THE ATTITUDE OF PRODUCT USERS TOWARDS ENVIRONMENTAL CONCERN
A Case Study on the Users Living in Chiba City

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Abstract: The purpose of this study is to research and analyze the attitude of users (consumers) toward environmental concern context. The questionnaires were answered by the users living in Chiba City. According to the Survey Results: users gave strong consideration to socio-cultural factor for solution of the present environmental issues. As consumers they showed a pro-environmental attitude and they gave attention to the environmental aspects during the purchase of a product. About a half of users affirmed that if company (ies) introduced new products with radical environmental aspects in marketing, the lifestyle of consumers could be changed. The majority of users express interest to receive environmental education in which the main topics are related with consumption of household products and waste.

key words: consumers, environmental concern, sustainable development

1. General Introduction

According to Ottman [1] environmental consumerism presents profound implications for marketers as they are moving rapidly and competitors around the world are already responding with substance. While economic health is still the publics' number one priority, more and more people are refusing to sacrifice environmental quality for the sake of a stronger economy.

In Japan the awareness of environmental issues has risen in recent years, but there is still a lag between awareness and action, particularly when compared to other countries like Germany, Netherlands and Sweden [2].

According to Abe [3] Europe and North America see Japan as being slow to get moving on the environment, perhaps the legacy of the image of heavy pollution that was created during the high-growth period. During 40 years preceding 1996, Japan had achieved extremely rapid economic development, with its GDP 9.4 times bigger than the GDP at the beginning of this growth period. As a result, the current Japan standard of living has come to acquire have the benefits of "materialistic wealth".

Japanese socio-economic and life styles seek economic efficiency, comfort, convenience, and have come to be dependent on a system of mass production and mass consumption that requires enormous amounts of resources to support it. [4]. As economic activities expand and improve, environmentally damaging problems inevitably occur. Two examples of this are, the over-exploitation of resources to a degree that surpasses the natural capacity of those resources to recover, and contamination due to the discharge of waste products. The material balance of Japan in 1995 shows that the total amount of materials used in the country during that year amounted to 2.21 billion tones and this number has increased year by year [4].

Considering this growth socio-economic and environmental issues consequence, the authors decide to analyze the attitude of users (consumers), toward environmental issues. And also to analyze their opinions toward environmentally products that could encourage companies and developers to integrate more effectively environmental aspects in the product and service of its production and also its consumption phases in the attainment of more sustainable development.

This research is a preliminary study in which the authors analyzed users' attitudes towards environmental concern from general points of view. (Figure 1) As case study, this research was focused on the users living in Chiba City. The choice of
Chiba City can be justified by data from Japan Almanac 1999 by Asahi Shimbun [5], in which Chiba City is cited as one of the 12 Cabinet Ordinance Cities in Japan. The total of garbage produced in Chiba City daily life has increased sharply since the mid-1980's.

The term environmental impacts used in this research refers primarily to the amount and consumption of households' products and household waste. The term 'socio-cultural' used in this research refers to the individual attitudes, lifestyles, ethics and sense of responsibility. And the term of 'consumer' was substituted by term 'user' which in the authors consider being more environmentally friendly.

Based on the situations mentioned above, six following research questions are set:
1. How can be characterized the attitude of users towards overview of environmental problems?
2. How can be characterized the attitude of users toward 'environmental aspects' during the purchase of a product?
3. How can be characterized the opinion of users toward new product with radical environmental aspects in marketing?
4. How can be characterized the knowledge of users about sustainable development concept?
5. How can be characterized present environmental education and learning from users' view?
6. What are the relationship between local community and environmental activities of companies from users' view?

2. Design of Research

At the beginning of this research the environmental damaging problems caused by current system of production, consumption and economic activities in Japan are discussed from different points of view. This discussion is based on the literature and case studies by many Japanese and foreign experts from Europe and North America.

Based on the information, which is mentioned above, a set of questionnaire was formulated and distributed to region of Chiba City. Users (consumers) living in Chiba City answered the questionnaire. The questionnaire was answered mainly by people of general professions and students, and was carried out between 2000/July and 2000/August.

