

EXPLORING CONSUMER NEEDS WITH LEWIN'S LIFE SPACE PERSPECTIVE

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ABSTRACT

Consumer needs are assumed to be originated from tensions between perceptions of the self and the environment by which the whole psychological field, life space, is developed. Dual research problems are developed from this proposition; one is to approach a basic framework of consumer life space and the other is to explore consumer needs from different life spaces for comparing distinctive characteristics within and across different life spaces. The structure of a consumer life is developed with three nations' time use studies from which all possible human activities are listed, clustered, and re-clustered to obtain a basic framework for consumer life spaces. Three GT studies collect consumer needs on learning, a kitchen, and an imaging device for representing those needs from a self, a family, and a leisure/cultural life space, respectively. Consumer needs are repeatedly clustered and underlying three dimensions in consumer needs are deduced: *self-oriented* vs. *others-oriented*, *functional* vs. *emotional*, and *autotelic* vs. *instrumental*. The three dimensions produce eight types of consumer needs, with which distinctive characteristics of consumer needs from different life spaces become manifested. The concept of consumer life space could enhance designer's capacity to envision and interpret underlying forces of consumer needs in a more humane way.

Keywords: Lewin's life space, consumer life, consumer needs, generative tools

1 INTRODUCTION

People-centered design and participatory design are making progress in discovering possibilities and opportunities with people that address their needs and aspirations for experience. The interest has been shifted from the things being designed to the ways to discover and understand what people think and know and how they feel and dream, and even to designing for the future experiences of people. In achieving design aims and purposes, consumer behavior perspective could help to reach results more meaningful to people's lives. If we agree upon to define consumer behavior as those activities by which products and services are sought out, secured, used, and evaluated, it is evident that it is an all-pervasive feature of individual and family life. Consumer life is happening all at once, all the time, at all places.

Lewin proposed that human behavior should be seen as part of a continuum, with individual variations from the norm being a function of tensions between perceptions of the self and the environment. To fully understand human behavior, the whole psychological field, or "life space," within which the person acted had to be viewed [1][2]. In the same vein with Lewin, consumers participate in a series of life spaces such as family, work, school and church. Consumers, as individuals and in groups, are fundamentally affected by their spatial and temporal distribution in their life space. Consumer life space must be considered to fully serve people through design and to help ensure that the designed products and services meet their needs.

This study aims to better understand consumer needs that are originated from his/her life space. The research problems are twofold; one is to understand how an ordinary consumer life is composed based on a range of daily activities in a typical human life and the other is to examine whether consumer needs that are originated from different life domains differ as Lewin's concept of life space expected.

2 BACKGROUND

2.1 Consumer Needs

Generally, consumer needs are gaps between current and desired conditions [3][4]. These gaps make psychological imbalance accompanying efforts to keep its balance to relieve psychological tension.

This effort leads to a consumer's ideal state, because needs are hypothetical constructs directing consumer behavior toward certain goals, or end states [5]. To understand the origin of the consumer needs, human motivation theories were examined. Because motivation theories explore the invisible psychological process of human behaviors, the theories regard human behaviors as a result from the motives which drive human behavior to relieve human needs. Therefore, it is valuable to refer the motivation theories to understand consumer needs. Lewin's Field Theory [1] is one of the human motivation theories which suggests an extensive theoretical foundation of consumer needs. In the Field Theory, needs are developed by an individual's internal factors, his/her environmental external factors, and the interaction between the two. Consumer needs are developed depending on not only how different characteristics an individual has, but also what different environments the person experiences [6][7][8]. A concept which implies the structure of development of needs is "life space [1]."

2.2 Life Space

Lewin's Field Theory connects to the concept of life space. Life space includes the psychological situation which is based on an interaction between personal and environmental factors [1][9]. Consumer needs are developed by an interaction between a consumer's characteristics and his/her environmental factors [7] and the two perceived factors by a consumer construct his/her psychological environment, life space [1][2].

Life space is a holistic origin of consumer needs including artificial and natural factors which determine a person's behavior. Life space gives birth of different needs from the whole contextual situations a person experiences. Consumer needs are developed from the context constructing by an interactive relation between a consumer and an environment. The context is a subjective experience a consumer perceives concluding to different consumer needs.

