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JUNK to FUNK

DIY approach on sustainability

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Summary

This paper aims to uncover how relevant personal and contextual factors may inhibit or facilitate sustainable DIY activities in South Korea. DIY in Korea is very active in recycling discarded material, and that was one of the success factors of those clubs. Linking sustainability with personality, DIY became as a mean of social transformation. Some argue that in some aspect, the DIY movement stands somewhere between a new form of consumption and a subversive political act. However, the research result revealed that the political motivation plays very minor role of the DIY movement.

Internet's strong consumer decision support has possibilities of increasing consumer citizen empowerment. Also, the result shows sustainable consumption behavior does not always come from sustainable motivation. Calling for ethics or causes to encourage sustainable consumption might be only good for small minority. Instead, emphasizing "fun" and "self expression" can be much more efficient in changing consumption behavior.

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Key concepts and abbreviations

- **DIY** Do it yourself

: Oxford dictionary (2005) defines DIY as the activity of making, repairing or decorating things yourself, instead of paying somebody to do it. It also associated with the culture scenes such as independent music, publishing and film.¹

- **Rebound effect**

: *Rebound Effect = Potential resource savings - Actual resource savings*

- **Sustainable Consumption**

: patterns of consumption that satisfy basic needs, offer humans the freedom to realize themselves, and are replicable across the whole globe without compromising the Earth's carrying capacity. (Hertwich 2003c) Also see appendix 1

- **ICT** Information and Communications Technology
- **LOHAS** Lifestyles of Health and Sustainability
- **OECD** Organization for Economic Cooperation and Development
- **UCC** User Created Contents
- **UNEP** United Nations Environment Programme
- **The NOA Model** The Needs-Opportunity-Ability Model
- **WSSD** World Summit on Sustainable Development
- **WWF** World Wildlife Fund

¹ see also the list of DIY artists ; http://en.wikipedia.org/wiki/List_of_DIY_artists

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1. Introduction

“Well welcome to our world. A world where consumers swear they would never choose a car tyre brand for anything other than safety reasons, then go and buy something they have never heard of because it was cheapest around when they got a puncture. A world where they try a healthy new product in tests and swear they will buy it, but carry on choosing their sugary regular brand because it tastes better and where they dutifully pack their waste into bags then cart it off to the recycling centre in a colossal four-wheel-drive multi-purpose vehicle, polluting the environment on the way.” (Longhurst 2006)”

1.1 Background

Since the Brundtland Report in 1987 brought the concept of sustainable development into the international policy area, the alarming growth in consumption volume called for a global strategy which will be referred to as “sustainable consumption” (Mayo 2006) So if you want to save the planet from dangerous carbon dioxide, don’t hug the trees; instead consider weaving a rug out of old sweaters.

This may sound too silly to be a solution for our generation’s ultimate challenge, but this is exactly the message Shoshana Berger and Grace Hawthorne, founders of “readymade” magazine try to give us; DIY is the sustainable alternative for the Generation X and Y. Instead of Greenpeace’s rainbow warrior approach, they urge you to hold a scissor and a glue stick and make junk to funk. Described by The New York Times as an “indie-rock Martha Stewart Living”², they are one of those emerging groups who chose DIY as the mean of social transformation³. In the interview with Sierra club (2003), Berger used vocabularies such as “fun, sexy, and cool” to describe the sustainable lifestyle they pursue. Well-known names like Danny Seo⁴ and Todd Oldham⁵ are also contributors of this eco-DIY movement. Their emphasis on recycling is connected to the idea of McDonough and Braungart (2002) “waste equals food”.

These advocates for the “DIY movement” explicitly criticize modern consumer culture, suggesting that our needs cannot be fulfilled by just purchasing things, and instead we should take technologies into our own hands. (<http://en.wikipedia.org/wiki/Diy> accessed 11/12/2006) Advocates of the DIY movement go further and claim that it stands

² www.readymademag.com accessed 11/11/2006

³ AlterNet (2006)’s article explained that the main difference between DIY in 2000 is that DIY is now consciously chosen by a group of people as a new lifestyle and a tool for achieving political and social change (towards sustainable consumption). It is not just about cheaper home improvement rather about the lifestyle choice with a cause.

⁴ an environmental activist; He published various books on sustainability and design.

⁵ a designer; He used to run his own show on MTV.

somewhere between a new form of consumption and a subversive political act⁶. (AlterNet 2006) By linking sustainability with personality, DIY suddenly became a means of social transformation which can save the earth. Self expression is an extra bonus.

The return of DIY relates to the new status of consumers. The modern consumers are no longer bound by “the rational choices” of the 50’s. The emotional consumer of the 70’s transformed into the 90’s spiritual or ethical consumer. (Pringle et al 1999) Now consumers are becoming prosumers. The choice is not limited to the exchange of goods and monetary means (purchasing) any more. Now it is also about choosing the producers they favor (i.e. ethical purchasing). The producers who know about consumers the best are (arguably) consumer themselves. To reach the highest level of customization, consumers decide to fulfill their own needs by producing it themselves. (DIY)

This phenomenon is not only limited to North America, it also happens in the Far East. As we will examine soon, Korea has shown a very interesting development in the DIY movement which was not headed by industry but by consumers. One of the online DIY clubs in this research had 250,000 members in October 2006, and in only 2 months, more than 20,000 new members joined the club. This rapid growth shows the great potential of Korean DIY culture.

So what made DIY suddenly an attractive option for consumers in Korea? Is the DIY movement a new form of consumption? How do relevant personal and contextual factors inhibit or facilitate DIY movement? Does sustainable consumption behavior come from the motivation of the green movement? By answering these questions, we will have a better understanding of what drives the DIY movement and ultimately, sustainable consumption.

1.2 Purpose

The purpose of this paper is twofold. The first purpose is to explore the possibility of DIY as a new means of sustainable consumption. Therefore primarily, to recognize what is sustainable consumption is an important task. Second, with a survey conducted among Korean online DIYers, this study is designed not to show scientific data but to uncover relevant personal and contextual factors of DIY activities. Economic, social and political motivation of DIYers is what this paper mainly intends to discuss. The public sector marketers and environmental activists can also use Korea’s experiences and identify innovative local strategies to make household consumption more sustainable.

1.3 Delimitation

⁶e.g. Greg Der Ananian's Bazaar Bizarre: Not Your Granny's Crafts!

The main interest of this research is to find out the mechanism of actions for the DIY movement in South Korea

The range of DIY activities is endless which makes it tricky to define it when semi-finished DIY kits are sold on the market. Therefore, in this paper, the term 'DIY movement' will be coined to describe an eco-friendly and design conscious DIY activity in the 2000's. Instead of the old image of hardware store or grandmother's hobby, DIY movement reflects a rather young and aesthetically pleasant illustration. Motivation is an important factor for the DIY movement as well. The scope of research is limited to online-based DIY activities. Also, the detail of the DIY industry is not of interest.

The geographical research scope is limited to South Korea. The reasons are following:

First of all, the so called new DIY/Craft movement started in Northern America, and the strategy should get tested in other cultural and societal settings in order to implement it globally. The WSSD Johannesburg Plan of Implementation, Sept. 2002 addressed that *"All countries should promote sustainable consumption and production patterns..."* However, most of academic researches on sustainable consumption are limited to European/North American cases. The sustainable consumption should be pursued globally and more local cases must be presented to understand where we stand.

Second, development of ICT ⁷ has an impact on the emergence of new form of consumption. Particularly in this case study, DIY consumption culture has been developed relying on the help of ICT. Korea DIY industry is rather new and largely based on small online businesses instead of a conventional giant warehouse franchise types. (Seoul Business News 2006)

These structural factors are also important to understand Korea's DIY movement and Korea's example could be used as an example that technology can facilitate sustainable behaviour.

1.4 Expected contributions

Previous research with this specific topic is rarely found. Therefore the paper aims to broaden the research stream and identify which personal and contextual factors drive Korean DIYers to sustainable consumption. OECD model of consumer behaviour will be applied to analyze the dynamics of the DIY movement. The contribution also can come from applying the models of consumer decision making to a different local example. In addition, it shall provide good understanding of what ought to be perceived as sustainable consumption.

1.5 Problem areas

⁷ ICT ; information and communications technology

The paper chose to focus on the “consumption” side of sustainability. Reisch (2001) argued that emphasizing the eco efficiency of the production side does not solve the real problem of over consumption. It is not enough because growth and rebound effect will compensate eco efficiency.

Longhurst(2006) claimed *“efforts to create autonomous analytic space for sustainable consumption have been repeatedly thwarted by competing pressure to subsume it under the more affable rubric afforded by its sister concept – sustainable production... [E]nhanced consumption efficiency and the growth of nominally “green” consumer preferences both tend to give rise to perverse rebound effects.”*

Heiskanen et al. (1998) even raise the suspicion that focusing an efficient production or gradual improvement might be some sort of green wash. Brooks (2000) also states that energy efficiency programs are the ultimate free lunch for politicians, making environmental threat as a political opportunity without taking unpopular measures. The DIY movement emphasizes the empowerment to consumers not depending on changes of business or government sectors.

1.6 Disposition

The thesis will follow these outlines. In the next chapter, the methodology of this study will be explained prior to the theory section. This chapter will elucidate the choice of methodology and its limitations. By presenting the sample profiles, readers can have background knowledge about DIYers before reading the empirical analysis. In chapter 3, three different topics of sustainable consumption research will be introduced. These topics are not interrelated directly however these are three important theoretical parts to understand DIY from the perspective of sustainable consumption. Chapter 4 will present a theoretical analysis tool, this will applied to chapter 5, empirical findings and analysis. Instead of having separate chapters for each, chapter 5 will present the segmented data and its implications in the same section. After the conclusion in the chapter 6, the possible critique of this research paper will be discussed. Finally, in chapter 8, I will offer further study suggestions

2. Methodology

Assessing sustainability requires good understanding of diverse data from disciplines other than business studies, such as input–output analysis, lifecycle assessment, material-flow accounting, environmental-space calculations, ecological-footprint analysis, and food-miles/kilometers computations. (Cohen 2006) However those sophisticated methods⁸ are not always effective as it seems. In measuring some of the social/personal issues of sustainable consumption, for instance the ethical side of DIY movement cannot be expressed on a functional unit basis. (Hertwich et al. 2003b).Therefore, the methodology of this paper is qualitative, focusing on DIYer’s perception and attitude on

⁸ In order to be truly consequential, computable general equilibrium models that are extended with environmental data are needed. But so far such model exist only for CO2-emissions and high aggregation levels.(Hofstetter 2003)

environment and DIY activities and it will examine if there was any viable behavioral change in the DIYer's resource allocation.

2. 1 Research design

The research subject was far from fully investigated making it hard to understand the phenomenon in an academic way. Therefore research was conducted in three ways: interview, survey and direct observation. First, as a pre study, four experts in DIY are contacted by email and telephone in order to comprehend the industry and online communities. This approach attempts to understand the personal motivation of promoting the DIY movement. Then the questionnaire asked different issues about online DIY activities. This focuses not only on personal, but also on contextual factors of the DIY movement. Last, by participation in both international and local online communities for two years, a lengthy web discussion on the subject enriched the information and enabled me to understand the culture of the DIY movement.

