

Assessment of Policies to Promote People's Environmental Activities

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Abstract: Nowadays, many kinds of environmentally friendly campaigns led by local governments and private companies alike have been conducted in order to increase the pro-environmental behaviors. Unfortunately, these campaigns do not always lead to the upgrading of people's pro-environmental behaviors, because people's behaviors are usually based on various motivations, including economic efficiency, convenience and so on. This article mainly aimed at analyzing the implementing reasons of people's pro-environmental behaviors and finding out policies of promoting people's pro-environmental behaviors. Therefore, the author conducted the internet investigations among male and female respondents over 20 years old, and collected valid responses of more than 1,000 from 2008 till 2014 every year in Japan and also used three communication concepts, which are the direct communication, the indirect communication and the direct and indirect combined communication as a framework for discussing policies of promoting people's pro-environmental behaviors. As a result of the internet investigations, it was found that non-environmental factors, such as "saving the household", "compliance with social norms" and "health" were bigger than the environmental factors, such as "the prevention of the global warming" and "saving resources" with regard to the implementing reasons of the pro-environmental activities. Actually, the pro-environmental activities often have the non-environmental benefits, such as cost-saving, health and so on. And so, the author suggests that it is effective that upgrading the implementation rate of the pro-environmental activities do not only appeal to the effects of reducing the environmental loading that the activity has (the direct communication), but also to the non-environmental benefits that the activity has, especially it is true to unconcerned people about environmental issues (the indirect communication). In addition, the author emphasizes that people need to appeal to both the environmental effects and the non-environmental benefits which the activity has, respectively, especially to people with the concern about environmental issues to some extent (the direct and indirect combined communication).

Key words: Environmental awareness, incentive, the direct communication, the indirect communication, the direct and indirect combined communication.

1. Introduction

In recent years, the environmentally friendly campaigns targeted individuals by local governments and companies alike have been increasing. Even though environmentally friendly products have been sold and the environmental measures targeted at individuals have been implemented, this is always the case that these activities do not reach directly each person's environmentally-oriented behavior. This is due to the fact that consumers tend to choose their behavior based on a variety of factors, including convenience, pleasure, economic efficiency, besides

environmental-oriented factors. Therefore, it is necessary to clarify various motives which make people choose something and consider the ways which promote ambient behavior.

There are many previous studies on the factors of human behaviors, including the pro-environmental behavior.

The main theories about the relevance of human attitudes and behaviors are "the theory of reasoned action" by Ajzen and Fishbein [1] and "the theory of planned behavior" by Ajzen and Madden [2] and Ajzen [3].

Ajzen and Fishbein [1] have explained the relevance of attitudes and behaviors by assuming the mental factors called "behavioral intentions",

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“attitudes for behavior” and “subjective norms” in the theory of reasoned action. That is, they express that “behavioral intentions” are formed of “attitudes for behavior” and “subjective norms”, and as the behavioral intentions become strong, the possibility that the action will be performed becomes higher.

But this theory has the restriction of behaviors which are completely controllable with the individual's behavioral intentions.

Therefore, in the theory of planned behavior, which is a development model from the theory of reasoned action, this limit has been improved by adding the psychological factor called “perceived behavioral control”. The perceived behavioral control means the measurement for evaluation whether it is easy or not to perform the action by the individual's intention in the situation at that time. The perceived behavioral control affects both the behavioral intentions and the implementation of behavior.

However, these theories do not sufficiently explain the inconsistency between pro-environmental attitudes and pro-environmental behaviors.

“The two-phase model” by Hirose [4] and “the dual-process of decision making model” by Ohtomo and Hirose [5] are the typical examples of the theories, which explain above inconsistency.

Hirose [4] expressed that because there is a time lag between the first phase where a person recognizes the importance of environmental problems and the second phase where a person carries out the environmental action, like the purchase of an environmentally friendly product in a shop, thereby a person chooses the different actions from the ones when they have chosen at the first phase. He named such a situation as “the two-phase model”.

