

The Millennial Generation Purchase Intention Toward Green Residential Building

Maranatha Wijayaningtyas, Togi H. Nainggolan

Abstract: Millennial homebuyers are influenced by a number of internal and external factors in their decision to buy a green residential building. Empirical findings from previous studies indicate that environmental knowledge and attitudes affect consumer behavioral intention in purchasing environmentally-friendly products. Thus, this study aimed at finding out whether the millennial generation's environmental knowledge influences their purchase intentions mediated by attitudes toward green residential buildings. A quantitative approach was employed using survey design by distributing questionnaires to 250 prospective millennial generation buyers residing in Surabaya and Malang. It was found that environmental knowledge positively shared with attitude influences the purchase intention of a green building. Furthermore, the results of the analysis show that attitude is a partial mediating factor of environmental knowledge. Overall, this study provides empirical evidence that attitude toward green residential buildings had less effect on millennial generation compared to environmental knowledge on purchase intention. This demonstrates that the millennial generation has not gained positive benefits from a green residential building.

Index Terms: attitude, building, environmental, generation, green, intention, knowledge, millennial, purchase, residential

1. INTRODUCTION

OVER the past five decades, there has been a rapid increase in the consumption of goods and services resulted in the depletion of natural resources and severe damage to the environment [1]. The impacts caused by environmental damage include global warming, increased environmental pollution, along with flora and fauna degradation [1]. Various countries have begun to recognize this threat and are trying to minimize their business activities' harmful effects on the environment. Therefore, community awareness and concern for the environment encourage the emergence of the 'sustainable development' movement by emphasizing, promoting and supporting it in minimizing the negative impact of development on the environment and society; it promotes a variety of environmental innovations and green consumption. Regarding the issue, green innovation focuses on incorporating environmental sustainability practices at each stage of goods and services creation [2], while green consumption is when consumers are environmentally responsible or consider the environmental impact of purchasing, using and decomposing various products and various green services as well [3]. Environmentally responsible purchases are highly essential for unplanned purchases that can seriously damage the environment. Grunert [4] reports that household consumer purchases are responsible for 40% of environmental damage; they can prevent or reduce environmental damage by buying green products. The building construction consumes a large part of land, energy, and water; most of the construction raw materials are obtained from nature [5]. For this reason, it is necessary to apply the concept of sustainable development in the building construction industry known as the 'Green Building'. "Green" has become a short term for the concept of sustainable development as applied to the building construction industry. Green building is expected to be an environmentally responsible, economically profitable, and healthy place to live and work. Accordingly,

green building seeks to reduce and eliminate the negative impact on the environment by improving the unsustainable quality of buildings in terms of planning and application of design, construction, and operational practices that ultimately produce green residential, viz. houses, apartments, condominiums, and offices [6].

Green residential are part of green development and green building focusing on controlling environmental pollution using the home's resources and emphasizing energy-saving features. In Indonesia, quite a few housing and settlements have exceeded the carrying capacity which leads to environmentally friendly housing construction offered to the community [7]. The concept of green building has now become a new trend since most Indonesian consumers have a different perspective when dealing with the choice to consume environmentally friendly or green products. Some of them have the awareness and purpose to save the environment; some of them, however, only buy the best products due to the culture influencing them [8]. Furthermore, some consumers have a lot to consider before buying something; in Indonesia, homebuyers have realized that green building is not only a trend but also a lifestyle change [9]. As a result, some keep themselves updated to the issue of sustainable development and are driven to change from conventional practices to environmentally friendly ones. The crucial elements to foster the market intention of environmentally friendly housing are consumers, industry, and government. Nevertheless, consumers are essential for the success of marketing and developing environmentally friendly housing; as individuals, their behavior is affected by a number of things which, for instance, can determine their behavioral intention to purchase an eco-friendly residential to meet their housing needs. Green residential buildings bring a positive impact on residents and the surrounding environment; this contributes to the improvement of sustainable development's main pillars: environmental, economic, and social quality. The most appropriate theory for determining behavioral intentions is the Theory of Planned Behavior (TPB) [10]. In TPB, three main factors are affecting behavioral intentions, viz. attitude, normative belief, and perceived behavioral control. In addition, several studies have shown that environmental knowledge also affects green product purchase intention. Thereby, it is important to find out whether environmental knowledge affects prospective home buyers' purchase intention toward a green