2.1.1 Pre study

As the launch years of each online club indicate, DIY was not a popular activity for Koreans, however, in the last few years, the interest in the DIY movement increased rapidly. To understand this change, it could be very useful to communicate with the people behind the Korean DIY boom. Therefore a pre study through in-depth interview⁹ was conducted in September 2006 before formulating the survey questionnaires.

The interview was not directed by an interviewer; the list of topics varied according to the interviewee's expertise. (Aaker et al. 1986) Except interviewee 3, all of them have an occupation in art and fashion. The details of the interviewees are following

Table 2.1.1 The details of the interviewees

name	sex	age	job	Online address	blog	Online business	Publish DIY Book?	Do you DIY with Politics?	Community building
1)Jung Hyun Choi	M	45	junk artist cartoonist ¹⁰	banzzogi.net *since 2003	no	Yes	yes	yes	Art Exhibition, Volunteering, education
2)Jean Young Park	F	31	Fashion designer(only use recycled material)	club.cyworld.-com/stylishjean *since 2004	yes	Yes	yes	no	offline meeting
3)Kyong Hi Choi	F	39	Math teacher	club.naver.com-/shezliving *since 2005	yes	no	no	no	Habitat movement Craft bazaar

⁹ The interview attempts were not successful in some cases because moderators of each DIY club were too busy because of a book publishing deal or some of them started their own shows on cable channels. Korean media also perceived the sudden popularity of DIY.

¹⁰ For his latest exhibition, www.bukchonmuseum.com

4)Kyong Jae Lee	F	27	Fashion designer	ecodress.net *since 2004	yes	Yes (custom made dress)	no	yes	Sustainable wedding campaign
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Interviewee (1) runs an online DIY community, a DIY shopping mall and 10 other offline DIY schools. Each member pays fees and can choose to be a shareholder of the company. The main members are couples with children and interaction happens generally in offline DIY clubs rather than online. He used to draw cartoons about gender equality and international/domestic politics for the left-wing newspaper “Hankyorye” before he came to participate in the DIY movement. Along with that, his junk art exhibition in the last summer was often assessed as one of the biggest successes in the Korean art scene in 2006.

Interviewee (2) designs clothes and home furnishing items using only recycled materials. Her club does not require paid membership and attracts active participation from single females in their mid 20’s. The main activity of the club is the exchange of DIY ideas, appreciation of and advice on each other’s works. Environmental reasons are not the main issue even though they have a certain impact. She stated that the older generation does not appreciate her work as much as the younger generation does.¹¹ Also, the majority of her club’s active members¹² seem to be female.¹³

Interviewee (3) is the only one who does not have any background in art and craft. She is one of Korea’s “wifelogger¹⁴” stars, well known for her home decorating tips on her blog. She features her know-how on various media. Her DIY club already has over 50,000 members, attracting mostly housewives. Social cause is not the main driver of the club however members are sometimes engaged with volunteering works such as habitat movement¹⁵. Cost saving is the biggest motivation for DIY activities for her.

Interviewee (4) designs a bio-gradable dress made of cornstarch fabric. Even though she does not run a club with members, she uses her blog to communicate with the customers who want to have a sustainable wedding. Her main concern is reducing landfill and resource consumption caused by clothing industry. Therefore she emphasized ‘sustainable design’ which can change the process the final material ends up in the product life span. In her case, her marketing efforts focus more on ‘sustainability’ rather than on function of her product.

Interviewees 1 and 4 are environmentalists. Interviewee 1 has in addition to his online carpentry school 10 offline carpentry schools, which help to raise different issues such as politics and sustainability. He tries to develop “koreanized” DIY, which fits for small

¹¹ The reason can be explained in the chapter 5 with the reference to ‘culture’.

¹² Participate in web discussion, post their works, exchange information etc.

¹³ Even though she did not have any official statistics regarding gender proportion of DIY clubs, since the members only can use their real names in order to participate, there is a certain degree of reliability with this statement.

¹⁴ A marketing jargon for a wife and blogger

¹⁵ In this case, building home for homeless

living spaces¹⁶ and uses DIY activities to build community identity. Interviewee 4 organizes a sustainable wedding campaign, designs a bio-gradable wedding dress out of cornstarch fabric. She also runs an organic vegetable farm.

The interviewees agreed that DIY activities can contribute to sustainability while interviewee (3) answered that she does not always reuse or refurbish discarded materials even though she tries to use them whenever possible. Park points out that since the style of blog stars are too often copied by other members. This can make the DIY scene just another fad.

Since there were only 4 interviewees, it is not possible to make any conclusion from the pre study result. However, it gave a good outlook on the Korean DIY scene on a personal level.

2.1.2 Survey design

The survey questionnaires consisted of 5 parts: motivation, information source, satisfaction, business opportunity and demographic information. Because of geographical and technical barriers, it was not possible to calculate the actual resource consumption level of the respondents. Therefore “the change of expense” was used instead as an indicator of resource consumption.

The level of scales of the questions asked is mainly nominal and ordinal and in many cases, the respondent had to choose dichotomous or categorical answers with several cases of multiple response possibilities. The questionnaires used often rather simple answer choices. This design intends to make it practical to analyze the data after cross tabulation.

Question 1.6 “Do DIY activities enhance the value of property?” was newly added in the second questionnaire. This question was mailed to the members of the first survey group but not everybody answered it. Nevertheless one can still assume that the data is valid since the answer showed a very clear trend.

2. 2 Data collection and sample characteristics

From October to November 2006, the questionnaire survey was conducted twice in order to increase the sample size¹⁷. After excluding incomplete questionnaires, the sample size was 88. To check the validity of the sample data, the results of first (50 respondents) and second groups (38 respondents) were compared and there was no notable difference. The questionnaire was posted on the web board and the result was sent by an email. Since the research topic was limited to online DIY communities, only internet users are considered as valid respondents. 76% of respondents turned out to be female and the average age of

¹⁶ He himself lives in 50sqm apartment with a wife and a 17 years old daughter.

¹⁷ (1)<http://club.naver.com/lemonterrace>, (2) <http://club.naver.com/shezliving>, (3) www.banzzogi.net, (4) <http://club.cyworld.com/stylishjean>, (5) <http://café.daum.net/reformtogether>

respondents is 31.7, with standard deviation of 10.9. 59.8% were under 30 years old, 23% were 30 to 40, 17.2% were over 40 years old¹⁸.

Q. 5.1a Gender	#	Percent
female	67	76
male	21	24
Total	88	100.0

In their article ‘Promoting Sustainable Consumption: Determinants of Green Purchases by Swiss Consumers’, Tanner et al(2003) used three groups of socio-cultural conditions as indicators of external barriers, and these conditions were borrowed for this paper to understand the demographic characteristics and also external barriers of DIYers. The conditions are slightly modified and their last condition “types of store” was not used for the study. Those features were questioned to collect demographic features of DIYers.

85.2% of respondents have a university education or higher, which is more than the average rate in Korea (48% in Korea have a degree or more) (NCPPE 2006). Top two occupations were students (44.3%) and homemakers (22.7%). 43.2% of the respondents spend under a half million won (about 500 dollar) per month, and only 8% lived in a single household.

Table 2.2 Sample characteristics and external barrier indicator of DIY consumers

Socioeconomic characteristics; purchasing power, time constraints

Q.5.1c.Occupation			Q.5.6. Monthly spending			Q.5.5. Education		
	#	%		#	%		#	%
Business(woman)	13	14.8	<500USD	38	43.2	No college	13	14.8
homemaker	20	22.7	<1000	5	5.7	college	61	69.3
Student	39	44.3	<2000	11	12.5	graduate	12	13.6
art related	5	5.7	>2000	22	25	Total	85	96.6
teacher	5	5.7	n/a	10	11.4	Missing	2	2.3
Etc.	4	4.5	Total	86	97.7	Total	88	100
Total	86	97.7	Missing	2	2.3			
Missing	2	2.3	Total	88	100			
Total	88	100						

Living Conditions; indicator of differences in buying opportunities and household activities

Q.5.4. Type of household			Q.5.7.Type of housing¹⁹			Q.5.2. Size of city		
	#	%		#	%	# of residents	#	%
single	7	8.0	Apartment type	33	78.6	less than 200000	19	21.6
couple	25	28.4	Detached House	7	16.7	less than a million	10	11.5
family with kids	18	20.5	House shared	2	4.8	Seoul and suburb	57	64.8
living with parents	28	31.8	Total	42	100	Total	86	97.7
extended family	8	9.1	missing	46		Missing	2	2.3
Total	86	97.7	Total	88		Total	88	100

¹⁸ Question 5.1b

¹⁹ This question was not included in the first survey attempt.

Missing	2	2.3
Total	88	100

For the secondary data, the databank of the ministry of environment, National Statistics Office and various information systems of commercial organization in Korea was used. Also the recent survey on America DIYers in 2005 was used to compare with Korean data.

2. 3 research limitation

In terms of validity, this paper has the weakness of general qualitative research. However the purpose of this research is not to assess sustainability quantitatively but to understand the relevant personal and contextual factors of DIY movement.

Sample randomness is always a problematic part of research design and it is not different in this study. Subjects were all people from limited online DIY groups, so it is reasonable to assume that randomization cannot be achieved when testing these certain groups. Survey participants were active members of DIY groups, so it is fair to argue that sampled individuals knew about the subject of DIY movement. As mentioned above, the answers from two sample data groups did not show any significant difference.

In terms of quality of research, one can argue that it is too early to make any generalized conclusion about the impetus of DIY movement in Korea. The rapid change of attitude to DIY activities in past few years could also imply that Korea is still in transition phase building DIY culture.

Finally a general problem of questionnaires is that people always tend to give a politically correct answer, even though they are completely anonymous. This can of course result in a skewness of the result. To minimize this tendency, the respondents were not informed that the subject of research was about sustainable consumption.

3. Previous research

Topics such as ethical purchasing or ecological efficiency have been studied for quite some time since the 90's in many academic disciplines. There is no shortage of literature about sustainable consumption in general. The study requires a multi disciplinary approaches, including *theories of consumer behaviour in marketing studies (psychology of decision-making)*, *microeconomics (individual preferences and maximisation of utility)*, *philosophy (why people consume)*, *anthropology (consumption as a cultural expression and social identity)*, *sociology (life-stage, social status, cultural meaning of consumption; sociology of technology)*, and *ethics (individual values, social and environmental responsibilities in consumption behaviour)*. (OECD 2001)

However, the revival of DIY in the 2000's has not yet been subject to wide academic investigation. The business studies did not show any interest in this topic. Considering

that DIY movement has gender specific characteristics (See Casimir et al. 2003)²⁰, a feminist stand point might be a part of the answer; Galloway questions in the article “knitting and public politics” why knitting in public is sometimes considered an ‘unsettling and faulty manner’ in the modern society while playing a portable Nintendo in public would not attract the same amount of attention..²¹ (Galloway 2006) DIY movement’s emphasis on recycle and reuse can be easily deemed as a petty frivolity with a housewife’s²² magazine connotation.

In this chapter, I will introduce three different levels of sustainable consumption. Starting from literature, which can explain the individual level of the DIY movement, I will move to the mechanism of sustainable consumption followed by the institutional framework.

