



The Role of Income Level in Green Consumer Behavior: Multigroup Structural Equation Model Analysis

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Abstract

This study examined the causal development model able to predict the green consumer behavior on organic food as green product. This study tested the influence of values orientation on environmental consciousness. This study also explained the effect of ecological knowledge, ecological affect, premium price and environment consciousness on green purchase intention. The role of income level as moderating variables on the causal model development. The idea implied in this research will be much help in resolving problem and decision making, connected to reinforce the green purchasing. The data are collected by using questionnaires. The analysis of 723 respondents all of those are people who influence and purchase their daily food. The result, based on path analysis using multigroup structural equation modeling, indicated that the model tested had an acceptable fit. The findings implied that the income differences level moderated the model significantly. These causal relationship variables was consistent on findings and conceptualized previous related studies. The implication of this research is relevant to academicians and practitioners in assisting them to explain of how the environmental consciousness, ecological affect and ecological knowledge, and also green purchase intention influence green purchase behavior.

Keywords: *green consumer, environment consciousness, , organic food, income*

BACKGROUND

When a consumer decides to buy a certain product there are various complex factors that influence the decision. In general a consumption event is seen as an economic process. However, in reality consumption is also a social and cultural event indicated by symbols (Peattie, 1995). In the new marketing era, products are not only evaluated based on the performance and price but also on the social responsibility of the consumers. In other words, the value of a product includes the environmental-friendliness of the product and the packaging. Consumers, known as green consumers, require products to give minimum impact to the environment.

Food safety trend has become a sensitive issue in food industry. Safe food material issues have increased society awareness towards environmental crisis that forces people to have a healthy and economical lifestyle. The improvement in life quality and healthy lifestyle has driven the society in different countries to shift back



to nature. This movement believes that anything that comes from nature is good and useful; it also guarantees natural balance. Organic food has become an important option to meet the requirements of the healthy lifestyle.

Food buying motives are more on environmental reasons, health concerns and taste. This trend has forced people to be loyal to organic food. According to Davies, Titterington, & Cochrane (1995), people buying organic food can be categorized into four: 1) eco-friendly, 2) phobia or fright of chemical residue in their food, 3) support to humanis agricultural method, and 4) hedonist who believes that products with premium price are better, important and has better taste.

Some studies on consumer behavior try to identify contomer behavior characteristics in relation to enviromental awareness linked with marketing implication (Ling-ye, 1997; Chan, 1999; Vlosky et al., 1999; Chan & Lau, 2000; Kalafatis et al., 1999; Follows & Jobber, 2000; Chan, 2001; Jiuan et al., 2001; Laroche et al., 2001; Fotopoulos & Krystallis, 2002). The studies have explored environmental concerns and buying attitudes that is environmentally friendly. The findings indicate that there is a tendency of a strong environmental awareness and consumers prefer environmentally-friendly products (Ottman, 1995) and income level has become a significant moderation factor.

CONCEPTUAL REVIEW AND HYPOTHESIS MODEL

Based on previous studies on consumers eco-friendly behaviors, this is an empirical study in improving models of green consumers behavior with specific objects, organic food. Measuring instruments are enviromental variables that operate as specific attitudes towards organic food with Indonesian consumers background so that there will be consistent findings on the relations of value-attitude-behavior.

The research position on the green consumer behavior compared to the previous studies is presented in Table 1. The comparison is a synthesis of literature study on environmental issues carried out by previous researchers. The research discussed orientation variables of consumer value, environmental affects, knowledge and awareness towards environment, premium price and the will to buy environmentally-friendly products. The study also covers variables of income level as a moderation variable in the research models in general.

In considering a process and development of a comprehensive theory of consumer behavior, some previous researchers (see Table 1) employ a social psychology approach in the behavior building (Ajzen & Fishbein, 1980). Social psychology theories are often employed in hope-value model. This model is relevant as it provides a theoretical relation between evaluation criteria and behavior concept. For more than four decades this model has been developed by Fishbein into Theory of



Reason Action (TRA), that later improved by Ajzen (1991) to become Theory of Planned Behaviour (TPB).