2.3 Human-centered Design Method: Generative Tools

Traditional needs research methods, such as survey, interview, and observation are deficient to approach tacit and latent needs, because those needs are not able to be articulated in words and observed in behaviors [10][11][12][13]. In order to access those needs, a new method, Generative Tools [14], is introduced to participatory design fields, which focuses on what people 'make' rather than what they say or do [15]. The generative tools technique enables designers to catch participants' tacit and latent needs by analyzing artifacts the participants make with toolkits including words, images, or other making materials [16]. They make collages, maps, stories, plans, and/or memories projecting their own aspirations [17]. The outputs of the generative tools can be used directly for user-oriented product development by inspiring designers with stories spoken and embedded in the tangible, visible forms of artifacts the participants made.

3 DECOMPOSITION OF A CONSUMER LIFE

To approach consumers' life spaces, first of all, it is required to search consumers' everyday life. In order to understand how an ordinary consumer life is composed, all possible activities in a typical everyday human life are explored. Time use studies provide excellent references for collecting a whole spectrum of human activities. Lists of typical everyday human activities are collected from three nations' time use studies as in Table 1. They are *Korean Life Time Survey* in 2009 [18], *American Time Use Survey* in 2008 [19], *Japanese Survey on Time Use and Leisure Activities* in 2006 [20].

The activities from the three references are compared and contrasted and finally mutually exclusive 45 activities are extracted from the three references. The list of 45 activities in an ordinary consumer's everyday life is developed excluding those activities related with earning money to make the list purely represent a consumer life.

Second, 45 activities are grouped into 23 activity groups through a series of a bottom-up clustering steps. Twenty three activity groups are re-clustered by the similarities in the activity purpose and these re-clustering steps produce 11 consumer life domains. Eleven life domains are finally grouped into the three broad life categories that are generally adopted in the field of home management as self, family, and leisure/cultural life [21]. Figure 1 indicates the list of activities in an ordinary consumer life that is composed 23 activity groups, 11 life domains, and 3 life categories.

Finally, a consumer life is turned out to be composed of five life domains in a self life, four life domains in a family life, and two life domains in a leisure/cultural life. The three life categories are divided by the units of actors such as activities purely done by oneself, by a family unit, and with

others. These units of actors could build up different kinds of psychological field, called the life space. Activities in self life are those least affected by others, activities in family life are those for or with other family members or done by other members to the self, and leisure/cultural activities are those by oneself, with other family members or non-family members. Consequently, consumer needs evolved from various interactions with one's psychological environment could be different such that the involvement of others, either family or non-family members, might provide different life space. This leads to the second research problem, whether consumer needs that are originated from different life spaces are different as Lewin's concept of life space implied.

Table 1. Lists of Activities in Three Nations' Time Use Study

Korea	United States	Japan
Personal care Sleeping Meals and snacks Personal care Health care Other personal care	Personal care Sleeping <hr/> Eating and drinking	Personal care Sleep related Physical care Meals
Learning School hours Learning beyond school hours Purchasing for learning	Educational activities Attending class Homework and research	Schoolwork Schoolwork Studies and researches
Household related Food preparation and cleanup Clothing Management House cleaning House maintenance Home management Shopping for household Other household management	Household Housework Food preparation and cleanup Lawn and garden care Household management	Housework Management of meals Making sweets Gardening Household upkeep Care of clothing Making clothing Building and repairing Vehicle maintenance Household management Care of family member Help to family member Other housework
Household member care Care for preschooler Care for schoolchildren Care for spouse Care for parents Care for other family member	Caring for household members Children <hr/> Caring for nonhousehold members Nonhousehold adults	Childcare Care of a baby and a little child Physical care or supervision Reading, playing and talking with Accompanying a child Teaching the child Transporting a child
Participation and volunteering Helping neighborhood Participation Volunteering	Organizational, civic, and religious Religious and spiritual Volunteering	Volunteer activity related Volunteer activities Travel related to Volunteering
Social and leisure activities Social activities Social learning Mass media Religious activities Culture Sports and outdoor leisure Hobbies and others Purchasing for leisure Other social and leisure activities	Leisure and sports Socializing and communicating Watching television Participating in sports, exercise, and recreation <hr/> Telephone calls, mail, and e-mail	Free time Social and religious Social life Entertainment, hobbies, and culture Sports Mass media Resting-time out
Travel Travel for the activities above Waiting for travel		Travel Travel related to housework Travel related to housework as hobbies
	Purchasing goods and services Consumer goods purchases Professional and personal care services	Shopping and using services Shopping Administrative services Commercial services