In the questionnaire a total of twenty-five questions (on four pages at one side) about the environmental aspects was
asked to users. The first part was related to their profile, the second part to their personal opinion about the environmental problems and the third part to their learning on environmental aspects. The questionnaire was put straightly into mailboxes of each household in Chiba City.

3. The Profile of the Respondents to the Questionnaire

The questionnaire was answered by 212 persons of Japanese nationality, living in Chiba City, among them 101 (48%) were male and 111 (52%) were female, the age was between from 15 to 69. In the Figure 2, the respondents were divided in six groups according to the age (Teens, 20-ties, 30-ties, 40-ties, 50-ties and 60-ties). From 212 respondents, only 5 respondents were involved in environmental activities, while another 207 of them unrelated in it.

In this research in order to get a general view of users' attitudes, the balance of respondents' numbers in the six groups according to the age and sexes were considered. (Figure 2)

4. Survey Results

4.1. The Personal Attitudes of Users Towards Overview of Environmental Problems.

The objective of this section is to discuss the users' positions and their personal attitudes towards environmental problems and their different ways to approach sustainable development. Based on the Ecodesign Awareness Workshop of Ecodesign Manual by Brezet [6], users were asked to determine their positions toward environmental problem; in a field consisting of four factors: technology, socio-cultural, the economy and ecology (conserve the nature).

According to the general results, users considered factor to mean fundamental changes in individual attitudes; changes of consumer lifestyles (53%); in other words, socio-cultural as one of the most important factors for solution of present environmental problems in the first order rank. (Figure 3)
technology and socio-economy to socio-cultural factor, which consequently will influence the re-definition of the current product, production and consumption.

4.2. The Attitude of Users Towards Environmental Aspects During the Purchase of a Product.

According to the answers by 212 users, it was noted that in almost all question users has showed an optimistic attitude during the purchase of a product. They showed their awareness of environmental issues.

As consumers, they are exercising the power of their purchasing decision in favor of their economic, socio-cultural and environmental concern. This argument can be noted in judging the following results: in the Figure 5 statement a. 63 percent of the respondents in general results, agree that the boycotts by end-users of certain products organized by consumer organizations can have considerable impact on company behavior. In the statement b. in general results, 41 percent agree and 31 percent disagree that in the near future the cost of disposal of a product will be more expensive than the cost of production it.

Judging from those results above, it can be concluded that users today are more conscious, showing a pro-environmental attitude to the cost of disposal and boycotts of certain products. Users also have contributed to environmental clean up and preservation primarily with practical action, through the purchasing products that are perceived as environmentally sound (products with eco-labelling) and such as recycling (re-use of second hand products).

In the Figure 6 to the question a. 56 percent in general results had ever opportunity to buy a product(s) in recycling shops. From the general results of the question b., 56 percent of users read labels of product before purchase it, and 64 percent of them had ever bought a product with eco-labelling (Question c). In these results the users have showed a pro-environmental action as consumer. However it can be argued that not always the environmental aspects are the most important factor in decision to purchase a product. Maybe one of the arguments that justify the motivation of users in buying in recycling shop are factors like price, fashion and aesthetic of old product with long-life. Other aspects noted were that in all answers' result didn't have significant differences between age groups.
a. Did you have opportunity to buy product(s) in recycling shops?

b. Before buying a product do you read labels?

c. Have you ever bought a product with "Eco-labelling"?

Eco-labelling was designed to help consumers select and to encourage manufacturers to make products which do less damage to the environment.

Fig 6. The Attitude of the Users Towards Eco-Labelling and Recycling Shops.

In the Figure 7, from general results of the question a, 41 percent of users responded ‘yes’, 41 percent ‘sometimes’ and 14 percent ‘no’. Here, users showed a proactive attitude, however from general results in the question b, 23% of users responded ‘yes’, 39 percent ‘sometimes’ and 34 percent ‘no’. The majority of users responded ‘sometimes’, showed an uncertainty in relation of this question. These results can be justified with the argument that ‘leasing’ in beginning is essentially a long-term rental on contract and also the according to the product the leasing vary from product to product.