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residential building. The results of previous studies present differences in the relationship of attitude, environmental knowledge and purchase intentions with environmentally friendly products. Tadjewski and Tsukamoto [11] suggested that environmental knowledge does not significantly affect the intention to purchase environmentally friendly products, whereas Aman et al. [12] revealed that environmental knowledge does not directly affect purchase intention; instead, it is through the mediated attitude toward products. Aside from that, Wahid et al. [13] reported that environmental knowledge has a significant effect on the intention to purchase environmentally friendly products. Accordingly, this research focuses on the millennial generation; as stated by Schmeltz [14], this generation pays more attention to, maintains, and has a positive attitude toward saving the environment. It is because the Millennials have better knowledge about the environment than the previous generation since they were taught in their childhood [15]. Consequently, it is expected that they can bring a better impact in the future by generating new rules supporting sustainable development. Notwithstanding, research conducted by Hume [16] found that although the Millennials have a positive attitude towards the environment, it does not affect their actions to purchase environmentally friendly products; thus, a further study is required to examine the relationship of the millennials' environmental knowledge with purchase intentions mediated by attitude toward products. In view of this, this study aimed at analyzing the effect of environmental knowledge on the intention to purchase a green residential building and the effect of environmental knowledge on the purchase intention through the variable of attitude toward a green residential building.

2 THEORETICAL REVIEW

2.1 The Millennial Generation

According to Kotler and Armstrong [17], a millennial generation is a population group born in 1978 – 2000, while Kim et al. [18] asserted that the millennial generation was born in 1980 - 1997. In addition, this generation is a group of consumers who potentially attract marketers because they are tech-savvy; so, it is easy for them to obtain information about a product and have the courage to take risks [19]. In Indonesia, the number of millennials constituting one-third of the total population, which is approximately 80 million people in 2015; it truly represents a huge market potential. The current rapid development of technology can easily affect the millennial generation to consume and purchase the desired products; the characteristics affect their buying behavior [20]. Thereby, the millennials perceive that most of their activities contribute a negative impact on global climate change, and this ultimately encourages them to buy environmentally friendly products. Besides, consumer market analysts predict that millennials have greater purchasing power than previous generations [18].

2.2 Attitude and Purchase Intention toward Green Residential Buildings

Attitude is the antecedent of behavioral intention; it is defined as an individual's level of favorable or unfavorable behavior or evaluation of a particular behavior. According to Kotler and Armstrong [17], attitudes are judgments, feelings, and inclinations that are consistent for people or inclinations towards an object or idea. The social psychology literature on

behavioral research has established attitudes as important predictors of behavior, behavioral intentions, and explanatory factors for variance in individual behavior. Therefore, knowing the attitude towards green residential consumers is essential to determine their buying intention. In addition, Alwitt and Pitts [20] argued that attitude toward environmentally friendly homes has a significant relationship to purchase intentions. A green residential building attracts potential customers who have a positive attitude toward it. Squires et al. [21] further supported that individuals holding positive and favorable attitudes tend to buy more environmentally friendly products than those who do not have this attitude. Therefore, it is assumed that prospective home buyers have a positive attitude toward a green residential building since it is designed to reduce the overall impact of the built environment on human health and the natural environment by using renewable resources and reducing environmental degradation. A study of the environmentally friendly residential market in the United States conducted by McGraw-Hill Construction [21] illustrates the benefits of a green building that brings the highest level of satisfaction in terms of importance are home quality, easy maintenance, better indoor air quality, equipment or more efficient equipment, and better health. Consequently, it is safe to say that individuals, who hold a positive attitude toward a green building concept and understand it, tend to have purchase intentions. Additionally, the attitude toward sustainable homes in Malaysia has a strong and significant relationship to purchase intention [22]. A good few studies have found that environmental attitudes influence the millennial generation's purchase intention towards environmentally friendly products [23, 24]. Therefore, the attitude toward a green residential building is one of the important variables in predicting the millennial consumers' purchase intentions; hence, the following hypothesis:

H1: The attitude toward the green residential building has a positive effect on purchase intention

2.3 Environmental Knowledge and Intention to Purchase a Green Residential Building

There are two forms of consumers' environmental knowledge: (1) the educated consumers' knowledge of the products' negative impact on the environment, and (2) the consumers' knowledge of environmentally friendly products [25]. Previous studies on consumer behavior investigating the relationship between environmental knowledge and purchasing or environmentally conscious behavior indicate contradictions. The studies conducted in China, Poland, Egypt, and Malaysia similarly concluded that environmental knowledge has a significant relationship with environmentally friendly purchasing behavior [26, 27, 28, 12]. In contrast, other literature shows that there is a little contribution to environmental knowledge to the buying behavior of environmentally friendly products [29]. In a qualitative study conducted by Tadjewski and Tsukamoto related to consumer behavior, it was found that although the consumers had knowledge of life cycle analysis, they failed to apply it in their daily lives. A study of water conservation also defined that there is no correlation between knowledge and attitude, or between environmental knowledge and behavioral intentions. Environmental knowledge is a key element in consumers' decision to buy environmentally friendly products [30]. Maichum et al. [30] found a positive relationship between environmental knowledge and purchase intentions towards

environmentally friendly products. In addition, Vicente-Molina et al. [31] reported that environmental knowledge has a direct effect on students' pro-environment intentions and behavior. Thus, this study intends to examine the relationship between the millennial generation's environmental knowledge and the intention to buy a green residential building. Environmental knowledge is conceptualized as a unidimensional variable which includes general aspects of what people know about environmental problems; so, the following hypothesis is generated:

H2: Environmental knowledge has a positive effect on the intention to buy a green residential building

2.4 Environmental Knowledge and Attitude toward a Green Residential Building

According to Stutzman and Green, environmental knowledge is a crucial factor in creating the attitude required for the consumption of environmentally friendly products. People with positive knowledge about the environment can also bring a positive impact to the environment, and have individual environmental responsibilities as well as contribute to sustainable development [32]. In addition, Noor et al. revealed that millennial generation environmental knowledge has a positive direct impact on environmental attitudes in Malaysia. Furthermore, previous researchers also found that environmental knowledge has a significant positive effect on consumer environmental attitudes [11, 33]; hence, the following hypothesis:

H3: Environmental knowledge positively influences attitudes towards homes with a green building concept

Figure 1 presents a conceptual model of research based on the aforementioned theoretical studies.