In addition, Ohtomo and Hirose [5] suggested “the dual-process of decision making model” on the basis of “the two-phase model”. They showed that there are two types of decision making processes, namely “reactive decision” and “intentional decision”.

In the reactive decision, people have a vague image

for each action. Also, when an individual performs the act, he/she judges whether he/she should perform the act which they choose or not, considering others' observational evaluations (including both positive and negative evaluations). This evaluation standard of the act is called “the descriptive norm”. On the other hand, in the intentional decision, people hold an explicit sense of purpose. This sense of explicit purpose is called “the aim intention”. When an individual performs the act, he/she judges whether he/she should perform the act which they chose or not, in accordance with a prescriptive social norm. This autonomous standard of the act is the subjective norm.

Ohtomo and Hirose [5] explain the dual-process of decision making model as follows. While intentional decision performs actions which promote the environmentally friendly behavior, reactive decision performs actions which restrain the environmentally friendly behavior. Hence, since intentional decision is not always made, the environmentally friendly behavior is not always promoted either. Ohtomo and Hirose [5] explained the reason why the environmental awareness does not always lead to the promotion of the environmentally friendly activities.

These studies clarified the structure and the mechanism of the human actions. However, they do not argue how the environmentally friendly behavior should be promoted under such situations.

In this article, the author will explore the approaches which promote people's ambient behavior by clarifying implementing reasons for ambient behavior, including individuals' environmental awareness, implementation status of ambient behavior, the environmentally related advantages and non-environmental advantages.

2. Methods

2.1 The Internet Survey for People

In this paper, with the aforementioned studies in mind, it will be argued how we can promote the individuals' environmental behaviors.

First, the actual conditions of people's environmental awareness and their related factors based on that actual condition will be explained. Then, the methods to promote the environmental friendly activities will be discussed. The following annual internet survey results are used in the study of people's awareness and behavior [6]. The 2008-2014 surveys were conducted by Initiative for Circular Flow Society (ICFS), which was a research group of environmental staff members in Japanese main companies and the author of this paper was the chairman of this group. The surveys were designed in 2008 and have been conducted since then among male and female respondents aged over 20 years old with valid responses of more than 1,000, which meets pre-designed target sample splits in line with the universe. This internet survey was conducted twice in February and June, 2011, respectively, to analyze the difference between before and after the big earthquake happened in March 2011 in Japan. Table 1 shows the periods the survey conducted and the number of samples.

Samples were extracted from INTAGE sample panel based on the quota allocation by area, gender and age in line with the splits of universe. Fifty

questions were asked regarding interest in social issues, how often they actually take pro-environmental actions in their daily life and the reasons for their actual actions, what importance they consider at the time of purchasing and so on.

The national population census, which Statistic Bureau, Ministry of Internal Affairs and Communications in Japan have conducted every five years, was used as the universe. The census conducted in 2005 [7] was utilized as the universe of surveys during the period 2009-2011 and the census conducted in 2010 [8] was utilized as the universe of surveys during the period 2012-2014.

Samples have been extracted from INTAGE sample panel, and 800,000 people were based on the quota allocation by gender (male, female), age (20-29, 30-39, 40-49, 50-59, over 60) and area (Hokkaido/Tohoku, Kanto/Keihin, Chubu, Kinki, Chugoku/Shikoku, Kyusyu/Okinawa) in line with the splits of universe. Table 1 shows the requested sample number, the collected sample number and the collected rate in each survey.

Tables 2-4 show the comparison between the collected rate of the internet survey in 2014 and the population rate of the census in 2010 by gender, age

Table 1 Research design and result conducted.

Year	Period	Requested sample number	Collected sample number	Collected rate (%)
2008	March 14-18	3,200	1,236	38.6
2009	February 20-24	3,200	1,042	33.8
2010	February 23-27	4,370	1,021	23.4
2011	February 24-28	4,370	1,261	28.9
2011	June 9-13	3,395	1,421	41.9
2012	February 29-March 2	4,540	1,264	27.8
2013	March 5-7	4,448	1,262	28.4
2014	March 20-24	5,097	1,268	24.9

Source: Initiative for Circular Flow Society (ICFS), 2014 [6].