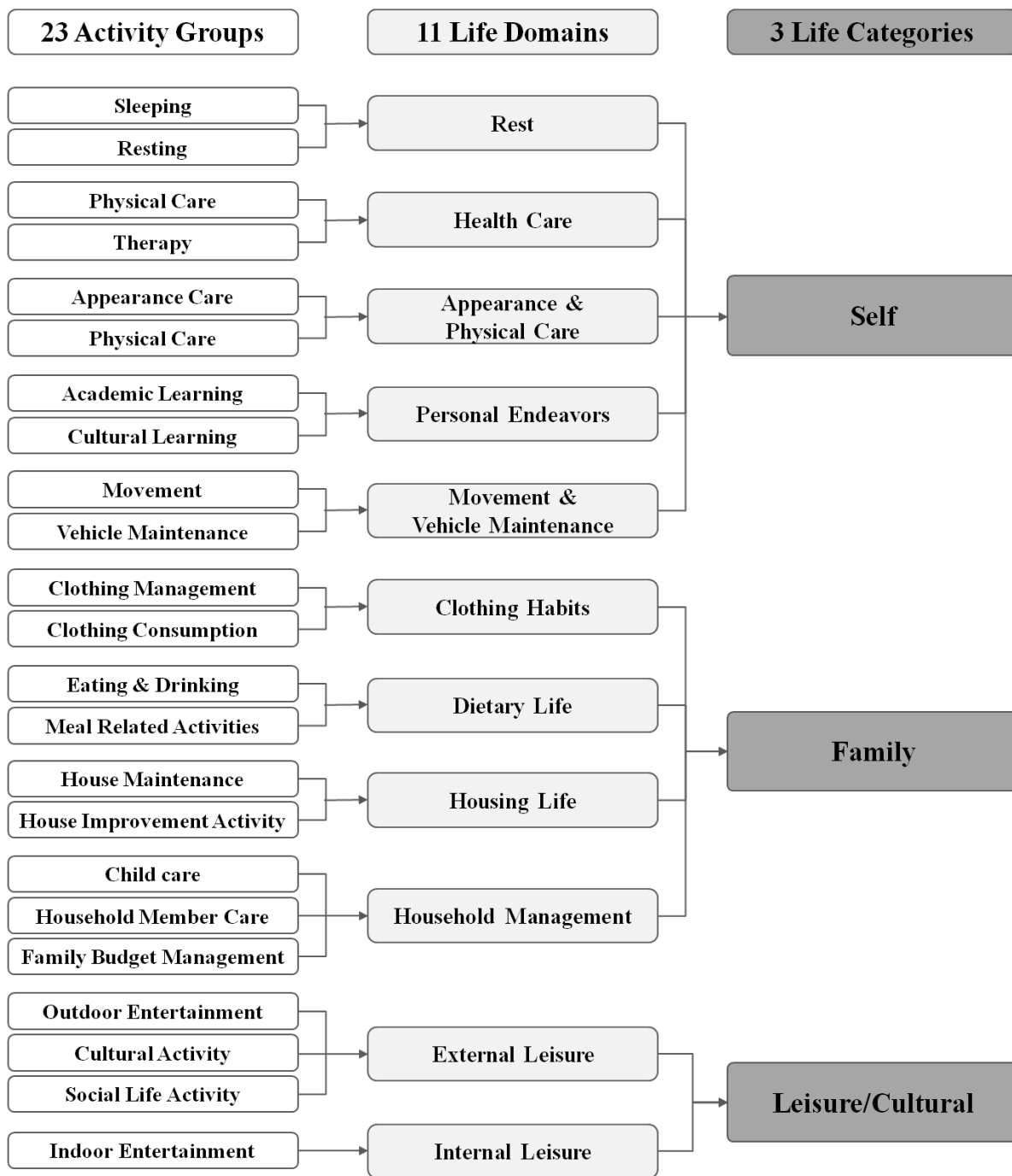


Figure 1. List of Activities in a Consumer Life

4 CONSUMER NEEDS FROM DIFFERENT LIFE SPACES

4.1 Exploring Consumer Needs with Generative Tools

Consumer needs originated from three life spaces are examined with three applications of generative tools (GT). The themes for the three GT are consumer needs in learning from a self life, kitchen from a family life, and imaging device from leisure/cultural life. Twenty two college students participated in the learning GT study, ten housewives in the kitchen study, and 14 adults in the imaging device study as represented in Table 2.

The procedure of each GT study starts from one week of immersion stage with a work book that contains less than ten minutes of daily tasks related with each theme. A group face-to-face session is followed with four to five participants preceded by short individual interviews on finished work books.

Each group session starts with activation of feelings and memories with collage and the next step is dreaming ideal experience through 3-D expressions with varieties of materials. Making collages and 3-Ds are followed by storytelling of each participant on his/her outcomes. The session ends with free talking about the themes and experiences throughout the GT procedure.

Transcriptions of all the interviews, talks, and stories are constructed and the long lists of statements containing any clues of consumer needs are developed. Mutually exclusive need statements are printed and cut into mini card shapes and shuffled around on the wall for meaningful clustering of consumer needs until no more clustering is possible. The clustering procedures produce three affinity diagrams of consumer needs in three themes of three life categories as in Figures 2-A through 2-C.

Consumer needs on learning revealed by college students are clustered into functional and emotional, within each re-clustering indicates those related to oneself, learning tools, and environment. Students' needs on learning materials are functionally oriented rather than emotional. Students reveal their hopes on accessible varieties of on-line learning materials, functionally and emotionally qualified tools and environments including something that could enhance their willingness to study. Others-oriented needs are only expressed within the boundary of competitive intentions. Self-oriented functional needs are revealed both in related with one's learning ability and with management of physical and psychological conditions.