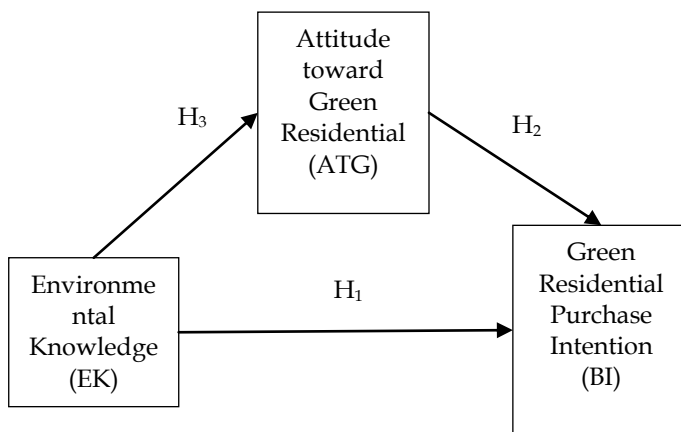


Figure 1: Research Conceptual Model

3 RESEARCH METHODS

This research employed a quantitative approach in which questionnaires were used to collect data. The sampling method was non-probability with a purposive sampling technique. The cross-sectional research was the method used for collecting data. The respondents were prospective home buyers visiting and seeking information in offices of several housing developments, also those attending property and real estate exhibitions in Malang and Surabaya. The questionnaire responses were collected from 250 respondents. The questionnaire was designed using closed-ended question model and divided into two parts; part A involving questions

about the demographic background of the respondents, and part B compiled the behavioral variables used in this study: environmental knowledge, as well as an attitude toward and intention to buy a green residential building. A Likert scale of 5 was used to measure the three latent variables: 1 was 'strongly disagree' and 5 was 'strongly agree'. The indicators for measuring environmental knowledge (EK) were having more knowledge about recycling than others, having the knowledge about how to choose products and packages to reduce the amount of waste, having the knowledge about environmental problems as well as environmental symbols and phrases on product packaging. The attitude towards a green building (ATG) can be defined as a general view of prospective buyers of a green building. Therefore, the attitude towards a green residential building is measured by 6 indicators of the benefits or value of the house for the environment. To exemplify, a green building concept house is very valuable because it is developed with an innovative and sustainable design; also, a green building concept house is beneficial because it can improve the health quality of its inhabitants. The millennial generation purchase intention of a green building (BI) indicator is the plan or objective of prospective buyers to buy a green residential building; this indicator measures: the Millennials' plan, attempt, and intention to buy a green residential building. Data analysis was conducted using two types of statistical software. Descriptive analysis was carried out using SPSS statistical software version 21. Moreover, PLS-SEM with Warp-PLS version 5.0 was used to test the validity and reliability of measurements, as well as to perform path analysis.

4 RESULTS AND DISCUSSION

Table 1 demonstrates that the most of respondents were male (58.4%) residing in Surabaya and Malang, whose ages were around 29-38 years (79.2%) and married (75.5%), working in a private company (49.6%) with a bachelor degree (53.3%), and their average family income was between 60 million - 120 million per year.

4.1 The Measurement Model Analysis

As a first step in the analysis, the reliability test was conducted to determine the internal consistency of the measuring instrument when used to measure the same object more than once. Internal consistency measurement is based on the performance of critical reliability testing of composite (CR), Cronbach Alpha, and extracted average variance (AVE). The internal consistency indicator coefficients are presented in Table 2. According to Nunnally, the standard composite reliability coefficient (CR) is greater than 0.7 and with Cronbach Alpha whose a reliability value of 0.70 or higher. From all of the coefficients in Table 2, the results of measuring instrument reliability are very reliable as the instrument has high internal consistency.

TABLE 1
THE CHARACTERISTICS OF RESPONDENTS

Profile	Percentage
Gender	
Male	58.4
Female	41.6
Age Group	
≤ 28	20.8
29- 38	79.2
Marital Status	

Profile	Percentage
Single	24.5
Married	75.5
Profession	
Private companies	49.6
Civil servants	21.6
Entrepreneurs	23.8
Others	5.0
Last education	
≤ High School / Vocational School / Equivalent	23.8
D3 / D4 (Non-degree Diploma)	
S1 (Bachelor Degree)	11.7
S2 (Master Degree)	53.3
S3 (Doctoral Degree)	10.4
	0.8
Family income / year (IDR)	
≤ 60,000,000	27.8
60,000,001 - 120,000,000	56.7
120,000,001 - 180,000,000	11.3
≥ 180,000,001	4.2

TABLE 2
THE RESULTS OF RELIABILITY TEST

	CR	Cronbach Alpa	AVE
EK	0.856	0.789	0.545
ATG	0.869	0.820	0.498
BI	0.941	0.906	0.842

The next step of the analysis was the instrument validity test; this test is used to examine whether the measurement is valid and can measure the phenomenon under study. The measurement of construct validity was conducted by measuring the convergence validity and divergent validity; convergent validity views the value of items expected to measure the same construct variable. The assumption of convergent validity is based on similar results between measurable indicators. From Table 3, it can be concluded that all the results of combining loading and cross-loadings produce good convergent validity.

