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Research Report

Status Race and Happiness: What Experimental Surveys Tell Us

KDI Policy Study, No. 2014-01

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Status Race and Happiness: What Experimental Surveys Tell Us

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KOREA DEVELOPMENT INSTITUTE

KDI



Policy Study 2014-01

Status Race and Happiness

What Experimental Surveys Tell Us

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| Preface |

While Koreans have achieved remarkable economic growth which leads to a spectacular increase of per capita income, their subjective well-being has failed to follow the pace of such economic growth. Further, their life-long competition in education and subsequent labor market has exposed Korean people to high pressure and status anxiety. Korean parents have shown more interest in their children's relative performance in the peer group than the children's absolute achievement.

One possible explanation on the Easterlin paradox (i.e., happiness does not increase in proportion to income increase) is that people tend to have interest not only in their absolute income but also their relative income compared to others'. Having said that, however, the level of the influence of relative income on happiness can vary depending on each person's inclination of social comparison or relative concern. Further, a comparison with others can be made in various facets of life, rather than limited to the level of income.

In this regard, Dr. Hisam Kim of Korea Development Institute (KDI) analyzed the socioeconomic backgrounds and values of persons showing strong tendency of social comparison, and carried out a comprehensive research on their economic achievement, health, subjective well-being, and behavioral characteristics they might have. For this study, Dr. Kim performed a nationwide web survey of 3,000 Koreans through experimental survey methods that have been used in behavioral economics. The survey questionnaire includes socioeconomic background, values, labor market performance, consumption and donation. And it also tried to measure individual preference on positional goods, tendency of herding, status-seeking, altruism, etc. through a series of hypothetical questions.

This study was carried out while the main author, Dr. Kim, was staying in Institute of Social and Economic Research (ISER) at Osaka

University as a visiting research scholar. Professor Fumio Otake, the coauthor of this study, kindly shared the GCOE data, and provided Dr. Kim with helpful advice on the survey in Korea and drafting the paper based thereon.

The authors of this study pay thanks to KDI which funded their research and special thanks to Dr. Dongseok Kim, Senior Vice President of KDI who encouraged international collaborative study. The main author would like to thank Mr. Youngho Jung and Ms. Seungjoo Lee at KDI Economic Information and Education Center for their help in carrying out the survey in Korea, and Macromill-Embrain which showed a true professionalism in performing web surveys.

The main author of this study also gives special thanks to Professor Ohtake who provided him with an opportunity to learn behavior economics that has been actively studied in Japan, and Professor Masao Ogaki at Keio University, Professor Sun Youn Lee at Meijikakuin University for their encouragement, and Professor Hyeogug Kwon at Nihon University who opened the door for this research by introducing the main author to the prestigious scholars in Japan. The main author also pays thanks to the kind staff including Ms. Yoshie Tachikawa at ISER and Ms. Mika Akesaka and Ms. Joobong Kim in doctoral course at Osaka University for their help. In addition, the main author is grateful to Professor Seung-Gyu Sim and other professors at the University of Tokyo, and Professor Kangkook Lee and other professors at Ritsumeikan University, who invited him to their seminars and gave him valuable comments.

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Joon-Kyung Kim
President of KDI

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Summary

People's concern about their relative status is regarded as an explanation to the Easterlin paradox, which reports that happiness has not increased despite continued growth in average income. The strength of concerns about relative position varies across people.

First, we examine the socio-demographic characteristics and values that lead to a strong relative concern. And then we comprehensively investigate differences in financial outcomes, health, happiness, and behaviors by the degree of relative concern. In particular, Korea is an appropriate country for this study as Koreans have experienced rapid economic growth and there exists severe status race in their education system and labor market. Using data from our experimental survey of 3,000 Koreans, we examine their preference for positional goods and behaviors regarding herding, status seeking, and altruism.

Our results show that those who have stronger relative concerns are more likely to live in upscale districts and place economic values above non-pecuniary values, and, in reality, they have better financial outcomes. They also exhibit higher tendencies of overconsumption and conspicuous consumption. Their health, however, is worse than others, specifically in regards to psychological health. Moreover, overall happiness and satisfaction in every dimension are proved to be lower for those who have stronger relative concerns. In a series of hypothetical situations of our survey, they consistently show higher inclinations toward status race and herding but lower degrees of altruism or sympathy.

As for policy implications, we discuss the following issues. First, we show Koreans' diagnoses of the reasons for their unhappiness and

examine how relative concern affects such diagnoses. Second, we discuss government intervention to remedy positional externalities based on our survey results about people's perceived positionality of selected goods that have a negative influence on others' welfare. Third, we show that Koreans' relative concerns do not necessarily arise from their materialistic values and they are undergoing transformation of individual values toward post-materialism, which makes a room for remedial change of institutions that have led excessive social comparisons and competitions. Fourth, we discuss policy directions for reducing negative effects of social comparison in the context of contemporary Korea focusing on the education system and labor market reform. Last but not least, we suggest some examples of nudge ideas using people's relative concern for the whole society and the motivation of self-improvement via social comparison, which implies that relative concern can be made good use of as well.

CHAPTER 1

Introduction

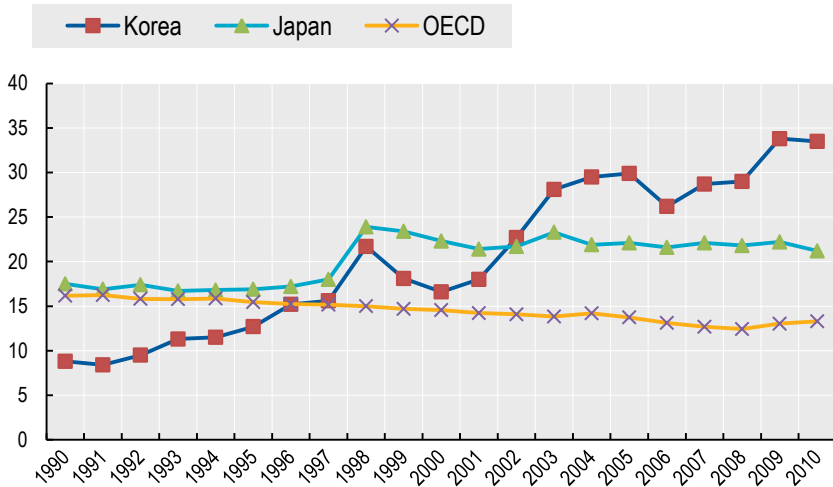
Korea is known to the world as one of the most stressed-out countries due to strong competition engulfing them from the very early stages of life (*The Economist*, Oct 26th, 2013). According to a survey, the vast majority (more than 80%) of Koreans feel “competition stress” in daily life.¹ Suicide rate is one of the most evident indicators of unhappiness in the society. As Figure 1 shows, the suicide rate of Korea has more than tripled in a decade while the OECD average has experienced a slight decline. And, in the case of youth suicide, the most common reason was attributed to the competition stress of students.²

Competition per se contains positive elements as it spurs motivations to develop one’s abilities and enhance efficiency. However, severe competition to obtain better university diplomas, pursue better jobs, and have better/more positional goods than others often leads to effects not conducive to the society and people’s well-being. Such tragedy can be

1 To the question, “How much do you get stressed due to competition in daily life?”, 61.5% of respondents answered “somewhat” and 21.9% “very much”, while “not very much” and “not at all” occupied only 15.1% and 1.3% respectively. This SBS-Gallup (2011)’s survey of 1,000 Koreans sampled adults aged 19 or older, so there left our curiosity whether the stated competition stress would be higher or not if the sample had included teenagers who often suffer from competition in their academic grades.

2 According to Statistics Korea (2012)’s survey, the reasons of suicidal impulse of the young aged 13 to 19 (middle and high school students) are in the order of academic grades/college entrance stress (39.2%), family trouble (16.9%), financial difficulty (16.7%), loneliness (12.5%), bullying (7.1%).

Figure 1 Trends in Suicide Rates



Source: OECD Factbook 2013: Economic, Environmental and Social Statistics.

mainly attributed to the zero-sum situation in which competition over a limited number of prestigious positions dominates. When there are only scarce openings in elite universities and decent jobs, outperforming others become imperative even by a small margin, which we call a “status race”.

Status race in education, usually exhibited in each student’s standing in test scores, hinders cooperative learning processes of students, a trait essential in the era of creative economy where the demand for cooperative creativity of a team or group is increasing in importance. Private tutoring race increases financial burden for households and results in very long days for children, which in turn hinders childbirth and full development of children (OECD 2008). Long hours of work, at least in part owing to status race and survival in the labor market, lead to work-life imbalance, and a phenomena of “overworking for some and unemployment for others.” And conspicuous consumption of luxurious goods to show off superior financial capacity can also create negative externalities on other persons’ welfare.

Even within the same society, however, some people tend to seek higher status in a more proactive manner. They may have a stronger

tendency to compare themselves with others in their economic standings, positions, grades, appearances, and other comparable items, which we term “relative concern” or “positional concern”.³ Such tendency can be traced to their backgrounds, demographic characteristics and values, which can affect their work performance, wealth, health, psychological well-being, and their behaviors in various domains. Further, their behaviors then can also influence the interests and peace of mind of others surrounding them.

In this study, we take a close look at people’s relative concerns as an important factor of cutthroat competition and unhappiness as well as self-improvement and achievement. Particularly, we examine the case of Korea due to the fact that Koreans have experienced rapid economic growth in a few decades and as a consequence, demonstrates the existence of severe status race in both their education system and labor market. As Table 1 shows, Koreans feel less enjoyment, are more likely to encounter depression, and experience more anger despite the fact that their standards of living are far beyond those of Zimbabwe. In addition, Koreans are less likely to feel that they can count on others in emergency situations and that they are viewed with respect.

Furthermore, a recent neural study by Kang et al. (2013) reports that Koreans demonstrate greater sensitivity toward social comparison than Americans. They conducted a functional magnetic resonance imaging (fMRI) study in which each participant performed a financial gambling task simultaneously and independently with a partner. Both the behavioral observations and neural examinations report that Korean participants are apt to be affected by relative than absolute incomes, which is in stark contrast with the American counterparts whose decisions are influenced by absolute rather than relative incomes. Their findings are consistent with previous studies that compared the behaviors of East Asians and North Americans which discovered that Easterners demonstrate stronger inclination for social comparison than Westerners on average (Chung and Mallery, 1999; Gibbons and Buunk,

3 This concept is also equivalent to a well-known term “social comparison” in psychology or “relativity” that means “the tendency to estimate the value of things according to how they compare with other items” as defined in Ariely (2009).

1999; White and Lehman, 2005). All these studies purport to the fact that people who come from regions that place a premium on interdependence such as East Asia are more likely to be affected by information about others than those who come from regions where independence is viewed as the norm such as North America. In this sense, Korea is an ideal country for us to observe people's relative concern and its relevant effects. However, we should note that both cultural differences and individual differences contribute to determining final behavioral phenotype (Leung and Cohen, 2011), and, therefore, an individual Easterner can have weaker relative concern than average Westerners. Thus, we can utilize individual heterogeneity in the strength of concerns about relative position among Korean respondents, which allows us to identify the determinants and effects of relative concern using Korean data.

Table 1 Well-being of Selected Countries

Targeted interest	Korea	Japan	USA	Denmark	Zimbabwe
Life satisfaction (0~10)	5.3	6.5	7.2	8.0	3.8
Enjoyed much yesterday (%)	64	71	86	92	68
Was very depressed yesterday (%)	29	12	15	3	23
Was very angry yesterday (%)	32	13	22	13	23
GDP per capita in 2005 (PPP USD)	28,000	32,600	46,400	36,000	200
Insufficient money for food (%)	15	8	17	9	74
Having own TV (%)	99	-	-	-	29
Country satisfaction	5.2	5.4	6.0	7.2	3.1
Environment good	.44	.47	.61	.66	.51
Perceived air quality	.71	.72	.84	.95	.80
Job satisfaction	.76	.78	.87	.95	.51
Can count on others in emergency (%)	78	93	96	97	82
Feel safe while walking alone (%)	67	62	77	82	44
Feel respected (%)	56	66	88	94	72
Low corruption (World Bank)	.2	1.2	1.8	2.4	-1.0

Source: Diener et al. (2010).

Therefore, our case study of Korea will portray a vivid picture of the status race driven by strong relative concerns in multi-dimensions and its relationship with happiness. Using a unique dataset drawn from our experimental survey of Koreans, we will examine the degree to which Koreans are concerned with their relative positions and investigate socio-demographic characteristics and individual preferences elicited as values that lead to a strong relative concern. And we will look into differences among people in their labor market performances, health, subjective well-being, consumption, and preference for positional goods by the degree of relative concern. We will also investigate their behaviors regarding herding, status seeking, altruism or sympathy and potential differences by the strength of their positional concerns. As for policy implications, we explore people's differences in the diagnosis on the low happiness of the society and their opinions about positional goods and corrective taxation. Then we investigate whether Koreans' relative concerns arise from their materialistic values and whether their values are heading toward post-materialism to examine whether there is a room for remedial change of institutions that have led excessive social comparisons and competitions. Also, we discuss policy directions for reducing the negative effects of social comparison in the context of contemporary Korea by focusing on the education system and the labor market reform. Last but not least, we suggest some examples of behavioral approach that can nudge people with a strong relative concern into socially desirable actions like donation or saving energy by making use of their social comparison seeking.

The remainders are organized as follows. Chapter 2 outlines the academic backgrounds of our study focusing on the economics of happiness and the relative income theory. Chapter 3 describes our dataset and analytical framework. In Chapter 4, we examine socio-demographic characteristics and values associated with a strong relative concern. Chapter 5 investigates differences by the degree of relative concern in their outcomes including labor market performance, wealth accumulation, physical/mental health, and subjective well-being. Observed behavioral differences by the degree of relative concern from a series of experimental questions about hypothetical situations are reported in Chapter 6. Chapter 7 includes selected topics that may

provide relevant policy implications such as perceived reasons of low happiness, positional externalities and corrective taxation, the relationship between Koreans' materialism and relative concerns, policy directions for reducing negative externalities of social comparison, and some nudge ideas or self-improvement/-enhancement possibilities making good use of people's relative concerns. And the last chapter concludes with summary and directions for future study.

CHAPTER 2

Background and Literature

In our analysis, we will use lots of variables elicited from people's responses to our survey questionnaire. Among the variables, those on subjective well-being are sometimes subject to criticism by economists in other fields, who question whether subjective well-being delivers true information about the quality of life. Now, however, the view that subjective well-being information is valid enough to be used in economic analysis on the quality of life is well established (Hollander, 2001; Ferrer-i Carbonell and Frijters, 2004; Kahneman and Krueger, 2006; Oswald and Wu, 2010).⁴ Since subjective well-being (i.e., happiness or life satisfaction) is one of our main interests in this study as well, we briefly describe the economics of happiness focusing on the "Easterlin Paradox" that triggered a reflective thinking on economic growth and well-being as well as a heated controversy over them. And then we introduce interdependent preferences as an explanation to the paradox and summarize previous studies on the "relativity" because our research on relative concerns flows in the same vein.