Table 2 Comparison between the internet survey in 2014 and the census in 2010 by gender.

Gender	Collected sample number	Collected rate (%)	Population number by census	Population rate (%)
Male	612	48.3	50,045,385	48.0
Female	656	51.7	54,168,743	52.0
Total	1,268	100.0	104,214,128	100.0

Source: Initiative for Circular Flow Society (ICFS), 2014 [6] and Statistic Bureau, Ministry of Internal Affairs and Communications, 2010 [8].

Table 3 Comparison between the internet survey in 2014 and the census in 2010 by age.

Age	Collected sample number	Collected rate (%)	Population number by census	Population rate (%)
20-29	185	14.6	13,720,134	13.2
30-39	208	16.4	18,127,846	17.4
40-49	236	18.6	16,774,981	16.1
50-59	204	16.1	16,308,233	15.6
Over 60	435	34.3	39,282,934	37.7
Total	1,268	100.0	104,214,128	100.0

Source: Initiative for Circular Flow Society (ICFS), 2014 [6] and Statistic Bureau, Ministry of Internal Affairs and Communications, 2010 [8].

Table 4 Comparison between the internet survey in 2014 and the census in 2010 by area.

Area	Collected sample number	Collected rate (%)	Population number by census	Population rate (%)
Hokkaido/Tohoku	163	12.9	12,218,199	11.7
Kanto/Keihin	410	32.3	35,598,740	34.2
Chubu	228	18.0	18,360,182	17.6
Kinki	189	14.9	16,919,182	16.2
Chugoku/Shikoku	141	11.1	9,391,760	9.0
Kyushu/Okinawa	137	10.8	11,726,065	11.3
Total	1,268	100.0	104,214,128	100.0

Source: Initiative for Circular Flow Society (ICFS), 2014 [6] and Statistic Bureau, Ministry of Internal Affairs and Communications 2010 [8].

Following shows prefectures which each area includes:

Hokkaido/Tohoku: Hokkaido, Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima;

Kanto/Keihin: Ibaraki, Tochigi, Gunma, Saitama, Chiba, Tokyo, Kanagawa, Yamanashi;

Chubu: Niigata, Toyama, Ishikawa, Fukui, Nagano, Gifu, Shizuoka, Aichi, Mie;

Kinki: Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama;

Chugoku/Shikoku: Tottori, Shimane, Okayama, Hiroshima, Yamaguchi, Tokushima, Kagawa, Ehime, Kochi;

Kyusyu/Okinawa: Fukuoka, Saga, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima, Okinawa.

and area. The composition ratio of the collection sample of the internet survey and the population composition ratio of the national population census are almost similar. The comparison ratios of the internet surveys from 2009 till 2013 and the population composition ratio of the census are approximately similar as in 2014.

2.2 Three Communication Concepts

Three communication concepts, properly, which are the direct communication, the indirect communication, and the direct and indirect combined communication, were suggested in this paper as the framework for discussing the policy for promoting people's environmental activities.

The direct communication is an important method for solving an actual problem brought by an action,

which leads to the following action. In other words, it plays an important role in appealing for the importance of the environmental problem resulting in the environmentally friendly behaviors by people.

The indirect communication is a method dealing with an actual problem that will lead to the convenience for which a given person hopes, resulting in an action followed rather than deepening the understanding of the problem needed for solution. By applying this method to a solution to the environmental issues rather than convincing people of a solution to the environmental issues, various advantages, including economic efficiency, will be realized, resulting in being beneficial to the environmental issues.

The direct and indirect combined communication is the combination of the direct communication and the

indirect communication. By taking both advantages of the direct and indirect communications, they are beneficial to the environment and enable to the realization of the conveniences, such as economic efficiency. As a result, they will promote an action beneficial to the environmental issues.