Fig 7. The Personal Attitude of Users Before Buying a Product.

4.3. The Opinion of Users Towards New Products with Radical Environmental Aspects in Marketing.

According to International Consumer Behavior [7] Japan is a country with relatively homogeneous society and rapid acceptance of new products in their daily life. 82 percent of the Japanese respondents felt that high-tech products, electronic appliances, such as compact disc players, would be accepted very quickly. But in this research the relationship between users and new products with radical environmental aspects is quite different.

In the Figure 8, from the general results in the question a, the majority of users (35%) responded that the public would accept new product with radical environmental aspects somewhere in between ‘very quickly’ and ‘very slowly’. Only a small percent of respondents (3%) believe that the public won’t accept it. In these results it can be argued that there is a doubt in the position of users in answer to this question. Perhaps it can be justified with the fact that users still have low experience in the purchasing of new environmental products or service. There is also lack of alternatives acceptable by users in the current system of production and consumption, which allows the users to choose it in the marketing. However, in the
a. In your thinking if company (ies) introduces new products with radical environmental aspects in marketing; how Japanese public will react?

![Graph 1](image)

1. The public will accept it somewhere in between 1 and 2.
2. The public will accept it very slowly.
3. I don't know.
4. I don't know.

b. If company (ies) introduces new products with radical environmental aspects in marketing, can it change the lifestyle of consumer?

![Graph 2](image)


c. "The environmental issues will be one of the most important theme for 21 century and will be driver for innovation and new business."

![Graph 3](image)

Fig 8. The Attitude of Users Toward New Products with Radical Environmental Aspects.

question b. the context of user in relationship to new environmental product is different. 50 percent of respondent affirmed that if company (ies) introduces new products with radical environmental aspects in marketing, it could change the lifestyle of consumer. Here, users showed a pro-environmental position, accepting new eco-product and service alternatives and giving their opinion for change in their lifestyle. If really users put this attitude in action, it could contribute to reduce the environmental impact.

The result above can be complemented by research conducted by Japan’s Economic Planning Ministry [2] which shows that 31 percent of Japanese believe that individual’s lifestyle contributes directly to environmental issues, and 50.8 percent believe that industry is the main source. Other important data also can be complemented here: a survey by Nissei Research Institute [2] showed that 35 percent of Japanese gave lack of nearby environmental products and services as a reason for not taking ecological steps.

Based on the results above, new possibilities of eco-business can be proposed in the current Japanese marketing, benefiting both users and companies. This affirmation also can be complemented by general results of statement c., where the majority of users agree that the environmental issues will be one of the most important themes for 21 century and will
be drivers for innovation and new business.

Although to achieve environmentally friendly-lifestyles context is important for companies, (commercial enterprises) which provide products and services to the public, to make an effort toward eco-efficiency, in order to built a sustainable socio-cultural economy.

4.4. The Users and Their Knowledge of Sustainable Development Concept.

The goal of this section is to analyze the knowledge of users about the Sustainable Development Concept. According to the answers by users to the general results of question a, the majority (84%) didn't know the meaning of Sustainable Development and only 16% know its meaning. The majority (41%) of respondents that revealed knowledge of its meaning belonged to the age between 20–29 (Figure 9). The concept of Sustainable Development was introduced in 1987 (UN Brundtland Committee: Our Common Future), and reviewed in Earth Summit in Rio de Janeiro, 1992. Its meaning: “development that meets the need of the present without compromising the ability of future generations to meet their own needs” [8]. Brezet [6] adds that: ‘Sustainable development requires a radical reduction in the use of raw materials and fossil fuels, and of wastes and emissions of (hazardous) substances in industrialized countries (by 70 to 90 percent). This in turn will require changes in production and consumption patterns’.

