

Study on factors that affecting Well-being

For the future design promotion

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Abstract: Designers' activity has gradually expanded with changes in society, and now especially in advanced countries face the problem of "Easterlin Paradox" is the paradox that higher income does not always contribute to making Well-being. We have employed GDP as index for well-being since 1950s after Kuznets proposed it, but now a lot of countries have tried to make a new index complementary with GDP. Thus, we should not focus only physical welfare but factors that making up Well-being, and it is also same for designers. In this study, we conducted web research on the hypothesis that happiness level is proportional to the amount of community activities and questions regarding happiness level, total time of community activities with: family, workplace, friends, and so on: about 524 men and women from 20's to 60's as a preliminary survey, about 1,075 men and women from 20's to 60's as a main survey. As a result, we found relationship between happiness level and total time of activities with family, but other activities have not strong relationship with happiness level. However we found the question that "Do you have some kind of rewarding?" has strong relationship with happiness level.

Key words: *Well-being Indicators, Design Promotion, Happiness, Community Activities*

1. Introduction

Designers' activity has gradually expanded with changes in society. At one time, product designer had mainly designed only tangible objects, but now they also design intangible matter as a service, and also environmental designer have focused on not only environment but activity itself as a community development. It seems like they begun to change their focus into motivation. In other words, designer has started to consider not only human behavior as issue but motive behind their behavior as fact.

Meanwhile similar changes have occurred in the economic policies field. A lot of countries in the world have adopted GDP as an indicator of their growth and it has treated as indicators of well-being. It is based on the concept that an increase of national income bring citizens into well-being, but from around 1990, some of advanced countries have faced "Easterlin Paradox [1]" that subjective sense of well-being decrease in spite of an increase of their income. Since then, researches of the new index called as "happiness equation [2]" to covers the shortcomings of GDP become an active especially in Japan. Considering these and getting back to design perspective, the essence of design is to make user's happiness, and now designer has begun to focus on motivation, the matter designer now facing is quite similar with topics that researchers that focus on "happiness equation". Therefore, to establish principles of design, especially to prevent their design from falling into paradoxes of happiness, we study factors that effects well-being especially focus on human activities.

2. Hypothesis about factors that affecting Well-being

2.1 Bibliographic Survey

At first, we have established working group to discuss the hypothesis about factors that affecting Well-being, comprised of 5 people who are interested in this study: including students, working people; and we conducted bibliographic survey mainly focus on the survey of Japanese Cabinet. On a basis of those, we discussed factors that highly affecting Well-being, and we tried to construct the hypothesis. As a result, we made 3 hypotheses: condition of some kind of relationship will affect significantly Well-being, “Socio-economic Condition” and “Health” those are main factors Japanese Cabinet proposed [3] will also have some influence on Well-being, and level of Well-being will change whether they have some kind of goals. Besides, we found there is a concern that web survey itself will cause some biases because we can carry out a survey particular people who have physical welfare as that they can access internet.

2.2 Preliminary Survey

On a basis of above, we made questionnaire as a preliminary survey and carried out to 524 men and women from 20’s to 60’s. On this survey, we made question items as below Table 1 for verifying hypothesizes in addition to a question about Well-being.

Table 1. Question items in a preliminary survey

No	Intention	Details and Question Items
1	Detailed questions about Relationship	Relationship with “Family living together,” “Family live separately,” “Colleague,” “ Lover or Spouse,” “Friend,” “Neighborhood”
2	Questions related with Japanese Cabinet proposed	“Health condition of mine,” “Health condition of family,” “Annual income,” “Personal disposable income,” “Satisfaction with income,” “Degree of difficulty in living”
3	Questions about goals	“Presence of hopes or dreams, and details if there are,” “Presence of what you want to do, and details if there are”
4	Questions to survey biases of the word “Well-being”	“Question about Ill-being as opposite of Well-being,” “The most important factor for you to be Well-being,” “The most important factor for you to prevent Ill-being”