Then how the environmentally friendly behavior should be promoted will be argued by using these three types of communications.

3. Results and Discussion

3.1 People's Concerns about the Social Issues

Table 5 shows the interest in Japanese social issues, which was clear from the results of the internet investigations that the author carried out from 2008 till 2014 [9]. In the investigation, each item and the answer of all the items which were interesting the respondents were listed.

In the 2014 survey, the respondents showed their greatest interest in the pension social security issue at 51.0%, and the domestic economic issues at 45.3%, the energy issues at 39.7%, low birthrate and aging problem at 37.2%, natural disaster earthquake measures at 36.5%, the global environment problem at 27.4%, and food problem at 21.2%.

Lehman Brothers' collapse [10] happened in September 2008 in the United States and afterward the recession period prolonged. Since 2008, the issues of pension social security and domestic economy monopolized the first place and the second place,

respectively, and became the most highly concerned issues.

In addition, in March 2011, East Japan great earthquake disaster [11] occurred in the Tohoku district. Therefore, in the survey result of June 2011 in comparison with in the survey result of February 2011, the interest in measures for both natural disasters and earthquakes rose from 30.1% to 47.9% and the interest in the energy increased from 30.4% to 54.0%. However, the global environmental problems were up only 1.8% from 37.5% to 39.3%, and the food issues were down 7.3% from 37.0% to 29.7%. It is assumed that the great earthquake did not affect people's interest about the global environmental problem and the food problem.

In 2008 when the G8 Hokkaido Toyako Summit conference [12] was held in Lake Toya of Hokkaido, the respondents of 54.0% answered that they showed the interest in the global environment. But the response ratio of the environmental problem decreased year by year, and in 2014 the response rate of the environmental problem fell down to 27.4%.

In addition, where the ratio of a person interested in the food problem was 51.0% in 2008, it dropped to 21.1% in 2014. It became high from 2007 and 2008, because food poisoning occurred due to the fact that insecticide and pesticide residue were included in the frozen Gyoza and frozen vegetables imported from China in 2007 and 2008 [13]. But, the percentages of food problem decreased, because such major problems did not occur again after that.

Table 5 Trends of people's concerns about the social issues.

Issues	2008	2009	2010	Feb 2011	Jun 2011	2012	2013	2014
Pension and social security problem	61.7	61.0	62.2	58.8	55.4	63.4	54.0	51.0
Domestic economy and business problem	61.9	63.9	62.3	55.4	54.9	46.8	52.1	45.3
Energy problem	42.2	38.8	33.7	30.4	54.0	42.8	43.0	39.7
Decreasing birthrate and aging society problem	46.5	43.1	46.3	43.7	37.9	42.6	37.2	37.2
Disaster and earthquake problem	29.6	29.0	26.2	30.1	47.9	44.6	37.8	36.5
Environmental problem	54.0	48.0	45.0	37.5	39.3	35.7	31.9	27.4
Food problem	51.0	41.3	29.9	37.0	29.7	25.0	24.8	21.2

Source: Initiative for Circular Flow Society (ICFS), 2014 [6].

Anyway, the interest in the issues, such as the global environment and food problems, have continued lower in comparison with the economic issues and so on.

3.2 The Implementation Rate of the Pro-environmental Activities

Table 6 shows the implementation rate of various environmental activities during the period of 2008-2014.

In 2014, “separating garbage” showed the highest implementation rate and 81.7% of people responded that they implemented, followed by “turning off electricity as often as possible when not used” (72.1%), then “bringing their own bags and declining a shopping bag provided by a shop” (61.8%), “adjusting a room temperature with switch” (60.6%) and “using refillable products” (60.6%).

Implementation rate of “separating garbage” was always the highest during the period of 2008-2014. In each year, more than 80% of people reported their actual implementation. And “turning off electricity as often as possible when the electricity was not used” was the second highest during the same period and more than 70% of people reported their actual implementation.