3.1 Who are they?

Campbell’s (2005) ‘The craft consumer; culture, craft and consumption in a postmodern society’ would be the closest to this article’s interest. The article highlighted the aspect of ‘personalization’ and ‘customization’ in craft consumption. Even though he did not use the term ‘DIY’, he used the term ‘craft’ to refer to “*consumption activity in which the ‘product’ concerned is essentially both ‘made and designed by the same person’ and to which the consumer typically brings skill, knowledge, judgment and passion while being motivated by a desire for self-expression.*” This definition comes very close to the the definition of DIY. However unlike the major actors in DIY movement, he notes that craft consumers tend to be the wealthy, he also claimed that cultural capital is needed to pursue ‘craft consumption’ as well as other resources.

He proposed, by recognizing the existence of the ‘craft consumer’, the image of the consumer will move from that of ‘the dupe’, who is easily manipulated by the end of mass media or ‘the rational hero’, as can be seen in Economics text books, to the ‘post modern identity seeker’. He raised a question to the suggestion that the contemporary consumer is simply the helpless puppet of external forces.

He also pinpointed to the possible uneasiness craft activity may cause in the modern industrial society. He stated that;

Craft activity became the very symbol of the pre-modern age, with the consequence that to argue for the virtues of this mode of production was tantamount to opposing modernity itself. Consequently, present-day advocates of craftwork have tended to be labeled romantics, uneasy with the modern world and

²⁰ For instance knitting is not a quite popular activity among man. Also, post-feminism perspective considers the craft a mean to express their feminism rather than drudgery.

²¹ According to Galloway, knitting in public is unsettling to some people since it is the intrusion of personal activity into public space. Playing a portable Nintendo in public however would not attract the same amount of attention.

²² For the issue of gender and sustainable consumption, see Casimir and Dutilh (2003)

either yearning for a return to an earlier pre-industrial age or nurturing unrealistic dreams of future postindustrial utopias.

Campbell highlighted the importance of craft consumerism as a mean to provide an oasis of personal expression and authenticity. Modern consumers feel the urge to counteract commoditization and marketization. We might come to desire a small space unique, singular or even sacred.

In addition to Campbell's craft consumer, the prosumer is also a concept which can refer to DIYers. The concept that the consumers would become producers was introduced by McLuhan and Nevitt in their book 'Take today in 1972'. Then Toffler used the term 'prosumer' in his book, 'The third wave', arguing that the role of producers and consumers would begin to blur and merge.

ICT contributed significantly to the rise of the prosumer with the number of online help forums. This notion can be compared to the role of a VCR as a visual aid which enabled the DIY boom in 1970. Also, the prosumer is often interpreted by social activists as a non-corporation producer. (Wikipedia, accessed on 10/10/2006)

The corporations now start to use this concept widely as a marketing strategy. For instance, prosumer was selected as one of top 10 business agendas of Korean economy in 2006 by Korea's biggest business organizations such as Samsung and LG.

3.2 How do they decide?

This chapter will introduce different opinions on drivers of sustainable consumption. Sustainable consumption calls for a behavioral change, therefore it is important to know how consumers reach a certain decision.

Hertwich et al. (2003b) list the elements influencing consumer behaviour. They include opportunities, drivers, infrastructure, policies, consumer awareness and intention/acceptance. These elements are, of course, interrelated. He makes an example of a "bicycle road" which requires a policy that provides infrastructure and creates an opportunity for more sustainable behaviour, i.e. biking instead of driving. Also, consumers need to be aware of the opportunities and evaluate them positively. (Hertwich et al. 2003c) Following views on drivers of consumption can also be compared with theoretical frameworks in chapter 4.

1. Knowledge and attitude

OECD (2001) argues that divergent views of sustainable consumption show the importance of clear and accessible information for household consumption as far as the

environment is concerned. ²³Heiskanen et al (1997) state however, knowledge has very little to do with sustainable consumption behavior.

While Hertwich et al.(2004a) claim also a positive feedback between attitudes and behaviour, Heiskanen et al. (1997) are skeptical about the correlation between the energy use and attitude, values, consciousness. Only price consciousness has some relevance.

2. Transmission and Reinforcement

Campbell (1996) suggests that mass media influences consumer behavior by creating images and “imaginative hedonism”. Products and Services are more than their function. So called “shopping experience” captures the moment when artifacts build identity and symbolic self completion. Juliet Schor (1998) also found a direct relationship between TV viewing and spending on consumption. She argued that the media influence was not addressed enough since it seemed too patronizing to talk about manipulation or the "true needs" of consumers.

However, Heiskanen et al. (1997) argue that the recent empirical researches show very little or vague correlations between sustainable consumption and overall media influence since the different methodologies were far from being comparable.

3. Inertia and hysteresis

Hertwich et al. (2004a) state that the consistency of individual behaviour is the most remarkable human characteristic when looking at consumption patterns. Once the decision is made by default, the decision would not change without an occurrence of a crisis. Also Longhurst (2006) suggests that past behaviour is the most powerful predictor of current behaviour. Casimir et al (2003) argued that consumption always takes place within limits that are acceptable in the cultural group people belong to. They also took an example of a ‘struggle’ particularly for youngsters who like to appear with the ‘right’ brand of clothing, while at the same time they feel that they express their individuality in their purchasing behaviour.

In conclusion, environmental concern is not enough for consumers to make a sustainable consumption decision. It asks for understanding of many more drivers of sustainable (in)action.

3.3 What macro force helps the decision?

Macro forces involve technology, economy, demography, institutions and culture. If there is one common force to influence consumers in the developed world, that would be the emergence of ICT.

²³ It also means that one information or education will not affect all consumers in the same way. (OECD 2001)

ICT and sustainability have drawn interests from many researchers. Reisch (2001) states in her article ‘The Internet and sustainable consumption’, internet has an structure effect on society, and potential positive effects in increasing efficiency, supplementing supplicated sustainable marketing, reducing transport needs, and meeting customers’ needs better and supporting the durable and more intensive use of products. Through its low transaction and information searching costs, the following alternative options can be more available; barter of used products, intensive use of products through reuse, recycling, common use schemes, neighborhood repair service networks, digital garage sales, flea markets and actions

Table 3.3: Potential function of virtual sustainable communities

Social functions	‘virtual settlements’ offer their members a kind of home and increase acceptance; diffusion of attitudes, life-styles, modeling, and illustration of ‘new models of wealth’
Political functions	P2P networking, lobbying for products and production standards
Economic functions	Power shopping, sustainable shrinking, e-marketing

Source: Reisch (2001)

Coles et al (2006) examined the case of the fair trade goods market in the UK, and claim that active consumer choice can influence societal transformation. They analyzed the effect of their availability through e-commerce. They see the role of e-commerce in building a niche for fair trade products. ICT can contribute to the emergence of new modes of ethical consumption. They claim that ‘*e-commerce provides open, universal accessibility to products that may be difficult to obtain in local markets.*’ This statement explains the structural aspects of the DIY movement, especially the case of Korea, where the main source of information and purchase of DIY is the cyberspace.

Coles et al. (2006) claim that web consumers are not empowered simply because of their access to information but also due to a collective identity and a collective voice online. Leisch (2001) also comments that ICT can be used to counteract the agenda of mainstream consumerist communication, indicate the hidden social and environmental costs, picture alternative models of a “good life”

4. Theoretical framework

The theoretical framework consists of two parts. First of all, the rebound effect is discussed in terms of sustainable consumption. The rebound effect is used 1) as an assumption of the thesis and 2) an analytical tool to assess net benefits to sustainability. Also the concept of rebound effect is the reason why the paper focuses on sustainable consumption rather than sustainable production.²⁴

²⁴ The purpose of production is consumption in economists’ view (Hertwich et al. 2004)

The second part is to understand the mechanism of sustainable consumption. Vlek (2000) analyzed psychology of sustainable consumption behavior and his earlier framework (Vlek et al. 1998) was adopted by OECD (2001) with three other theories of driving forces of sustainable consumption. Those theories are not mutually exclusive and all can be used to understand the consumer's decision on (un)sustainable behaviors.

4. 1 sustainable consumption and rebound effect

To explore the possibility of the DIY movement as a new means of sustainable consumption, we can apply rebound effect model. The absence of a serious rebound effect which can negate environmental gain is a prerequisite of sustainable consumption. (Hertwich et al. 2004a) According to this concept, for instance buying organic/fair trade product is sustainable because the higher price decreases the opportunity to spend on more resources. If buying a car with better fuel economy leads to more driving because of decreased cost, it would not be sustainable. In the same principle, if there is an increase in spending of DIYers, we can say there is a rebound effect which will cancel out the gain from recycling and reuse efforts.

The rebound effect is the behavioral response to cost reductions of energy services as a result of energy efficiency gains. (Hertwich et al. 2003a) These effects are also often called back fire, take-back, or offsetting behavior. The business sector often promotes eco-efficiency as an answer, however Khazzoom(1980) argued that the increase of eco-efficiency does not always bring the best result to the environment. Since his well known article, "Economic implications of mandated efficiency in standards for household appliances", the term rebound effect has been widely used, although he himself did never actually use the term. (Holst 2003) At first, the term was applied narrowly to the direct increase in demand for an energy service whose supply had increased as a result of improvements in technical energy efficiency (Khazzoom 1980, Hertwich 2003a)

Hertwich (2001) claimed that 'in principle, all limiting consumption factors may cause rebound effects, i.e., storage, displaying and traffic space; skills and talents, all type of information, and other resources'. The rebound effect is behavioural (Jalas et al, 2001) and in economics, it includes changes in purchasing behavior as a result of changes in market prices. It has later been expanded to include economy-wide effects. (Hertwich 2001) Greening et al (2000) distinguished the following effects and it is often cited by the rebound effect researchers.

Table 4.1 Composition of Rebound Effect

Concept	Definition
Direct Rebound Effect (substitution effect, pure price effect)	Greater efficiency may lead to a lower price of the service (or product or technology) which in turn may induce an increased use of this cheaper service
Indirect Rebound Effect (income effect)	If prices of other commodities and income are constant, the reduction of costs for one commodity due to a particular efficiency increase

effect, secondary effect)	implies that consumers have more money to spend on other goods.
General Equilibrium Effect (economy-wide effects)	The direct and indirect rebound effect lead to changed prices and consumption throughout the economy, which may increase or decrease production in distant sectors and changes the production functions.
Transformational Effect	This includes changes in consumer preferences, alteration of social institutions, and the rearrangement of the organization of production.

Source: Greening et al (2000)

In spite of the theory's valid points, it is hard to quantify rebound effects because the assessment of the effect depends on individual preferences. Rebound effects can still be evaluated in quantitative terms but because of difficulty in data collection, this paper will use simple qualitative analysis. (Jalas et al. 2001)

4. 2 mechanism of sustainable consumption

By understanding how the consumption patterns have developed as they have, we can predict what will change consumer's behavior or preference under a certain stimulus. OECD's report in 2001 suggested 4 different models for driving forces of sustainable consumption. For this paper, I will borrow OECD's framework to analyse relevant personal and contextual factors inhibit or facilitate the DIY movement. Even though individually none of these models can fully explain consumption behavior, when all of four are used together, every framework has its valid points (Hertwich et al. 2004b) and can be applied as framing devices. However the main analytical tool will be Vlek's NOA model

4.2.1. The economic framework of consumer decision making

This theory assumes *the rational decision maker who reacts to price signals in a way as to maximise her utility*. When this model was used, a survey on OECD members (2002) shows clear correlation between private consumption per capita and income.