4 In a recent *Science* article, for instance, using a 2005-2008 Behavioral Risk Factor Surveillance System random sample of 1.3 million U.S. citizens, Oswald and Wu (2010) find that between-state variation in peoples' life satisfaction from the survey and that in the quality of life previously estimated from solely non-subjective data show the same pattern, i.e., each state's subjective well-being is well matched with the state's objective well-being (correlation=0.6, P-value<0.001).

1. The “Easterlin Paradox” and Interdependent Preferences

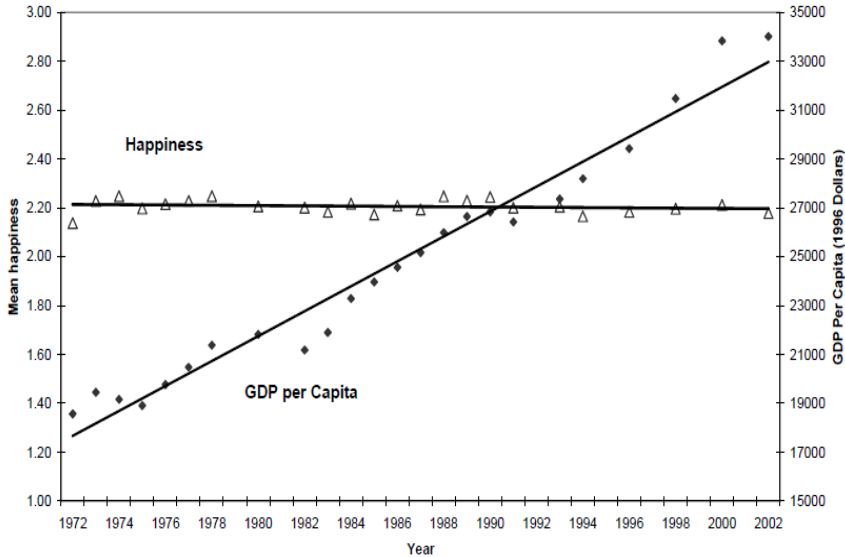
A. The “Easterlin Paradox” and Happiness Economics

Economists’ attention to well-being or happiness was ignited by Richard Easterlin’s argument that happiness has not increased despite continued growth in average income (Easterlin, 1974). But, not surprisingly, his within-country estimates showed that “in every single survey, those in the highest status group were happier, on the average, than those in the lowest status group” (Easterlin, 1974). His between-country estimates, however, suggested that “the happiness differences between rich and poor countries that one might expect on the basis of the within-country differences by economic status are not borne out by the international data” (Easterlin, 1974).

Moreover, he has found that that national time series data show a paradox that “income growth in a society does not increase happiness” (Easterlin, 1995). [Figure 2] shows such an example in the case of the United States. Time series data from other countries such as the United Kingdom, West Germany, and Japan have also shown similar phenomena (Easterlin, 1995; Easterlin and Angelescu, 2007).

Since Easterlin first reported the happiness paradox, subsequent empirical studies have produced the following stylized facts on the relationship between life satisfaction and income: (1) cross-section and panel analysis based on individual data show a strongly positive relationship between individual income and well-being; (2) cross-country analysis shows a fairly positive relationship between life satisfaction and GDP per capita; but (3) aggregate time-series analysis shows no correlation between life satisfaction and GDP per capita. Therefore, the Easterlin paradox is mainly related to the time-dimension which says that once basic needs are fulfilled, people on average do not become happier in the long run, despite increases in national income per head.

Figure 2 | Happiness and Real GDP per Capita, United States, 1972-2002



Note: The mean happiness is measured by a 3-point scale question "Taken all together, how would you say things are these days – would you say that you are very happy (=3), pretty happy (=2), or not too happy (=1)?" used in the United States General Social Survey (GSS).

Source: Easterlin and Angelescu (2007)

Although some scholars such as Stevenson and Wolfers (2013) still challenge the Easterlin paradox, it has not been easily rebutted at least by within-country time series data.⁵ Owing to the paradox and related debates, ample studies on the economics of happiness have been published in academia, and some politicians have also begun to pay close attention to the well-being or happiness of their nations, reconsidering their conventional GDP-driven growth-oriented policies.⁶

5 Using multiple datasets, multiple definitions of “basic needs” and multiple questions about well-being, Stevenson and Wolfers (2013) find no support for the Easterlin paradox. Instead, they claim that the relationship between well-being and income is roughly linear-log and does not diminish as incomes rise. Their counter-evidence for the paradox is, however, based comparisons of both rich and poor countries, and of rich and poor people within a country, both of which are from cross-section analyses. Within-country time series evidence for the paradox seems relatively robust.

6 Stiglitz, Sen, and Fitoussi (2009)’s report commissioned by President Sarkozy is a well-known example of such efforts observed in advanced countries. But actual

B. Interdependent Preferences as an Explanation to the Paradox

Then why are people not that happy with much higher income than before? Unobserved choice that is positively correlated with income, but is negatively associated with happiness (e.g. working hours, etc.) might contribute to this phenomenon. Until now, the most influential explanation to the paradox has been the “relative income theory” (Easterlin, 1974; Frey and Stutzer, 2002; Clark et al., 2008). Originally, Duesenberry’s “relative income hypothesis” posits that an individual’s spending is affected by her/his own standard of living in the recent past and the living standards of other people in the present (i.e. contextual effect), which is in contrast with Friedman’s “permanent income hypothesis” assuming that context has no influence on individual spending (Frank, 2008).

The relative income theory in our context takes happiness into account in place of spending. So the theory notes that people care not only their absolute level of income but also their relative status which may affect their happiness. And their reference income for comparison may be influenced by their neighbors’ income (“social comparison”) or modified by their income in the past (“adaptation” a.k.a. “habituation”, “habit formation” or “hedonic treadmill”). In plain language, the more rich people become, the more likely that they will compare themselves with others – see Table 2 in Chapter 3 – and people get used to money very quickly. Therefore, despite the continued growth in the absolute level of income, people do not feel happier when they compare their incomes with those of their richer reference group or with their desired incomes that have also increased with income growth.

These interdependent preferences can be formulated by a utility function that depends not only on one’s own income (equivalent to own consumption in a one-period model) and leisure but also on comparison income as follows:

implementation into policies has not yet been noticeable with an exception of Bhutan in which the Gross National Happiness (GNH) Index has been practiced as the main goal of the nation.

$$U_t = U(u_1(Y_t), u_2(Y_t|Y_t^*), u_3(T - l_t, Z_t)),$$

where Y_t is own income, Y_t^* is comparison income that may be reference group's income or own past (or desired) income, $T - l_t$ is leisure, and Z_t is a vector of socio-economic and demographic variables.

In contrast to the prediction of traditional economics, happiness is derived from relative income ($Y_t|Y_t^*$) as well as from absolute income (Y_t). First, in the context of social comparison, if everyone's purchasing power increased thanks to economic growth, some may still feel less happy if their relative position turns out lower than others'. Even though this effect may not turn economic growth into a zero-sum game entirely, it will diminish the benefits people draw from their hard work (i.e., decreasing their leisure). In an economy where not only companies but also individuals join in forming the tapestry of competitive environment, work and life are experienced as a rat race. Second, in the context of adaptation, people easily get accustomed to higher income levels despite economic growth, and, therefore, their standards of sufficient income increase with the rise in income. If they fail to anticipate that effect, they will invest more time for work than is beneficial for their happiness. Thus, these interdependent preferences may lead to prolonged work hours, higher average income but little improvement in happiness.

2. Literature on the Relativity

Numerous studies investigate whether individuals have feelings of deprivation and discontent when other people around them have more, which is called the "relative deprivation" hypothesis. A major challenge in such studies is defining appropriate reference groups to which individuals compare themselves (Eibner and Evans, 2005).

Some researchers use workplace data and define colleagues or comparable workers as the reference group. Having gathered data from 5,000 British workers, Clark and Oswald (1996) suggest that even with the identical wage rate, workers' reported satisfaction levels were lower

if they earned less than their colleagues or people in the same occupation in other firms. They also show that, holding income constant, satisfaction levels are negatively related to the level of education. Moreover, Tenbrunsel and Diekmann (2002) find that people tend to choose a lower paying job with the same salary as other employees than a higher paying job with a smaller salary compared with others.

Siblings also can be a reference group for people's relative concern. Neumark and Postlewaite (1998) show that jealousy exists between sisters. They find among married women with a sister who was not employed, the probability of the woman's own employment rises 16-25% if her sister's husband makes more money than her husband.

Using region information of survey data, other researchers have defined reference groups based on geographic location. Luttmer (2005) matches individual-level panel data containing well-being indicators to information about local average earnings and finds that, conditioned on an individual's own income, there is a negative relationship between neighbors' earnings and self-reported happiness. Evidence from Hinks and Davies (2008) for Malawi, Copestake et al. (2009) for Peru indicates that even among very poor communities, average levels of local consumption are inversely related to levels of individuals' satisfaction, which suggests that relative economic position in the community is important to satisfaction.

Some studies obtained needed information on respondents' relative income by using tailored survey questions. Mangyo and Park (2011) use Chinese survey data that include respondents' subjective assessments of their living standards compared to different geographic and non-geographic reference groups. They find that relatives and classmates are salient reference groups for urban residents and neighbors are important for rural residents.

Alternatively, in an Internet-based survey, Yamada and Sato (2013) asked Japanese respondents to choose between alternative combinations of hypothetical monthly income amounts, both for themselves and certain reference persons. They recommend this approach because it also enables us to investigate the differences in comparison effects across types of reference groups as well as respondents' individual characteristics.

As a matter of fact, hypothetical choice experiments have been broadly used to examine the strength of people's concerns about relative position in having particular goods as well as income. Since the degree of positional concern may vary on the properties of the good, some researchers have examined various kinds of private/public goods/bads focusing on, to each item, what proportion of respondents prefer being relatively better-off to being absolutely better-off but relatively worse-off.

Solnick and Hemenway (1998) asked respondents to choose between a world where they had more of a good than others and one where everyone's endowment of the good was higher, but the respondent had less than others. The questions covered education, attractiveness and intelligence of one's child and oneself, income, vacation time, approval and disapproval from a supervisor, and papers to write. Half of the respondents preferred to have 50% less real income but high relative income. Such positional concerns were strongest for attractiveness and supervisor's praise and weakest for vacation time.

Further, using an identical questionnaire in the United States and China, Solnick et al. (2007) explore the effect of culture and circumstances on positional concerns. They find that in the United States, the attractiveness, intelligence and education of one's child were all quite positional, whereas in China, such goods were income, own education and vacation time. Their results, however, were driven from non-representative small samples for both countries (146 Harvard faculty, students and staff and 90 college students in Beijing), and, therefore, need reexamination using better datasets.

Using a survey of 325 students from The University of Costa Rica, Alpizar et al. (2005) find that relative consumption also matters for vacation and insurance, which are typically regarded as non-positional goods. Further, they find that absolute consumption is important for cars and housing, which are widely seen as highly positional. Carlsson et al. (2007), however, find that leisure is almost completely non-positional based on a random sample of 700 Swedish people. They also find that car safety is non-positional while cars are highly positional as income.

Some studies examined individual characteristics of those who demonstrate higher positional preferences and/or their reference groups.

Lyubomirsky and Ross (1997) show that those who rated themselves unhappy would be more sensitive to social comparison information than would self-rated happy individuals. In their experiment, unhappy students' self-assessments were heavily influenced by a peer who performed even better or even worse, while happy students were moderated only by information about inferior peer performance. Pingle and Mitchell (2002) find that a positional concern for income was more likely to be exhibited by those who were younger, more competitive, non-Caucasian, less satisfied with how much they are accepted by others, more satisfied with their religious fulfillment, and by those who gambled more often. Clark et al. (2013) show that relative to Europeans, Japanese reference groups are more likely to be friends and less likely to be colleagues, and Japanese compare their incomes more. An individual's satisfaction is negatively associated with others' income, and the negative relationship is stronger for those who report greater income comparison intensity.

CHAPTER 3

Data and Framework

In this chapter, we introduce our data and framework used in our analysis. Since we conducted our own survey for this study, we explain the process of collecting data. And we also explain why we focus on relative concern as well as (or rather than) relative income. Then, we provide the strength of concerns about relative position observed in our data as the key variable and suggest our analytical framework.

1. KDI Happiness Study

For this study, we conducted an Internet-based survey of 3,000 Koreans in the name of “KDI Happiness Study (hereafter KHS),” of which the purpose is stemmed from the commitment of Korea Development Institute (KDI), Korea’s government-sponsored economic research institute, in supporting the study purpose to improve the happiness among Koreans. We selected Macromill-Embrain Inc., the top web survey agency in Korea, which boasts a database of 980,380 people (as of the end of July 2013) of Korean panel respondents nationwide. We obtained 3,000 Korean respondents aged 20 through 69 using stratified random sampling from the panel. The company executed our survey under the direction of the authors and the survey experts of KDI Economic Information and Education Center from October 17 to November 13, 2013. We used payment (5,000 won per person) incentives and e-mail/SNS to encourage participation and made

additional efforts of phone calls and follow-up surveys to assure whether previous web responses were accurate.

Researchers often have concerns about the potential selection bias of a web survey because of the possibility of excluding those who only have limited access to the Internet such as elderly people or those living in rural areas. However, Korea's world-class Internet penetration rate (e.g. as of December 2011, Korea's high speed wireless Internet penetration rate reached 100.6%, the first in the world owing to its well-established IT infrastructure and rapid increase of smartphone users nationwide, while OECD average is 54.3%) partially relieves our concerns about selection bias. In addition, we always control for age and region dummies in our analysis.

On the other hand, the advantages of a web survey are not just confined to saving survey costs and reducing data cleaning time. Our questionnaire includes many experimental questions asking respondents to make a choice or allocate something in various hypothetical situations as directed on the screen. By designing our web survey's logical architecture to serve our purpose correctly in each question, we could avoid missing observations (e.g., by prohibiting skip or jump in each question), apparently inconsistent answers to separate questions such as demographic backgrounds (e.g., by asking reconfirmation using automatic alarm messages), or mathematically unsound answers (e.g., by alarming when the sum of each allocation does not match with given total budget). As a result, we successfully obtained the whole 3,000 person sample with almost all valid observations. Therefore, in the following analyses, the number of observations is equivalent to 3,000 if not specified.

Our survey questionnaire includes our original experimental questions on hypothetical situations to examine behavioral differences as well as comprehensive questions about socioeconomic and demographic backgrounds. We also incorporate all questions contained in Osaka University Global COE (The 21st Century Center of Excellence Program) data (hereafter GCOE data), specifically 2013 Japan survey, and some selected questions used in 2008, 2012 surveys.⁷

⁷ As our main benchmark survey for this study of Korea, the Osaka University GCOE

In addition, our survey includes selected questions on people's values about their life, work, marriage, children and the like adopted from World Values Survey (1981-2012). And we included some other questions that we created for the future study.

2. Analytical Framework

A. *Why Do We Focus on “Relative Concern” Rather Than “Relative Income”?*

“Relative income” often refers to the ratio of “own income / comparison (reference group or own past) income” (social comparison or adaption). Regarding social comparison, there have been numerous studies back from Veblen (1899) to Yamada and Sato (2013) (see Clark et al. (2008) to review literature until then although we have already reviewed some newer studies on the above as well).