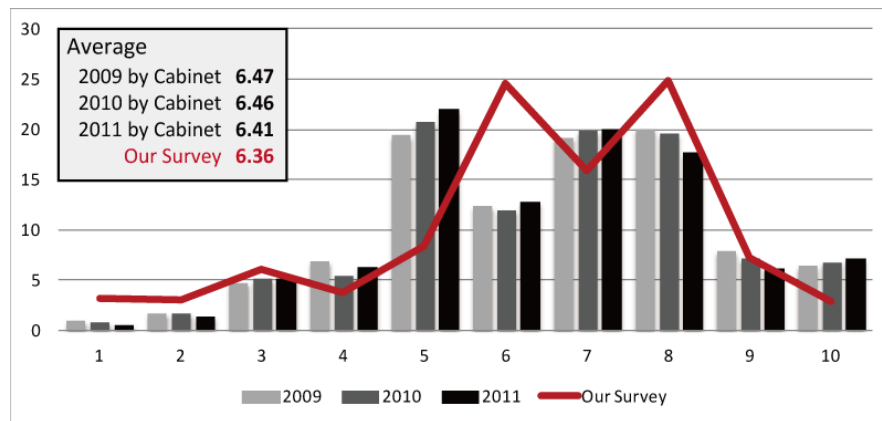


Figure.1 Comparison with the result of Cabinet

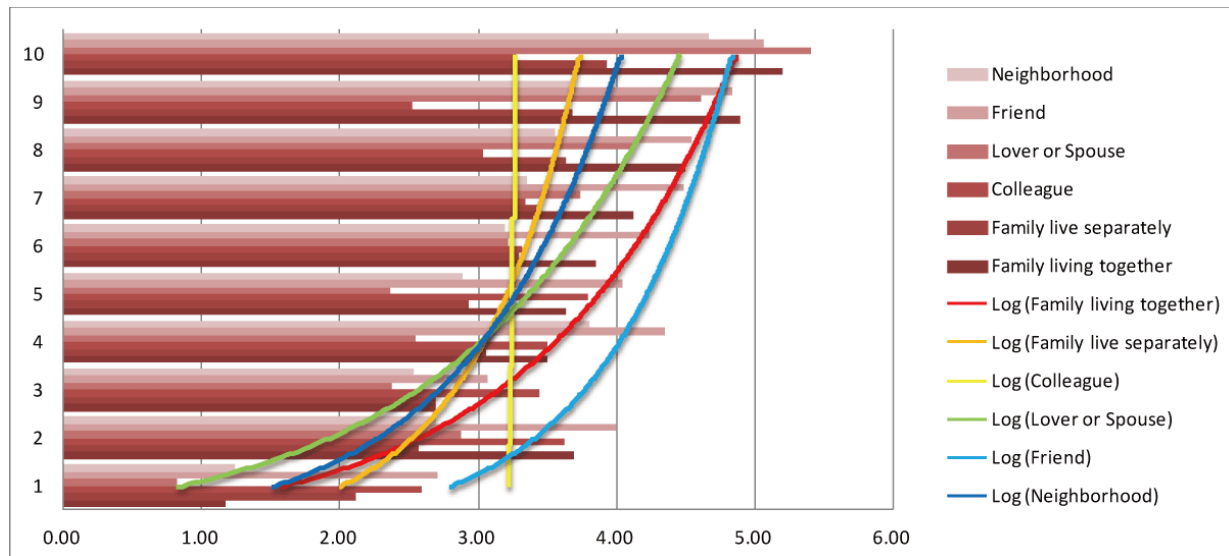


Figure.2 Relationship between the score of Well-being and the result of scoring relationship