This framework however cannot explain crisis cases since it assumes that consumer preferences are consistent, stable over time, and immune to external influences. (Hertwich et al. 2004b) For instance, landfill crisis and oil shock in 1970 lead people to recycling and measures to aid recycling. (Heiskanen et al. 1997) The assumption that 'Each consumer's preferences are independent of other consumers' preferences' is simply not true when we take 'culture' into consideration.

4.2.2. Socially contingent consumption

Consumption is not rational and sometimes contradictory. Social acceptability²⁵ is one of the main motivations of consumption. (Hertwich et al. 2004b) According to this model,

²⁵ Again, teenagers are good examples.

ethical consumption emerges out of a sense of obligation influenced by other people's opinions and behaviour. For example, the “fair share” argument can be explained with this model.

The model is also useful to understand *not* sustainable consumption behavior. The main driver of over consumption comes from the notion of ‘keeping up’.

It argued that problematic environmental behavior is often the result of lack of social information (OECD 2002). Consumers need to know information relevant not only to self interest but also to the common goods like environment and equality.

4.2.3. Systems of the Provision Model of Consumption

Consumption is a set of social practices that are carried out by applying sets of rules and shared norms. This view highlights non functional roles of consumption, and material artifacts also have symbolic roles to play in our life. (Longhurst 2006) For instance, even just 50 years ago taking a weekly bath was a social norm while the same practice will be highly frowned upon having modern hygienic standards. (Tukker 2005; edited by Hertwich et al 2005) In this framework it is important to address the entire system of both producers and consumers. (Hertwich et al. 2004a) This view can be used with the cultural forces of Vlek's model.

4.2.4. The Needs-Opportunities-Abilities model of consumer behaviour

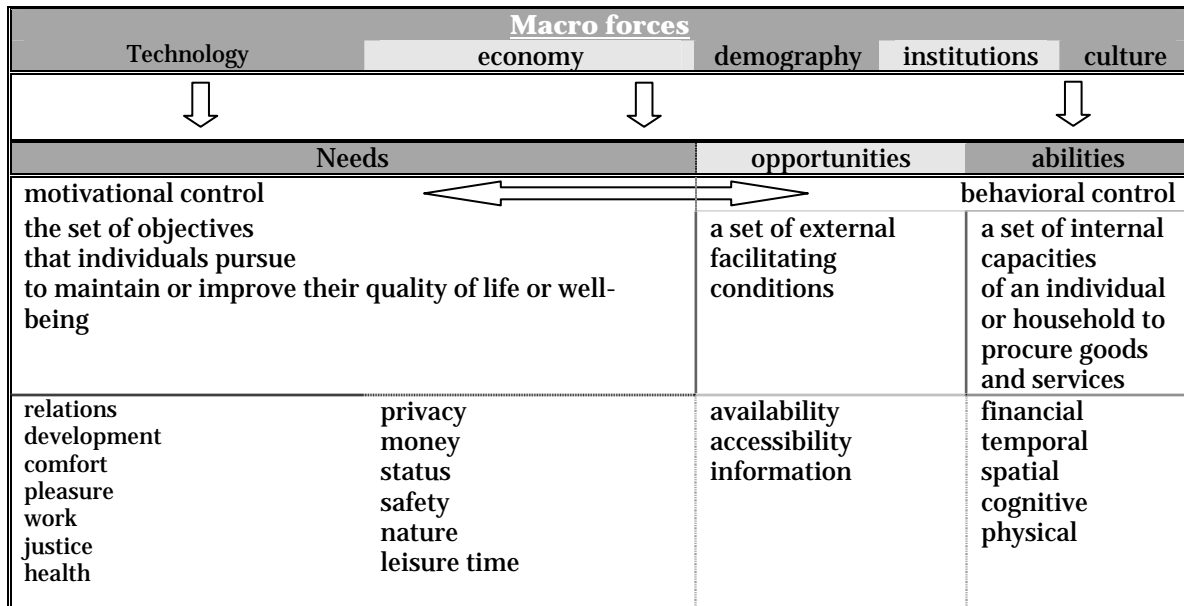
For the main theoretical tool, Vlek et al.'s The Needs-Opportunities-Abilities (NOA) model (1997) is very valuable to examine “at the individual level of citizens, households, and business companies, a diagnosis of environmentally relevant behaviour”. Vlek (2000) argued that “people generally cannot handle long-term complexity, they are limited information processors, and they are mentally biased towards *us, here and now.*” Environmental problems are socio behavioral problems therefore eco sufficiency or price mechanisms are not enough to change the behavior. (Vlek 2000)

The model explains the various forces of consumption. People consume to satisfy needs and in order to consume, they need opportunity. The Satisfaction depends on abilities to afford the consumption and know how to use it. Needs, opportunities and abilities also rely on their structural restraints such as Technology, institutions, culture and so on. Then, to create a certain type of consumer behaviour, people need to have both the motivation and the behavioural control to do so. (OECD 2002) As displayed in following figure, this model illustrate how various factors lead to a consumer behaviour, which eventually directs to certain consequences. (Hertwich et al. 2004c)

Even though this model does not include other important points such as “inertia”, “hysteresis” or “crisis”, this NOA model has its qualitative explanatory advantage. A country such as Korea has gone through a dramatic transformation which effects and

creates new needs, opportunities and abilities and the case cannot be explained without understanding the those factors.

Feature 4.2.4: NOA model



(Drawn from Vlek 2000; OECD 2001; Hertwich et al. 2004c)

5. Empirical findings and Analysis

In this part, empirical data will be analyzed according to the NOA model and the rebound effect framework. The findings will be reframed altogether and presented in the last chapter.

5.1 Rebound effect of the DIY movement

Can the DIY movement help the environment by decreasing the consumption level? Question 1.3, 1.4 asked if the subjects believe DIY can improve the Earth's environment condition and if the DIY movement has changed their consumption level.

Some of the subjects informed me that the initial cost of purchasing tools has increased their consumption; this point though can be overlooked in the long term. The majority of people answered their spending has stayed constant. Only 31% of people answered that their spending decreased and 18% reported increased spending. Considering that the

spending on DIY was not enough to influence the personal finance, it is possible that there is a case of rebound effect.

The responses were segmented according to perception of environment. Generally 86% perceived DIY can be (very) helpful for the environment. Interestingly, none of the group with increased spending perceived that DIY is very helpful to environment.²⁶

Table 5.1.1 Perception of environmental effect and spending change

environment	spending change			Total
	increased	constant	decreased	
very helpful	0	7	5	12
helpful	11	35	18	64
indifferent	4	3	4	11
harmful	1	0	0	1
Total	16	45	27	88

To assess the rebound effect, it would most definitely have been better to observe long term observation of the actual household expenditure. However, that was not a feasible option in this research. First, many of respondents do not keep record of their expenditure and second, some of the respondents did not have enough experience with DIY movement to observe the change of spending patterns. Without the actual data of personal consumption, any conclusion would be flawed methodologically. In order to assess direct rebound effects of online DIY communities, data of time use, and consuming pattern changes, of each member should be examined.

Table 5.1.2 A possible rebound effect scenario of the DIY movement

Direct Rebound Effect (substitution effect, pure price effect)	DIYers use more resources than before, since it costs less than a purchase which in turn may increase total resource consumption.
Indirect Rebound Effect (income effect, secondary effect)	With the reduction of costs due to a cost saving from the DIY activities, DIYers perceive that they have more money to spend for instance on overseas holiday.
General Equilibrium Effect (economy-wide effects)	The direct and indirect rebound effect of DIY leads to changed prices and consumption patterns throughout the economy, which may increase or decrease production in home furnishing and clothing industry and changes the production functions.

²⁶ The only respondent who claims the negative environmental effect of DIY mentioned “I have piles of DIY products bought on the internet, and my family liked it at first but soon they say it was getting tedious. I know “refurbishing” some garbage is a trend right now. But there is always a reason why the person had thrown away that stuff in the first place. After few attempts, I gave up.” This testimony reflects that the personal experience and satisfaction affect the individual’s perception of “what is sustainable”.

Transformational Effect	People spend more on service and industry sells more power tools.
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5. 2 mechanism of the DIY movement

5.2.1 The economic framework

The economic framework assumes that consumer preference is stable over time and external influences do not change consumer behavior. Therefore this model cannot fully explain the case of Korea. The change of preference did not come from pure price signals in the case of DIY activities. Before Korea's financial crisis in 1997, DIY was not a popular choice among people because of cultural reasons.²⁷ The Korean economic crisis provided a turning point for the DIY movement; people started to look for self help solutions as people saw lifelong employment has proven to be a myth. During that time, labor costs actually went down or stayed steady, therefore if a price signal is the only variable, people should actually hire labor force instead of doing it themselves. Therefore, this theory can be only partially applicable to analyze the empirical data.

5.2.2 The socially contingent consumption

With the socially contingent consumption, we can partially explain why there was a sudden interest in the DIY movement. As the empirical data indicates, 63.2% of the DIYers answered that they use a blog as the main information source. In 2004 statistics, more than 10 million Korean internet users joined the blog service 'cyworld'. (Hankyore 2004-09-30) The self expression is an important aspect of the DIY movement, and a blog is a perfect place to present themselves. At the same time, by using a blog, one can find out if one remains 'up to date' with the latest trend.

So called 'wifelogger stars' are modern day Martha Stewarts made by internet users. Leisch (2001) provides an interesting insight on these virtual stars. She claims that opinion leader techniques within virtual communities have been widely used mainly targeting young computer users and those role models can support more sustainable consumption decisions. The same principle can explain why there are so many recycling DIY projects. The role models of Korea's online DIY clubs happened to use lots of recycled materials and that resulted in people using recycled materials on a broader basis.

5.2.3 System of the provision model of consumption

Systems of the provision model of consumption can be used to highlight Campbell's explanation on craft consumers. Also, the change of social norm enabled Korean consumers to accept DIY culture easier. Later I will discuss this aspect further.

²⁷ According to traditional Confucians political system, craftsman was considered the second lowest class after slave class.

5.2.4 The Needs-Opportunities-Abilities analysis

5.2.4.1 Macro forces

Heiskannen (1997) suggested that environmentally related behavior is connected to structural factors. I divided those restraints into three categories for the reader's convenience; however the 5 main macro forces are inter-connected and should actually not be examined separately. A structural restraint such as Technology also rapidly changes and affects other restraints i.e. culture, institutions and economy and vice versa.

- **Economy and institutions**

What made DIY suddenly an attractive option for consumers in Korea? For most Koreans, DIY was not a familiar activity until recently, DIY specialty shops started to appear in discount retail chains only after the early 90's, and DIY tool market depended on door to door sales until mid 90's. DIY was neither a popular nor necessary choice for Koreans, who usually reside in massive apartment blocks with an employed janitor in house. (Euromonitor 2006) Therefore the DIY movement is surely a new form of consumption in Korea.