However, implementation rate of each activity remains almost at the same level or shows a little decreasing trend. For example, when compared the data of 2010 and 2014, all the activities decreased, except that “being conscious of cool biz and warm biz” increased 1.4%. In particular, implementation rate of “using refillable products” went down by 11.6% and “try not buying too much and using the leftovers” went down by 8.2%. Nowadays, it is a big issue how we can raise the implementation rate of the environmental activities.

3.3 The Implementation Reasons of Environmentally Friendly Activities

Table 7 shows the implementation reason of the

pro-environmental activities in 2014.

With regard to the implementation reason of “separating garbage”, “for saving of resources” was the biggest reason with 57.0% of implementation which people reported their actual implementation, followed by “for recycling promotion” (53.8%) and “for it was a social rule” (53.2%). With regard to the implementation reason of “turning off electricity as often as possible when not used”, “for saving of the family budget” was the biggest reason and 76.7% of people reported their actual implementation, followed by “for saving of resources” (54.6%) and “for prevention of the global warming” (45.7%).

With regard to “separating garbage” and “bringing a shopper’s own bags instead of a free plastic shopping bag offered by a shop”, “for saving of resources” is the biggest reason for people’s actual implementation, 57.0% and 69.5%, respectively. With regard to “being conscious of cool biz and warm biz”, “for prevention of the global warming” is the biggest reason (54.7%) for people’s actual implementation. But with regard to other environmentally friendly activities, like “turning off electricity as often as possible when not used”, “adjusting room temperature with a thermostat” and so on, “for saving of the family budget” is the top reason for people’s actual implementation.

As for “separating garbage”, “because of a social obligation” is the third biggest reason and the rate is 53.2%.

As for “adjusting room temperature with a thermostat” and “being conscious of cool biz and warm biz”, “for a health reason” is the fourth biggest reason and the former rate is 22.1% and the latter is 36.4%, respectively. Like this, the reason why an environmental activity is chosen does not always aim at the reduction of the environmental load, such as prevention of the global warming and saving of resources.

Table 6 Trend of the implementation rate of the pro-environmental activities.

Pro-environmental activities	2008	2009	2010	Feb 2011	Jun 2011	2012	2013	2014	Difference of 2010 and 2014
Separating garbage	85.0	86.3	85.9	84.0	80.7	80.3	81.6	81.7	-4.2
Turning off electricity when not used	73.8	75.5	75.7	72.4	76.6	70.6	75.4	72.1	-3.6
Bringing a shopper's own bag instead of a free plastic bag offered by a shop	51.2	60.2	64.5	58.3	63.1	62.7	61.8	61.8	-2.7
Adjusting room temperature with a thermostat when not used	61.8	64.8	63.3	60.7	61.7	58.9	61.9	60.6	-2.7
Using refillable products	-	70.6	72.2	64.0	67.6	66.1	61.8	60.6	-11.6
Saving bath water and tap water	61.9	59.9	60.0	58.2	57.6	53.3	55.9	55.3	-4.7
Using products carefully for a long term to be usable	57.1	54.9	55.0	50.5	51.0	49.4	48.7	49.8	-5.2
Being conscious of cool biz and warm biz	-	35.9	37.8	32.0	36.5	31.4	36.0	39.2	1.4
Getting rid of overbuying and using the leftovers	-	43.5	40.8	36.5	36.7	41.0	34.4	32.6	-8.2
Reducing standby mode electricity consumption	-	38.9	37.4	30.7	40.2	42.6	34.7	30.9	-6.5

Source: Initiative for Circular Flow Society (ICFS), 2014 [6].

Table 7 The implementation reasons of the environmentally friendly activities in 2014.