Housewives' needs on their kitchens are clustered into those related with the primary functional purpose of a kitchen and with expanded purposes. Frequently expressed functional needs are related with utilities and efficiencies including suitability for flexible situations. Kitchens are regarded as not only family members' public spaces but also private spaces for housewives who are in charge of the space. Kitchens are also regarded as such social spaces that could be utilized as means of showing off and saving faces toward others. Housewives also reveal their wishes for privacies and kitchens are turned out to be excellent spaces for this purpose within which personal endeavors, entertainment, and rests are possible by using the spaces privately.

Consumer needs on imaging devices are also clustered into functional and emotional as in the case of learning. In addition to utilities and efficiencies in functional needs, the device provides both sources of needs one for self-satisfaction and the other related others in public zones. Functionally related needs are most frequently expressed and both self- and others-oriented emotional needs are also as much revealed. Consumers reveal their hopes to use imaging devices for their own satisfactions through emotionally well designed and playful devices. They also reveal their hopes to exchange interests and entertainment with others with imaging devices and to show off their advanced skills and tastes to others. Imaging devices that could support flexible situations of scenes at any moment and places are strongly emphasized.

Table 2. Themes and Participants in Three GT Studies

LIFE CATEGORY		SELF	FAMILY	LEISURE/CULTURAL
Theme		Learning	Kitchen	Imaging device
GT implement time		Nov-Dec, 2009	Jan-Mar, 2010	Mar-Apr, 2009
Number of participants		22	10	14
Status		College student	Married women	Adult
Sex	Male	10 (45.5%)	0 (0.0%)	8 (57.1%)
	Female	12 (54.5)	10 (100.0)	6 (42.9)
Major	Humanities	9 (40.9)	n.a.	n.a
	Science+eng.	8 (36.4)	n.a	n.a
	Arts	5 (22.7)	n.a	n.a
Duration of marriage	Newly married	n.a	2 (20.0)	n.a
	< 10 years	n.a	3 (30.0)	n.a
	10 years +	n.a	5 (50.0)	n.a
User types	Light	n.a	n.a	3 (21.4)
	Middle	n.a	n.a	6 (42.9)
	Heavy	n.a	n.a	5 (35.7)