Q. 1.6 Home improvement increases the value of real estate?

		#	%
Valid	yes	2	5.71
	no	28	80.00
	indifferent	5	14.29
	Total ²⁸	35	100.00

An interesting point here is that only 5.7% in the survey answered that house improvement can add the value of real estate while according to Ace 2005 national survey, 83% Americans DIY to enhance the value of home. The fact that the average lifecycle of an apartment was only 17 years could be a reason for the late adaptation of DIY culture in Korea. (Construction and economic research institute of Korea, http://www.cerik.re.kr/data-/debate_view.asp?idx=492&page=14&ref=482&title= accessed 11/11/2006)

The Korean financial crisis in 1997 had a huge impact on the lifestyle of many. During the financial crisis, the so called “ANaBaDa²⁹ movement” was initiated by various civil activist groups and its success has given a kick start for the rise of Korea's DIY scene. In 2004, the DIY market size is about 512.3 billion Won³⁰, representing a growth rate of 12% CAGR³¹ over the period 1999-2004. (Euromonitor 2006)

²⁸ This question was added on the second survey, and only 35 people answered.

²⁹ An acronym for Save, Share, Barter, Reuse in Korean

³⁰ 51million dollar

³¹ compound annual growth rate

Also, another important institutional change is the 5-day working-week implemented in July 2003. An increasing number of locals spared time for DIY jobs such as decorating, repairs, making furniture, sewing and house-building. (Euromonitor 2006)

Q. 1.5. Is the DIY movement beneficial to national economy?

		#	%
Valid	yes	42	47.7
	no	12	13.6
	indifferent	34	38.6
	Total	88	100.0

It is always politically difficult to pursue the economic development and sustainability at the same time. Still, economic growth is the number one priority to the government and voters and if people perceive that DIY would not contribute to national economy, there could be a chance for refusal. From the sample data, only 13.6% perceived that DIY activity is not beneficial for national economy.

• **Culture and Technology**

Energy consumption data comparison between Japan and USA shows that culture is an undeniably important to understand sustainable (in) action. Culture shapes consumption by creating the norms and social rules (Hertwich et al. 2004c)

Korea's cultural norm is traditionally influenced by two major religions, Buddhism and Confucianism; these elements also affect consumer's behaviour differently.

For instance, Korea Buddhist group Jungto society (see www.ecobuddah.org) leads the "pleasant discomfort/garbage zero movement"; they claim that there is no need to make a slogan for recycle or reuse, because the concept of garbage does not exist in the perception of nature in Buddhism at the first place.

The Confucianism influence formed the perception toward craft/manual work which was considered the job of the low class³²; therefore it had to be avoided whenever possible. Increasing DIY population of modern Korean society implies that there was a change from the traditional Confucian view.

In terms of technology, it is not easy to explain the rise of DIY without mentioning ICT. This is a case where technology influences culture and institutions. Over 75% of South Korean homes have a 3Mb per second broadband connection, paying under 20 dollar a

³² Under the Confucian class system 士農工商 the scholar-official was at the top with farmers, artisans, and merchants in descending order.

month and 70% of Koreans are internet users.³³ Also, ICT has played a significant role to build a collective opinion of modern Korea.³⁴ As Reisch (2001) argued, internet facilitated access to alternative models of resource acquirement rather than simply “buying”.

Also continuous falling prices of advanced technologies such as power tools enabled more people to participate in DIY activities. Delivery of bulky items is almost free of charge with countless internet DIY shops on the net.

• Demography³⁵

Demography is an important aspect to understand Korea’s DIY culture. The fact that 76% of the respondents were female implies the gender specific characteristics of DIY activities. Topics such as sewing, cooking and home decorating are actively discussed while other subjects such as home building or tech-DIY are relatively uncommon.³⁶ Educated stay-at-home moms are the most active participants of not only online DIY clubs but also blogging (Channel Asia 2006). Interestingly while the average ratio of female college degree holders is 85.0% in this sample, 96.6% of female home makers hold college degrees.³⁷

As seen in chapter 2, 82.8% of the respondents are under 40 which implies that the online DIY scene in Korea is dominated by the younger generation, who is comfortable with technology. However over 40 internet users are rapidly growing,³⁸ meaning that the demographic characteristics can be changed over a short time.

Q 5.3 Your political preference?

	Frequency	DIYers Percent	National level Percent	19~29 years national level percent
No preference	2	2.3	33.8	37.6
liberalist	16	18.2	43.8	29.6
left wing	24	27.3	7.0	14.6
center	33	37.5	14.6	14.6

³³ see <http://www.asiamedia.ucla.edu/article.asp?parentid=13452>

³⁴ Independent reported that ‘a nation of restless young cyber-activists make South Korea the most fascinating media laboratory on the planet.’ (Independent 20-11-2006) For example, ‘Ohmynews’ is a complete online based independent media with the concept of ‘every citizen can be a reporter.’ Also, it is often cited that internet civil movement has reshaped political map in 2002 president election. 50% of Korean prefers online media to conventional one. (ibid.)

³⁵ See chapter 2 for the detailed information

³⁶ With an average of 250 thousands members and 100000 visitors a day, the massive amount of contents in each DIY club made it very difficult to make any specific statistics of the DIY categories. However the members can only access the club under their real names which make it easier to distinguish the gender of each member.

³⁷ 29.9% of female DIYers are home-makers.

³⁸ see <http://www.asiamedia.ucla.edu/article.asp?parentid=13452>

green party	12	13.6	0	0
Other	1	1.1	1.3	3.3
Total	88	100.0	100.0	100.9

The political preference of the samples shows an interesting difference from the national statistics.³⁹ DIYers preference rate for left wing was almost 4 times higher than national level. Even considering the point that the younger generation tends to support left wing, the figure was still higher. The green party does not have any seats in the Korean parliament, but 13.6% of DIYers answered they support green party. As said above, the respondents were not informed that this survey was related to sustainable research, and there were only 3 questions which had a reference to environmental issues.

5.2.4.2 Needs Opportunities Abilities

• Needs

According to the OECD's (2002) definition, needs refer to "the set of objectives that individuals pursue to maintain or improve their "quality of life" or well-being". People are motivated to consume goods in order to satisfy their needs. (Jager 2004)

However fulfilling needs is not as simple as it may sound. Vlek (2000) listed 14 different needs⁴⁰ to be fulfilled. From the basic needs of health and safety, to loving/belonging needs, different individuals will have different ways to fulfill the needs. Also, a single consumptive behaviour may affect the satisfaction of several needs simultaneously. (Jager 2004) For this research, I focus more on social communication needs, because unlike other needs, satisfying of this particular need affects more than just a personal level.

‘Social communication’

Hornik et al. (1982) argued that the subtle side of DIY, namely the “aspect of communication” should get more attention. Newly built apartment blocks often run its own intranets, the existence of active resident communities actually increases the value of real estate.⁴¹

Korea's internet user culture also demands more social networking rather than simple information source from internet. According to a national survey in 2006, 30% of the Korean internet users create active UCC⁴² and 91.6% of the internet users participate at least in one of the following activities on the web; web discussion boards, blogs and

³⁹ see http://research.joins.com/issue/view.asp?rsh_no=1

⁴⁰ Relations, development, comfort, pleasure, work, justice, health, privacy, money, status, safety, nature, leisure, time

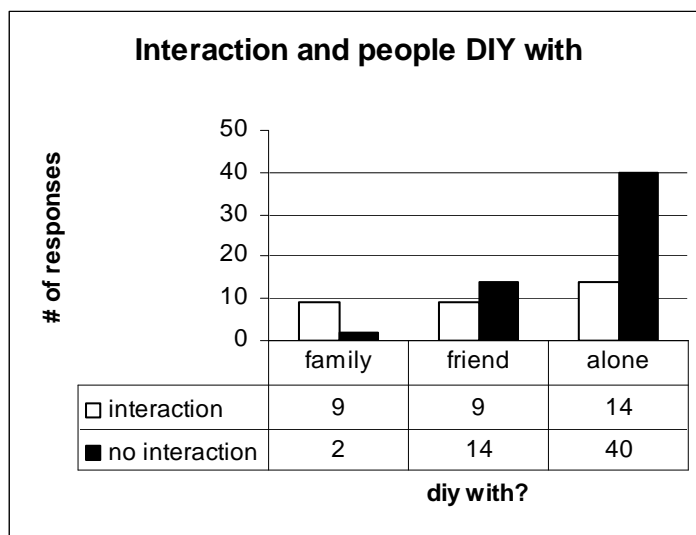
⁴¹ Online DIY clubs of apartment residents in Suji (Suburb of Seoul) appeared in TV commercial for the construction company and it increased the price of real estate more than double from 1.2 billion won (120000USD) to 3 billion (300000USD) per 100sqm.

⁴² user created contents

contents sharing. (Digital times 2006) For online club members, internet helps to create social bonding with citizens with a similar interest, and the ‘open exchange’ ethic has potential to mutually reinforce the values of sustainable consumerism. (Cole et al. 2006) For instance, the biggest online DIY club ‘Lemonterrace’ on the internet portal “Naver” runs a bazaar, flea market, workshop and a junk swap every month, which can create social networking opportunities.

Survey part 3.1 asked “Do you as well interact offline with people who have the same interest?” and 3.2 asked “Who do you DIY with?”. These questions intended to find out if online activity can lead to offline social communication, and 36.4 percent answered that they network with people with the same interest “outside of internet”.

Feature 5.2.4.2.1: Social communication aspect of DIY



However the majority of people (45.5%) work alone without any offline interaction. In order to find out the relevant factors, this group was segmented according to demographical aspects; their household and gender, which affects needs in the personal level. Table 5.2.1.1 shows that people without a partner and children have less interaction outside of the internet than the other groups. Extended family households showed the highest interaction level. The result implies that to some extent, the household type can influence internet users’ level of social communication

Table 5.2.4.2.1: Interaction and Household Type

Household type	# of Q.5.2.	# interaction	%
Single	7	4	57.1%
Couple	25	11	44.0%
family with kids	18	7	38.9%
living with parents	28	16	57.1%
extended family	8	1	12.5%
Missing	2	1	50.0%

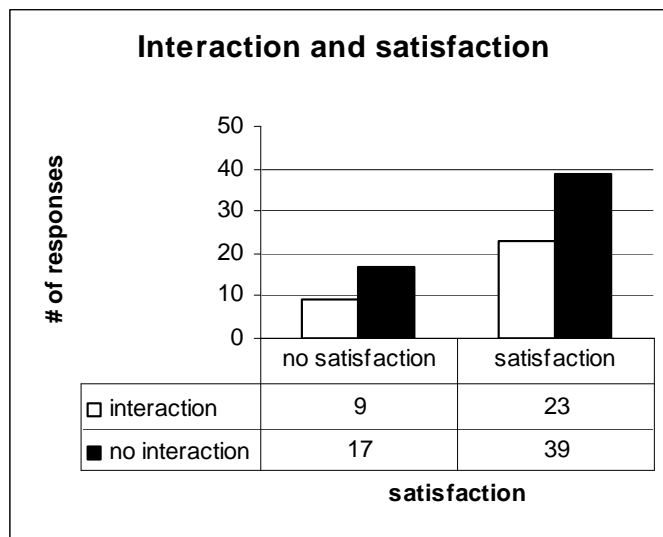
Casimir et al (2003) showed the correlation between sustainability and gender. They conclude that females have a favorable view towards sustainability. Communication skills were one of the reasons. The result however indicates that the female groups of the survey do not have a higher social interaction level than the male group. This might result from the small number of male respondents; the data is not as extensive as to conclude anything on that matter.