TABLE 3
THE RESULTS OF COMBINED AND CROSS LOADINGS

	EK	ATG	BI
EK1	0.636	-0.035	0.026
EK2	0.733	0.002	-0.105
EK3	0.768	0.063	0.031
EK4	0.750	-0.036	-0.035
EK5	0.795	-0.001	0.080
ATG1	0.001	0.758	0.110
ATG2	-0.053	0.841	0.042
ATG3	-0.044	0.801	-0.041
ATG4	-0.049	0.832	-0.125
ATG5	0.006	0.632	0.012
BI1	0.083	0.042	0.901
BI2	-0.085	-0.019	0.915
BI3	0.003	-0.022	0.937

Next, the Fornell and Larckers were employed to assess divergent validity measurements by comparing the square root of the extracted mean-variance (AVE) of each variable against other correlations among all variables. The divergent validation coefficient is shown in Table 4. From the table, it is concluded that the measurement has good divergent validity because the AVE square root is greater than other bivariate correlations.

TABLE 4
THE RESULTS OF LATENT VARIABLE CORRELATIONS WITH SQUARE ROOTS OF AVE (DIAGONAL)

	EK	BI	ATG
EK	0.738	0.447	0.373
BI	0.447	0.918	0.361
ATG	0.373	0.361	0.705

4.2 The Structural Model Analysis

The general model measurement results based on SEM-PLS analysis in Table 5 shows that the model has a good fit with a P-value <0.001. In addition, there are no multicollinearity problems between indicators and variables, or causality problems in the model. Based on the results of the structural model analysis in Figure 2, environmental knowledge (EK) has a direct and significant effect on the intention to buy a green residential building (BI) with a P-value <0.001 and a path coefficient value of 0.363. Environmental knowledge (EK) also has a significant effect on attitudes towards a green residential building (ATG) with a path value of 0.405 at a P-value <0.001. The millennials' attitude toward a green residential building has a significant effect on their purchase intention with a path coefficient of 0.255.

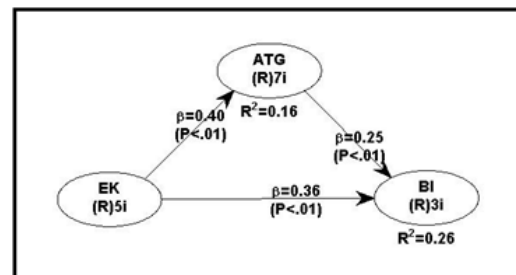


Figure 3. The Structural Model

4.3 Discussion

The R-squared value for the purchase of a green residential building variable is 0.26; this means that the influence of environmental knowledge and attitude variables can only explain the purchase intention by 26%, and the rest is influenced by other variables outside the research model. As found in other studies, the Millennials' intention to buy environmentally friendly products is influenced by many factors such as culture, behavior control, family, or their identity. Furthermore, the effect of attitude mediation on environmental knowledge toward purchase intentions can be measured by the VAF method. The VAF structural model in this study was 24.6%; thus, it can be categorized as a partial mediating attitude.

4.4 Managerial Implications

The results of this study indicate that environmental knowledge can directly influence the Indonesian millennials' intention to buy a green residential building mediated by the attitude toward a green building. This finding supports research conducted in several other developing countries such as Malaysia and Egypt [12, 27]. For this reason, a synergy between the government and housing developers is required to provide the proper knowledge and information about a green building based on the applicable regulations. In addition, according to the millennial generation demographic findings in

this study, the knowledge of green building should be properly directed on target: the head of household working in a private company holding at least a bachelor degree, so that environmental knowledge can increase the millennial generation positive attitude toward a green residential building.