As a result of this survey, first we found no significant difference could be seen with response of Well-being in comparison with the result of Cabinet [4], and we found there is an insignificant bias and there is no need to concern a bias with web survey (Figure 1). Besides, as a peculiar feature of web survey, there are a lot of housewives in this survey (129 samples / 24.6%), and as a result of t-test between housewives and others, no significant difference could be seen. Regarding items about relationship, there are quite few samples who answered “I have poor relationship,” and it would be difficult to analyze the statistical tendency, but the result of scoring responses that the better is higher score the worse is lower, we got a graph that we can find correlated with Well-being. Therefore, we convert the result of responses about Well-being into two values that “Being Happy” and “Being Unhappy,” and we performed discriminant analysis. As a result of it, canonical correlation coefficient is even 0.393 is not high, but we found we can be classified those in linear classification. However, in the test of an assay of the statistical differences among groups, there is no significant difference only in “Relationship with Colleague,” and we can predict that “Relationship with Colleague” have little effect on Well-being. Besides, in the items that are related with Cabinet proposed, we could not find items that significantly correlate with Well-being in the items related with the Cabinet proposed. However, the item “Satisfaction with income” only has high correlativity the score of coefficient of correlation was 0.415, but contribution ratio is 0.253 is not high, and we can be seen that it possess lower reliability. Thus, “Satisfaction with income” has a little possibility that affect Well-being, and it is not definitively having strong implications.

Regarding the item about goals, we performed the non-parametric test because the answer has two values. As a result of it, there is a significantly different between the group that has “presence of Goals” and the group that has “absence of Goals” in two-sided 95% confidence interval. Besides, we found that biases of the word “Well-being” is not so much. As a result, we found we should look at “the presence of Goals.” Hence, we shared this with working group, and we modified the hypothesis toward the main survey. In consequence, we got the supposition as below Table 2.

Table 2. The supposition from the result of Preliminary Survey

No	Intention	Supposition
1	Quantitative scale about relationship between Well-being and relationship	We can monitor it by measuring the amount of activity time.
2	The presence of Goals	According to preliminary survey, we found the samples that have goals about contribution to someone had higher score than the samples that have goals about self-realization. Accordingly, we can monitor the difference by measuring the difference between “the presence of Rewarding” and “the presence of Objectives.”
3	Questions to survey biases of the word “Well-being”	There is no difference between Well-being and Ill-being, but there will be some difference between Well-being and "Subjective Life Satisfaction," "Subjective Life Fulfillment."

2.3 Main Survey

On a basis of above, we made questionnaire as a main survey and carried out to 1075 men and women from 20's to 60's. Regarding the items about relationship, we made questionnaire about “Family,” “Colleague,” “Friend,” “Group activities,” “Group activities on the WEB,” “Neighborhood,” and we got answers about the amount of activity time by self-enumeration.

Based on the results of main survey, we performed discriminant analysis with the items about relationship and Well-being. As a result of it, the first parameter of canonical correlation coefficient about “The amount activity time with Family” was high that point 0.679 and next was “The amount activity time with Friend” that point 0.433 and the worst was “The amount activity time with Group on the WEB.” However, canonical correlation coefficient of first parameter was 0.325 that is low, and it means there is not significant influence, and thus, those 3 items have a certain effect on Well-being, but that is not significant. In addition, regarding biases of the word Well-being, we performed correlation analysis between Well-being and "Subjective Life Satisfaction," "Subjective Life Fulfillment." As a result of it, the former is 0.713 and the latter is 0.773. The both results indicate there is no

