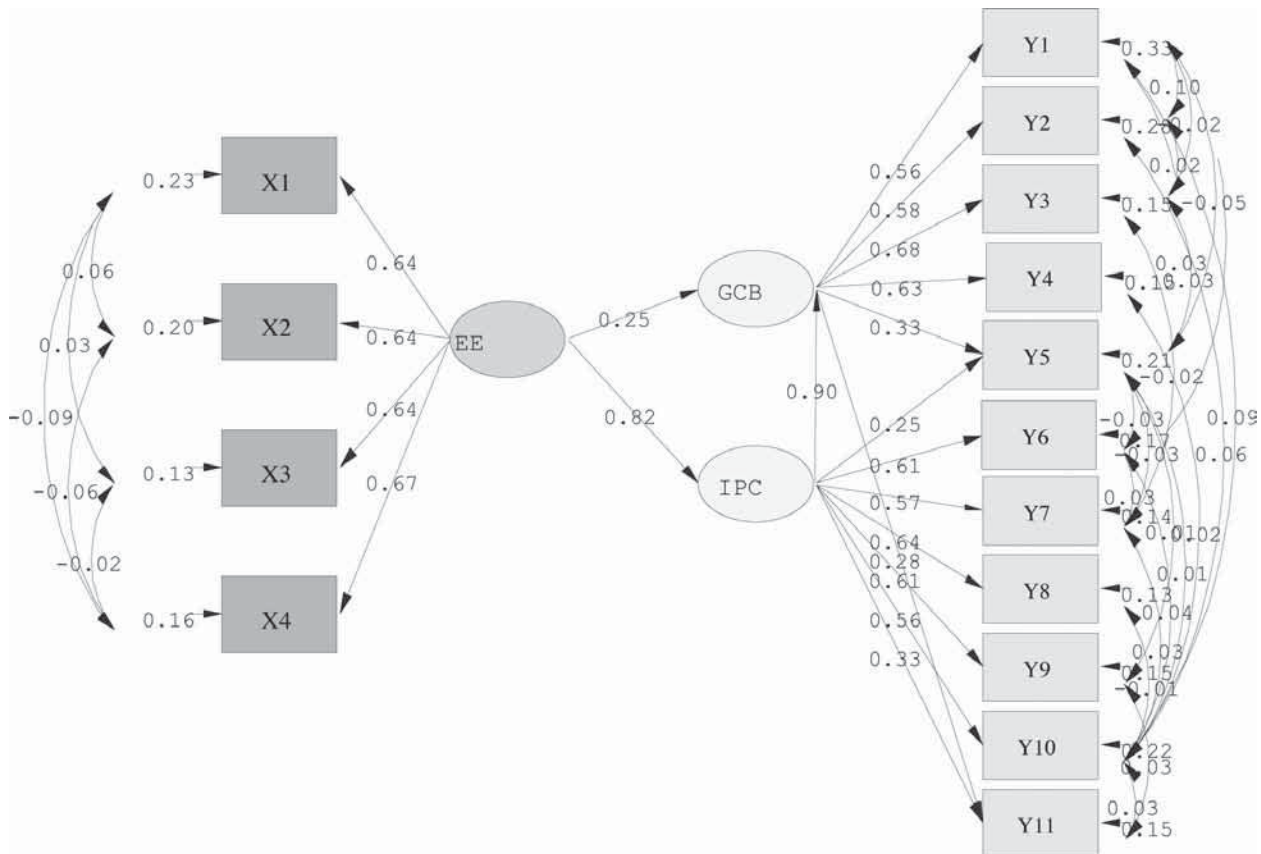
Figure 1 Causal relationship model of environmental education affecting green consumption behavior

Table 1

Direct and indirect effect of EE affecting GCB through IPM

Causal variable	Result variables					
	IPC			GCB		
	TE	IE	DE	TE	IE	DE
EE	0.82**	-	0.82**	0.99**	0.74**	0.25**
	(0.065)		(0.065)	(0.045)	(0.023)	(0.032
IPC	-	-	-	0.90**	-	0.90**
				(0.042)		(0.042
$\chi^2 = 108.25$; df = 60			CN = 306.66		$\chi^2 / df = 1.804$	
GFI = 0.97	AGFI = 0.93		RMSEA = 0.045		RMR = 0.014	

TE: Total Effect, IE: Indirect Effect, DE: Direct Effect

Discussion

The findings indicated that Environmental Education (EE) had direct effect to Green Consumption Behavior (GCB) with statistically significant at level of 0.01 with effect of 0.25. Considering from observed variable of Environmental Attitude (X3), was highest correlation to Green Consumption (GC) with 0.84. It is obviously seen that the sample groups who are undergraduate students have positive environmental attitude since the university has held different projects and activities about environmental conservation and environmental quality control in different facets whether air, soil, water and waste reduction. Such as waste bank, recycling management and air quality control are included in the environmental projects. Particularly, they have frequently used internet to search for numerous knowledge and information to prepare their reports for different learning topics. Furthermore, Environmental Awareness (X2), Environmental Participation (X4), and X1Environmental Knowledge and Understanding (X1), had rather more to moderate correlation to Environmental Education (EE) with 0.61, 0.61 and 0.49 respectively. However, environmental education was introduced in Thailand for more than three decades,, therefore environmental education has been integrated in different subjects. In particular, the governmental sector had established the 5 main goals cover (1) work sectors, organizations and different target groups understand and aware to role of environmental education (2) structured institute to support the development of environmental education sustainably (3) collaboration and cooperation among different sectors to support development of environmental education and (4) develop and exchange knowledge, attitude and skill about environmental education inside and outside educational institute continuously, and introduce environmental education to support the policy, strategy, and implementation in the local and national levels by adopting United Nations' vision for a centrally managed global society to control the way of human live, eat, learn, move and communicate as all under the noble standard of save the earth (United Nations, 1993; The Social Research Institute, 2008).