Activities	Implementation reasons									
	For prevention of the global warming	For saving of resources	For recycling promotion	For reduction of the family garbage	For saving of the family budget	For health	For getting a sense of satisfaction	For it is a social rule	For a neighbor does it	There is not the reason in particular
Separating garbage	31.8	57.0	53.8	45.0	16.7	6.5	14.1	53.2	4.8	1.1 2.4
Turning off electricity when not used	45.7	54.6	5.0	3.1	76.7	3.9	14.9	12.4	1.8	1.3 1.2
Bringing a shopper's own bag instead of a free plastic bag offered by a shop	25.1	69.5	22.6	49.1	42.0	1.9	20.4	18.0	4.6	1.1 2.4
Adjusting room temperature with a thermostat when not used	61.1	46.8	4.6	2.1	80.4	22.1	18.2	11.7	2.0	1.0 1.3
Using refillable products	20.7	65.6	29.4	61.7	66.5	2.6	17.1	6.1	1.4	0.3 0.9
Saving bath water and tap water	21.3	65.3	6.1	5.3	80.2	3.6	18.8	10.8	2.0	0.9 1.0
Using products carefully for a long term to be usable	19.5	62.2	20.4	45.3	69.6	4.7	26.6	8.5	1.3	1.4 3.3
Being conscious of cool biz and warm biz	54.7	41.6	4.4	2.4	46.1	36.4	24.1	18.7	6.8	0.8 2.8
Getting rid of overbuying and using the leftovers	18.1	52.7	10.9	65.7	82.4	13.3	25.1	6.0	1.4	1.4 1.4
Reducing standby mode electricity consumption	52.0	59.4	5.1	3.6	86.0	2.8	23.0	11.2	2.6	0.5 1.0

Source: Initiative for Circular Flow Society (ICFS), 2014 [6].

Table 8 Comparison of the implementation reasons of environmentally friendly activities between 2010 and 2014.

Activities		Implementation reasons										There is not reason in particular
		For prevention of the global warming	For saving of resources	For recycling promotion	For reduction of the family garbage	For saving of the family budget	For health	For getting a sense of satisfaction	For it is a social rule	For a neighbor does it	Other	
Separating garbage	2010	17.3	35.1	52.6	32.8	5.4	1.4	12.0	57.7	5.0	0.8	1.4
	2014	31.8	57.0	53.8	45.0	16.7	6.5	14.1	53.2	4.8	1.1	2.4
	Difference	14.5	21.9	1.2	12.2	11.3	5.1	2.1	-4.5	-0.2	0.3	1.0
Turning off electricity when not used	2010	39.7	45.7	1.2	0.8	81.1	0.6	12.2	3.6	1.4	0.3	1.2
	2014	45.7	54.6	5.0	3.1	76.7	3.9	14.9	12.4	1.8	1.3	1.2
	Difference	6.0	8.9	3.8	2.3	-4.4	3.3	2.7	8.8	0.4	1.0	0.0
Bringing a shopper's own bag instead of a free plastic bag offered by a shop	2010	27.0	61.3	13.7	38.5	29.6	0.8	21.5	16.5	9.3	1.5	1.2
	2014	25.1	69.5	22.6	49.1	42.0	1.9	20.4	18.0	4.6	1.1	2.4
	Difference	-1.9	8.2	8.9	10.6	12.4	1.1	-1.1	1.5	-4.7	-0.4	1.2
Adjusting room temperature with a thermostat when not used	2010	51.9	39.0	0.8	0.9	78.2	18.9	11.5	4.3	1.5	0.5	1.1
	2014	61.1	46.8	4.6	2.1	80.4	22.1	18.2	11.7	2.0	1.0	1.3
	Difference	9.2	7.8	3.8	1.2	2.2	3.2	6.7	7.4	0.5	0.5	0.2
Using refillable products	2010	16.1	51.2	15.2	51.4	61.6	0.9	11.1	2.4	1.5	0.1	1.9
	2014	20.7	65.6	29.4	61.7	66.5	2.6	17.1	6.1	1.4	0.3	0.9
	Difference	4.6	14.4	14.2	10.3	4.9	1.7	6.0	3.7	-0.1	0.2	-1.0
Saving bath water and tap water	2010	19.2	55.3	2.0	1.5	81.7	0.7	12.9	3.6	1.3	0.3	0.5
	2014	21.3	65.3	6.1	5.3	80.2	3.6	18.8	10.8	2.0	0.9	1.0
	Difference	2.1	10.0	4.1	3.8	-1.5	2.9	5.9	7.2	0.7	0.6	0.5
Using products carefully for a long term to be usable	2010	14.6	49.3	7.7	31.1	66.2	0.9	21.5	2.8	1.1	1.2	3.4
	2014	19.5	62.2	20.4	45.3	69.6	4.7	26.6	8.5	1.3	1.4	3.3
	Difference	4.9	12.9	12.7	14.2	3.4	3.8	5.1	5.7	0.2	0.2	-0.1
Being conscious of cool biz and warm biz	2010	42.5	25.6	1.6	1.8	41.5	29.3	14.5	10.4	5.7	0.8	3.6
	2014	54.7	41.6	4.4	2.4	46.1	36.4	24.1	18.7	6.8	0.8	2.8
	Difference	12.2	16.0	2.8	0.6	4.6	7.1	9.6	8.3	1.1	0.0	-0.8
Getting rid of overbuying and using the leftovers	2010	16.3	40.0	5.8	54.7	78.9	7.4	18.5	2.6	1.0	0.5	1.0
	2014	18.1	52.7	10.9	65.7	82.4	13.3	25.1	6.0	1.4	1.4	1.4
	Difference	1.8	12.7	5.1	11.0	3.5	5.9	6.6	3.4	0.4	0.9	0.4
Reducing standby mode electricity consumption	2010	44.8	46.9	3.4	2.4	83.8	1.3	14.4	3.9	1.0	0.8	0.8
	2014	52.0	59.4	5.1	3.6	86.0	2.8	23.0	11.2	2.6	0.5	1.0
	Difference	7.2	12.5	1.7	1.2	2.2	1.5	8.6	7.3	1.6	-0.3	0.2