Previous behavior research towards environment tried to map the consumer demographic profiles in general. Few literature studies show that environmental awareness succeeded in explaining consumer social behavior that is social oriented. Linge-yee (1997) tries to explain the role of the differences in consumer characteristic demography related to consumer's value-attitude-behavior behavior in consuming eco-friendly products. Suspected moderating variables related to consumer's value-attitude-behavior behavior in their commitment to eco-friendly products are gender, address, product involvement, age, ethnic group, education level, marital status, number of children, and access to media (Ling-yee, 1997; Straughan & Roberts, 1999; Chan, 2001; Jiuan et al., 2001; Laroche et al., 2001; Fotopoulos & Krystallis, 2002; Bloom & Sevilla, 2004)

Therefore it can be concluded that demography plays an important role in the decision-taking process in consuming healthy food (Mathios, 1996; Ling-yee, 1997; Straughan & Robert, 1999; Jiuan et al., 2001). This study will discuss more deeply the role of income level in moderating the relations of value-attitude-behavior in consuming eco-friendly products.

The Roles of Income Level in Green Consumer Behavior

One's income level has a positive relation with environment sensitivity. Individual with high income will raise the cost to support environmental sustainability and to buy eco-friendly products. Income as predictor of environmental awareness relates with affect-ecological contraction, ecological knowledge and premium price of eco-friendly products (Straughan & Robert, 1999). Previous research findings show that there is an inconsistency in the relation between environmental awareness with level of income. Middle class have met their basic needs and start to focus on human existence aspects. According to Buttel and Flin, the lower class society stay in high polluted environment and work in a bad environment with poor facility so that they hope to improve their environment. In general, social classes tend to give a positive influence towards environmental awareness and commitment (Ling-yee, 1997).

Family income level indicates human capital of the formal education level, Mathios (1996) states that income level reflects a high efficiency in collecting information on food nutrients. They have the financial support to consume health products and this ability influences them to buy more healthy food which price is higher than food in general. Gould and Lin (1994) find that one's income level has a positive relation with health knowledge, especially related with food products choice and potential illnesses (Cotugna et al., 1992).



Some studies illustrate that income level plays a role in predicting environmental awareness related to a person's attitude contraction towards the environment. The relation between income growth and quality of environment is a fundamental issue in environmental economics. One's level of income influences the willingness to pay marginally higher prices as a social responsibility towards the environment. Empirical studies in countries with low income per capita do not show any improvement in the willingness to spend more on eco-friendly products (Bloom & Sevilla, 2004). Therefore, the income level moderates the relations between consumers behavior towards the environment with their willingness to consume eco-friendly products.

The research model shown in Figure 1 is developing the synthesis results of some research models carried out by some previous researchers (Chan, 1999; Chan & Lau, 2000; Chan, 2001; Ling-yee, 1997; Vlosky et al., 1999). The model development is employed to analyze the relations among variables of value orientation, environmental knowledge, environment affect, environmental awareness, and premium price with the commitment to buy organic food as eco-friendly products.

METHODS

Sampling Method

Sample collecting in the study employs *nonprobabilistic* sampling in which each element in the population does not have same probability to act as a sample (Sekaran, 1992; Cooper & Emory, 1995; Cooper & Schindler, 2001). The nonprobabilistic technique in defining samples is *purposive sampling*. There are 800 exemplars of questionnaire. The purposive sampling as the subject is consumers who play roles in the decision of buying food and the families that process or cook their own food for their own families.

Measurement and Instruments

1. Values Orientation

Schwartz (1994) in Laroche et al. (1999) state that consumers values are defined as a mode to reach a required goal. These values drives the person's life. Individual values influencing consumer behavior are classified as individualism and collectivism.

Individualism represents how much a person focuses and depends in him/herself (Triandis, 1993). The group will competed against other individuals to reach a status or put his/her own interests first.

Collectivism reflects consumers who are willing to cooperate, to help each other and put collective goals as a priority. This group supports eco-friendly programs.



Contraction measurement adopts Kinsky et al. (2002) questionnaire on collectivism based on the individualis-collectivist typology.