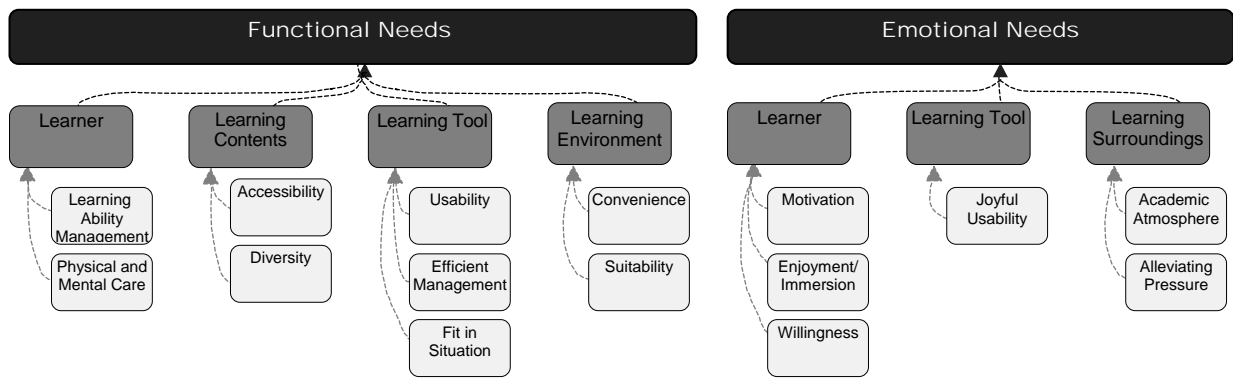


Figure 2-A. Consumer Needs in Learning

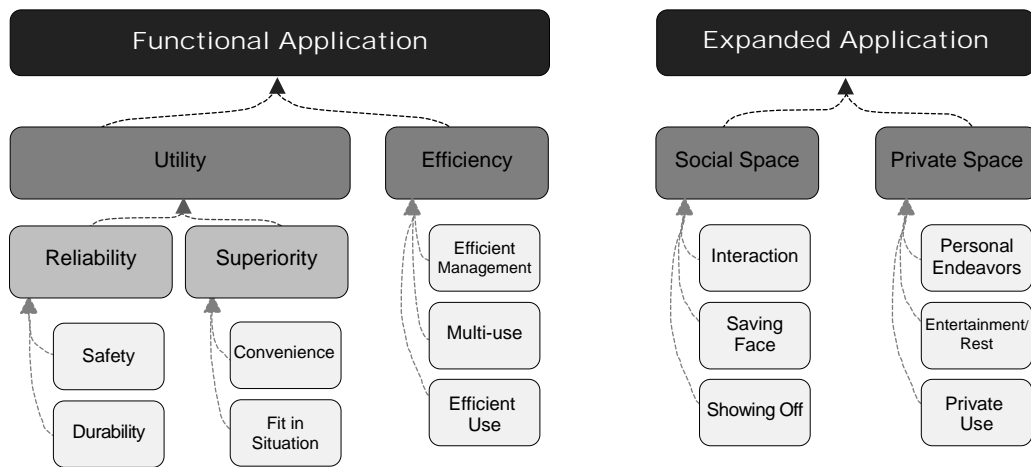


Figure 2-B. Consumer Needs on Kitchen

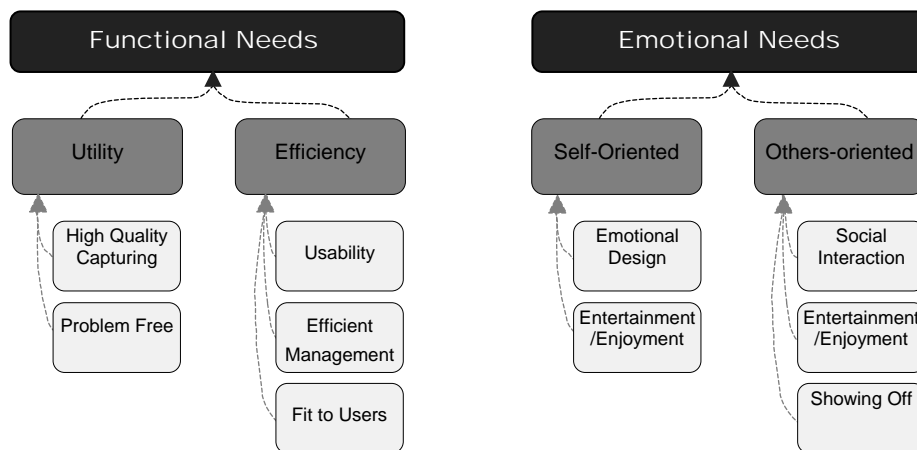


Figure 2-C. Consumer Needs on Imaging Device

4.2 Structure of Consumer Needs

A close examination of consumer needs in three affinity diagrams reveals common dimensions in consumer needs in three ways. The first dimension is *self-oriented* or *others-oriented* according to a specific need is related purely with oneself or with others. The second is *functional* or *emotional* as a

need is about superior quality or about emotional experience. The third is *autotelic or instrumental* depending on a need reflects its own purpose or is revealed as an instrument to achieve some other purpose. These three dimensions result in eight types of consumer needs as in Figure 3. They are *self-oriented functional autotelic* (SFA), *self-oriented functional instrumental* (SFI), *self-oriented emotional autotelic* (SEA), *self-oriented emotional instrumental* (SEI), *others-oriented functional autotelic* (OFA), *others-oriented functional instrumental* (OFI), *others-oriented emotional autotelic* (OEA), *others-oriented emotional instrumental* (OEI) needs. It provides a good framework for comparing differences in consumer needs across life spaces.