Source: Initiative for Circular Flow Society (ICFS), 2014 [6].

3.4 Changes in the Implementation Reasons between 2010 and 2014

Table 8 shows the changes in the implementation reasons of the environmental activities between 2010 and 2014.

With regard to the implementation reasons of “separating garbage”, the rate of “for saving of resources” rose dramatically 21.9% from 35.1% in 2010 to 57.0% in 2014. As for many other activities, such as “turning off electricity as often as possible when not used”, “using refillable products” and “saving bath water and tap water” and so on, the rate of “for saving of resources” rose significantly. Presumably this is due to the fact that after 2011’s East Japan earthquake disaster, Japan suffered from a serious shortage of energy resources and this was picked up on television and newspapers which changed people’s perceptions.

However, as for “bringing a shoppers’ own bag instead of a free plastic bag from a shop”, the rate of “for saving of the family budget” increased 12.4% from 29.6% in 2010 to 42.0% in 2014. As for “separating garbage”, the rate of “for saving of the family budget” increased 11.3% during the same period. This is why the charge of the shopping bag in

many supermarkets started. In this way, not only environmental benefits but also non-environmental benefits often have promoted the pro-environmental activities.

3.5 Discussion of Policies

As the results of the internet investigations stated, in order to tackle the promotion of the environmentally friendly behaviors, we need to raise people’s awareness regarding the importance of the environmental issues while seeking the economic efficiency and convenience, including both the effect for environmental load reduction, such as saving resources, and the prevention of global warming and the effect of economy and the social norm.

Based on the above, it is thought to be effective to change the way of the approach for promoting the environmental behaviors by the difference in the degree of the people’s concerns about environmental issues.

