Reinforcing the Need for Green Practices Through a Green Knowledge Society

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Abstract: With the advent of the industrial revolution, green practice has evolved to become more than simply a message but an important mission in society. In support of this importance, this study aims to investigate the relationship between a green knowledge society and the need for green practices. In order to facilitate this study, surveys were used for data collection. A total of 300 questionnaires were sent out and 190 responses were received. The data were analyzed using descriptive, reliability, correlations and multiple linear regression analyses. It was found that the adjusted $R^2$ value was 0.385, which indicates that 38.5% of the variance in the need for green practices can be significantly explained by social environmental issues, social responsibility and government rules and legislation. It was also found that a positively significant relationship existed between a green knowledge society and the need for green practices among consumers. Also, the government rules and legislation factors were found to be of unparalleled importance in efforts to reinforce the need for green practices. The results of this study can be enhanced by identifying other possible underlying factors that drive the need for individuals to implement green practices. The outcome of this study can be potentially used as a consumer awareness guideline to reinforce the need for green practices among green knowledge societies.

Key words: Green knowledge, green practice, knowledge society, survey

INTRODUCTION

It is common knowledge these days to understand that the denotation of the word ‘green’ in a product may not necessarily refer to the color of the product. The same goes for the usage of ‘green’ in describing practices, management, technology and even knowledge. This concurrence is due to the growing awareness that the public has for the environment. One of the major concerns that triggered this awareness was the effects of damaging greenhouse gases on global warming.

The amount of greenhouse gases in the atmosphere is already beyond the threshold that potentially leads to dangerous climate changes. According to Rogers (2009), one in four mammals is threatened with extinction due to this effect. If allowed to run its course, this threat of extinction will eventually change the ecology in all corners of the earth.

The role played by the government in environmental protection is unquestionable. Governments around the world have publicized strategies to implement sustainable consumption and practices throughout the world. Some governments have adopted social advertising in order to educate and promote environmental awareness among the public (Chen and Chai, 2010).

With the amount of attention that the environment has been receiving lately, people would think that there is indeed substantial progress in preserving the world’s species, resources and wonderful diversities of nature. Many companies have started to be more socially responsive in addressing pollution and waste disposal by developing environmental friendly assembly and packaging methods to support environmental causes.

Companies face challenges with regards to the misconceptions of customers and often spend millions of dollars investing in green products. As a result, it is important to explore the views and behaviors of society towards environmental issues, with an emphasis on their attitude towards green or environmental friendly products.

In order to ensure a sustainable future, comprehensive and equitable green societies need to be constructed. In order to be green, a society requires to have knowledgeable people (knowledge workers) who are

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able to look into emergent issues in science and technology and create ground-breaking solutions to work out environmental issues (Bokova, 2011).

From the preceding statements, it is clear that a green knowledge society that possesses the knowledge on social environmental issues, perceived green values, social responsibilities, government rules and legislations is required to successfully cultivate the need for green practices among consumers. It is therefore of interest to study how a green knowledge society can affect the need for green practices.

This study thus aims to determine the relationship between a green knowledge society and the need for green practices. For this study, a framework was derived from the literature review on green knowledge society and green practices, followed by a survey research carried out among consumers. The relationships in the framework were then verified by analyzing the data collected using descriptive, reliability, correlations and multiple linear regression analyses. Finally, by using theory and logic, the mechanisms of these relationships were explained. The outcome of this study can be potentially used as a guideline for consumer awareness in the efforts to reinforce the need for green practices among green knowledge societies.

BACKGROUND ON GREEN PRACTICES

The history of environmentalism started way before eco-living communities were even familiar with the concept of going green. The expansion of this movement, philosophy or way of life is important for human beings to survive on this planet.

Although many people associate the beginning of the green movement with Rachel Carson’s 1962 publication entitled Silent Spring, the origins of the green movement in America can be traced back even further to the time of Henry David Thoreau and Teddy Roosevelt (Michael, 2010). In short, the concept of going green has been popular throughout the history of mankind.

Besides that, although the concern on green consumer behavior to marketing planners has been backdated as early as the 1970s, it only vigorously captured the public’s attention in the 1990s. At that time, the social and environmental concerns were of great importance to consumer purchasing decisions (Prothero, 1996).

As consumers become more aware and concerned about the environment, their way of making purchase decisions starts to change. It appears that consumers progressively prefer to purchase environmental friendly products, having realized that their purchasing behavior has a direct impact on many environmental issues.

Consumers quickly adapted to this new paradigm by considering environmental issues when shopping such as ensuring if the product contains or is wrapped in recyclable materials and buying only ecologically compatible products such as biodegradable paint, CFC-free hairspray and unbleached coffee filters (Laroche et al., 2001). Consequently, the gradual rise of green consumerism developed a need for society to carry out green practices.