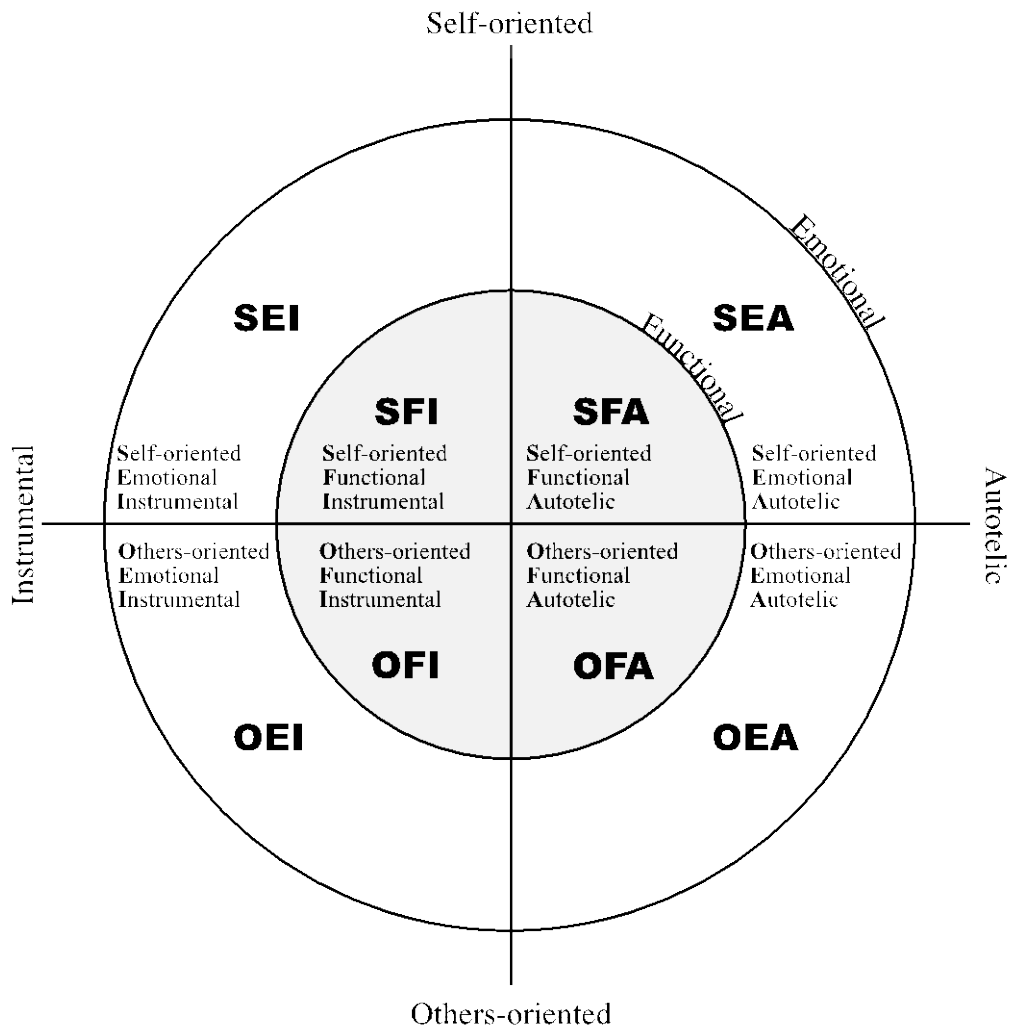


Figure 3. Three Dimensional Eight Types of Consumer Needs

4.3 Consumer Needs from Different Life Spaces

The three GT themes, learning, kitchen, and imaging device, reflect possible artifacts that are needed from a self life space, a family life space, and a leisure/cultural life space, respectively. In order to understand whether life spaces could be regarded as the origins of consumer needs and, therefore, consumer needs from different life spaces would differ as Lewin's concept implies, the detailed consumer need statements from the three GT studies are repeatedly examined. At this stage, consumer needs are classified according to the eight types in three dimensional structures. Figures 4-A through 4-C represent the results intuitively with the brightness of each cell in a way that the darker the more consumer needs expressed. The distribution of consumer needs in the eight dimensions is listed in Table 3.

The needs expressed from the learning issue tend to be self-oriented, functional, and instrumental, while others-oriented or emotional needs are rarely expressed. These needs imply some characteristics

of those needs originated from a self life space in which social and situational influences are minimized. Those infrequently expressed emotional needs in this context tend to relate with self emotional control rather than emotions related with others. A few others-oriented needs include competitive learning or effective group study with usable tools.