Therefore, if these five main goals are effectively implemented in the school , college, and university by integrating in different subjects successfully, this environmental education principle would able to enhance young generations' knowledge and understanding on environmental contents and problems, raise awareness, adjust attitude, skill perform and practice with responsibility to regularly carry on until it becomes permanent behavior, therefore, it will lead to actual sustainable development by participating in environmental projects and activities of environmental conservation to reduce environment problems in diverse issues (Pichitchai Kumin, 2557, 270). Concurrently, environmental conservation is occurred from the requirement to maintain natural resources for future generations and to increase humans' quality of life (WCED, 1987; UNESCO, 2003; Summers, 2003; Palmer & Birch, 2003; Lundegard & Wickman, 2007; Volker, 2007; Watkinson, 2009; Thiengkamol, 2011e). Therefore, green, a symbol of life for good health, and vitality are the color that remind undergraduate student to realize them to conserve environment for themselves and future generation as well.

Simultaneously, inspiration of Public Consciousness (IPC) was revealed as very essential endogenous latent variable affected to result variable of Green Consumption Behavior (GCB) with the highest prediction power with 0.90, meanwhile its observed variables of Person as Role Model (Y6), Impressive Event (Y7), Impressive Environment (Y8), Social Expectation (Y9), Social Norm (Y10), and Diverse Media Receptions (Y11) are rather similar prediction power to exogenous latent variable Inspiration of Public Consciousness (IPC) with 0.78, 0.76, 0.74, 0.68, 0.70, and 0.67.

Additionally, observed variables of Green Consumption Behavior (Y1), Green Energy Behavior (Y2), Green Traveling Behavior (Y3), Green Knowledge Transferring Behavior (Y4), and Green Health Behavior (Y5) are able to predict Green Consumption Behavior (GCB) with 0.37, 0.53, 0.80, 0.66 and 0.60. It pointed out that the Green Traveling Behavior (Y3), was the highest prediction power with 0.80 and subsequences were Green Knowledge Transferring Behavior (Y4) with 0.66, Green Energy Behavior (Y2) with 0.53, and Green Consumption Behavior (Y1) with 0.37. It might be explained that most undergraduate students practice the better traveling behavior but they are still have poor the green consumption behavior on food consumption since it might due to the surplus food of country and they are easy to reach the food in every place of university including everywhere around the university.

These are harmonious to Thiengkamol notion (Thiengkamol, 2009a; Thiengkamol, 2009b; Thiengkamol, 2011e; Thiengkamol, 2011f, and her different studies and her colleagues (Thiengkamol, 2011f; Thiengkamol, 2011i; Thiengkamol, 2011j; Thiengkamol, 2012d; Thiengkamol, 2012g; Thiengkamol, 2012h; Donkonchum, & Thiengkamol, 2012; Jongwutiwes et al., 2012b; Pimdee, et al, 2012b; Sangsan-anan et al., 2012a; Tumpracha et al, 2012a; Chomputawat et al., 2013b; Kotchakote et al., 2013a; Koonboonchan et al., 2013a; Petchang et al., 2013a; Prasertsri et al., 2013b; Suebsing et al., 2013a; Mongkonsin et al., 2013b) that the results illustrated that environmental education influencing through inspiration of public mind for environmental conservation to perform better environmental behaviors whether consumption behavior, energy conservation behavior, waste management behavior, traveling behavior and knowledge transferring and supporting for environmental conservation when they had real practice through environmental conservation with inspiration of public consciousness.

Therefore, the research results should be integrated in the teaching and learning process for university students who are our future hope of environmental quality maintenance to reach actual sustainable development (Thiengkamol, 2009b; Thiengkamol, 2011e; Thiengkamol, 2011f; Thiengkamol, 2011j; Thiengkamol, 2012g; Donkonchum, & Thiengkamol 2012; Donkonchum et al, 2012a; Gonggool et al, 2012b; Jongwutiwes et al, 2012b; Morrasri et al, 2012b; Phinnarach et al, 2012a; Pimdee et al, 2012a; Ruboon et al, 2012a; Sangsan-anan et al, 2012b; Tumpracha et al, 2012b; Udonboon et al, 2012b; Waewthaisong et al, 2012a; Mongkonsin et al, 2013b; Koonboonchan et al., 2013a).

However, it might be concluded whether EE and IPC latent variables are play significant roles to cause green consumption behavior of green consumption behavior, green energy utility behavior, green traveling behavior, green knowledge transferring behavior, and green health behavior through IPC. Therefore, the model of EE affecting through IPC to GCB was verified the proposed model was fitted with all observed variables according to criteria of Chi-Square value differs from zero with no statistical significant at 0.01 level or Chi-Square/df value with less or equal to 5, RMSEA (Root Mean Square Error Approximation) value with less than 0.05 including index level of model congruent value, GFI (Goodness of Fit Index) and index level of model congruent value, AGFI (Adjust Goodness of Fit Index) between 0.90-1.00.

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