On the other hand, “relative concern” means “how important it is for an individual to compare his/her status with other people's status”. Only a limited number of research studies have delved into this issue until we comprehensively researched this topic. Our study on relative concern is important in at least two points. First, the impact of relative income on happiness can differ depending on the degree of relative concern (to be tested in this study).⁸ Second, comparing oneself with others is not

data have been accumulated from annual surveys of four countries – Japan (2003-2013), USA (2005-2013), China (2006-2013), and India (2009-2013). Although specific questionnaire has been changed year by year, survey items generally include experimental questions regarding key preference parameters defining utility function such as risk aversion, time preference, habit formation, externality; comprehensive basic attributes such as household composition, consumption, income, and socio-demographic characteristics. According to the online survey overview of the GCOE preference parameters study, the purpose of the survey is “to examine whether the premise of present-day economics that people act rationally and maximize utility is true” (http://www.iser.osaka-u.ac.jp/coe/journal/survey_eng.html).

- 8 In terms of utility function on the above, our explicit consideration of relative concern allows the individual heterogeneity of sub-utility function u_2 even if relative income (Y_t/Y_t^*) happens to be the same for some individuals.

confined to income (to be shown in other domains related to status race or other behaviors in this study).

B. Key Variable: The Degree of Relative Concern

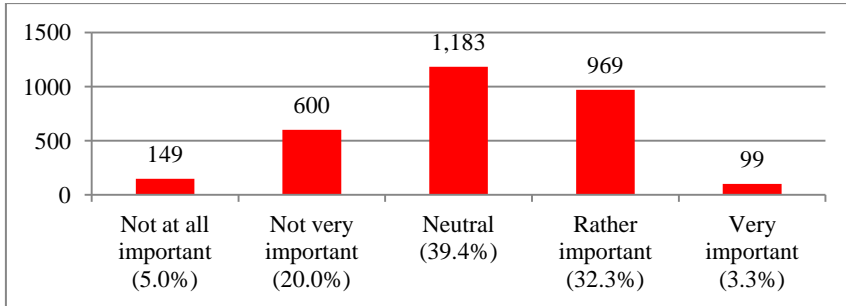
The key variable is, of course, the degree of relative concern. The relevant question is “How important do you think it is, to compare your living standard with that of others surrounding you?”⁹ As <Figure 3> shows, 32% of respondents answered as “rather important” and 3% “very important”, while relatively comparison-free (not at all or not very important) respondents occupy 25% at most. From now on, the degree of relative concern indicates this 5-point scale variable, which is used either as dependent variable or a key explanatory variable.

One may wonder whether the respondents tend to compare their living standard with that of the superior or the inferior. The motivation and influence of social comparison can differ depending on whether such comparison heads upward or downward. Psychology literature hints that our survey question is much more likely to ask about the strength of upward comparison because many studies found that the most common social comparisons are upward comparison, which means comparing oneself to those who look superior to or better than oneself (Gruder, 1971; Miller et al. 1988). Moreover, compared with Westerners, East Asians like Korean, Chinese, or Japanese typically have a stronger desire to make upward comparisons (Chung and Mallery, 1999) and make more self-deprecatory social comparisons (Takata, 1987). In self-presentation, Japanese students are hesitant to conclude that they performed better than their average classmates whereas Canadian counterparts are reluctant to conclude worse performance (Heine et al., 2000). So we assume that the degree of relative concern measures the strength of upward social comparison, and our analytical results to be

9 Wave 3 (2006) of the European Social Survey measured the degree of relative concern in a similar way. Individuals were asked “How important is it to you to compare your income with other people’s incomes?” They were then asked “Whose income would you be most likely to compare your own with?” with a choice among work colleagues, family members, friends, and others.

shown in the following chapters also strongly support this assumption.

Figure 3 | The Degree of Relative Concern



Note: The degree of relative concern is measured by a 5-point scale question “How important do you think it is to compare your living standard with that of others surrounding you?” in the 2013 KHS.

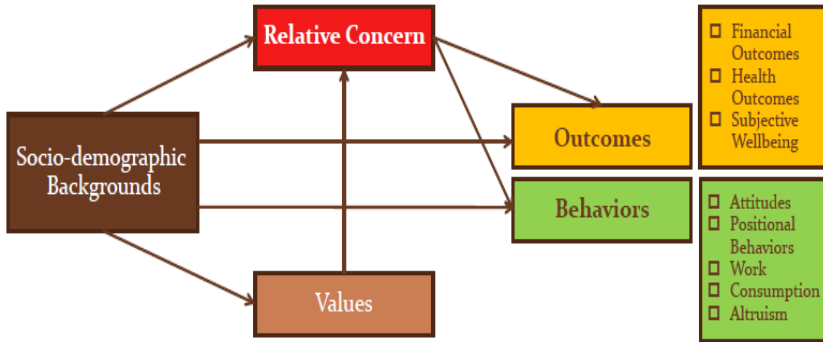
C. Analytical Framework and Econometric Models

<Figure 4> shows our analytical framework. First, we examine the socio-demographic characteristics and values that lead to a strong relative concern (Chapter 4). And then we comprehensively investigate the differences in financial outcomes, health, and happiness (Chapter 5), and behavioral differences (Chapter 6) by the degree of relative concern. We control for socio-demographic background variables in every regression that examines the determinants and influences of the degree of relative concern.

A challenging factor of this study is the lack of theoretical background regarding the treatment of relative concern as either an outcome (dependent variable) or a determinant (independent variable) in our analyses. Therefore, we will not claim that our findings below show the causal relationship between relative concern and other variables of interest; and, instead, we interpret that they only show the correlation except some cases in which the time sequence of variables is clear enough.¹⁰

¹⁰ We use cross-section data for this study. If panel data would be available, we can find more causal relationships using lagged variables as determinants.

Figure 4 Analytical Framework



We employ econometric models in consideration of the dependent variable. First, when the dependent variable has more than two categories that have a meaningful sequential order as in 5-point scale (strongly disagree; disagree; neither agree nor disagree; agree; strongly agree) questions, we use ordered (or ordinal) logit (or logistic) models.¹¹ Second, when the dependent variable has more than two categories that do not have any meaningful order, we use multinomial logit regressions. Third, when the dependent variable has a binary value (1/0) as in yes/no questions, we run (derivative) probit regressions and provide marginal effects, i.e., percent increase in response to a unit change in each explanatory variable. Fourth, when the dependent variable has cardinal values (e.g., overall happiness on a scale from 0 to 10), we employ OLS models. Finally, when the dependent variable has continuous values (e.g., earning, income, asset, or time) we use OLS models after (natural) logarithmic transformation of the dependent variable plus 0.001 that is a negligible nuisance value but necessary to prevent 0 value of $\ln(1)$ in the case of its raw value being 1 (million won for instance).

¹¹ Usually, both ordered logit and ordered probit estimations produce qualitatively similar results regardless of their different distributional assumptions for the disturbance.

CHAPTER 4

Who Have Stronger Relative Concerns?

In our view, the strength of concerns about relative position is an individual-specific characteristic as a personality trait, which represents the sensitivity to one's status compared with others' one in individual preference. An individual's degree of relative concern may have been affected by observed socio-demographic characteristics as well as unobserved factors such as genes and nurturing environments. This chapter examines socio-demographic characteristics and people's values that lie behind a strong relative concern by regression analyses in which the degree of relative concern is the dependent variable.

1. Socio-demographic Characteristics behind Relative Concerns

A. Characteristics of the "Joneses' Neighbor"

We run an ordered logistic regression in which the dependent variable is the degree of relative concern. As explanatory variables, we include gender, age cohort dummies (20s, 30s, 40s, 50s, and 60s), years of schooling, marital status, number of children, household income, family size, religion dummies (no religion, Buddhist, Protestant, Catholic, and other religion), military experience, and region dummies (16 metropolitan cities/provinces). In <Table 2>, we also provide the mean value of each explanatory variable to show the average characteristics of our sample.¹²

12 As explanatory variables, we also tried respondents' family backgrounds such as

From the regression result, we find that those who have stronger relative concerns are more likely to be female, young, and have more children. Although some research finds that women are more likely to make upward comparisons than men and compare themselves with mainstream media images of powerful, successful and thin women (Strahan, 2006), gender difference in relative concern needs further investigation. Then why are younger people more likely to make social comparison? Relative concern may have an aspect of immaturity and the elder might have already compromised their ambition of outdoing others and settled for the status quo in regards to their current belongings and possessions. Those who have children may have more occasions for social comparison such as children's academic grades, test scores, university rankings, labor market performances, and so on.¹³

Those who do make social comparison earn higher income and are more likely to be Buddhists or Catholics. They are also more likely to have served in the military, an organization with a rigid hierarchal rank system. We also find that those who live in Gangnam area of Seoul have the strongest relative concern conditioned on household income or other socio-demographic characteristics.¹⁴

father's and mother's education, number of siblings (elder, younger; brother, sister), the highest education level of siblings, a dummy of having been grown in religious environment, and so on. But most of their estimates showed insignificant coefficients. This finding that family background variables have little influence on the degree of relative concern can be good news for policy intervention because we cannot change people's backgrounds. We determined our final specification based on information criteria (AIC and BIC) of post-estimation procedure. Alternative econometric models such as an ordered probit model or an OLS model did not change qualitative results.

13 Instead of number of children, we also used a dummy variable that indicates having at least one child. The result shows again that the existence of children in the family elevates the strength of social comparison. We also examined whether the relationship between the number of children and the degree of relative concern is monotonically increasing considering a possibility that people with strong relative concerns may have fewer children because they have to compromise the quality of investment in their children if they have many children. We found that the relationship is monotonic up to three children, but four or five (maximum number in our sample) children do not show statistically significant difference compared with no child.

14 Gangnam area usually indicates Gangnam 3 districts (Gangnam-gu, Seocho-gu, and Songpa-gu) in Seoul, which are considered the most affluent parts of the

Table 2 | Socio-demographic Characteristics behind Relative Concerns

	Mean	Coef.	Std. Err.	z-value
Female	0.492	0.329 **	0.136	2.42
Age 20s	0.182	0.576 ***	0.179	3.22
Age 30s	0.229	0.414 ***	0.152	2.72
Age 40s	0.261	0.418 ***	0.139	3.00
Age 50s	0.236	0.132	0.135	0.98
Age 60s	0.091	0	(omitted)	
Years of schooling	14.752	-0.011	0.016	-0.67
Currently married	0.643	0.053	0.107	0.50
Number of children	1.201	0.163 ***	0.056	2.92
Household income (million won)	50.962	0.003 **	0.001	2.17
Number of household members	3.259	-0.040	0.033	-1.21
No religion	0.495	0	(omitted)	
Buddhist	0.143	0.367 ***	0.103	3.56
Protestant	0.223	0.078	0.087	0.90
Catholic	0.113	0.303 ***	0.114	2.66
Other religion	0.025	-0.088	0.221	-0.40
Served/serving in the military	0.459	0.266 *	0.137	1.94
Gangnam, Seoul	0.033	0	(omitted)	
Non-Gangnam, Seoul	0.177	-0.431 **	0.204	-2.11
Busan	0.071	-0.531 **	0.226	-2.35
Daegu	0.049	-0.143	0.243	-0.59
Incheon	0.030	-0.174	0.274	-0.63
Gwangju	0.058	-0.367	0.233	-1.57
Daejeon	0.028	-0.282	0.277	-1.02
Ulsan	0.023	-0.189	0.293	-0.64
Gyeonggi	0.239	-0.477 **	0.200	-2.38

metropolitan area. Moreover, Gangnam area attracts Korean tiger moms by its educational advantages in both high-quality private tutors market and better schools. Thus we split Seoul into Gangnam (n=100) and non-Gangnam (n=350) area. In our sample, Gangnam 3 districts indeed show the highest average income in terms of both household income and household equalizing income that adjusts the number of household members.

Table 2 | (Continued)

	Mean	Coef.	Std. Err.	z-value
Gangwon	0.029	-0.475 *	0.275	-1.72
Chungbuk	0.030	-0.125	0.271	-0.46
Chungnam	0.038	-0.467 *	0.254	-1.84
Junbuk	0.035	-0.336	0.262	-1.28
Junnam	0.034	-0.612 **	0.266	-2.30
Gyeongbuk	0.051	-0.236	0.240	-0.98
Gyeongnam	0.064	-0.491 **	0.231	-2.13
Jeju	0.011	-0.861 **	0.379	-2.28

Note: The dependent variable is the degree of relative concern (5-point scale) and the estimates are from an ordered logistic regression (N=3,000). Log likelihood = -3910.2, LR chi-square (31) = 72.9. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level respectively.

B. Time Preference, Risk Tolerance, and Relative Concern

Individual patience towards delayed payoff or variable payoff affects economic behaviors and outcomes. Here, we examine how individual time preference (a.k.a. “discounting” or “impatience”) and risk tolerance (a.k.a. “risk seeking” or “risk loving,” the opposite of “risk aversion”) are related to their strength of concern about relative position. To measure time preference and risk tolerance, we use related questions adapted from 2013 GCOE questionnaire. Among others, we provide the results of a couple of time preference questions and two risk tolerance questions that show relatively significant estimates in <Table 3>.¹⁵

Our time preference measures in <Table 3> gauge the later minimum payoff that the individual is willing to wait for instead of receiving the earlier payoff.¹⁶ Conditioned on other characteristics included in the explanatory variables of <Table 2>, higher time preference (i.e., higher discount rate) seems to be negatively associated with the degree of

15 Detailed questions and other related questions can be found in Osaka University’s GCOE data website, specifically, the 2013 wave questionnaire.

16 The two questions using different points of time when the comparison is occurred (i.e., today vs. 7 days from today; 90 days from today vs. 97 days from today) can be used together to inspect potential time inconsistency that respondents place more value on sooner-occurring future intervals than later-occurring future intervals, which is called “hyperbolic discounting” in behavioral economics.

relative concern (although the relationship is not statistically significant in the sooner-occurring future interval). If this is the case, those who have a strong relative concern can be more patient in waiting for the future reward.

Next, we use a lottery question and an umbrella question as in <Table 3> to measure risk tolerance. Those who are more willing to take a risk for a lottery prize or comfort without carrying an umbrella tend to have stronger relative concerns. It is not surprising that aggressive investors or risk-loving individuals are more easily found among ambitious people who seek a higher status.

Time preference and risk tolerance are key parameters of individual preference. Our results show that patience and risk tolerance for a higher reward seem to have positive correlations with relative concern. Our interpretation is that those who have a stronger desire for materialistic success – see the following section – are more willing to wait patiently, take risk and work harder.

Table 3 | Time Preference, Risk Tolerance, and Relative Concern

	Question	Coef.	Std. Err.	z-value	Obs.
Time Preference	Instead of receiving 30,000 won today, how much more money would you need to wait until 7 days from today?	-.0246	.0157	-1.57	2673
	Instead of receiving 30,000 won 90 days from today, how much more money would you need to wait until 97 days from today?	-.0408 **	.0164	-2.50	2612
Risk Tolerance	How much would you spend to buy a ticket for a “speed lottery” with a 50% chance of winning 1 million won?	.0361 ***	.0136	2.66	2621
	How high should the chance of rain be for you to bring an umbrella when you go out?	.0033 **	.0015	2.17	3000

Note: The dependent variable is the degree of relative concern (5-point scale) and the ordered logit estimates are on time preference and risk tolerance variables, of which valid responses determine the number of observations in each regression. We control for all explanatory variables in <Table 2>. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level respectively.