A study on green practices in a firm from the United States reported that a majority of the respondents (84.4%) indicated that they regularly participate in some form of green purchasing initiative (Min and Galle, 2001). From this finding, it is evident that people are indeed making an effort in employing green practices to save the environment.

Laroche et al. (2001) suggest that in 1989, 67% of Americans stated that they were willing to pay 5 to 10% more for ecologically compatible products. They also pointed out that individuals who are concerned for the environment will willingly fork out an extra 15 to 20% just to purchase green goods in order to participate in environmental activities.

The aforementioned results show that the consumers’ needs on green products are becoming more significant and results in the encouragement of green practices. Due to the growing concerns for the environment, more firms are now seeking ways to enhance green marketing which can be used to foster green practices.

Marketing green products can have a constructive influence on society since it promotes and considers the reduction of pollution in business trades. Even if companies are found liable for pollution of the environment, the underlying cause of pollution may still come from the customer demands for environmentally harmful products (Laroche et al., 2001).

Although the policies and actions of firms may have great impact on the natural environment, they are not the only ones who are responsible for its degradation. In contrast, the responsibility to address environmental issues should go to the society which, in actually fact, needs to be working together with firms and the government. According to the study of the Environmental Protection Agency (EPA), the reason why consumers may be involved in the damage of the environment is due to:

- A lack of understanding on environmental issues
- A lack of perceived values of green practices
- Inconvenience
- Laziness
- A lack of encouragement from the government
- Time constraints
Unavailability of cheaper alternative and mainstream products

In addition, there is a possibility that consumers are not strongly committed in improving their environment and may be expecting the firms and government to stand up for them and take full responsibility over the environment. It is thus imperative for researchers to conduct studies on the need for green practices in a green knowledge society.

GREEN KNOWLEDGE SOCIETY

A green knowledge refers to a society that considers the environmental conditions that everyone lives in for the pursuit of more sustainable paths of socio-economic development (Jamison, 2001; 2003). The development of a green knowledge society can depend on various important components in the society such as social environmental issues, perceived green values, social responsibilities, government rules and legislation. The following sections present the literature review and hypotheses development for these components.

Social environmental issues: Social environmental issues are problems that threaten the existing methods of social organizations. These problems often challenge communities to change certain patterns of practice in the organization. Since the causes of these social environmental issues are often said to be from mankind themselves, it is thus mankind’s responsibility to solve them. This logic often urges people to start implementing and researching on green practices.

Perhaps the greatest uncertainty that poses a major potential environmental threat to mankind is global warming. There is significant evidence that the world is heating up. According to Tuan (2004), when temperature averages are calculated for the entire globe, it was found that the 10 warmest years on record have all occurred from 1990 to 2003. Tuan (2004) also suggests that statistics show an upward trend, where the condition in the 1970s was hotter than the condition in the 1960s and even worse in the 1980s.

Although there have been public activities on environmental awareness such as recycling, green consumerism and ecological awareness, the participation is still at an alarmingly low level. Surveys done among students on the environmental behavior have shown that the respondents are generally ignorant of social environmental issues and unwilling to incorporate environmental awareness activities on a day-to-day basis (Perry and Singh, 2001). Therefore, based on the preceding discussion, the first hypothesis can be proposed as:

H1: Social environmental issues correlate with the need for green practices

Perceived green values: Schwartz (1994) describes human values as desirable goals, varying on importance that serves as guiding principles in people’s lives. McCarty and Shrum (1994) believe that it makes instinctive sense for these values to influence behaviors that work for common or societal good.

According to Laroche et al. (2001), there are two major values that actually influence consumer behavior, which are individualism and collectivism. Individualism represents how much an individual focuses on his or her independent self. Collectivism, on the other hand, refers to cooperation, helpfulness and consideration on the goals of the group relative to an individual.

When major sectors of the global population pursue generalized green consumer behavior, consumers are expected to experience an improvement of environmental quality (Hartmann and Ibanez, 2006). However, a more detailed analysis on the consumer value of green products reveals that consumers do not experience immediate individual benefit after purchasing a product that has a reduced negative impact on the environment.

Hence, the perceived value of individuals’ benefits might not be a sufficiently powerful motivation to entice green purchasing. It is also uncertain whether people who are practicing green concepts are influenced by the perceived green values of individuals or the perceived values in preserving the environment. Based on the preceding discussion, the second hypothesis can be proposed as:

H2: Perceived green values correlate with the need for green practices

Social responsibilities: In general, social responsibility is an ethical ideology rather than an entity and involves the commitment and accountability of individuals for the benefit of society at large. An individual should not expect to develop the interest in green initiatives only from external inducements but also from internal factors which involve a sense of responsibility towards society cultivated from within.