2. Environmental Consciousness

Consumer social awareness is detected when a consumer tries to consider the effects of his/her buying habits in relation with pollution that affects the nearby social environment. Consumer social environmental awareness as Webster in Follows dan Jobber (2000) states is a person who remembers that in general the consequence of individual consumption or an effort to make use of the ability to buy can be a social problem. Environmental awareness instruments employed in this research is developed by Vlosky et al. (1999).

3. Ecological Knowledge

Ecological knowledge known as ecoliteracy is a consumer's ability to identify or define a number of symbols, concepts and behavior related to ecological environmental problems (Laroche et al. 1999). Chan defines environmental knowledge (1999) as how much a person knows environmental issues. In developing the objective scale to measure and understand environmental awareness is by measuring how much respondents knows issues related to environment and its relation with organic food which is adapted from Fotopoulos dan Krystallis (2002).

4. Ecological Affect

Consumer affect towards environment is the emotional level of an individual towards environmental issues (Chan, 1999). The consistence of empirical data that support the positive relation between ecological affect and behavior indicates that persons with limited environmental knowledge in general they still show high emotional level (Chan & Lau, 2000).

5. Premium Price

Consumers who are willing to pay higher price for eco-friendly products believe that the companies carry out the social responsibility towards the environment (Laroche et al., 2001). Individual questionnaire structure for respondents is to qualify prices based on the assumption of quality. Premium price contraction in the study is developed from the study by Vlosky et al. (1999) and Laroche et al. (2001) on the willingness to pay more for organic food.

6. Green Intention

The intention to buy eco-friendly products is a will or to express an intention of an individual to commit in activities that support the ecological moves (Chan. 1999)



7. Behavioral Intention

Behavior variables to actually buy eco-friendly products are shown in four statements that show one's behavior in buying and consuming organic food daily in replacement of non organic food. All contraction measurements in the research use 5 point Likert scale from disagree very much to agree very much.

8. Income Level as Moderating Variable

Level of income consistently relates to environmental awareness. Newell and Green (1997) as quoted by Straughan dan Robert (1999) state that income moderates the role influence in forming the environment. Another study shows that there is a negative relation between income and environmental awareness.

Income level in demography can indicate social status and class of a person and this will influence his/her consumption behavior pattern. Income in this research is indicated by family income as the research subject is consumers who decide the food in meeting their daily needs. The grouping consists of low and high incomes.

Validity and Reliability

Validity testing using AMOS proves that all items are valid with critical ratio (CR) of each indicator in the contraction of ≥ 2.0 and supported by goodness of fit criteria. Reliability testing to measure the consistency of the research instrument is carried out by employing the cronbach alpha coefficient as a result of factor analysis and confirmatory factor analysis (Hair et al., 1998). The results of testing as a whole show that the instruments are reliable as the coefficient α value of the contraction is higher than 0.7. (Sekaran, 1992). The results of testing are as follow: composite reliability individualistic orientation ($\alpha=0.899$), colectivistic orientation ($\alpha=0.831$), ecological affect ($\alpha=0.830$), premium price ($\alpha=0.781$), ecological knowledge ($\alpha=0.923$), environmental consciourness ($\alpha=0.898$), green intention ($\alpha=0.857$), and green behavior ($\alpha=0.861$).

Prior to data analysis by employing structural model, there is an evaluation on structural model equation assumptions. The assumptions show that there are rural multivariate data. The observation on data with Mahalanobis distance higher than 26.125 flunks out five observations as they are rural multivariate data. Therefore the number of respondents analyzed by using structural equation model is 723.

FINDINGS AND DISCUSSION

Profile



Respondents who illustrate on how decision making on family food is taken are composed of female (82.1%) with average age of 34.88. 495 (68%) of them are married with children of less than 12 years old. This profile indicates that the decision makers on food consumption are housewives. The findings support an earlier research by Davies *et al.* (1995) that illustrate female of 30-49 years old with children are representatives of green product consumption in the future since they have a healthy lifestyle, especially for their children.