2. People's Values and Relative Concerns

Each person has a different set of values in his/her view of life, job, marriage, child and so on. We examine the values that lead to a stronger relative concern by running a series of regressions in which the dependent variable is the degree of relative concern and explanatory variables include a set of values as well as socio-demographic variables as controls.¹⁷

A. The Conception of a Happy Life and Relative Concerns

<Table 4> reports the relationship between each respondent's conception of a happy life and the strength of concerns about relative position. The question regarding the conception of a happy life is borrowed from Osaka University GCOE 2008 questionnaire (Q23. "What kind of life do you think is a happy life? Choose all that hold true for you. If you choose more than one answer, please rank your choices in order of importance. For example, the most important would be number 1, the second most important would be number 2, and so forth."). Three alternatives – (1) A life that I feel at ease and comfortable; (2) A life that I achieve something that I should be doing; (3) A life that is beneficial to people and society – are given following the question. Considering specific directions given to the respondents on the above, we discretionally construct the value of each alternative so that the sum is 10.¹⁸ On average, respondents' frequent choices are in the order of (1), (2), and (3).

As for the conception of a happy life, those who prefer ease and comfort or achievement tend to show stronger relative concern compared to those who put contribution to others as their primary goal of life. In other words, people with an altruistic view of a happy life are less likely to compare their standard of living with others.

17 We borrowed questions regarding values from existing questionnaires of the GCOE and the WVS data in consideration of cross-country comparison in the future.

18 We score each alternative (10, 0, 0) if only one alternative was chosen; (6, 4, 0) if two alternatives were chosen and ranked properly; and (5, 3, 2) if all three alternatives were chosen and ranked properly. We drop 123 observations with improperly ranked answers (e.g. unchosen alternative was ranked).

Table 4 | What Values Lead to Relative Concerns? (1) – The Conception of a Happy Life

	Mean	Coef.	Std. Err.	z-value
A life that I feel at ease and comfortable	5.524	0.030	0.009	3.36
A life that I achieve something that I should be doing	3.522	0.029	0.009	3.15
A life that is beneficial to people and society	0.954	0	(omitted)	

Note: The dependent variable is the degree of relative concern (5-point scale) and the estimates are from an ordered logistic regression (N=2,877). Socio-demographic variables in Table 2 are controlled for in the regression although their estimates are not provided in the table for the sake of brevity.

B. The Conception of Most Important Things and Relative Concerns

The value question used in <Table 5> is also adopted from the GCOE 2008 questionnaire (Q24. “To be happy with your life, which of the following do you think is necessary? First choose the top four that are most important to you, then rank them in order of importance. For example, the most important would be number 1, the second most important would be number 2, etc.”). We recoded the answers as 1=the fourth most important, 2=the third most important, 3=the second most important, 4=the most important so that the sum becomes 10.

Table 5 | What Values Lead to Relative Concerns? (2) – What is the Most Important to You?

	Mean	Coef.	Std. Err.	z-value
Your friends	0.981	-0.018	0.022	-0.80
At least average level of wealth	1.914	0.061	0.020	3.11
Admiration and respect from others	0.474	0.090	0.025	3.59
Your spouse/partner	2.667	0.003	0.025	0.12
Contribution to society through work or other activities	0.454	-0.063	0.026	-2.44
Decent housing	0.441	0.084	0.027	3.07
Fulfilment of your own goal	1.178	-0.045	0.021	-2.16
Religious beliefs	0.366	-0.093	0.027	-3.42
Your child/children	1.525	0	(omitted)	

Note: Same as the previous table.

At least average level of wealth, admiration and respect from others, and decent housing are positively correlated with relative concerns. In contrast, contribution to society through work or other activities, fulfillment of one’s own goal, and religious beliefs show a negative correlation with the degree of relative concern. Hence, those who appreciate wealth and visible success over social contribution or own/spiritual fulfillment show a stronger propensity toward comparison with others.

C. Important in Life and Relative Concerns

In our Korean survey, we also used WVS questions asking respondents’ values (WVS 1981-2008 Integrated Questionnaire v. 2011-06-09), which provide us with an opportunity for cross-country comparison in future studies. First, we ask about respondents’ valuation of each component of life (A001~A007. “For each of the following aspects, indicate how important it is in your life. Would you say it is: (Recoded as 1=Not at all important; 2=Not very important; 3=Rather important; 4=Very important)?”). <Table 6> tells us that those who place a higher priority on work over service to others tend to have stronger relative concerns.

Table 6 | What Values Lead to Relative Concerns? (3) – Important Factors in Life

	Mean	Coef.	Std. Err.	z-value
Family	3.751	0.050	0.045	1.10
Friends	3.175	0.051	0.039	1.30
Leisure time	3.188	0.022	0.040	0.55
Politics	2.511	0.030	0.028	1.08
Work	3.268	0.127	0.037	3.45
Religion	2.161	0.004	0.030	0.13
Service to others	2.557	-0.109	0.035	-3.12

Note: Same as the previous table.

D. Important in a Job and Relative Concerns

Using a WVS question (C011~C025. “Here are some more aspects

of a job that people say are important. Please look at them and tell me which ones you personally think are important in a job?” Recoded as 1=Not at all important; 2=Not very important; 3=Rather important; 4=Very important), we ask about important elements in a job in <Table 7>. As its answer, good pay, respected profession by people in general, responsible job, and favorable chances for promotion are positively related to relative concern. But a job in which you feel you can achieve something,¹⁹ a job that is interesting, a job that meets one’s abilities, a job in which the colleagues are pleasant to work with and is of a service to society are negatively associated with relative concern. As such, social comparison arises in visible dimensions such as pay, status, and promotion rather than in dimensions such as inner achievement, interest, self-efficacy, colleagues, and contribution to society.

Table 7 | What Values Lead to Relative Concerns? (4) – Important Factors in a Job

	Mean	Coef.	Std. Err.	z-value
Good pay	3.383	0.238	0.041	5.84
Not too much pressure	3.236	0.014	0.039	0.35
Good job security	3.547	0.055	0.040	1.37
A job respected by people in general	3.134	0.185	0.037	4.98
Good hours	3.278	0.008	0.043	0.19
An opportunity to use initiative	2.892	0.033	0.038	0.86
Generous holidays	3.035	-0.037	0.036	-1.03
A job in which you feel you can achieve something	3.412	-0.087	0.040	-2.16
A responsible job	2.796	0.119	0.037	3.24
A job that is interesting	3.176	-0.076	0.038	-1.97
A job that meets one's abilities	3.440	-0.087	0.042	-2.09
Pleasant people to work with	3.421	-0.090	0.041	-2.18
Good chances for promotion	3.059	0.148	0.038	3.90
A useful job for society	3.112	-0.136	0.040	-3.39
Meeting people	2.894	0.069	0.034	2.01

Note: Same as the previous table.

¹⁹ This is kind of subjective or independent feeling of achievement, so it can be differentiated from an achievement that is visible to others.

E. Important for Successful Marriage and Relative Concerns

The different views of people on successful marriage also mirror their values. Using a WVS question (D027~D043. “Here is a list of things which some people think make for a successful marriage. Please tell me, for each one, whether you think it is very important, rather important or not very important for a successful marriage?” Recoded as 1=Not very; 2=Rather; 3=Very), <Table 8> reports how different views of a successful marriage are related to relative concerns. People having greater sensitivity toward social comparison place higher priorities on an adequate income, same social background, good housing, and distance from your in-laws. But mutual respect and appreciation or understanding and tolerance are less important to them. Hence, those with stronger relative concerns are more likely to expect ease and comfort from their marriage whereas they are less willing to make efforts for a good relationship with their spouses.

Table 8 | What Values Lead to Relative Concerns? (5) – Important Factors for a Successful Marriage

	Mean	Coef.	Std. Err.	z-value
Faithfulness	2.949	0.095	0.092	1.04
An adequate income	2.616	0.259	0.045	5.73
Being of the same social background	2.176	0.117	0.038	3.07
Mutual respect and appreciation	2.807	-0.193	0.056	-3.47
Shared religious beliefs	1.755	-0.017	0.033	-0.50
Good housing	2.388	0.178	0.044	4.09
Agreement on politics	1.632	0.038	0.033	1.14
Understanding and tolerance	2.739	-0.145	0.049	-2.96
Living apart from your in-laws	1.741	0.112	0.033	3.45
Happy sexual relationship	2.462	0.046	0.038	1.21
Sharing household chores	2.284	-0.036	0.039	-0.93
Children	2.593	0.066	0.036	1.85
Tastes and interests in common	2.432	-0.109	0.040	-2.76

Note: Same as the previous table.

F. Important Child Qualities and Relative Concerns

Parenting goals reflect people’s values as well. <Table 9> reports the relationship between relative concern and parenting goals using a WVS question (A027~A042. “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five.” We changed these questions into 4-point scale and coded responses as 1=Not at all important; 2=Not very important; 3=Rather important; 4=Very important). Hard work and obedience show a positive correlation with the strength of concerns about relative position. So people with strong positional concerns may want their children to obediently follow their directions to study hard in pursuit of higher status. They, however, tend to neglect imagination or tolerance and respect for other people as important qualities for children.

Table 9 | What Values Lead to Relative Concerns? (6) – Important Child Qualities

	Mean	Coef.	Std. Err.	z-value
Good manners	3.682	0.036	0.039	0.92
Independence	3.725	0.014	0.042	0.33
Hard work	3.276	0.109	0.031	3.49
Feeling of responsibility	3.879	-0.032	0.055	-0.59
Imagination	3.069	-0.120	0.030	-3.95
Tolerance and respect for other people	3.592	-0.162	0.034	-4.75
Thrift, saving money and things	3.382	-0.024	0.032	-0.74
Determination, perseverance	3.429	0.041	0.030	1.35
Religious faith	2.207	0.009	0.028	0.31
Unselfishness	3.143	-0.032	0.030	-1.08
Obedience	2.445	0.076	0.030	2.51

Note: Same as the previous table.

G. Schwartz’s Value Measures and Relative Concerns

Lastly, we use Schwartz’s value questions adopted from the WVS (A189~A198. [Schwartz Questionnaire] “Now I will briefly describe some people. Using this card, would you please indicate for each

description whether that person is very much like you, like you, somewhat like you, not like you, or not at all like you? (Code one answer for each description):” Recoded as 1=Not at all like me; 2=Not like me; 3=A little like me; 4=Somewhat like me; 5=Like me; 6=Very much like me) to figure out what kinds of personal values are positively/negatively correlated with relative concern?

According to <Table 10>, to the respondent with a strong relative concern, they placed a premium on being wealthy, in secure surroundings, being very successful and having people recognize one’s achievement, behaving properly, which means avoiding things which

Table 10 | What Values Lead to Relative Concerns? (7) – It is Important for This Person to...

	Mean	Coef.	Std. Err.	z-value
It is important for this person to think up new ideas and be creative; to do things one’s own way.	3.900	-0.022	0.021	-1.04
It is important for this person to be rich; to have a lot of money and expensive things.	2.968	0.107	0.020	5.46
Living in secure surroundings is important for this person; to avoid anything that might be dangerous.	4.203	0.047	0.025	1.93
It is important for this person to have a good time; to “spoil” oneself.	4.469	-0.112	0.026	-4.39
It is important for this person to help the people nearby; to care for their well-being.	3.983	-0.076	0.025	-3.10
Being very successful is important for this person; to have people recognize one’s achievements.	3.542	0.189	0.022	8.74
Adventure and taking risks are important for this person; to have an exciting life.	3.306	-0.012	0.021	-0.57
It is important for this person to always behave properly; to avoid doing anything people would say is wrong.	4.434	0.052	0.024	2.20
Looking after the environment is important for this person; to care for nature.	4.008	-0.038	0.024	-1.56
Tradition is important for this person; to follow the customs handed down by one’s religion or family.	3.593	0.045	0.019	2.34

Note: Same as the previous table.

people would say is wrong, and following the tradition or customs that had been handed down by one's religion or family. However, having a good time or "spoiling" oneself, and helping people nearby or caring for their well-being are less important to those who have a strong relative concern. Therefore, we can conclude that individual comfort derived from money and security, visible success, and recognition from others' eyes are positively associated with sensitivity to social comparison while subjective good feelings from joyful life or contribution to community have negative associations with relative concern.

CHAPTER 5

Outcome Differences by Relative Concern

In this chapter, we investigate the differences by the strength of concerns about relative position in their outcomes including labor market performance, economic affluence, physical/mental health, and subjective well-being. Therefore, the degree of relative concern is the key explanatory variable in the following regression analyses.

1. Financial Outcomes by Relative Concern

First, let's look into the differences in financial outcome by relative concern. Financial performance or economic standings are measured by monthly earnings (employees' salaries or self-employees' earnings), annual earnings including students' income (e.g. from part-time job or scholarship), household income, and assets – real estates and financial assets. We take the natural logarithm of each dependent variable added by 0.001 (equivalent to 1,000 won) to avoid zero value of “ln 1(million won).” Now the degree of relative concern is the key explanatory variable and we control for socio-demographic variables except household income that is now used as a dependent variable).

The results in <Table 11> are quite significant and substantial. Particularly, monthly earnings increase by 29 percent in response to the one-point increase of 5-point scale relative concern. And also in terms of annual earnings including non-labor market income and household income,

Table 11 | Relationships between Relative Concern and Financial Outcomes

Dependent variable	Mean of dep. var. (mil. won)	Coef.	Std. Err.	t-value	Obs.	Model
Monthly salaries or earnings in 2012 (raw value)	3.195	.289	.082	3.49	2,901	OLS: ln(y+0.001)
Annual earnings including students' income in 2012 (imputed*)	30.365	.153	.064	2.40	3,000	OLS: ln(y+0.001)
Household income in 2012 (imputed*)	50.962	.025	.012	2.05	3,000	OLS: ln(y+0.001)
Real estates (imputed*)	222.283	.220	.093	2.37	2,944	OLS: ln(y+0.001)
Financial assets (imputed*)	86.542	.207	.081	2.55	3,000	OLS: ln(y+0.001)

Note: *Although respondents were asked to report these variables' amounts via unfolding brackets, we imputed a specific amount by taking the median value of the upper and lower limits in each category. The regression estimates are on the key explanatory variable, the degree of relative concern (5-point scale). We controlled for socio-demographic variables in Table 2 except household income in each regression.

those who have stronger relative concerns show better performance.²⁰ Furthermore, the results show that they are richer in terms of real estates and financial assets. In the previous chapter, we observed that those with strong relative concern place economic values above non-pecuniary values, and, indeed, they appear to have better financial outcomes.