Sensitivity towards the environment can be strengthened by further increasing the awareness of environmental issues such as global warming, greenhouse gases and pollution. Such issues may also nurture the interest of firms to behave in more socially responsible manners and reflect an image of commitment to sustainability and social responsibility. By being sensitive to the environment, organizational behavior can be guided
not only by self-interest but also by the desire to behave appropriately in accordance to the public’s expectations and internalized standards of conduct (El Tayeb et al., 2010).

According to El Tayeb et al. (2010), social responsibility has a significant influence on green supply chain initiatives. For instance, they point out that many companies in Malaysia adopt social responsibility objectives that inspire them not to harm the environment but to produce more green products instead.

Besides that, organizations that desire to go green are working towards attaining the leadership in energy and environmental design (LEED) certification and producing corporate social reports to enhance their environmental performance. Therefore, it appears that social responsibility is one of the factors that can stimulate people to cultivate green practices. Thus, the third hypothesis can be proposed as:

H3: Social responsibilities correlate with the need for green practices

Government rules and legislation: The government is capable of expressing their desire to have a cleaner environment by urging organizations to study and consider the possible environmental consequences carefully before making any decisions (Lee and Quazi, 2001). Following the concept of ecological marketing, the government can carry out the marketing efforts in a form of communications, in order to sell new ideas or concepts such as air pollution control methods to industrial firms.

Also, the positive ecological content of the government policy contributes a minor or major appeal for marketers to adopt new concepts in increasing the environmental quality to an acceptable level (Apaivongs, 1994). According to Lee and Quazi (2001), compulsory environmental audits and stricter legislation in many countries have put pressure in organizations to place more emphasis in addressing environmental problems. Incentives and recognition awards for role model companies have also been offered in many countries.

However, enforcing rules and regulations to address environmental issues are not the most effective methods for controlling these problems. Instead, perhaps a voluntary policy of regulatory alternatives may be a better approach. An organization could then be innovative in controlling the pollution rates of emission sites as long as the level of pollution meets the EPA (Environmental Protection Agency) requirements (Lee and Quazi, 2001). Fundamentally, a voluntary approach allows substantial cost savings for the industry without neglecting the government’s requirements.

Besides that, regulatory institutions and agencies may provide incentives for firms that behave in an environmentally appropriate manner. Such inducement mechanisms can include offering incentives to companies for conforming to the demands of the agency. Government regulations can also encourage people to start employing green practices such as recycling. They may also motivate firms to increase recyclable contents in their products by purchasing recyclable materials from suppliers.

In addition, parent companies may set certain standards, rules and regulations that encourage their subsidiary companies in developing countries, to adopt green initiatives. Overall, perhaps government rules and legislation are aspects that encourage society and businesses to employ green practices and resolve the environment issues. This proposition leads to the development of the fourth hypothesis:

H4: Government rules and legislation correlate with the need for green practices

MATERIALS AND METHODS

According to Borgatti and Everett (2006), the development of a research framework can help researchers identify the measures and determinants of statistical relationships. Figure 1 presents the research framework on the effects of the green knowledge society variables on the need for green practices.

In this study, the independent variable involved is green knowledge society which includes social environmental issues, perceived green values, social responsibilities, government rules and legislation. The dependent variable in this study includes the need for green practices. A compounded analysis on how a green knowledge society could affect the need for green practices can be represented by forming a fifth hypothesis:

![Fig. 1: Research framework on the effects of the green knowledge society variables on the need for green practices](image-url)
H5: A green knowledge society influences the need for green practices

Survey and respondents: A questionnaire can be very important for data collection when a study intends to establish the measurement of variables. The targeted sample size for this study was 300 respondents. The respondents selected for the study were consumers from both public and private sectors. The questionnaire consisted of a written set of questions that have been modified from previous study.

The five-point Likert scale was used in order to investigate how many respondents intend to vote for a particular variable. This scale was chosen because it is best suited to determine the degree of knowledge on the subject matter and to understand the overall opinion towards the issue outlined. The last part of the questionnaire was reserved for the respondents to make any suggestions or comments pertaining to the questionnaire and the statements within.

Data analysis: Data analysis is the approach to de-synthesize data, informational and factual elements to answer research questions. The basic objectives of data analysis are to get a feel of the data, test its authenticity and develop hypotheses. The analysis for this study was done using SPSS 18. The analyses used were descriptive, reliability, correlations and multiple linear regression analysis.