Table 5.2.4.2.2: Interaction and Gender

Gender	# of Q.5.1a	# interaction	%
female	67	29.0	43.3%
male	21	11.0	52.4%

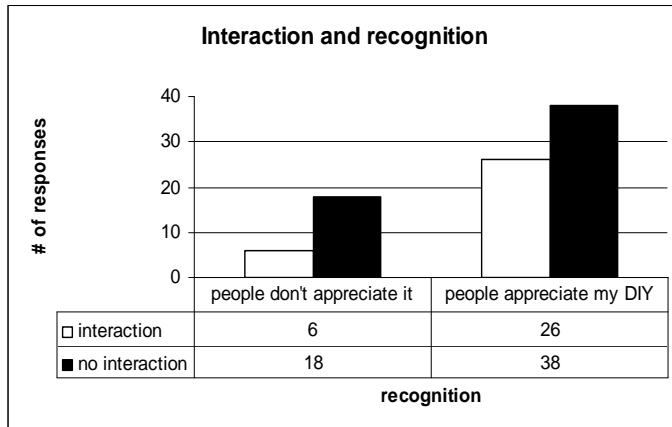
Question 3.3 asked “Are you satisfied with your creation?” The result shows some difference between the non satisfied group (34.6% interaction rate) and the satisfied group (37.1% interaction rate). The difference is not significant.

Feature 5.2.4.2.2: Interaction and self satisfaction



Question 3.4 asked “Do other people appreciate your creation?” The group with no recognition from others had a 25% interaction rate while 40% of group with recognition answered that they interact with people offline. The results from Question 3.3 and 3.4 imply that the recognition from other people is a more important factor for offline interaction than self satisfaction.

Feature 5.2.4.2.3: interaction and recognition



Online DIY clubs have their own recognition system. Quick feedback from other members is a characteristic internet community and actually obligatory for a blog. It is required to write a certain number of evaluations of other member's DIY work in order to get a membership of the community. Heiskanen et al. (1997) argue that knowledge and behavior show weak relations while "feedback" is important to motivate recycling behavior. A certain degree of feedback even can create recognition from the mainstream media such as newspapers or TV. Finally to the question 3.5 "Do you recommend people to DIY as well?" 58% answered that they recommend DIY to other people.

• Opportunities

Opportunities are seen as a set of external facilitating conditions, such as the objective availability of goods, materials and services, their accessibility and price information. (OECD 2002) As mentioned, the emergence of visual aids such as VCR made DIY more accessible to more people in early days, in 2006 DIYers can watch user created "how-to videos" and follow step by step instructions on internet.⁴³

Question 2.1 asked "Where do you get the information for DIY?" 63.2 percent of the cases answered that they use blogs as the main source of information.⁴⁴ Web discussion boards (52.9%) and other web sources (41.4%) also appeared to be important information sources. Information on those online DIY clubs is open sourced and the content is rarely provided by professional DIY specialists.

TV media had relatively low impact compared to other information sources; particularly DIY specialty cable channels did not seem to have a huge importance as an information source.⁴⁵

⁴³ ehow.com is a good example.

⁴⁴ Nearly two thirds of South Korea's homemakers use internet regularly and it was reported that about 300000 people are active housewife bloggers. (Asia pacific news 2006-10-18) A stay-at-home mom with high education is a typical DIY club member profile. Successful blog stars often publish books or launch online DIY shops. The founder of online DIY club Lemon terrace Hwang Hye Kyong launched her blog with DIY projects with recycled materials in 2004. Within 2 years, her club had more than 250000 members; she has her own TV show, published a book, runs classes and an online shopping mall.

⁴⁵ DIY TV ; a registered Korean DIY channel since May 2001

This result implies that to communicate with Korean DIYers, web media is a much better method than conventional ones such as magazines, newspapers or TV. It is a striking phenomenon that the use of a personal media exceeds any other media in a very short time. Also, I argue that to communicate sustainability, a wise use of personal media can reach consumers easier.

Table 5.2.4.2.3: Interaction. Access to information
Q 2.1. Where do you get the information for DIY?
(Multiple responses)

	Responses		Percent of Cases
	N	Percent	
blog	55	22.9%	63.2%
web discussion	46	19.2%	52.9%
web article	36	15.0%	41.4%
DIY school	18	7.5%	20.7%
magazine	27	11.3%	31.0%
newspaper	9	3.8%	10.3%
home improvement show	12	5.0%	13.8%
cable TV	4	1.7%	4.6%
commercial	8	3.3%	9.2%
warehouse	11	4.6%	12.6%
exhibition	1	.4%	1.1%
friend and family	13	5.4%	14.9%
Total	240	100.0%	275.9%

The data also shows a considerable difference to the survey results on American DIYers in 2005. While in the American survey, 52% said “ask friends and family”, only 14.9% in Korean DIYers use their friends and family as the information source. This can be explained with the relatively short history of DIY in Korea, resulting in heavy dependency on web sources.

Question 2.4 “Where do you get the materials you need?” asks not only about availability and accessibility of goods and materials but also helps to examine the first assumption, if people use recycling as their main material source. The result sends interesting messages.

Table 5.2.4.2.4: Availability
(Multiple responses, valid cases 94.3%)

	Responses		Percent of Cases
	N	Percent	

source	Individual internet buying	37	26.8%	44.6%
	Collective internet shopping	21	15.2%	25.3%
	warehouse type DIY	12	8.7%	14.5%
	independent type DIY	10	7.2%	12.0%
	check garbage disposal site	19	13.8%	22.9%
	re-use what I have	25	18.1%	30.1%
	junk swap	9	6.5%	10.8%
	Other	5	3.6%	6.0%
Total		138	100.0%	166.3%

Accessibility to DIY activities has improved because of ICT. Since a big scale DIY retailing market in Korea was not developed until 2000, countless internet DIY shops serve the increasing customer's demand with a highly specialized assortment. (Weekly Chosun 2003, Seoul Business News 2006)

In 44.6% of the cases, DIYers shop online individually. The second category, DIY club group purchasing (25.3%) means a special offer organized by DIY clubs. From textiles to building materials, when there are enough requests from club members, moderators call for collective buying.⁴⁶ This shows that Korean consumers much rather shop online than in conventional DIY warehouse franchises (14.5%) or small scale independent DIY shops (12%) which implies for the DIY industry, internet has better availability than offline franchises such as B&Q⁴⁷ or hypermarkets with a DIY section.

The higher usage of internet over offline purchase implies two contrastive scenarios regarding sustainable consumption. As Reisch(2001) argues, DIYer's strong consumer decision support has possibilities of increasing consumer citizen empowerment. Mouth of marketing is the most common information source for DIYers. They can be directed to sustainable consumption easier if the message is convincing. At the same time, internet can be an engine for more consumption. Various DIY suppliers conveniently linked to each project, open for 24 hours, can create a perfect chance for compulsive purchasing causing possible rebound effects.

Last three categories seem similar but slightly different in character. It indicates the popular use of recycled materials of Korean DIYers. First "check garbage disposal site" (22.9%) implies DIYers use someone else's disposable materials and this sort of material acquirement brings the most of attention and respect from other club members. Also, when a member found an interesting disposed item, a picture and information such as pick up location was also posted.

⁴⁶ One respondent points out "it is so funny to see that so many people in our club have the same wallpaper from September group buying, a sewing machine in June or whatever in their home. I know in the end, my home would not be so individual knowing hundred of other homes have the same but it makes us feel like a family too"

⁴⁷ First foreign DIY franchise in Korea. UK King fisher group's DIY brand ; launched in 2004

The second category “reuse, recycle, refurnish at home” (30.1%) means using the material they already have. This can be explained by two institutional factors. First of all, in Korea every waste disposal costs ⁴⁸and specially, a disposal of bulky item requires a certain amount of fees and an official paper procedure from the city council.⁴⁹ Secondly, an average Korean apartment has a storage room the size of a small wardrobe and it makes it almost impossible to keep bulky items at home.⁵⁰

And for that reason, junk swap (9.4%) can be a very practical solution and also it creates a chance for DIYers to interact with each other. Even though the survey result did not show high usage of junk swap, there were 65 junk swap requests per day in October in only one DIY club ⁵¹

• Abilities

Abilities are the set of internal capacities of an individual or household to procure goods and services. They include financial (e.g. income, credit options), temporal (e.g. more time to take holidays), spatial (space in the home to store goods and distance to relevant shops and services), cognitive and physical means and skills (health, fitness, possession of licenses and permits). (Vlek 2000, OECD 2002, Hertwich et al. 2005)

Cognitive and physical means and skills

Horbik et al (1983) point “lack of perceived skills⁵²” out as the biggest barrier of American DIYers. Compared to 1983 when their article was written, the information access environment and the tools have been improved and are cheaper, but still Korean DIY also perceived this factor as the biggest challenge (60.5%).

Table 5.2.4.2.5: Abilities

Q 2.3. What are the challenges of DIY? (choose all)

		Responses		Percent of Cases
		N	Percent	
abilities	Lack of skills	52	30.8%	60.5%
	Lack of money	16	9.5%	18.6%
	Lack of time	33	19.5%	38.4%

⁴⁸ 20 liter per 500won (50 cent) (Korea ministry of environment 2006)

⁴⁹ minimum disposable cost : wardrobe 10,000 won(10 dollar), a chair 2000won, mattress 15000won etc (Korea ministry of environment 2006)

⁵⁰ It is unlike Norway’s case where an obsolete refrigerator still can run as a “second back up freezer for party occasions” in the spacious basement (Hertwich et al. 2005)

⁵¹ online DIY club “Lemon terrace”, approximately 1950 junk swap cases per month ; (2006 October statistics)

⁵² They state that perceived skills consisted of knowledge and physical ability.

Lack of inspiration	21	12.4%	24.4%
Lack of space	26	15.4%	30.2%
Lack of tools	21	12.4%	24.4%
Total	169	100.0%	196.5%

Temporal abilities and spatial abilities

Temporal abilities and spatial abilities are the second biggest challenge (38.4% and 30.2% of the cases respectively) for DIYers. The Table 5.2.3.2 indicates that the majority of them are not actually frequent DIYers. Only 33.7% of the respondents answered that they engage in DIY activities more than once a month and 5.7% said they do it more than once a week.

Table 5.2.4.2.6 Frequency

		Frequency	Percent
Valid	more than once a week	5	5.7
	more than once a month	29	33.0
	more than once a year	32	36.4
	less than once a year	22	25.0
	Total	88	100.0

In terms of spatial abilities, Korea does not offer the best environment. According to national statistic office, 90% of housing in Korea is an apartment (NSO 2005, accessed 11/12/2006) and lack of working space and noise problems limit the variety of available DIY activities.

Financial abilities

To the question 2.3, only 18.6% answered that the challenge of DIY activities is the lack of financial resource. The result from Question 2.2 “How much do you spend in your DIY project?” can explain why.⁵³ The majority of DIYers (57%) spend less than 50,000won (approx. 50 USD) for one DIY project.

With regards to monthly personal spending power⁵⁴ the high income groups tend to spend more on DIY.

Table 5.2.4.2.7 Average spending per one project

⁵³ Income

⁵⁴ 5.6 How much do you spend per a month?

average spending per one project	Monthly spending power						Total
	missing	>500USD	>1000USD	>2000USD	<2000USD	n/a	
>10 USD	0	29	3	6	8	4	50
> 50 USD	1	8	1	5	5	6	26
> 100 USD	1	1	1	0	4	0	7
< 100 USD	0	0	0	0	5	0	5
Total	2	38	5	11	22	10	88

• Motivation and Behaviour control

Why do people choose to DIY? In an American survey (2005), the biggest motivation of DIY (90%) was to save money. Along with the question 2.3.⁵⁵, question 1.1 asked “Why are you interested in DIY?” ‘Saving money’ was only the reason in 19.3% of the cases.