Judging by the answers of users to the question a. (Figure 9), it can be said that users showed little interest or small involvement in environmental issues in relationship with the “world”. A criticism noted in the report by Burgh [9], from the point of view of general public: “Japanese people are only concerned with problems that effect their own surrounding”. Maybe this is one of the arguments that justify the answers of users.

4.5. The Present Environmental Education and Learning From Users’ View.

According to Gardener [10] the lack of environmental information can be serious barrier to pro-environmental action, because it is not always obvious to individual how to act effectively on his or her attitude. Especially the case for environmental protection, because it is impossible discerns from personal experience, the connections between behavior and its environmental effects.

The Japan Environment Agency [4] in its report stresses also that one way for consumer to achieve a lifestyle with less environmental load is to provide information. This information is based on daily activities and examples of measures to reduce environmental load. For this, focus on education and learning of consumers are the keywords to make environmentally friendly lifestyles. Based on these arguments and suggestions from experts, in this section the authors analyze the present environmental education and learning of users living in Chiba City.

According to the answers by users, only 5 of respondents were involved in the environmental activities of group or team, while another 207 of respondents were not involved in them. From these 207 of respondents were not involved in the environmental activities, 74 percent of respondents express their interest in participation in the environmental group or team. (Figure 10)

The current environmental education and learning of users living in Chiba City didn’t reveal an ideal level for transition to more environmentally friendly lifestyles. Between 212 respondents, only 4 percent of those, who represented only 5 users, responded that have attended education and learning program on environmental aspects organized by school and company since last year. Here, the authors see from this results that education on environmental aspects in the most schools or companies have not been implemented formally in its education program. It can also be said that majority of schools and companies that have implemented environmen-
tial education did it voluntary, by their own initiative. Those schools or companies have showed a proactive attitude toward environmental concern.

In the Figure 11 the most important environmental information topic, that users would like to receive learning in, eco-toxi substances that are used and emitted during production of materials and components (23%). The second most important topic was examples of environmentally friendly products (20%). The third position in order rank belonged to environmental costs (for waste disposal, recycling, etc) (17%). Only 4 percent of respondents expressed no interest in to receiving or learning it.

Judging from the choice of those three major topics by users, it can be argued that those topics are directly related with the amount and consumption of household products and household waste of users. In particular the increased volume of waste, and the diverse of waste's component, including increasingly varied quantity of toxic chemical substances, which is causing additionally complicated problem to environmental.

4.6. The Relationship between local community and environmental activities of companies from users' view.

In the previous studies [11] were argued that one of the most important initiatives for transition to a new paradigm of production and consumption was the change in the lifestyle of company and users. In this context education and learning on environmental aspects as strategic approach have an important role.

In this section, important environmental criteria based on the recent studies [12-14] is proposed to achieve sustainable. This proposal puts the focus on the local community, their local people, local economy, local environmental conditions.

Nowadays, principally in economic trends, many experts from other fields [8, 15, 16] indicate that one of the solutions for the economic and environmental crises lies in creativity of local communities or regions. The authors research new way to indicate new direction or new eco-business in order to achieve sustainable. From the general results of question a., 61 percent of respondents affirmed that the local community, local cultural environment constitutes a critical success factor for the local company(ies). (Figure 12) In question b., (topics 1, 2 and 3) the 76 percent of respondents expressed interest the promotion of environmental activities by local companies in their local community. (Figure13)

The most important environmental activities, which the users would like to promote was the organization of seminars and symposiums on environment (34%). The second most important type was workshops: collection of community opinion and suggestion (30%). The third position in order rank was space for exhibitions and meeting spaces for information exchange (12%). Only 1 percent expressed no interest the promotion of environmental activities in their local community. By this general results the authors can see that users showed a proactive attitude toward environmental concern in order to explore new ways in the interaction between the companies and community for a more sustainable development.

The relationship between the local community and environmental activities of companies still in its initial phase. So much original research and thinking is necessary for it's continuation.
5. Discussion

Based on the survey results the authors extended the discussion with reference to socio-cultural factor as the more pro-environmental attitude. The authors also focused the present factors that have blocked the users to have a more environmentally friendly lifestyles in order to achieve a sustainable society.