RESULTS

A total of 300 questionnaires were distributed to consumers. However, out of 300 distributed questionnaires, only 190 were returned which was equivalent to a response rate of 63%. Table 1 presents the descriptive results of this study, which can be represented by a demographic profile of the respondents, such as gender, type of generation, ethnicity, nationality, education status, occupation and economic status. There was also a question on whether the consumer was familiar with the concept of going green.

From Table 1, it is found that the amount of female respondents (57.9%) is more than the male respondents (42.1%). Majority of the respondents are Malaysian (92.6%) while the rest of the respondents (7.4%) are of different nationalities.

Besides that, 93.7% of the respondents are from a younger age group, known as Generation Y (born after 1981) whereas 0.5% are from the Baby Boomer Generation (from 1946 to 1964) and 5.8% are from Generation X (from 1965 to 1981). Also, majority of the respondents are Chinese (85.3%).

<table>
<thead>
<tr>
<th>Demographic profile</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>80</td>
<td>42.1</td>
</tr>
<tr>
<td>Female</td>
<td>110</td>
<td>57.9</td>
</tr>
<tr>
<td>Type of generation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby boomers (1946-1964)</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Generations X (1965-1981)</td>
<td>11</td>
<td>5.8</td>
</tr>
<tr>
<td>Generations Y (After 1981)</td>
<td>178</td>
<td>93.7</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>162</td>
<td>85.3</td>
</tr>
<tr>
<td>Malay</td>
<td>6</td>
<td>3.2</td>
</tr>
<tr>
<td>Indian</td>
<td>9</td>
<td>4.7</td>
</tr>
<tr>
<td>Others</td>
<td>13</td>
<td>6.8</td>
</tr>
<tr>
<td>Nationality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysian</td>
<td>176</td>
<td>92.6</td>
</tr>
<tr>
<td>Others</td>
<td>14</td>
<td>7.4</td>
</tr>
<tr>
<td>Education status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Secondary school</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>177</td>
<td>93.2</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>9</td>
<td>4.7</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>180</td>
<td>94.7</td>
</tr>
<tr>
<td>Professional</td>
<td>6</td>
<td>3.2</td>
</tr>
<tr>
<td>Blue-collar worker</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Self-employed</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Economic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than MYR1000</td>
<td>164</td>
<td>86.3</td>
</tr>
<tr>
<td>MYR1000-MYR2999</td>
<td>14</td>
<td>7.4</td>
</tr>
<tr>
<td>MYR3000-MYR4999</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>MYR5000 and Above</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>Are you familiar with the concept of going green?</td>
<td>154</td>
<td>81.1</td>
</tr>
<tr>
<td>No</td>
<td>36</td>
<td>18.9</td>
</tr>
</tbody>
</table>

Table 2: Reliability analysis results for the green knowledge society variables and the need for green practices

<table>
<thead>
<tr>
<th>Variable Item</th>
<th>No. of items</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social environmental issues</td>
<td>5</td>
<td>0.801</td>
</tr>
<tr>
<td>Perceived green values</td>
<td>5</td>
<td>0.781</td>
</tr>
<tr>
<td>Social responsibilities</td>
<td>5</td>
<td>0.760</td>
</tr>
<tr>
<td>Government rules and legislation</td>
<td>5</td>
<td>0.695</td>
</tr>
<tr>
<td>Need for green practices</td>
<td>4</td>
<td>0.747</td>
</tr>
</tbody>
</table>

As for the education status of the respondents, 93.2% of them are still pursuing their bachelor degree. This finding is also consistent with the fact that most of them are students (94.7%). Thus, it is unsurprising that the highest monthly income range is less than MYR1000 (86.3%) due to the fact that most students are not employed and do not earn a stable income. Also, 81.1% of the respondents are familiar with the concept of going green.

Reliability analysis: Table 2 presents the Cronbach's alpha coefficients for the independent and dependent variables. From the results, all the variables have a Cronbach's alpha that varies from 0.695 to 0.801. This range is considered to be acceptable because according
Correlations analysis: Table 3 presents the correlation matrix of the study. It is found that all variables have a positive and significant correlation with each other. The significant values for Social Environmental issues (SEI), Perceived Green Values (PGV), Social Responsibilities (SR), Government rules and Legislation (GL) are below 0.01 (p<0.01). This finding shows that these variables significantly correlate with each other.

When investigating the individual relationships, it is found that the SEI variable has a correlating value of 0.420 when tested together with the dependent variable which is the need for green practices (GP). This finding suggests that a positive but moderately correlated relationship exists between SEI and GP (p<0.01).