Then, what factors account for the outperformance of people who show inclination toward social comparison over others in terms of labor market performance and wealth accumulation? Their priority in life is more likely to be focused on money-making activities at the expense of other values. On top of that, their risk-loving propensity, shown in the previous chapter, may also help them work aggressively or invest in

20 We notice that the magnitude of coefficient gets smaller starting from monthly earnings to annual earnings including student's income, and to household income. Our conjecture is that the effect of an individual's relative concern on labor market performance might be diluted when students are included (accordingly, sample size increases from 2,901 to 3,000) or the incomes of other members of the individual's household are included.

risky assets, which was presumably rewarding owing to housing market bubbles and stock market growth during couple of decades in Korea.²¹

2. Health Outcomes by Relative Concern

We also examine whether there is any difference in health outcomes by the strength of concerns about relative position. Health status is measured by self-rated health, experiences about medical treatment and hospitalization, BMI (body mass index), and psychological health problems.

A. Physical Health Outcomes by Relative Concern

<Table 12> reports that people having stronger relative concern are more likely to have experienced hospitalization in the past one year. But other proxies of physical health status did not show any significant differences by relative concern.

B. Psychological Health Outcomes by Relative Concern

As Mangyo and Park (2011) note that “psychosocial health is a particularly appropriate measurement for examining the relative deprivation hypothesis, which posits that health is affected largely by dissatisfaction or stress caused by relative economic status.” We also suspect that relative concern is more closely related to mental health.²²

21 Indeed, the risk tolerance measured by using the lottery question in <Table 3> has significant explanatory power in the regressions of monthly salary, household income, real estate, and financial asset even conditioned on the degree of relative concern as well as socio-demographic variables.

22 Psychological health outcomes can be treated as a type of subjective well-being, i.e. emotional well-being or affective well-being in the happiness literature (e.g. Kahneman and Krueger, 2006; Helliwell et al., 2012, 2013). Our results will also show that relative concern has similar relationships with psychological health and with happiness.

Table 12 | Relationships between Relative Concern and Physical Health Outcomes

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Obs.	Model
Self-rated health (1=poor; 2=fair; 3=good; 4=very good; 5=excellent)	3.274	-.050	.038	-1.32	3,000	Ordered logit
Currently receiving medical treatment (1=yes; 0=no)	0.232	.006	.008	0.67	3,000	Derivative probit
Having been hospitalized within the past 12 months (1=yes; 0=no)	0.105	.011	.006	1.78	3,000	Derivative probit
Obesity (BMI \geq 25)	0.229	-.009	.008	-1.07	3,000	Derivative probit
Severe obesity (BMI \geq 30)	0.024	-.002	.003	-0.81	2,826	Derivative probit
Underweight (BMI \leq 18.5)	0.066	-.0002	.004	-0.05	3,000	Derivative probit

Note: The regression estimates are on the key explanatory variable, the degree of relative concern (5-point scale). We controlled for socio-demographic variables in Table 2 in each regression although their estimates are not provided in the table for the sake of brevity.

First, we use proxies of psychological health problems, which were used in 2013 GCOE questionnaire, regarding health anxiety, stress, depression, insomnia, loneliness, and old-age anxiety. <Table 13> shows that people having stronger relative concerns are more likely to have such problems. Second, following Mangyo and Park (2011) we also use the eight questions for measuring psychosocial health outcome from the CES-D scale (Center for Epidemiologic Studies Depression scale), which are provided in the lower rows of <Table 13>. We also calculate an index of psychosocial health, the answers to each 4-point scale question are normalized to be standard deviations from the mean, and the index is the mean of the normalized scores for the eight questions. Even in the time window of the past week, those who have stronger inclination toward social comparison report a higher index of psychological health problems. These findings remind us of a nonfiction book titled “Status Anxiety” by Alan de Botton(2004). According to this book, “anxiety is the handmaiden of contemporary ambition” and we can expect that a strong relative concern makes it worse.²³

23 *Status Anxiety* discusses the desire of people in modern societies to “climb the social ladder” and the anxieties resulting from a focus on how one is perceived by others.

Table 13 | Relationships between Relative Concern and Psychological Health Outcomes

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Obs.	Model
I have anxieties about my health. (1~5)	3.110	.175	.038	4.65	3,000	Ordered logit
I have been feeling stressed lately. (1~5)	3.527	.182	.038	4.76	3,000	Ordered logit
I have been depressed lately. (1~5)	3.122	.254	.038	6.76	3,000	Ordered logit
I haven't been sleeping well lately. (1~5)	2.809	.186	.037	5.03	3,000	Ordered logit
I have been feeling lonely lately. (1~5)	2.973	.244	.038	6.47	2,826	Ordered logit
I have anxieties about my life after 65 years old. (For those who are already aged 65 or above, life in future.) (1~5)	3.301	.201	.038	5.34	3,000	Ordered logit
Psychological health problems index (the mean of normalized scores of the following 8 questions): In the past week, did you experience these conditions (often=4; sometimes=3; rarely=2; never=1)?	0	.105	.012	8.99	3,000	OLS
- I worry about some small things.	2.698	.335	.039	8.67	3,000	Ordered logit
- I have no appetite for food.	1.906	.219	.038	5.77	3,000	Ordered logit
- I have trouble focusing while doing things.	2.316	.184	.038	4.83	3,000	Ordered logit
- My life feels like a failure.	2.007	.316	.038	8.27	3,000	Ordered logit
- The quality of my sleep is poor.	2.073	.190	.038	5.03	3,000	Ordered logit
- I feel unfortunate.	2.814	.055	.038	1.47	3,000	Ordered logit
- I feel alone.	2.373	.246	.038	6.52	3,000	Ordered logit
- I feel my life is unhappy.	2.481	.153	.038	4.03	3,000	Ordered logit

Note: Same as the previous table.

As the causes of such anxiety, the author lays out lovelessness, expectation, meritocracy, snobbery, and dependence. He tries to find solutions in philosophy, art, politics, religion, and Bohemianism.

C. Health-Related Habits by Relative Concern

Health outcomes are related to health-related habits as well as genes. <Table 14> shows that people having stronger relative concerns tend to have unhealthier habits. Specifically, they are more likely to drink and gamble, but less likely to exercise or play sports. In particular, their gambling behaviors are consistent to the responses to the lottery question (Table 3), in which those who have stronger relative concerns are more likely to buy a lottery given the same expected payoff.

Table 14 | Relationships between Relative Concern and Health-Related Habits

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Obs.	Model
I never smoked.	0.557	-.016	.011	-1.48	3,000	Derivative probit
I don't drink at all.	0.208	-.016	.008	-1.97	3,000	Derivative probit
I don't gamble at all.	0.508	-.026	.010	-2.54	3,000	Derivative probit
Number of days exercising or playing sports per week	1.686	-.068	.037	-1.84	3,000	OLS
Number of days having breakfast per week	4.157	-.066	.051	-1.31	3,000	OLS
Number of minutes of sleep per day	421.3	-.511	1.362	-0.37	3,000	OLS

Note: Same as the previous table.

3. Subjective Well-being by Relative Concern

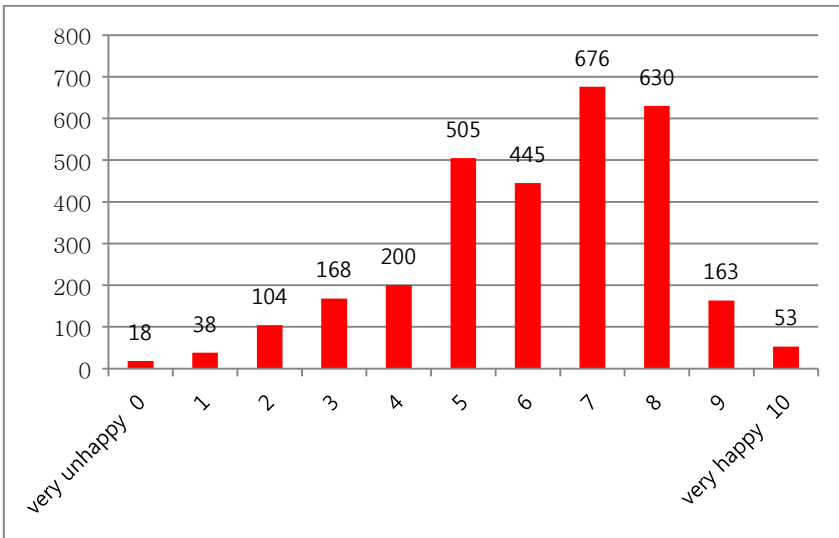
According to Diener (2005), “subjective well-being refers to all of the various types of evaluations, both positive and negative, that people make of their lives. It includes reflective cognitive evaluations, such as life satisfaction and work satisfaction, interest and engagement, and affective reactions to life events, such as joy and sadness.” Typical questions regarding subjective well-being are: (1) happiness (e.g. “Taking all things together, would you say you are: very happy; quite happy; not very happy; not at all happy?”); (2) life satisfaction (e.g. “All things considered, how satisfied are you with your life as a whole these

days?” [unsatisfied=1 ~ 10=satisfied]); or (3) satisfaction ladder (e.g. “Here is a ladder representing the ‘ladder of life’. Let’s suppose the top of the ladder represents the best possible life for you, and the bottom, the worse possible life for you. On which rung of the ladder do you feel you personally stand at the present time?” [0~10 rungs]).²⁴

A. Happiness and Its Components by Relative Concern

Now we are ready to examine the subjective well-being of our Korean respondents and its difference by the degree of relative concern. We tried multiple measures of subjective well-being. First, we use the happiness question from GCOE questionnaire: “Overall, on a scale from 0 to 10, how happy would you say, you are currently?”

Figure 5 Distribution of Overall Happiness



²⁴ Alternatively, well-being can be measured by the remainder of unhappiness in the domain of time. Kahneman and Krueger (2006) proposed the “U- index” that measures the proportion of time spent in an unpleasant state, which does not require a cardinal conception of individuals’ feelings.

<Figure 5> shows the distribution of happiness in our sample of 3,000 Koreans (the mean value is 6.17), which is skewed to the right specifically to 7 and 8 on a scale from 0 to 10. Then, are people with stronger relative concerns happier or not? The regression result in <Table 15> reports that conditioned on socio-demographic characteristics including income, those who have stronger relative concerns are less happy, and the result is very significant.²⁵

In <Table 15> of happiness regression, we provide the influence on other variables as well. Above all, household income has the most significant effect on happiness with t-value of 9.56.²⁶ The magnitude of coefficient estimate for income (0.012, in million won) can be compared with that for the degree of relative concern (-0.237, on a scale from 1 to 5). The negative effect of a 1-point increase in 5-point scale relative concern on happiness is equivalent to the household income loss of 20 million won, which is quite substantial. As such, our results show that “relative concern really hurts happiness” as well as “money can buy happiness”.²⁷

25 When including relative concern as 5-category dummy variables instead of a 5-point scale variable, we see similar results. Conditioned on other characteristics as in <Table 15>, compared with category 1(very weak) of relative concern, category 2(weak) shows 0.7 point lower happiness (measured by 10-point scale), category 3(neutral) and category 4(strong) show 1 point lower happiness, and category 5(very strong) shows 1.4 point lower happiness.

26 In the common specification of happiness regression, income is included as the natural logarithm rather than its level. When we use $\ln(\text{Household income})$ in Table 15, the coefficient (t-value) is estimated as 0.505 (9.16). Here, we choose to use income level in order to calculate the monetary equivalent (in level) of the effect of relative concern from the regression estimates. We also confirm that qualitative results do not change if White robust standard errors are used in this regression as well as the other regressions in our study.

27 We note that stronger relative concern is associated with higher financial outcomes (Table 11). As such, relative concern can have positive influence on happiness via financial gains whereas it undermines happiness due to relative deprivation (Table 15). Therefore, in order to judge the total effect of influence of relative concern on happiness, it would be better to omit household income in happiness regression or to observe a simple correlation between relative concern and happiness. Here, we report that happiness regression without income and a simple correlation show that the negative effect of relative concern on happiness outweighs the positive indirect effect via income increase.

■ Table 15 ■ Relationships between Relative Concern and Overall Happiness

Dependent variable: Overall, how happy would you say you are currently? (very unhappy=0~10=very happy)	Mean	Coef.	Std. Err.	t-value
Degree of relative concern (1~5)	3.090	-0.237 ***	0.037	-6.41
Household income (million won)	50.962	0.012 ***	0.001	9.56
Female	0.492	0.447 ***	0.136	3.30
Age 20s	0.182	0.538 ***	0.180	2.99
Age 30s	0.229	0.068	0.154	0.44
Age 40s	0.261	-0.011	0.141	-0.08
Age 50s	0.236	-0.252 *	0.136	-1.85
Age 60s	0.091	0	(omitted)	
Years of schooling	14.752	0.037 **	0.016	2.30
Currently married	0.643	0.799 ***	0.106	7.56
Number of children	1.201	0.122 **	0.056	2.19
Number of household members	3.259	-0.081 **	0.033	-2.45
No religion	0.495	0	(omitted)	
Buddhist	0.143	0.354 ***	0.105	3.39
Protestant	0.223	0.588 ***	0.088	6.69
Catholic	0.113	0.295 ***	0.113	2.60
Other religion	0.025	0.389 *	0.219	1.77
Served/serving in the military	0.459	0.380 ***	0.136	2.79

Note: We also control for region dummies although we do not provide the results in the table. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Other things being equal, women are happier than men and those in their 20s are happier than other age cohorts. More educated and currently married people are also happier. Family size has mixed effects depending on family composition – from the coefficients of currently married, number of children, and number of household members, we can infer that the spouse and children have positive effects but other family members have negative effects on happiness. Compared with people who are unaffiliated with any religion, any religious affiliation helps increase happiness. In addition, the experience of having served or serving in the military is positively associated with happiness for some

unknown reason.²⁸

Overall life satisfaction is an alternative measure of happiness. The question used in <Table 16> also contains elements conducive to satisfactory life: the place to live in, non-work activities, current financial situation, relationships with friends, work, relationship with spouse, and relationship with other family member(s). The result shows that those who have stronger relative concerns are less satisfied with their life overall in every component.

Table 16 Relationships between Relative Concern and Life Satisfaction

Dependent variable: How satisfied are you with each of the following? (unsatisfied=1~5=satisfied)	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
Your life overall	3.250	-.258	.040	-6.52	Ordered logit
- The place you live in	3.405	-.100	.039	-2.57	Ordered logit
- Your non-work activities	3.145	-.207	.039	-5.35	Ordered logit
- The current financial situation of your household	2.625	-.064	.038	-1.70	Ordered logit
- Relationships with your friends	3.268	-.149	.038	-3.88	Ordered logit
- Work	2.572	-.073	.037	-1.96	Ordered logit
- Relationship with your spouse	2.507	-.083	.041	-2.00	Ordered logit
- Relationship with your family member(s), except for your spouse	3.564	-.184	.039	-4.74	Ordered logit

Note: The regression estimates are on the key explanatory variable, the degree of relative concern (5-point scale). We controlled for socio-demographic variables in Table 2 in each regression although their estimates are not provided in the table for the sake of brevity.