The most frequent answers are motivations from self interest such as fun (46.6%) and self expression (25.5%). Consumption can also serve as a mark or a ‘badge’ of sub-cultural membership.(Campbell 2005) However only 3.4% mentioned that DIY is a political subversive act such as anti capitalism or a personal choice against sweat shop issues.

Table 5.2.4.2.8: Motivation and experience

Q 1.1. Why are you interested in DIY?

Responses				Frequency		Percent	
		N	Percent				
It helps environment	10	10.2%	11.4%	Valid	beginner	44	50.0
					hobbyist	24	27.3
					experienced	20	22.7
					Total	88	100.0
It helps my finance	17	17.3%	19.3%				
It is fun	41	41.8%	46.6%				
It is self expression	22	22.4%	25.0%				
It is a political act	3	3.1%	3.4%				
other	5	5.1%	5.7%				
Total	98	100.0%	111.4%				

		environment	finance	fun	self expression	subversive act	other
experience	beginner	6	7	18	13	1	2
	hobbyist	2	5	11	5	1	1
	experienced	2	5	12	4	1	2
Total		10	17	41	22	3	5

DIYers are divided into 3 groups according to their experiences; DIY beginner group with less than 2 years, DIY hobbyist group with 3~5 years, DIY experienced group with

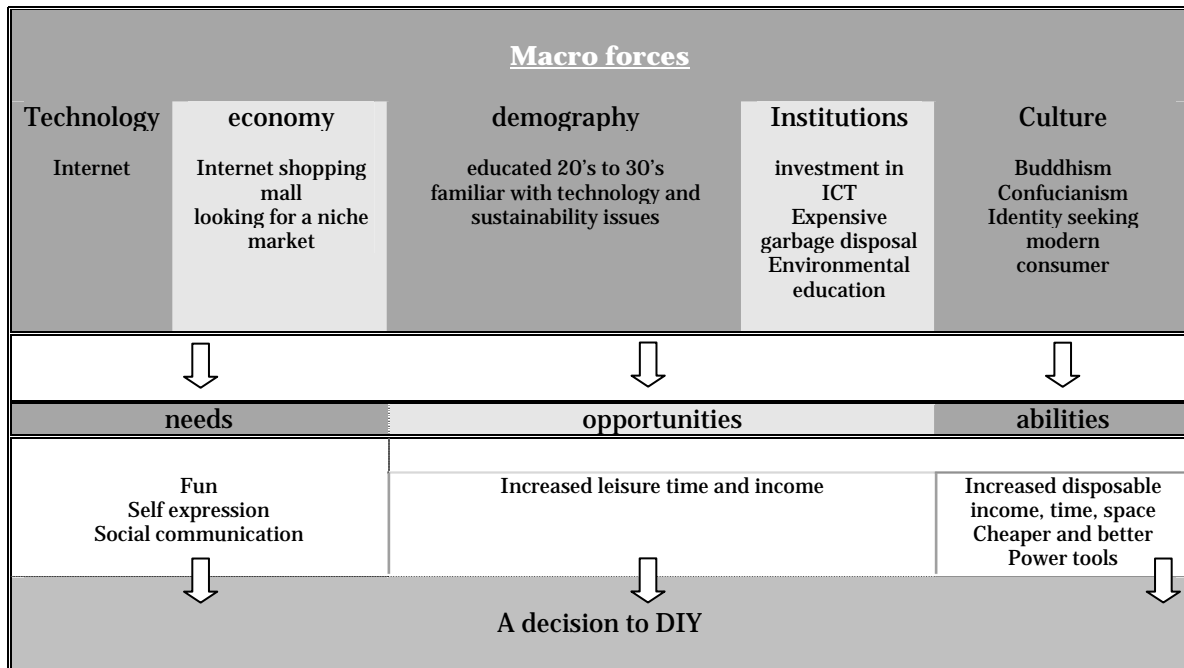
⁵⁵ only 18.6% answered that money is the problem

over 6 years of experiences. With a minimum of 1 month to a maximum of 40 years, the average DIY experience of respondents is 4.9 years.

The motivations between the beginner group and the experienced group did not show any notable difference. This implies that the use of internet did not affect motivation of DIYers significantly.

5.3 Summary of analysis

Feature 5.4 Mechanism of action of Online DIY activities



Does sustainable consumption behavior come from sustainable motivation? The motivation of consumers is not always consistent with the desired behavior. The result shows that most of DIYers do not choose DIY as an alternative of conventional lifestyle but rather a hobby. It implies that calling for ethics or causes to encourage sustainable consumption might be only good for a minority. (Langhurst 2006) However the environmental messages are often placed central in promotions of sustainable consumption. (Jager 2004) This approach does not benefit the desired outcome. Reisch (2001) also mentions that economic and social incentives have not always been strongly effective in practice.

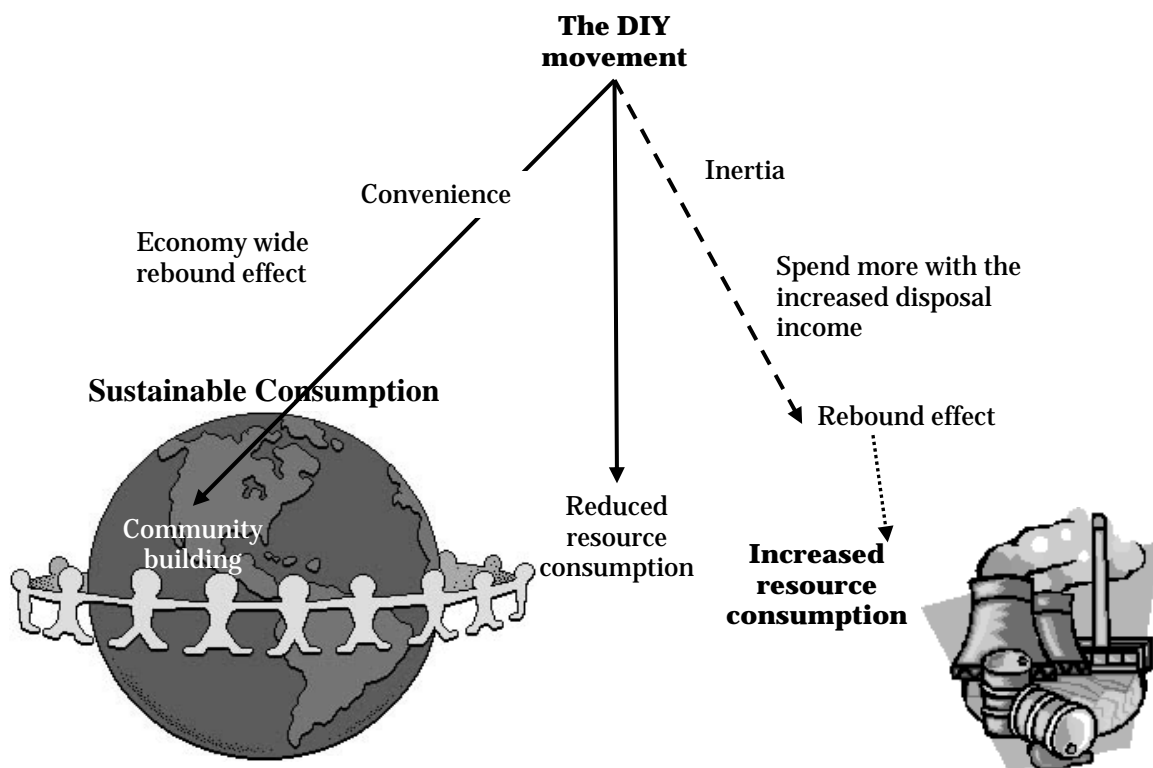
Then why do Korean DIYers prefer reuse and recycling? “Convenience” has been recognized as a determinant of sustainable consumption behavior. The high usage of material at home can be also interpreted as a behavior in pursuit of convenience.

Also, the existence of online DIY communities does neither substitute our conventional purchasing pattern nor increase a disposable income dramatically. If DIYers use more time and monetary resources on making stuff, that will decrease the ability and opportunity to purchase more products. However if DIYers decide to spend the increased disposable income to spend on something else, that will create a rebound effect.

Online DIY communities have increased the production in the sectors causing economy wide effects. Also, its ability to create changes in consumer preferences and alternation of social institutions (e.g. common DIY workshop, waste management policy etc.) can bring transformational effects even further. (Greening et al 2000)

6. Conclusions

Feature 6: the DIY movement and sustainable consumption



In spite of all the social and political activism, only 5% of consumers in developed countries adopted the sustainable life style. (Jacquie Burgess 2003) It is still difficult to identify the evidence of progress advancing this particular agenda of sustainable consumption. (Fuchs et al 2005)

Criticism towards modern consumerism has asked for total consumption pattern changes for a long time. However it was easily ignored because the concept sounds condescending and not new. It does not have a story or sells dreams like we learn in

marketing class. Also, by asking corporations to work on better energy sufficiency, consumers' burdens will feel lighter. However the notion of rebound effects should expand to take into account the potential radical changes in consumption patterns. (Jalas et al., 2001)

With the demand for more sustainable products, consumers should go back to this old but important question, "How much is enough?" It is not necessarily a moral question only for philosophers and environmentalists but also a valuable question for consumers and researchers of business studies.

DIYers are arguably non corporation producers. DIY movement can empower consumers and help them eventually to act as citizens without provocative slogans. Even though the motivation does not always come from altruistic reasons, DIY has the potential to satisfy our needs of self expression or recognition, without necessarily consuming more. The development of ICT has contributed to DIY and made it a personal experience. DIY activities are considered as a form of self expression, and personal media such as a blog is used to present the works easier than ever.

Also, survey results reveal that online DIY activities evoke social communication and encourage recycling. Cost reduction or increasing the value of property was not their main concerns.

Admittedly, it is still too early to argue that if the popularity of reuse and recycle will be a lasting one. It could end up as just another latest niche market and another trend of the past.⁵⁶

However, as Heiskanen et al. (1997) say, we are a hostage of past experience. LOHAS⁵⁷ marketing was hyped during the last few years and consumers can use the opportunity to create the DIY industry differently from the conventional ones, making DIY as a strategy of sustainable consumption. Once the change is made with a help of ICT, "DIY movement" can be a good stepping stone to fundamentally change in our consumption level in our "throwaway" society. It may not be always glossy and glamorous but it can outwit the conventional production. We have a choice without going for shopping.

7. Criticism

First of all, the research has its methodological weakness. In order to calculate an actual environmental effect of DIY, instead of the nominal data such as "environmental perception" used in this paper, more quantitative data such as actual CO2 emission of each DIY activity should have been used.

⁵⁶ With the trend that many young graduates have to live under little disposable income without a regular employment, the DIY movement might not end up as just being a trend.

⁵⁷ Lifestyles of Health and Sustainability

Second, the lack of long term observations of DIY'ers consumption patterns is also a disadvantage of this paper⁵⁸ Korea's DIY culture is rather young and 5 days working regulation has only started in 2003. There is so much information still lacking. For instance there is no official statistics of online DIY supplier yet even though they are one of the most important characteristics of the Korean DIY scene. (Weekly Chosun 2003, Seoul Business News 2006) The lifespan of finished DIY works also is not available. It is too early to say the unique case of Korea can be useful for different socio-economic and lifestyle groups.