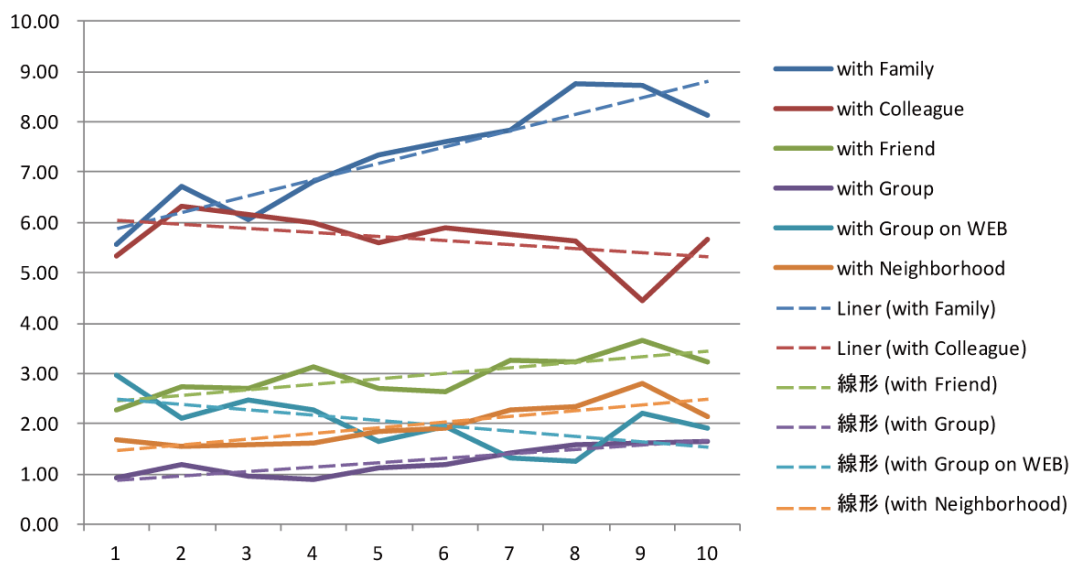


Figure.3 Relationship between the score of Well-being and the result of scoring the amount of activity time

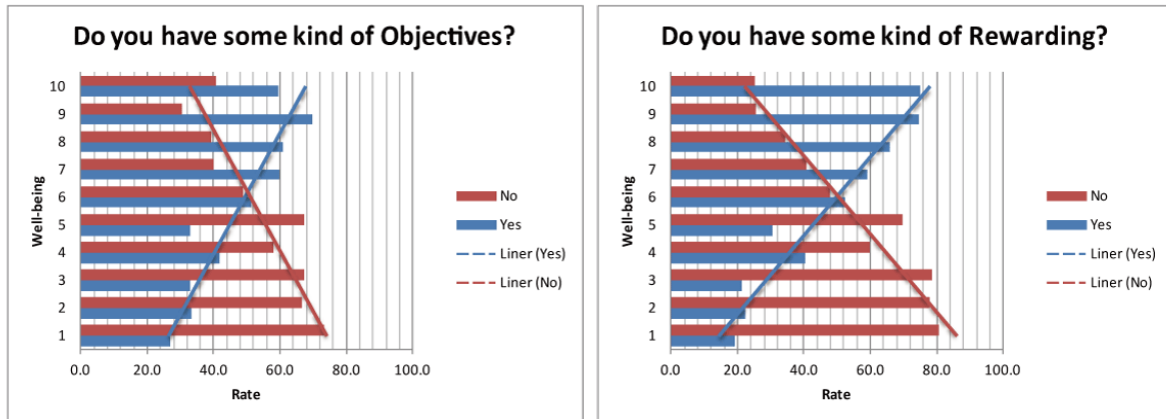


Figure.4 Comparison of Objectives with Rewarding

difference if we change into those words instead of Well-being. On the other hand, regarding “the presence of Rewarding” and “the presence of Objectives,” we performed the non-parametric test. As a result of both, we found a significant difference in two-sided 99% confidence interval, and that is higher than the presence of Goals. That means those have higher influence with Well-being. Besides, regarding comparison of those, the first, regarding Rewarding, the average score of Well-being with presence of rewarding is 7.00 and absence of rewarding is 5.76. The second, regarding Objectives, the average score of Well-being with presence of objective is 6.83 and absence of objective is 5.97. As a result of comparison of average difference, we can presume “the presence of Rewarding” has higher influence than “the presence of Objectives.”

3. Conclusions

Consequently, regarding the first hypothesis, we found that the amount activity time with Family is the most contributing factor, and the next is the amount activity time with Friend. Conversely, we found that the amount activity time with Group activities on the WEB is the worst contributing. However influence rate of those is not high and it means there is not significant influence.

In contrast, we found that “the presence of Rewarding” and “the presence of Objectives” have high influence on Well-being. Especially, the presence of Rewarding is higher than the presence of Objectives, and we should look at details about “Rewarding” in the future. However, in this survey, the samples that answer Ill-being are quite few and there are slight doubts about whether these surveys have enough believability. Therefore, we should be continued this research.

4. References

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