4.5 Limitations and Research Opportunities

This research is limited to millennials residing in Surabaya and Malang. The method used was only quantitative methods with closed-ended questions based on 3 variables: environmental knowledge, attitudes and purchase intentions of the green residential building. It is expected that future studies will have a broader range of questionnaires, considering the government campaign for energy-efficient homes throughout Indonesia. In addition, future studies should employ qualitative methods to better understand the real phenomena taking place in Indonesian society.

5 CONCLUSION

The results showed that the millennial generation's environmental knowledge significantly and positively affected the intention to buy a green residential building. This means that the higher the millennial generation's knowledge of the environment and the better knowledge of the importance of protecting and preserving the environment, the higher their intention to buy a green residential building, and vice versa. This research proves that the Generation-Y attitude towards a green residential building is not a full-mediation between their environmental knowledge and purchase intention.

REFERENCES

- [1] Chen. T. B., & Chai. L. T, Attitude towards the environment and green products: Consumers' perspective. *Management science and engineering*, 4(2), 27- 39, 2010.
- [2] Veleva. V., & Ellenbecker. M, Indicators of sustainable production: framework and methodology. *Journal of Cleaner Production*, 9(6), 519-549, 2001.
- [3] Moisander. J, Motivational complexity of green consumerism, *International Journal of Consumer Studies*, 31(4), 404-409, 2007.
- [4] Grunert. S. C., & Juhl. H. J, Values, environmental attitudes, and buying of organic foods, *Journal of economic psychology*, 16(1), 39-62, 1995.
- [5] Melchert. L, The Dutch sustainable building policy: a model for developing countries, *Building and Environment*, 42(2), 893-901, 2007.
- [6] Elias. E. M., Bakar. A. A., Bahaudin. A. Y., and Husin. F. M, *Green Residential Buildings: The Perspective of Potential Buyers*, Paper presented at the Proceeding of 3rd Global Accounting, Finance and Economics Conference, Rydges Melbourne, Australia, 2013.
- [7] Sugandhi. RA, and Hakim. R, *Prinsip Dasar Kebijakan Pembangunan Berkelanjutan Berwawasan Lingkungan*, Malang: Bina Aksara, 2007.
- [8] Adiwoyo. N.S.A., Prasetyoadi, and Perdana, S, *Towards Indonesia Sustainable Future through Sustainable Building and Construction*. Country-Paper. Green Building Council Indonesia, 2013.
- [9] Arif, I., Permanasari, A. and Badil, R, *Hidup Hirau Hijau*. Malang : Kepustakaan Populer Gramedia, 2013.
- [10] Ajzen, I. The theory of planned behavior. *Organizational Behaviour and Human Decision Processes*, 50, 179-211, 1991.
- [11] Aman, A. L., Harun, A., and Z. Hussein, The influence of environmental knowledge and concern on green purchase intention the role of attitude as a mediating variable, *British Journal of Arts and Social Sciences*, vol. 7, no. 2, pp. 145-167, 2012.
- [12] Wahid, N.A., Rahbar, E. and Tan, S.S, Factors influencing the green purchase behavior of Penang environmental volunteers. *Internal Business Management*, 5, 38-49, 2011.
- [13] Schmeltz, L, Consumer-oriented CSR communication: focusing on ability or morality? *Corporate Communications: An International Journal*, 17(1), 29-49, 2012.
- [14] Kim, Y.H. & Chung, J, Consumer purchase intention for organic personal care products., *Journal of Consumer Marketing*, 28(1): 40 – 47, 2011.
- [15] Hume, M. (2010). Compassion without action: Examining the young consumers' consumption and attitude to sustainable consumption. *Journal of World Business*, 45(4), 385-394, 2010.
- [16] Noh, M dan Mosier, J, Effects of young consumers' self-concept on hedonic/utilitarian attitudes towards what is 'cool'. *International Journal of Fashion Design, Technology, and Education*, 7(3), 163-169, 2014.
- [17] Hsu, C.L., Chang, K.C., and Chen, M.C, Flaw experience and internet shopping behavior: investigating the moderating effect of consumer characteristics. *Systems research and behavioral science*, 29, 317-322, 2012.
- [18] Kim, G. S., Park, S.-B., & Oh, J, An examination of factors influencing consumer adoption of short message service (SMS). *Psychology & Marketing*, 25(8), 769–786, 2008.
- [19] Kotler, Phillip, and Gary, Armstrong, *Principles of Marketing*. USA. Prentice-Hall, 2008.
- [20] Alwitt, L. F. & Pitts, R. E, Predicting purchase intentions for an environmentally sensitive product. *Journal of Consumer Psychology*, 5, 49–64, 1996.
- [21] McGrawHill-Construction, *The Green Homeowner Smart Market Report*. Retrieved on November 21, 2013, from <http://images.kw.com/docs/0/0/9/>
- [22] Tan, T.H, Use of structural equation modeling to predict the intention to purchase green and sustainable homes in Malaysia. *Asian Social Science*, 9(10), 181-191, 2013.
- [23] Yadav, R. and Pathak, G. S., "Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior," *Journal of Cleaner Production*, vol. 135, pp. 732-739, 2016.
- [24] Prakash, G. and Pathak, P, "Intention to buy eco-friendly packaged products among young consumers of India: A study on developing nation," *Journal of Cleaner Production*, vol. 141, pp. 385-393, 2017.
- [25] D'Souza, C., Taghian, M., and Khosla, R, Examination of environmental beliefs and its impact on the influence of price, quality and demographic characteristics concerning green purchase intention. *Journal of Targeting, Measurement, and Analysis for Marketing*, 15(2), 69-78, 2007.
- [26] Chan, R. Y. K. and Lau, L. B. Y, Antecedents of green purchases: A survey in China. *Journal of Consumer Marketing* (17), 338-357, 2000.
- [27] Mostafa, M. M, Gender differences in Egyptian consumers' green purchase behavior: The effects of environmental knowledge, concern, and attitude. *International Journal of Consumer Studies*, 31, 220-229,