Third, there is still the big question of how much less we should consume. Does a change in consumption level affect well-being of consumers? Sustainability is based on our environmental and societal effects which will happen in the future; therefore the answer for the question is precautionary and arbitrary in nature. The new strategy for sustainable consumption should improve well-being and quality of life which will help consumers to accept the new life style easily and slow down substitute consumption. (Hofstetter et al. 2003) Without a clear goal, sustainable consumption will end up as a parlor game, a handful of well-meaning words, but ultimately unsuccessful (Langhurst 2006)

Fourth, one can always argue that a middle class without radical change of lifestyle cannot stop environmental damage. (Hertwich 2003a) Sustainable consumption is not about a single action such as a buying an ecological label or recycling your soda bottles; that might help but it is rather 'a drop in the ocean' (Heiskanen et al. 1997). However, sustainable consumption is a goal itself and at the same time, a strategy. In order to achieve desirable consequences, it is crucial to identify what is actually feasible. Therefore, however skeptical I am, it is still worthwhile to search for a new approach.

Finally, "corporation catch-on" will always concern the activists as Naomi Klein (1996); major media such as "Vogue" launched their first knitting magazine in 2004, and Toyota's marketing campaign also intends to bandwagon the current DIY movement. As she mentioned, subversive groups often end up being the next target market. For instance, in 2006, Toyota launched a marketing event called 'Yarisworks road show' in the USA aiming for those young creative types. Toyota's DIY campaign, which also means "Drive it yourself", collaborates with DIY/craft communities⁵⁹

8. Further study suggestion

As explained, the methodology of this research had certain limitations. One can compare the resource consumption level of DIYers and non DIYers and figure out if there was any notable rebound effect in the long run. The study on time use of DIYers also could be an interesting future research topic. Even though DIY emphasizes "self help", developing

⁵⁸ Even though it was almost inevitable because of physical constraints of research, there should be more data about how people use their spare time, long term expenditure change after DIY, CO2 emission and so on.

⁵⁹ Such as Make, Venus, Readymade magazine in America.

the concept of “DIT (Do it together) is where DIY movement has its potential. The interactive community-based nature of DIT (Boucher 2006, www.timboucher.com) is already seen in various open source teaching DIY clubs. The even more socially developed concept, ‘Do it together’ is also worthwhile to study. In addition, since the main respondents of the research were female, the gender comparison among DIYers could be another future study topic.

Finally the international aspect of sustainability such as equity was not addressed here. One can examine if the DIY movement can be applied in the developing world.

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- List of Online DIY activities visited

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International	www.make.com www.craftster.org ; Newsweek (June 2004) featured the story of "Craftster.org" as another example of trendsetting sustainable consumption. This international online DIY club with over 50000 members shares the idea such as how to reconstruct the 2 dollar worth of clothes from the charity shop. The members present their handmade work out of reused materials and get instant feedback from others. Also, this community is an opportunity for the small business; often the works are sold or bartered on the internet market space. www.readymademag.com www.churchofcraft.org

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Appendix 1 Sustainable Consumption

Since 1987, WCED⁶⁰ suggested the concept of “sustainable development”, there has been various discussions about “what is sustainable” in 1990s. Then the international communities have developed the concept of “sustainable consumption” as one of objectives in the international conferences and events such as the Rio earth summit and Agenda 21. The concept was also widely discussed in the UN General Assembly.⁶¹ (Hertwich et al, 2004)

Actually, sustainable consumption is a concept which still does not have full consensus. While NGOs such as WWF⁶² (Bond 2005) declare that the current level of consumption cannot be continued and must be decreased⁶³, some academics and international political organizations clarify that sustainable consumption is not about consuming less. According to Houlder (2003), it is the business community and Governments which are resistant to the idea of a deliberate shift towards lower consumption because it could mean reduced (tax) revenues, public spending and employment.” Followings are definitions of sustainable consumption by different actors.

- Norwegian Ministry of Environment (1994), United Nations Department of Economic and Social Affairs (1999), also adopted by OECD; sustainable consumption is; The use of goods and services that respond to basic needs and bring a better quality of life, whilst minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations.
- Jacqueline Aloisi De Larderel, Director of UNEP's Division of Technology, Industry said: “ *Sustainable consumption is not about consuming less, it is about consuming differently, consuming efficiently, and having an improved quality of life. It also means sharing between the richer and the poorer.* ”
- OECD (2001) used the term, sustainable consumption “*a reduction of environmental impacts,*” while no quantitative targets are identified. Also, it stated that “*The definition remains open to different interpretations, which is appropriate because assessments of sustainability should be site and problem-specific*”
- Hertwich et al (2004c) defined Sustainable consumption patterns as “*patterns of consumption that satisfy basic needs, offer humans the freedom to realize themselves, and are replicable across the whole globe without compromising the Earth's carrying capacity.*”

The other important element of sustainable consumption is that the consumption change should not deteriorate the well-being of consumers. (Hofstetter et al. 2003)

⁶⁰ the World Commission on Environment and Development

⁶¹ For instance, UN general assembly 1992, § 4.7 ; 2002, §13, § 14

⁶² World Wildlife Fund

⁶³ Also, Tanner et al (2003) perceived main cause of environmental problems is over consumption of natural resources, with the industrial nations showing the highest per-capita consumption

Appendix 2 Business opportunities

		Frequency	Valid Percent
Valid	Clothing and accessory	18	66.7
	Home furnishing	6	22.2
	book	2	7.4
	cosmetics	1	3.7
	Total	27	100.0
Missing	System	61	
Total		88	

This part was not included in the main text because of low response rate. Handmade products have value of rarity and personality (Campbell 2005). Appreciation of handmade craft can open an opportunity for social entrepreneurs and small business especially for women.

Question 4.1 to 4.6 asked if they have bought any handmade products. 13.6% answered that they have been to a Craft fair. 31.8% have purchased a handmade product, 67% of purchase was clothing and accessory, Home furnishing items was 22%, and the rest of the items were a handmade book and cosmetics. (7%, 4% each) 65% purchase from independent craft shop, 10% from an internet, following with DIY warehouse (15%)⁶⁴ and flea market(10%).

For the open question 4.5, the answers were generally following 5 types. People don't purchase handmade products because they believe they can make it better (50%), and the quality of handmade products is not satisfactory (23.5%). Also, people point out that there was not much chance to access to the product (14.7%), and the price was another factor (8.8%)

4.1. Have you been to DIY meeting/ fair? Yes 13.6%

4.2. Have you purchase DIY/handcrafted products? Yes 31.8%

4.3. If yes, what was the item?

4.4 Where did you buy?

		Frequency	Valid Percent
Valid	1	4	16.0
	2	4	16.0
	3	3	12.0

⁶⁴ Multiple responses from a handmade product buyer group.

	4	12	48.0
	5	2	8.0
	Total	25	100.0
Missing	System	63	
Total		88	

4.5. If no, why didn't you buy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Because my work is better	21	23.9	46.7	46.7
	Expensive	8	9.1	17.8	64.4
	No opportunity	5	5.7	11.1	75.6
	Quality is not satisfactory	10	11.4	22.2	97.8
	I like new product better	1	1.1	2.2	100.0
	Total	45	51.1	100.0	
Missing	System	43	48.9		
Total		88	100.0		

6. Do you have any intention to buy? Yes 15.9%

Appendix 3 Questionnaire questions

1. Motivation of DIY

1.1 Why are you interested in DIY?

- 1) It helps environment
- 2) It is good for my finance
- 3) It is fun
- 4) Self expression
- 5) I don't agree with today's consumerism
- 6) Other

1.2 When did you start to DIY?

Number of years

1.3 Do you believe DIY can improve environmental condition?

- 1) Strongly agree
- 2) Agree
- 3) Indifferent
- 4) Disagree
- 5) Strongly disagree

1.4 After DIY, I think my spending is

- 1) Increased
- 2) Decreased
- 3) Indifferent

1.5 Do you think DIY will help increasing the economy activities of the country?

- 1) Yes
- 2) No
- 3) Indifferent
- 1.6 Does DIY enhance the value of property?

- 1) Yes
- 2) No

2. Opportunities: availability, accessibility, information

2.1 Where do you get the information?

- 1) Internet
 - a. Blog
 - b. Web discussion board
 - c. Web article (incl. magazine, newspaper, independent information source)
- 2) Hobby center (adult education center etc.)
- 3) Magazine (please name it)
- 4) Newspaper
- 5) Friends and family
- 6) TV
 - a. Home improvement show
 - b. Cable TV (e.g. HGTV)
 - c. Commercial
- 7) DIY warehouse
- 8) Exhibition/DIY fair
- 9) Other (please specify)

2.2 How much do you spend in your DIY project?

- 1) Less than 10 euro per a month
- 2) Less than 50 euro per a month
- 3) Less than 100 euro per a month
- 4) Less than 200 euro per a month
- 5) More than 200 euro per a month

2.3 What are the challenges of DIY? (choose all)

- a. Lack of skill
- b. Lack of money
- c. Lack of time
- d. Lack of inspiration
- e. Lack of space
- f. Lack of tools
- g. Other (specify)

2.4 Where do you get the materials you need?

- 1) Internet shopping
 - a. Independent shopping
 - b. Group buying
- 2) DIY warehouse franchise
- 3) Independent DIY shops
- 4) Check garbage disposal site
- 5) Use what I already have

- 6) Junk swap
- 7) Other

3. Needs: relations, pleasure, leisure, status

3.1 Do you interact with people who have the same interest also offline?

- 1) Yes
- 2) No

3.2 Who do you DIY with

- 1) Friend
- 2) Family
- 3) Alone

3.3. Are you satisfied with your creation?

- 1) Yes
- 2) No

3.4 Do the others appreciate your creation?

- 1) Yes
- 2) No

3.5. Do you recommend people to do this as well?

- 1) Yes
- 2) No

3.6 How often do you engage in your DIY project?

- 1) More than once a week
- 2) More than once a month
- 3) More than once a year
- 4) Less than once a year

4. Other - Business opportunity

- 1. Have you been to DIY meeting/ fair?
- 2. Have you purchase DIY/handcrafted products?
- 3. If yes, what was the item and how much did you pay?
- 4. Where did you buy?
- 5. If no, why didn't you buy?
- 6. Do you have any intention to buy?

5. Demographic information

5.1 Gender (f/m) Age, Occupation

5.2 how big is your city you live

- 1) Less than 200thousand people
- 2) Less than a million
- 3) Seoul and its suburb

5.3 Your political preference?

- 1) Conservatism
- 2) Left wing
- 3) Center
- 4) Green party

5) Other

5.4 type of household

1) Single

2) Couple

3) Family with kids

4) Living with parents

5) extended family

5.5 educations

1) No university education

2) University

3) Graduate school

5.6 spending power

1) Less than 500 euro per month

2) Less than 1000euro per month

3) Less than 2000 euro per a month

4) More than 2000 euro per a month

5) I don't have any

Appendix 4 Pictures

Starting from comparatively easy carpentry tasks like this example, DIYers enjoy personal and creative way to recycle.



Source : blog.naver.com/gippmy