The PGV variable is found to have the correlating value of 0.444 when tested with GP. This finding indicates that a positive and moderately correlated relationship exists between PGV and GP (p<0.01). Besides that, the correlation value between SR and GP is 0.470. This relationship is also a positive and moderately correlated relationship (p<0.01). Lastly, GL has been proven to have a positive and moderately correlated relationship with GP (p<0.01) based on the correlation value of 0.520.

In short, all these variables are positively and significantly correlated with each other and with the dependant variable which is the need for Green Practices (GP). Thus, H1, H2, H3 and H4 are not rejected. Somehow, to further support the hypotheses of the framework, a multiple linear regression analysis is also required for this study.

Multiple linear regression analysis: Table 4 presents the model summary of the multiple linear regression analysis.

It is found that the adjusted R² value is 0.385, which indicates that 38.5% of the variance in the need for green practices can be significantly explained by the independent variables considered in the previous sections.

However, during the stepwise multiple linear regression analysis, it appears that one of the independent variables was removed due to its insignificance in the model. That particular variable includes perceived green values. Nonetheless, the model is still proven to be significant and H5 is not rejected.

**DISCUSSION**

Based on the multiple linear regression analysis results, it is found that a green knowledge society plays an important role in harnessing the need for green practices, as far as the social environmental issues, social responsibilities, government rules and legislation are concerned. However, it is also found that there is no significant relationship between perceived green values and the need for green practices when all the independent variables are composite tested together against the need for green practices.

According to Jones and Yoo (2011) as well as Hartmann and Ibanez (2006), perceived green values might not be a sufficiently powerful motivator for green purchasing. Jones and Yoo (2011) explain that there is also no significant relationship between perceived green values and customer satisfaction on green consumption. The reason for this finding is perhaps due to the change in the values of respondents from time to time. Thus, the justifications are somehow consistent with the findings of this study.

From the analysis, it was found that the 'government rules and legislation' variable had the highest correlation among other variables. Seeing as majority of the respondents are Malaysian consumers, this phenomenon can be explained by considering the level of green knowledge, practices and cultures in Malaysia, which is still at an alarmingly low level (Rahim et al., 2012). It appears that few people are willing to pay extra for green
products. One of the reasons may be because the green culture is yet to be accepted or embraced by a large percentage of the society.

It appears that the motivation to sacrifice more (by paying more) for a brighter future has yet to surpass the critical comparison factor of price. Therefore, unless a higher authority (such as top management or the government) enforces the usage or purchase of the pricier but greener products, it is hypothesized that the public may just continue to be ‘green ignorant’.

The effectiveness of the legislation on enforcing these green practices can be clearly seen in certain places, where only bio-degradable packaging is allowed for purchases such as meals or groceries. The same goes for the common ‘non-plastic bag’ days, which are enforced in shopping malls every Saturday in Malaysia.

The perceived green values of every individual may vary on several accounts (Keller et al., 2011). These accounts may be contributed by each individual’s self-motivation and agenda when involved in green practices. It is possible that a portion of these consumers unwillingly practice green purchasing because of the enforcement of the government rules and legislation. If this likelihood was true, it would be explicable to assume that these individuals may not even want to understand the reasons to be involved in green movements.

In addition, consumers may tend to accept that by employing green practices, they have to pay more without truly understanding the full life-cycle impact of green products on the environment. Also, consumers may not be able to understand the technical knowledge and terms used in a green product’s life cycle. This possibility may further hinder the effectiveness of green awareness and the need for green practices.

CONCLUSION

In summary, it can be concluded that a positively significant relationship exists between a green knowledge society and the need for green practices. It can also be posited that the governmental rules and legislation factors in a green knowledge society are of unprecedented importance in the efforts to reinforce the need for green practices.

For future studies, it is suggested for researchers to identify other possible underlying factors that drive the need for individuals to implement green practices such as price sensitivity, eco-literacy and many more. Researchers may also include the analysis of relationships among these factors.

Besides that, researchers can also increase the sample size in order to obtain more accurate and valid data for analysis. By increasing the number of respondents, the possibilities for unfilled or invalid questionnaires during data collection can be reduced. The increase in the amount of questionnaires distributed can improve the response rate. Researchers can consider a sample size of 500 to 1000 respondents to improve the validity of the data.

For future studies, researchers can select actual consumers from the market to partake in this study as respondents, rather than focus on respondents in the younger age groups. Different approaches for data collection can be used to reach out to consumers from different geographical areas. In order to improve the data collection process, the location of the study also needs to be taken into consideration. Also, by using various sampling methods such as random sampling rather than convenience sampling, the results of this study can potentially be more accurate.

REFERENCES