2007.

- [28] Rokicka, E, Attitudes towards the natural environment. *International Journal of Sociology*, 32 (2), 78-, 2002.
- [29] Paco, A. F., Raposo, M. L., and Filho, W. L, Identifying the green consumer: A segmentation study. *Journal of Targeting, Measurement, and Analysis for Marketing*, 17(1), 17-25, 2009.
- [30] Maichum, K., Parichatnon S., and Peng, K.-C, "Application of the extended theory of planned behavior model to investigate purchase intention of green products among Thai consumers," *Sustainability*, vol. 8, no. 10, pp. 1077, 2016.
- [31] Vicente-Molina, M. A., Fernández-Sáinz, A., and Izagirre-Olaizola, J., "Environmental knowledge and other variables affecting pro-environmental behavior: comparison of university students from emerging and advanced countries," *Journal of Cleaner Production*, vol. 61, pp. 130-138, 2013.
- [32] Fryxell, G. E. and Lo, C. W, The influence of environmental knowledge and values on managerial behaviors on behalf of the environment: An empirical examination of managers in China, *Journal of business ethics*, vol. 46, no. 1, pp. 45-69, 2003.
- [33] Barber, N., Taylor, C., and Strick, S, "Wine consumers' environmental knowledge and attitudes: Influence on willingness to purchase," *International Journal of Wine Research*, vol. 1, no. 1, pp. 59-72, 2009.