Kitchen is one of the family life space and the needs expressed from this space cover all types of needs as in Figure 4-B. Self- or others-oriented and autotelic or instrumental needs are relatively evenly expressed from this family life space with highly frequently expressed functional compare to emotional needs. A noticeable result is that self-oriented emotional needs are more likely autotelic while others-oriented emotional needs are more likely instrumental. This implies that kitchen is regarded as a meaningful and at the same time a dutiful life space for housewives and could be a symbolic space of their social status for others.

Finally, the characteristics of consumer needs from a leisure/cultural life space are deduced from the imaging device study. The results of GT on imaging device indicate that functional needs are most frequently expressed within the boundary of self-oriented, while emotional needs are in the others-oriented. Autotelic functional needs in related with others are almost never expressed. In addition to the needs on usefulness and usability with advanced imaging device technology, emotional interactions with others or intentions to show off their skills and purchasing power to others are frequently expressed. This implies that leisure/cultural life space provide consumer context open to the public and people make use of this context as useful mediums of emotional interactions with others and of building ideal images to others.

In summary, the three life spaces, a personal, a family, and a leisure/cultural, provide different environment and the interactions between the self and the environment provide different contexts that are holistic origins of consumer needs. Life space gives birth of different consumer needs from the whole contextual situations a consumer experiences.