The results show that consumers often buy natural food to process as their daily meals. However, there are 127 respondents (17.4%) who never buy any organic food in a supermarket. So only 601 respondents (82.4%) buy their daily needs in supermarkets. Therefore, according to Fotopoulos dan Krystallis (2002), the other group is included as environmentally aware buyers while those who are considered as aware non-buyers of organic product are 127 (17.4%). Meanwhile there are 464 (63.7%) respondents who state that the decision to buy food for family's daily needs is actually influenced by their spouses.

Multi-group Structural Equation Modeling

Straughan and Robert (1999) argue that one's income is an environmental awareness predictor in relation with the contractions of ecological affection, ecological knowledge and premium prices of eco-friendly products. In general, social class has a positive influence on the environmental awareness (Ling-ye, 1997). Therefore, the income level of consumers moderates the relations between consumers behavior towards the environment seen from their willingness to buy eco-friendly products.

The following is the testing on the different levels of family income that moderates the structural relation between contractions which is done by structural model testing using unconstrained parameters. This alternative model shows that there is positive and significant influence both in the low and high income groups between the collectivistic orientation and environmental knowledge. However, individualistic orientation influences their willingness to pay the premium prices. Besides, environmental knowledge increases the consumer's awareness towards the environment nearby and later will drive them to pay premium prices for eco-friendly products and increase their commitment to buy organic food. Details can be seen in Table 2.

The alternative model employing unconstrained parameters has a significant relation that varies in the research variables. The influence of high income consumer's individualistic orientation towards their willingness to know environmental problems is higher than those with low income. The higher knowledge among high income consumers also increase their emotion towards environment. The same applies to the



collectivistic values which are closely related with others' interests, i.e. family will become more sensitive towards environmental issues.

Goodness of fit model with unconstrained parameters (GFI=0.961) turns out to be better than the model with constrained parameters (GFI=0.947). Besides, the different value of chi square 37.607 with degree of freedom 15 shows a significant level ($p < 0.05$). Therefore, the basic and alternative models based on income level are different significantly. This indicates that the difference in income levels significantly influence as model moderating variables. Variable moderation of income difference is seen from the different relations between individualistic value orientation and ecological knowledge, between ecological knowledge and ecological affection, between collectivistic orientation and ecological affection among lower class and upper class society members. This finding supports the study by Gould and Lin (1994) who finds that income level has positive relation with health knowledge especially related with food and illnesses (Cotugna *et al.*, 1992). The comparison between basic and alternative models is presented in Table 3.

Based on the comparison results of Goodness of fit between alternative and basic models, it can be concluded that the hypothesis that states that the relation between research variables in environmentally aware consumer behavior model moderated by the difference in income level can be accepted

The development of research model with income level as a moderating variable offered based on preliminary research model of environmentally aware consumer behavior is presented in Figure 2.

CONCLUSION

The best causal relation between variables model in the research illustrates that collectivistic value orientation increases a consumer's ecological knowledge which later also increases consumer's environmental awareness. Ecological knowledge does not directly increase consumer's will to buy eco-friendly products; rather the awareness acts as moderating variable. Green consumers have social awareness the it leads them to be concerned with social-environmental influence of their behavior. Therefore, green consumers feel sure that the condition of the present environment is facing serious problems that affect mankind all over the world. This drives consumers to pay higher prices for eco-friendly products that they identify as high quality products.

Based on the model best result in the study, it is shown that consumers' collectivistic values are important in influencing the ecological awareness mediated by



ecological knowledge. The findings in the research show that Indonesian consumers have collective orientation that prioritizes collective rather than individual goals. However, organic food information is still low in non-metropolis cities as there are very limited supermarkets that provide organic vegetables and fruit. High income and better educated consumers have willingness to buy eco-friendly products offered in higher prices. One's income reflects higher efficiency in getting information on food products and commitment to consume health products.

The methodology employed to study green consumer behavior theoretically contributes to the understanding of intention to buy specific objects. Therefore, the study best model can be employed to give conceptual model of green consumers since the development and testing have resulted in consistent predictable and explainable findings.

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