28 A unanimous referee pointed out that the real effect of military service might not be captured here because most Korean males are subject to the compulsory military service unless they have health problems, and, therefore, the military experience variable may pick up the mixture of gender difference and the difference between healthy and unhealthy males. In our sample, 88.3% of male respondents have served or are serving in the military while only 2% of female respondents have such experiences.

The regression in <Table 17> examines the magnitude of each component's relative contribution to overall life satisfaction. We also include interaction terms of the degree of relative concern and the satisfaction of each component. Financial situation has the largest weight for overall life satisfaction and it is even more important to the people having stronger relative concerns. But they place a relatively small weight to the relationships with their friends.

|| Table 17 || Contribution of Each Component to Life Satisfaction by Relative Concern

	Coef.	Std. Err.	t-value
The place you live in	.172	.043	4.02
Your non-work activities	.143	.047	3.04
The current financial situation of your household	.210	.042	5.04
Relationships with your friends	.166	.045	3.66
Work	.057	.026	2.17
Relationship with your spouse	.040	.021	1.94
Relationship with your family member(s), except for your spouse	.148	.040	3.72
Relative concern * The place you live in	-.004	.013	-0.27
Relative concern * Your non-work activities	.001	.014	0.08
Relative concern * Current financial situation of your household	.030	.013	2.27
Relative concern * Relationships with your friends	-.029	.014	-2.07
Relative concern * Work	-.005	.008	-0.65
Relative concern * Relationship with your spouse	-.004	.007	-0.63
Relative concern * Relationship with your family member(s)	.004	.012	0.31
Constant	.460	.059	7.79

Note: The dependent variable is the satisfaction level of life overall in the OLS (N=3,000, R-squared=0.511) regression.

B. Impacts of Relative Living Standard on Happiness by Relative Concern

As mentioned earlier, the relative level of income or living standard compared with neighbors' in addition to the absolute level of income can influence one's happiness, which has been shown sufficiently by a number of past studies such as Luttmer (2005). The upper panel named model 1 of <Table 18> also adds evidence for that. Conditioned on

socio-demographic characteristics and household income, Korean respondents become less happy when they are positioned in the lower status in comparison with their neighbors, which is often called “relative deprivation”.

A novelty of our study lies in the lower panel named model 2 of <Table 18>. When describing our analytical framework in Chapter 3, we posited that “the impact of relative income on happiness can differ depending on the degree of relative concern.” To test this, we include interaction terms of the relative living standard (1~5) and the degree of relative concern (dummies) in happiness regression. Indeed, the result shows that the stronger relative concern leads to a bigger impact of relative deprivation.²⁹

Table 18 | Impacts of Relative Living Standard on Happiness by Relative Concern

Model	Dependent variable: Overall, how happy would you say you are currently? (very unhappy=0~10=very happy)	Coef.	Std. Err.	t-value
1	Your relative living standard: higher score=your lower status Q: How does your standard of living compare with that of the people around you? (Theirs is much lower than mine=1 ~ 5=Theirs is much higher than mine)	-.266	.042	-6.30
2	Your relative living standard (1~5)	-.031	.059	-0.53
	Your relative living standard * Weak relative concern	-.181	.049	-3.72
	Your relative living standard * Medium relative concern	-.268	.046	-5.80
	Your relative living standard * Strong relative concern	-.273	.047	-5.82
	Your relative living standard * Very strong relative concern	-.390	.071	-5.50

Note: We controlled for socio-demographic variables in Table 2 in each regression (N=3,000) although their estimates are not provided in the table for the sake of brevity.

C. Changes in Happiness by Relative Concern

One might be interested in the dynamics of happiness. As a simple version, we can use a 2013 GCOE question: “Compared to 1 year ago,

29 Despite that medium relative concern and strong relative concern do not show a significant difference in the magnitude of relative deprivation, very strong concern does show a significantly larger negative effect on happiness than lower degrees of relative concern at the 5 percent significance level.

do you think that you are happier now, than you were then?” To this question, 55% said “about the same”, 28% “happier”, and 17% “less happy”. To examine the effect of relative concern on changes in happiness, we use an ordered logit model and a multinomial logit model as in <Table 19>. Both models produce qualitatively similar results that people with a stronger propensity for relative concerns show decrease in current happiness compared to one year ago. This is surely a double blow for those who have a strong relative concern in terms of happiness.

Table 19 Relationships between Relative Concern and Changes in Happiness

Dependent variable: Compared to 1 year ago, do you think that you are happier now than you were then?	Mean of dep. var.	Coef.	Std. Err.	z-value	Obs.	Model
Coded as: 1=less happy than 1 year ago (17%); 2=about the same as 1 year ago (55%); 3=happier than 1 year ago (28%)	2.110	-.161	.040	-4.03	2,934	Ordered logit
Coded as: 0=about the same as 1 year ago; 1=happier than 1 year ago; 2=less happy than 1 year ago	Happier	-.099	.049	-2.04	2,934	Multinomial logit
	Less Happy	.176	.058	3.04		

Note: The regression estimates are on the key explanatory variable, the degree of relative concern (5-point scale). We controlled for socio-demographic variables in Table 2 in each regression although their estimates are not provided in the table for the sake of brevity.

CHAPTER 6

Behavioral Differences by Relative Concern

People's behaviors reflect their preferences, values, personality traits, ways of thinking, and so on. In this chapter, we investigate how relative concern affects various behaviors stated in our survey data. We examine respondents' stated attitudes from their self-evaluations and stated behaviors elicited from their responses in a series of hypothetical situations. Our goal is to find the effect of relative concern on some behaviors regarding herding, status seeking, altruism or sympathy.

1. Different Attitudes by Relative Concern

A. Herding (Following Others) Inclination

As in <Table 20>, relative concern is positively correlated with herding inclination, which is intuitively appealing. So people with stronger relative concerns agree to the following statements more strongly: (1) Behaving similarly to people around me makes me feel comfortable. (2) I am interested in other people's choices, actions and plans and try to keep up with or follow them. (3) At work, I should follow the opinion of the group. (4) At home, I should follow my family's opinion.³⁰

30 Statements (1), (3) and (4) are adopted from 2012/2013 GCOE questionnaires, while statement (2) is newly made in our survey. For this reason, their point scales are

Table 20 | Relationships between Relative Concern and Following Behavior

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
Behaving similarly to people around me makes me feel comfortable. (1-5)	3.095	.182	.038	4.74	Ordered logit
I am interested in other people's choices, actions and plans and try to keep up with or follow them. (1-6)	3.886	.206	.040	5.18	Ordered logit
At work, I should follow the opinion of the group. (1-5)	3.464	.208	.039	5.28	Ordered logit
At home, I should follow my family's opinion. (1-5)	3.741	.106	.040	2.67	Ordered logit

Note: Same as the previous table.

B. Willingness to Compromise Values or Ethics to Achieve Goals

As seen in Chapter 4, money and visible success takes precedence over non-pecuniary values or meanings for those who have a strong relative concern. <Table 21>, not surprisingly shows that they are more willing to compromise values or ethics to achieve their goals. They agree to the following newly made questions more strongly: (1) If early education in overseas countries increases my child's chances of getting a better job, I would support despite the risk of damaging family relationship. (2) I feel better when my child is doing well in studies than growing up well rounded in character. (3) I would probably tolerate the involvement of a large enterprise CEO in an unlawful act in pursuit of a bigger corporate profit. (4) When national interests are at stake, it is right to join hands with other countries and turn against our allies that helped us in the past. The "willingness-to-compromise" index constructed by the mean of normalized scores of these 4 questions also shows a positive correlation with the degree of relative concern. As such, status-seeking desire pushed by a strong relative concern appears to undermine values or ethics in the level of child education or parenting, business, and even national diplomatic affairs.

slightly different.

Table 21 | Relative Concern and Willingness to Compromise Values/Ethics to Achieve Goals

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Model
Willingness-to-compromise index: the mean of normalized scores of the following 4 questions	0	.155	.013	12.02	OLS
- If early education in overseas countries increases my child's chances of getting a better job, I would support despite the risk of damaging family relationship. (1~5)	2.572	.416	.038	10.95	Ordered logit
- I feel better when my child is doing well in studies than growing up well rounded in character. (1~5)	1.968	.390	.039	10.03	Ordered logit
I would probably tolerate the involvement of a large enterprise CEO in an unlawful act in pursuit of a bigger corporate profit. (1~5)	1.872	.310	.039	2.34	Ordered logit
- When national interests are at stake, it is right to join hands with other countries and turn against the allies that helped us in the past. (1~5)	2.586	.135	.038	3.55	Ordered logit

Note: Same as the previous table.

C. Stance on Market Economy and Government's Responsibility

Using 2012/2013 GCOE questions, <Table 22> examines Korean respondents' stances on market economy and government's responsibility for the poor. Those with a strong relative concern tend to be pro-market supporters despite the widening income gap. They take less sympathetic view to the governmental role for the poor although this is not statistically significant. Meanwhile, they expect to be taken care of by their children in their old age when they need long-term care. Thus, people with stronger relative concerns may support free market economy and place emphasis on individual responsibility or private aid rather than on big government or social safety nets funded by high taxes.

Table 22 | Relative Concern and Stance on Market Economy and Government's Responsibility

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
Although an economy regulated by market forces widens the income gap between the rich and the poor, it makes people wealthier in general; so in total, they are better off. (1~5)	3.150	.200	.038	5.21	Ordered logit
It is the government's responsibility to take care of those who cannot take care of themselves financially. (1~5)	3.426	-.009	.038	-0.23	Ordered logit
If I had a child(ren), I would want my child(ren) to take care of me when I am in need of long-term care. (1~5)	3.288	.117	.038	3.08	Ordered logit

Note: Same as the previous table.

D. Stance on Cooperation and Factors for Success

<Table 23> investigates the relationships between people's relative concern and their stances on cooperation and success. Those with a strong relative concern appear to show preference for group work over individual work. The main reason seems to be greater achievement owing to cooperation rather than satisfaction from cooperation per se. We also need to note that people with a strong inclination toward social comparison possess more opportunistic view of success, that is, they are less likely to believe that crucial factor for success in life is hard work compared to luck and personal connections.

Table 23 | Relative Concern and Stance on Cooperation and Factors for Success

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
Working as a group results in greater achievement than working Individually. (1~5)	3.541	.077	.038	2.00	Ordered logit
I am more satisfied when I achieve a goal by cooperating with others than only by myself. (1~5)	3.631	.026	.038	0.68	Ordered logit
The most important factor for success in life is hard work rather than luck and personal connections. (1~5)	3.720	-.094	.038	-2.48	Ordered logit

Note: Same as the previous table.

E. Etiquette, Self-control, Carefulness, and Overconfidence

Using 2012/2013 GCOE questions, <Table 24> finds that those who have a stronger relative concern tend to show less hesitation in cutting queues. They lack self-control (although not significant) and act carelessly towards others or say things impulsively. By the same token, they look overconfident in their ability to understand other person's thought or feeling just by talking to or looking at him/her.

Table 24 | Relative Concern and Etiquette or Manners

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Model
I never cut into a line of people. (1~5)	4.019	-.130	.038	-3.45	Ordered logit
I am self-controlled. (1~5)	3.440	-.052	.038	-1.37	Ordered logit
Carelessness index: the mean of normalized scores of the following 3 questions: - When I am faced with a problem, I usually act before I think. - I say things without thinking. - I am not a careful thinker.	0	.061	.014	4.28	OLS
Overconfidence index: the mean of normalized scores of the following 2 questions: - I find it easy to "read between the lines" when someone is talking to me. - I find it easy to work out what someone is thinking or feeling just by looking at their face.	0	.055	.017	3.18	OLS

Note: Same as the previous table.

F. Planning Behavior

In contrast to their careless behavior in communicating with others, those with a strong relative concern shows careful planning behaviors for their own tasks or trips. Using 2013 GCOE questions, <Table 25> hints their meticulousness in things that may influence their own interest directly.

Table 25 | Relative Concern and Planning Behavior

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-value	Model
Planning behavior index: the mean of normalized scores of the following 3 questions: - I always plan things before I actually do them. - I plan tasks carefully. - I plan trips well ahead of time.	0	.054	.016	3.44	OLS

Note: Same as the previous table.

G. Maximizing Behavior (Perfectionism)

Our survey questionnaire contains a set of questions in measuring the degree of perfectionism, which are adopted from *The Paradox of Choice* by Barry Schwartz (2004). The 13 questions provided in <Table 26> try to identify someone who needs to be assured that every choice left nothing to be desired, whom the author called a “maximizer” or “perfectionist” in contrast with a “satisficer” who also has criteria and standards but is not worried about missing better choice.

We construct a “maximizing behavior” index measured by the mean of normalized scores of the 7-point scale answers to the 13 questions. The regression result shows that people who have a strong relative concern tend to be maximizers or perfectionists rather than satisficers in daily life. Taken this together with our previous findings, our result shows that a strong relative concern leads to unhappiness, which is consistent with Schwartz (2004)’s message that warns detrimental impacts of overexpansion of choice sets on psychological and emotional well-being especially of maximizers.

Table 26 | Relative Concern and Maximizing Behavior

Dependent variable	Coef.	Std. Err.	t-value	Model
<p>Maximizing behavior index: the mean of normalized scores of the following 13 questions:</p> <ul style="list-style-type: none"> - Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment. - No matter how satisfied I am with my job, it's only right for me to be on the lookout for better opportunities. - When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I am relatively satisfied with what I'm listening to. - When I watch TV, I channel surf, often scanning through the available options even while attempting to watch one program. - I treat relationships like clothing: I expect to try a lot on before finding the perfect fit. - I often find it difficult to shop for a gift for a friend. - Renting videos is really difficult. I'm always struggling to pick the best one. - When shopping, I have hard time finding clothing that I really love. - I'm a big fan of lists that attempt to rank things (the best movies, the best singers, the best athletes, the best novels, etc.). - I find that writing is very difficult, even if it's just writing a letter to a friend, because it's so hard to word things just right. I often do several drafts of even simple things. - No matter what I do, I have the highest standards for myself. - I never settle for second best. - I often fantasize about living in ways that are quite different from my actual life. 	.142	.011	13.25	OLS

Note: Same as the previous table.

H. Reciprocity

We include 6 questions regarding social reciprocity – 3 for positive reciprocity (i.e. repaying behavior) and 3 for negative reciprocity (i.e. revenging behavior) borrowed from 2012 GCOE questionnaire. Using the mean of normalized scores of each group of 3 questions as an index, we find that those with a strong relative concern are ready to take revenge

Table 27 | Relative Concern and Reciprocity

Dependent variable	Coef.	Std. Err.	t-value	Model
Repaying behavior index (the mean of normalized scores of the following 3 questions): - If someone does me a favor, I am prepared to return it. - I go out of my way to help somebody who has been kind to me before. - I am ready to undergo personal costs to help somebody who helped me before.	.007	.017	0.39	OLS
Revenging behavior index (the mean of normalized scores of the following 3 questions): - If I suffer a serious wrong, I will take revenge as possible, no matter what the cost is. - If somebody puts me in a difficult position, I will do the same to him/her. - If somebody offends me, I will offend him/her back.	.150	.018	8.43	OLS

Note: Same as the previous table.

on offenders but not ready to repay helpers as in <Table 27>. Their asymmetric response to offenders and helpers is reminiscent of their willingness to compromise ethics or virtues for their own interest as well as people’s general tendency of “loss aversion” (Kahneman and Tversky, 1984).³¹

2. Different Behaviors by Relative Concern

This chapter, in which we investigate behavioral differences by the degree of relative concern, consists of three parts. First, we examine respondents’ choices between relative position and absolute level to measure the strength of their positional preferences depending on the type of good and individual tendency for social comparison seeking. Second, from the analyses of respondents’ decisions in a series of experimental situations, we elicit their behavioral inclinations towards

31 Loss aversion refers to people’s tendency to feel losses more deeply than gains of the same value. Interesting examples are provided in many popular books on psychology or behavioral economics such as *The Paradox of Choice* or *Nudge*.

opportunism, status-seeking, herding, altruism, and sympathy and attempt to detect their relationships with relative concern. Third, we examine how positional concerns affect respondents' basic activities such as work and consumption and their altruistic actions.