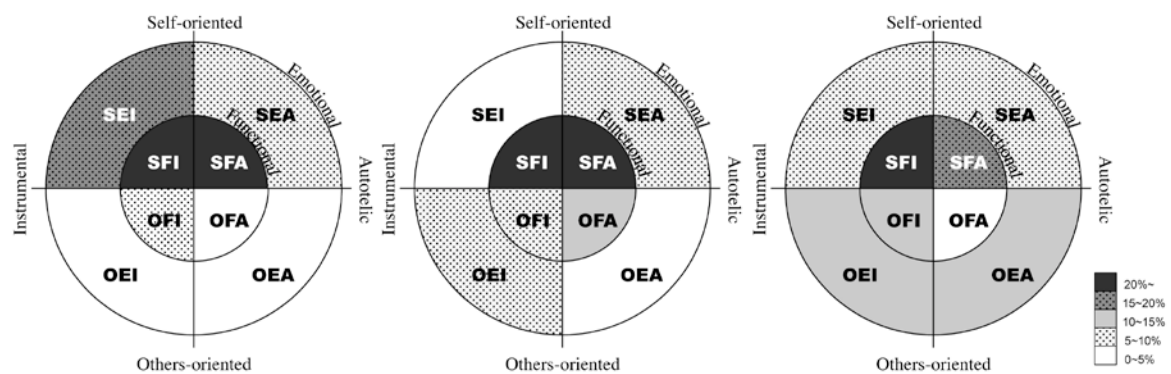


Figure 4-A. Learning

Figure 4-B. Kitchen

Figure 4-C. Imaging Device

Table 3. Distribution of Consumer Needs in Eight Dimensions

Need Dimension				Learning	Kitchen	Imaging Device
Self	Function	Autotelic	SFA	24 (33.8%)	44 (23.5%)	20 (18.7%)
		Instrumental	SFI	22 (31.0%)	74 (39.6%)	38 (35.5%)
	Emotion	Autotelic	SEA	5 (7.1%)	18 (9.6%)	8 (7.5%)
		Instrumental	SEI	13 (18.3%)	2 (1.1%)	6 (5.6%)
Others	Function	Autotelic	OFA	-	20 (10.7%)	-
		Instrumental	OFI	4 (5.6%)	10 (5.4%)	11 (10.3%)
	Emotion	Autotelic	OEA	-	6 (3.2%)	13 (12.1%)
		Instrumental	OEI	3 (4.2%)	13 (6.9%)	11 (10.3%)

5 CONCLUDING REMARKS

This study aims at exploring the origins of consumer needs from Lewin's life space perspective, in which an individual and the environment interact and this interaction causes various tensions by comprising all influences acting on him or her at a given time. The psychological tensions from an

individual's life space are regarded as the origins of consumer needs in this study, by which two research problems are developed. One is to understand the basic structure of a consumer life through classifying all possible daily human activities from three nations' time use studies of Korea, Japan, and the U.S. The other is to compare characteristics of consumer needs that are aroused from three life spaces of a self, a family and a leisure/cultural from the lists of consumer needs extracted from three GT studies on the themes of learning for representing a personal space, kitchen for a family space, and imaging device for a leisure/cultural space.

A consumer life is structured with mutually exclusive 45 activities under the three broad life categories of self, family, and leisure/cultural and the full lists of activities are clustered into 23 activity groups and, in turn, re-clustered into 11 consumer life domains. Consumer needs obtained from three GT studies on the three themes of learning, kitchen, and imaging device provide data for comparing consumer needs from three different life categories of a self, a family, and a leisure/cultural. Three dimensions of consumer needs are deduced through a series of thorough examinations of the three GT consumer need data and they are self-oriented versus others-oriented, functional versus emotional, and autotelic versus instrumental. This results in eight types of consumer needs by combining the three dimensions. Eight types of three dimensional consumer needs from the three life categories are compared to understand characteristics of consumer needs from different life spaces.

Consumer needs for learning from a self life space tend to be self-oriented with few emotional needs in related with others, while consumer needs from a family life space like a kitchen tend to be a mixture of all types in which self-oriented emotional needs tend to be autotelic while others-oriented emotional needs are instrumental. The autotelic needs from kitchen may reveal cognitive duties or responsibilities that are deeply seated in housewives' minds. Consumer needs for imaging device from a leisure/cultural life space reveal others-oriented characteristics like showing off his/her advanced skills or tastes to others, in which others-oriented needs tend to be emotional while self-oriented be functional. Functional needs are most frequently expressed in all three themes of life spaces since learning, kitchen, and imaging device are examples of functionally oriented life spaces with one exception from kitchen in which family members interact.

This study provides additional way of understanding consumer needs from their life space perspective than the state of art in design. Consumer needs are supposed to be originated from their life spaces in which the self and the psychological environment interact and the comparative examinations of the three GT studies support the life space perspective. In conclusion, understanding consumer life context is one of the very critical elements in achieving successful design solutions in a more humane way.

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