As showed in Fig. 1, in other words, we need to indicate the environmental effects that the environmental activity have to the highly concerned persons for the environmental issues, such as the leaders of the environmental non-profit organization

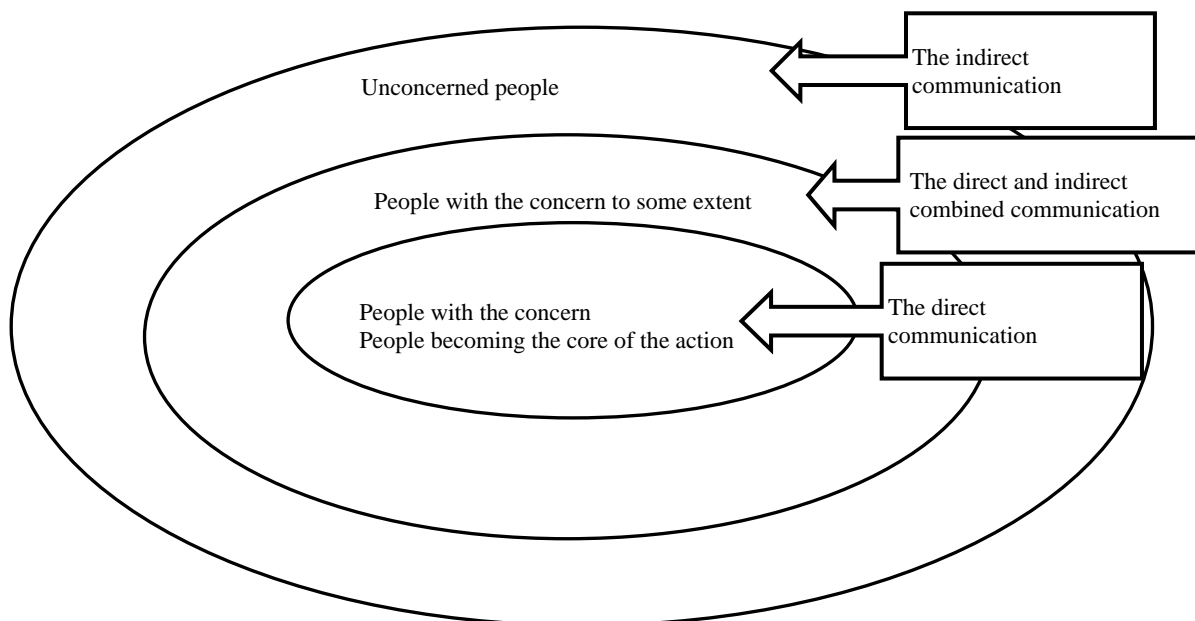


Fig. 1 The relation between the difference of people's concern about the environment and three communication concepts.

implementation rate of the environmentally friendly activities, more than 80% of people responded they always separated garbage, while about only 30% of people responded they always carried out the reducing standby mode electricity consumption. The implementation rates of the environmentally friendly activities are different by the type of the activities. Also the reasons for carrying out the activities vary in type of activities. The biggest reason of carrying out the “separating garbage” and “bringing a shopper’s own bag instead of a free plastic bag offered by a shop” is “for saving of resources”. But the biggest reason of “turning off electricity as often as possible when not used” and “adjusting room temperature with a thermostat” and so on is “for saving of a family budget”.

The implementation rates of the environmentally friendly activities in 2014 tended to be declining or remained flat compared to the data in 2010.

Also, the implementation reasons in 2014 were different from the reasons of 2010 when compared. Saving of resources increased 21.9% in “separating garbage” and in many other activities reason rates rose by more than 10%. “Saving of a family budget” rose 12.4% in “bringing a shopper’s own bag instead of a free plastic bag offered by a shop”.

The reason for implementation may change in accordance with change of a social situation or a policy enforcement and so on.

5. Recommendations and Future’s Research

It is important to increase the implementation rate of the environmentally friendly activities for building the strategy of the administration and the company.

Dealing with the promotion of the environmentally friendly activities is a common challenge for each country. The idea of three type communication, including the utilization of the non-environmental benefits expressing in this article, is effective in each country. The concepts of three types of communication models described herein, including

non-environmental benefits, are believed to be beneficial to each country.

In this article, the factors of the environmentally friendly and non-environmentally friendly activities in Japan were analyzed. It will be worth dealing with the solution to the environmental problems to analyze the commonality and difference of the promoting factors for each country and utilize the benefits, including the non-environmental factors.

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