A. Choices between Relative Position and Absolute Level

1) Comparing Respondents Themselves with Others

<Table 28> provides evidence that strong relative concern is positively associated with strong preference for relative position over absolute level. We asked respondents to choose between ① relative position (i.e., relatively better-off but absolutely worse-off) and ② absolute level (i.e., absolutely better-off but relatively worse-off).

The related question and a choice example are as follows: “(Hypothetical situation) When you are given each of the followings choices ① and ②, which one would you choose to be in? (The real value of money is always assumed to remain unchanged.) ※ Please, consider that “others” here refer to average people of the society you are living in.”³²

Annual after-tax income	①	You: 50 million won Others: 25 million won	②	You: 100 million won Others: 200 million won
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In <Table 28>, the italicized items indicate that more than half of Korean respondents choose better-off relative position over better-off absolute level in such items, which are often called “positional goods”(Frank, 2008). For our Korean respondents, positional goods include not only private goods (e.g., compliments from the boss, IQ, physical attractiveness, outfit for job interviews) or income (after-tax) but also (local) public goods (e.g., public spending on the park nearby home).³³ Meanwhile, private bads (e.g., length of commute, frequent

³² Appendix 1 (AQ1) provides the full set of choice items used in <Table 28>.

³³ The U.S. respondents also showed positional responses to these items including spending on national park (Solnick and Hemenway, 2005; Solnick and Hemenway,

body aches) or public bads (e.g., potholes in neighborhood) are less positional than goods as proposed by Solnick and Hemenway (1998).

The results of a set of derivative probit regressions, in which each respondent's positional response (i.e., whether or not choosing ① relative position instead of ② absolute level) is the dependent variable and the degree of relative concern is the key explanatory variable with other controls, suggest that strong relative concern is positively associated with strong preference for relative position across all items without any exception. Consequently, the relative position preference index computed by the mean of normalized scores of the positional response for each item also shows a strong correlation with the degree of social comparison seeking.

Table 28 | Relative Concern and Preference for Relative Position

Dependent variable: Choosing relative position instead of absolute level (0/1)	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Model
<i>Number of compliments from your boss per year</i>	0.628	.055	.010	5.63	Derivative probit
<i>Intelligent quotient (IQ)</i>	0.596	.051	.010	5.09	Derivative probit
<i>Government's financial support for a park nearby home</i>	0.580	.061	.010	6.04	Derivative probit
<i>Physical attractiveness (score out of 100 points)</i>	0.578	.070	.010	6.93	Derivative probit
<i>Price of a job interview outfit</i>	0.577	.051	.010	5.08	Derivative probit
<i>Annual after-tax income</i>	0.576	.052	.010	5.20	Derivative probit
Average days of night overtime per month	0.426	.051	.010	5.03	Derivative probit
TV screen size	0.419	.041	.010	4.04	Derivative probit
Number of criticism from your boss per year	0.394	.048	.010	4.78	Derivative probit
Apartment size	0.382	.063	.010	6.36	Derivative probit
Weeks of vacation	0.381	.060	.010	6.03	Derivative probit

1998; Solnick et al., 2007). Specifically, positional concerns about local public goods may reflect local SOC investment races for central government budget, often resulting in social inefficiency (e.g., virtually unused local airports).

Table 28 | (Continued)

Dependent variable: Choosing relative position instead of absolute level (0/1)	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Model
Education level	0.357	.061	.010	6.25	Derivative probit
Number of potholes on the street within the radius of 500 meters	0.329	.061	.010	6.35	Derivative probit
Lump-sum cancer insurance payment after cancer diagnosis	0.329	.067	.010	6.98	Derivative probit
Number of days per year with physical ailments	0.279	.048	.009	5.24	Derivative probit
Length of commute time	0.223	.041	.010	4.80	Derivative probit
Relative position preference index: the mean of normalized scores of the above 16 questions	0	.105	.011	9.98	OLS

Note: Same as the previous table.

2) Comparing Respondents' Grandchildren and Others' Grandchildren

In the subsequent questions of our survey, we instructed respondents to consider the well-being of an imaginary grandchild in making choices to help them liberate themselves from their current circumstances (following Johansson-Stenman et al., 2002; Alpizar et al., 2005; Carlsson et al. 2007). To confirm the positionality of the previous items in <Table 28> now using 2-generation away choices, <Table 29> includes identical items with some additional ones such as price of a bag which granddaughter would carry for her school reunion party, grandchild's study hours, private tutoring expenditure, vehicle price, and pocket money which you expect from grandchild after retirement. All these aforementioned items turn out to be positional goods for Korean respondents if we use an ad hoc criterion that relative position, not absolute level, is chosen by more than half. Again, stronger relative concerns are positively correlated with stronger preferences for relative position instead of absolute level in every item for respondents' grandchildren.

Table 29 | Relative Concern and Preference for Grandchildren's Relative Position

Dependent variable: Choosing relative position instead of absolute level (0/1)	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Model
<i>Price of a bag that granddaughter would carry for her school reunion party</i>	<i>0.664</i>	.036	.010	3.83	Derivative probit
<i>Grandchild's study hours per week (high school)</i>	<i>0.651</i>	.012	.010	1.27	Derivative probit
<i>Grandchild's physical attractiveness (score out of 100 points)</i>	<i>0.619</i>	.047	.010	4.80	Derivative probit
<i>Average monthly expenditure on private tutoring for grandchild (middle school)</i>	<i>0.588</i>	.003	.010	0.27	Derivative probit
<i>Vehicle price, provided by grandchild's company</i>	<i>0.587</i>	.050	.010	5.03	Derivative probit
<i>Grandchild's annual after-tax income</i>	<i>0.579</i>	.045	.010	4.49	Derivative probit
<i>Grandchild's exercise hours per week (elementary school)</i>	<i>0.572</i>	.028	.010	2.79	Derivative probit
<i>Grandchild's intellectual quotient (IQ)</i>	<i>0.552</i>	.043	.010	4.25	Derivative probit
<i>Pocket money expected from grandchild after retirement</i>	<i>0.550</i>	.044	.010	4.36	Derivative probit
Grandchild's scholarship printed on a university tuition bill	0.456	.056	.010	5.52	Derivative probit
Grandchild's vacation period	0.413	.051	.010	5.13	Derivative probit
Average accident rate of the vehicle grandchild is given by his/her company (a lower rate is safer)	0.363	.030	.010	3.05	Derivative probit
Lump-sum cancer insurance payment grandchild would receive after cancer diagnosis	0.361	.036	.010	3.67	Derivative probit
Grandchild's education level	0.344	.032	.010	3.29	Derivative probit
Grandchild's test scores (out of 100 points)	0.299	.030	.009	3.20	Derivative probit
Relative position preference index: the mean of normalized scores of the above 15 questions	0	.073	.012	6.02	OLS

Note: Same as the previous table.

B. Decisions in Experimental Situations

Our survey includes a series of experimental questions asking respondents what they would do in suggested hypothetical situations. We provide such questions and the regression results that show the

relationships between relative concern and various behavioral propensities.

1) Would You Pursue Your Interest at the Cost of Your Colleagues?

Box 1

(Hypothetical situation) Suppose that your employer provides better opportunities for promotion to those who have a good command of foreign language, so you want to attend night classes at a foreign language institute to improve your proficiency. However, if you attend the class, you will not be able to participate in overtime work and cause burdens on your colleagues. What would you do in this situation?

- ① Register for a foreign language course
- ② Not register

To this question, 40 percent of respondents choose to register for a foreign language course as shown in <Table 30>. And the regression results reveal that those who have stronger relative concerns are more likely to pursue their interest at the cost of their colleagues. Quantitatively, the derivative probit estimate (.037) suggests that the probability to register for a language course increases by 3.7% in response to a 1-point increase of 5-point scale relative concern, which means that very strong (5 point) relative concern is associated with about 15% higher registration probability compared with very weak (1 point) relative concern.

Table 30 | Relative Concern and Pursuing Own Interest at the Cost of Others

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
Would you register for a foreign language course at the cost of your colleagues? (1=yes; 0=no)	0.401	.037	.010	3.71	Derivative probit

Note: Same as the previous table.

2) Where Would You Sit?

Box 2

(Hypothetical situation) Suppose your employer hosts a regular company dinner every month. Where would you sit?

- ① Next to the boss so that you can have a good chance to impress your boss
- ② Next to a close colleague you feel comfortable with
- ③ Next to a new intern whom no one talks to

In this seat selection experiment, 74.5% of respondents chose seats next to a close colleague (for comfort), 17.5% chose the one next to a new intern (for sympathy), and only 8% chose the one next to the boss (for success). As the multinomial logit estimation of <Table 31> unveils, however, people having a strong relative concern are more willing to sit next to the boss to increase the chances of impressing their boss, which shows their strong status-seeking propensity. But they are less likely to sit next to a new intern whom no one talks to, which implies their weaker level of sympathy. Put differently, when we use “sitting next to a new intern” as the base to compare the lower panel of the table, the results are identical to the upper panel, albeit in a different form in the order of success, comfort, and sympathy.

Table 31 | Relative Concern and Seat Selection for Success, Comfort, or Sympathy

Dependent variable: Where would you sit?	Next to:	Coef.	Std. Err.	z-value	Model
Coded as: 0=next to a close colleague (0.745); 1=next to your boss (0.080); 2=next to a new intern (0.175)	Boss	.340	.081	4.20	Multinomial logit
	Intern	-.332	.054	-6.19	
Coded as: 0=next to a new intern; 1=next to your boss; 2=next to a close colleague	Boss	.672	.091	7.34	Multinomial logit
	Colleague	.332	.054	6.19	

Note: Same as the previous table.

3) How Would You Allocate Gift Money?

Box 3

(Hypothetical situation) You just received wedding invitations from three close acquaintances. However, you have now only 180,000 won available for money gifts. How would you allocate them? (Total amount must be equal to 180,000 won)

(1)	Upper class acquaintance's wedding where guests give gift money of 100,000 won or more on average	_____ won
(2)	Middle class acquaintance's wedding where guests give gift money of around 50,000 won on average	_____ won
(3)	Lower class acquaintance's wedding where guests give gift money of 30,000 won or less on average	_____ won
Total		180,000 won

This experiment is a variant of the dictator game in which the participants are asked to decide the final allocation of payoff; in this case, however, they decide the shares of their money among third parties with different level of wealth and guests. Here, we define three specific types of allocation (amount in 10,000 won):

- (1) Herding allocation: upper class 10, middle class 5, lower class 3
- (2) Equal allocation: upper class 6, middle class 6, lower class 6
- (3) Altruistic allocation: upper class \leq middle class \leq lower class
(but excluding upper class = middle class = lower class to avoid the redundancy with (2) equal allocation)

By the above definition, 43% of respondents would make herding allocation by following the average amount of gift money for each wedding, 13% would give equal money to each wedding, and 21% would made altruistic allocation by making some compensatory money gifts. The multinomial logit estimation in <Table 32> shows that people

having stronger relative concerns are more likely to make herding allocation but less likely to make equal allocation and least likely to make altruistic allocation. Their behavior in the allocation of gift money looks consistent with their high inclination toward herding shown in <Table 20> and their lower level of sympathy in the previous hypothetical situation of <Table 31>.

Table 32 | Relative Concern and Allocation of Gift Money

Dependent variable: How would you allocate gift money?		Coef.	Std. Err.	z-value	Model
Coded as: 1=herding allocation (0.430); 2=equal allocation (0.131); 3=altruistic allocation (0.209); 0=other allocation (0.230)	Herding	.210	.054	3.91	Multinomial logit
	Equal	-.125	.070	-1.79	
	Altruistic	-.183	.061	-3.00	

Note: Same as the previous table.

4) Would You Take the Blame for a Poor Junior Staff?

Box 4

(Hypothetical situation) You have a junior staff whose poor work performance might potentially lead to dismissal. You have always felt sympathy for him/her because he/she has been a hard worker and believe he/she might overcome the slump when given a second chance. One day you discover that the junior staff has made a critical mistake putting the entire project on jeopardy which only you and your junior staff have been working on. The mistake was fatal and the junior staff had to go. However, if you lie to the company and take the blame, the company will not take disciplinary action against you thanks to your excellent work performance, accumulated over time and keep the junior staff. What would be your action?

- ① I will tell the truth that it is not my mistake
- ② I will tell a lie that it is my mistake and will take the blame for him/her

This question asks about respondents' willingness to show mercy on someone who is considered the weakest in the corporate ladder. Such act of mercy requires lying to others but does not incur substantial cost such as layoff or wage cuts except a potential scar on their reputation. Sixty eight percent of respondents answered that they would tell a lie to others to cover up the mistake of the junior staff. Again, however, those with stronger relative concerns are less likely to have such mercy as <Table 33> shows. But their attitude does not seem to arise from their strict adherence to not telling a lie in any case – as in the great philosopher, Immanuel Kant's moral theory – if we recall the previous self-oriented willingness to compromise values or ethics.

|| Table 33 || Relative Concern and Taking the Blame for a Poor Junior Staff

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
Would you tell others a lie and take the blame to protect junior staff who committed grave mistake? (1=yes; 0=no)	.680	-.018	.009	-1.90	Derivative probit

Note: Same as the previous table.

5) How Would You Change Your Spending on Your Child's Private Tutoring?

Korean parents spend considerable amount of money on children's education. Their children also spend long hours in private tutoring academies known as *hagwon*, private cram schools, in an effort to outdo others in crucial exams and tests that have lasting consequences. If one increases his private tutoring, then everyone feels the pressure to follow suit, to preserve their position in the rankings. This zero-sum game structure makes the situation similar to that of Prisoners' dilemma and, therefore, would lead to a socially wasteful equilibrium of everyone's high burden of private tutoring. Cooperative reduction of such wastes would not be attainable without any exogenous force or credible commitment of every player.

Box 5

(Hypothetical situation) You have been paying 500,000 won every month for your child’s private tutoring, roughly the average of the whole society. Of the following situations, which would be your response? (All other conditions are assumed to remain unchanged in each situation.)