As was already argued in the sections 4.2 and 4.3, the majority of users exercise a positive action toward environmental aspects during the purchase of a product. About a half of users have affirmed that if company (ies) introduces new environmentally friendly products or services in the marketing, it can change the lifestyle of consumer.

The majority of users (98%), that have not received environmental education or learning since last year, stressed the interest to receive environmental education in their school, companies and local community. (Sections 4 and 5)

In the face of those facts the authors argued that one of factors, that did not permit the user to have a more environmentally friendly lifestyle is, perhaps, the lack of acceptable products and services in the current system of production and consumption. Also more one factor is the lack of environmental education and learning program for general public in nurturing the ability of users in their action toward environmental impact.

In general, the lack of more environmentally friendly products and services in the current production and consumption can be explained by following arguments:

- The high cost and the technical problems have been the most relevant barriers encountered by companies during implementation of the environmental aspects into the product development. [17]

- The current Japanese companies and government policies have strong focus on technical guidelines (eco-redesign concept) to solve the environmental burden in the product life cycle. [17]

- The ecodesign strategy adopted by companies for a new sustainable design concept (eco-business) still is characterized with a focus on development of environmental improvement of product (eco-redesign of products with focus on technology factor). It didn't reveal radical design concept or new design concept development in achieving of a more sustainable solution. [18]

Those facts above can be justified with the arguments that the implementation of new concepts of environmental services and products in the current system of industrial production and consumption, implies reduction of current economic activities.

The situation with present environmental education and learning for users can be explained with following arguments:

- The introduction of environmental education and learning in Japan is still in its initial phase. The promotion of environmental education and learning was established in 1993 with the introduction of Basic Environmental Law in Japan. Efforts have been made particularly by national and government bodies, supporting citizen's voluntary action, organization, training leaders and making financial support [4].

- The Global Environmental Information Center (GEIC), founded 1996, has supported different sectors of society with collection and dissemination of information on activities of various organizations, establishment of several networks, organization of seminars and symposiums, collection of public opinion, and NGO project and activity support [19]. Though those environmental activities in education and learning that have to be made, it is something not very well known to general public and also still in its promotion phase. The environmental education still is not implemented formally in the general schools, universities and companies. The majority of those, who had implemented environmental education, did it voluntary by their own initiative.

In conclusion of this discussion it must be said that there is a need to implement strong efforts for education and learning on environmental aspects in the daily life of user and better system of information, which enables users to notice the environmental problems, in their relationship with society and the economy, and to join forces with the efforts made by others to solve the problem. And also the new environmental criteria must be formulated and focused at the corporate level that permit to provide products and services to users to make an effort toward environmental issues. For example: exploitation of the local community, local economies and local culture in order to develop a new generation mix of product and services with characteristic of a low environmental impact and high users' participation.

These proposed new environmental criteria that could be the product or service oriented strategic, if applied in the right context, the development of new eco-business idea could be stimulated and could lead to less environmental damaging products and services.

6. Conclusions

In this research the users gave strong consideration to sociocultural principles as most important factors for solution of the present environmental issues, showing a pro-environmental attitude.

Users also showed a pro-environmental attitude as consum-
ers. They considered the environmental aspects during the purchasing products. They did so through the purchasing products that are perceived as environmentally sound (products with eco-labelling) and recycling (reuse of second hand products).

About a half of respondents stated that if company (ies) introduced new products with radical environmental aspects in marketing the lifestyle of consumer it could be changed.

The majority of users showed little knowledge and involvement with sustainable development concept. The environmental education and learning for users did not show significant level in transition to more environmentally friendly lifestyles. The majority of users expressed interest to receive environmental education in, which the main topics are related with consumption of households products and waste. Also the majority of users expressed interest the promotion of environmental activities by local companies in their local community, which the main topics are related with organization of seminars and symposiums on environment.

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