Hypothetical situations	I will spend on private tutoring expense.					Positional private tutoring
	0 won	250,000 won	500,000 won	750,000 won	1 million won	
When all other parents raise private tutoring expense to 750,000 won,	①	②	③	④	⑤	a) At least 750,000 won
When all other parents decide to spend only 250,000 won on private tutoring and continue their decision,	①	②	③	④	⑤	b) At least 500,000 won
When all other parents decide to forgo private tutoring and continue their decision,	①	②	③	④	⑤	c) At least 250,000 won

(Note: More situations, 17 in total, were given to respondents – see the appendix – and the final column in italics was not shown to them in the survey.)

The questions in <Box 5> deal with how Korean adults respond to hypothetical changes in others’ private tutoring decisions (or to some exogenous institutional changes as provided in the appendix). Our purpose is to detect the relationship between relative concern and positional demand for private tutoring. Here, the positional demand is defined as the case in which one considers private tutoring as the means and measurement to compete with others, and, therefore, spends no less than others. Therefore, we define positional private tutoring using the 3 sample situations as in the final column of the table in <Box 5>.³⁴

34 At first, we tried to identify positional private tutoring by selecting those who constantly persist with more expenditure than all other parents – i.e., a) at least 1 million won, b) at least 500,000 won, and c) at least 250,000 won – but the fraction

Indeed, <Table 34> suggests that people with stronger relative concerns show higher demand for extra private tutoring in order to outdo others. Even if private tutoring in Korea would be banned by the government as was the case in the 1980s, they are probably more likely to take the risk and engage in illegal private tutoring.³⁵ In addition, when we use a composite index of positional private tutoring by taking the mean of normalized 5-point scale scores in 17 hypothetical situations, we also find that the degree of relative concern is positively correlated with higher demand for private tutoring with all else being equal.

Table 34 | Relative Concern and Pursuing Own Interest at the Cost of Others

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-/z-value	Model
Positional private tutoring: a) & b) & c)	0.07	.029	.005	5.81	Derivative probit
Positional private tutoring index: the mean of normalized scores in 17 hypothetical situations (see Appendix)	0	.065	.013	4.96	OLS

Note: Same as the previous table.

C. Behaviors on Work, Consumption, and Altruism

Next, we turn to basic activities such as work and consumption and potential differences among them by the strength of concerns about relative position. And we also examine the relationship between relative concern and altruism by looking at respondents' direct statements about altruistic behaviors.

1) Work

As seen before in <Table 6>, those with stronger relative concerns

of such strict positional demands is very small (only 7 out of 3,000). So we used an alternative selection criteria as in <Box 5>, which relaxes a) by allowing 750,000 won when all other parents spend 750,000 won. This relaxation renders 209 cases of positional private tutoring to our analysis.

35 In 1980 the government outlawed out-of-school private tutoring, which drove the industry underground. The ban was declared unconstitutional in 2000.

place a higher priority on work over other important components of life such as family, friends, and leisure time. <Table 35> reaffirms that people with stronger relative concerns are more likely to treat work as something to live for. The tables also shows that they are more likely to work in more competitive (i.e., performance-based compensation) system and work harder. As our previous findings (Table 7) suggests that they think much in terms of extrinsic motive of work such as pay, status, and promotion but make light of intrinsic counterpart such as interest, self-efficacy, colleagues, and contribution to society. We may attribute their tendency toward hard work to their strong desire for higher pay and status.³⁶

Table 35 | Relative Concern and Work-Related Behaviors

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Obs.	Model
Work is something to live for. (1~5)	3.668	.080	.039	2.05	3,000	Ordered logit
To what extent is your salary or wage based on your work performance? (1=not at all; 2=slightly; 3=mostly; 4=almost entirely)	1.907	.083	.043	1.91	2,305	Ordered logit
How hard do you work each day? Please answer the question based on the amount of work done per hour. (1= work but have a lot of downtime; 2=work but have some downtime; 3=work continuously but not hard; 4=work hard continuously; 5=could not work any harder than currently)	2.631	.129	.043	3.02	2,305	Ordered logit

Note: Same as the previous table.

36 Considering the possibility that reported work intensity in <Table 35> would be quite subjective and dependent on respondents' individual standards, we tried to use the answers to the same kind of question for their spouses as an alternative dependent variable. The result is not statistically significant, which suggests that the plausibility of the higher work intensity of those who have stronger relative concerns in themselves.

2) Consumption

As for consumption behavior, <Table 36> reports that those with stronger relative concern are more likely to over-consume and spend more time on shopping – the weekly shopping time increases 9.2% in response to a 1-point increase of 5-point scale relative concern. In fact, they spend considerably more money on durable consumer goods such

Table 36 | Relative Concern and Consumption-Related Behaviors

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-value	Model
Overconsumption index: the mean of normalized scores of the following 4 questions (5-point scale for each question): - I plan to spend a lot of money or to purchase expensive items in the future. - I don't feel uncomfortable borrowing money. - I am so occupied with my daily life that I cannot save much money. - If there is something that I want, I need to buy it.	0	.052	.011	4.71	OLS
Time spent on shopping for consumption goods or services (including going to or coming back from a store, watching home shopping channels and using the Internet for online shopping but excluding shopping for job such as purchasing raw materials) per week (minutes)	250.8	.092	.027	3.39	OLS: ln(y+0.001)
Household expenditures on durable consumer goods (e.g. cars, expensive electric products) in 2012 (in 10,000 won)	544.7	.417	.101	4.14	OLS: ln(y+0.001)
Total Household expenditures (excluding durable goods, taxes, insurance premiums, and mortgage interest but including utilities and energy) per month in 2012 (in 10,000 won)	163.0	.051	.017	2.94	OLS: ln(y+0.001)
Household expenditures on food (excluding eating out) per month in 2012 (in 10,000 won)	46.4	.041	.019	2.16	OLS: ln(y+0.001)
Household expenditures on eating out per month in 2012 (in 10,000 won)	21.5	.101	.033	3.04	OLS: ln(y+0.001)

Note: Same as the previous table.

as cars or high-end electronic products by 41.7% in response to a 1-point increase of 5-point scale relative concern, which implies that luxury durable goods are highly positional and the main focus is of social comparison. The household expenditures excluding durable goods is also higher than others' (by 5.1% in response to a 1-point increase of 5-point scale relative concern). We also notice that expenditures on eating out (10.1%) has a bigger coefficient than food expenditures excluding eating out (4.1%), which suggests dining out at restaurants is more conspicuous form of consumption than meals at home. Thus, the implied degree of conspicuous consumption or positionality seems to be higher for (expensive) durable goods than for food, and in the case of food, for eating out than for home meals implying that the positionality of goods may increase with their price and visibility to others.

3) Altruism

How is relative concern related with altruism, i.e., unselfish concern for the welfare or happiness of others? <Table 37> reveals that relative concern is negatively associated with altruism. Those who have stronger relative concerns are less likely to feel happy when they perform good deeds for others. And, indeed, their donation amounts are lower than their counterparts who have similar socio-economic characteristics.

But if they were not Mr. Scrooge, an isolated cranky old man, they may have somebody that they are willing to help or share with. A set of questions in <Box 6> examines the degree of altruism measured by the willingness to give depending on the recipient – here, parents, children, and a well-known charity.

Table 37 | Relative Concern and Altruism

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
I feel happy when I perform good deeds that I think is beneficial to others (such as picking up trash in a park). (1~5)	3.631	-.133	.040	-3.35	Ordered logit
Donation amount in 2012 (8 categories)	2.263	-.071	.038	-1.88	Ordered logit

Note: Same as the previous table.

Box 6

Q1. Let's assume that you have parents (even if you actually don't have). Also, assume that you aren't living together with your parents (even if you actually are). Suppose that your parents had only one-third of as much family income per person to live on as you do. Up to how much of your own family income would you be willing to contribute to your parents per month until things changed (possibly a few years)?

Q2. Let's assume that you have two children (even if you actually don't have). Also, assume that you aren't living together with your children (even if you actually are). Suppose that your children had only one-third of family income per person of what I have. Up to how much of your own family income per month would you be willing to give to assist your children until things changed (possibly a few years)?

Q3. Suppose that you found a well-known charity that gave financial help to people who typically had about one-fifth of your family income per person. Up to how much of your own family income per month would you be willing to donate to the charity if you knew that the money would directly benefit those people?

Q4. Suppose that you found a well-known charity that gave financial help to people who typically earned about one-fifth of your family income per person. Up to how much of your own family income per month would you be willing to give to the charity if you knew that the charity would give twice the amount of your donation directly for those people's benefit?

- ① Up to 2 % of your family income per month
- ② Up to 5 % of your family income per month
- ③ Up to 10 % of your family income per month
- ④ Up to 20 % of your family income per month
- ⑤ No help at all

Note: We borrowed these questions from 2008 GCOE questionnaire but we modified Q2 to have respondent consider two children's welfare instead of a child's one as in the GCOE question so that we can compare the share of donation to children with that to parents controlling for the number of recipients as two.

Upon respondents' willingness-to-give choices among 0%, 2%, 5%, 10%, and 20% of their family income, we code the degree of their altruism towards parents, children, and a charity with/without matching fund scheme, which is respectively 10.9%, 10.1%, and 3.9%/4.0% on average. Using the OLS regressions with the dependent variables being these percentages as in <Table 38>, we find that the degree of relative concern negatively affects the willingness to give to parents while it shows a positive correlation with the willingness to give to children. Meanwhile, relative concern shows negative but insignificant correlations with the willingness to give to a well-known charity regardless of the existence of matching fund scheme. Therefore, if people with a strong tendency of social comparison would have somebody whom they are willing to help, that somebody is neither their parents nor a well-known charity but their children.

Table 38 | Whom Are Those Who Have a Strong Relative Concern Willing to Help?

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-value
The maximum percentage of your family income that you are willing to give per month to your parents who don't live together with you and have one-third as much family income per person to live on as you do. (0%; 2%; 5%; 10%; 20%)	10.9	-.372	.118	-3.15
The maximum percentage of your family income that you are willing to give per month to your children who don't live together with you and have one-third as much family income per person to live on as you do. (0%; 2%; 5%; 10%; 20%)	10.1	.379	.139	2.73
The maximum percentage of your family income that you are willing to give per month to a well-known charity that gives your donation directly to people who have one-fifth of your family income per person. (0%; 2%; 5%; 10%; 20%)	3.9	-.059	.075	-0.79
The maximum percentage of your family income that you are willing to give per month to a well-known charity that gives twice the amount of your donation directly to people who have one-fifth of your family income per person. (0%; 2%; 5%; 10%; 20%)	4.0	-.052	.073	-0.72

Note: Same as the previous table.

Furthermore, we examine their altruism towards spouses as well as children using their bequest motive. <Table 39> shows that, contrary to their miserly behavior towards other people or charity, they are more willing to leave as much of their inheritance as possible to their children or their spouses. Is this altruism as well? If so, we may call it “narrow altruism” only applied to their children and spouses; or we may call it “extended egoism”.

|| Table 39 || Relative Concerns and Bequest Motive for Children and Spouse

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	z-value	Model
I want to leave as much of my inheritance as possible to my children. (1~5)	3.358	.298	.038	7.90	Ordered logit
I want to leave as much of my inheritance as possible to my spouse. (1~5)	3.095	.182	.038	4.74	Ordered logit

Note: Same as the previous table.

CHAPTER 7

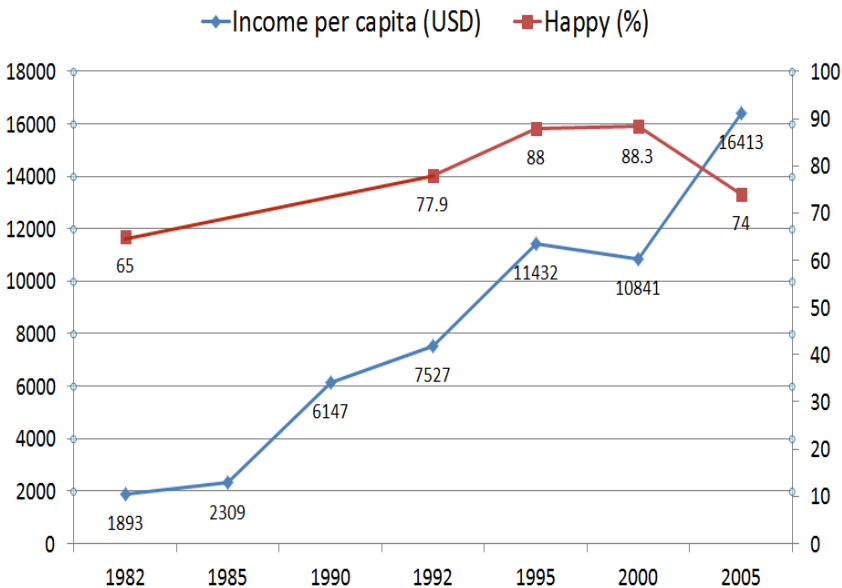
Policy Implications

So far we have found that people's social comparison seeking makes striking differences in their labor market outcomes, subjective well-being, and mental health as well as behaviors regarding herding, status seeking, and altruism. Our next step should be on finding policy implications in the perspective of social welfare or gross happiness in the society. Specifically, we deal with five topics in this chapter. First, we show Koreans' diagnoses of the reasons for their unhappiness and examine how relative concern affects such diagnoses. Second, we discuss government intervention to remedy positional externalities based on our survey results about people's perceived positionality of some selected goods that have a negative influence on others' welfare. Third, we show that Koreans' relative concerns do not necessarily arise from their materialistic values and that they are undergoing a period of transformation where individual values are heading toward post-materialism, which makes a room for remedial change of institutions that have led excessive social comparisons and competitions. Fourth, we discuss policy directions for reducing negative effects of social comparison in the context of contemporary Korea focusing on education system and labor market reform. Last but not least, we suggest some examples of nudge ideas using people's relative concern for the whole society and the motivation of self-improvement via social comparison, which implies that relative concern can be made to good use as well.

1. Why Are Koreans Unhappy?

South Korea's per capita income has risen continuously to reach the level of advanced economies. However, long-term surveys on life satisfaction show that people's satisfaction remains stagnant as shown in <Figure 6>. This may hint that the Easterlin paradox also holds true for Korea, but further scrutiny is required for diagnosis. The average happiness level of Koreans turns out to be lower than that of people from other countries that exhibits lower per capita income.³⁷

Figure 6 Does the Easterlin Paradox Apply to Korea?



Source: The proportion of respondents who answered that they were happy has been reported by Gallup Korea (recited from the fourth Future Korea Report by SBS, 2006). The data on real income per capita (USD) is from the Bank of Korea.

37 There have been numerous media reports worrying about Korean's low ranking of happiness, life satisfaction, or positive emotion presented in many global surveys conducted by Gallup (ranked 97 out of 148 countries in 2011), UN (52 out of 156 in 2012), and OECD (24 out of 36 in 2011) for example.

In our survey, we asked about the reason for Korean's low happiness and how important (5-point scale) the respondent thinks each of the suggested 14 reasons are (see <Table 40>). Policy makers should listen to their opinion especially to the reasons that more people voted for.

We sorted the perceived reasons for unhappiness so that the highest average points are at the top of the column of mean values. Here, we are also interested in potential differences of their opinions by the degree of relative concern. The following reasons were voted high by average respondents but voted low by those with a strong relative concern: (1) More and more people feel isolated due to increased difficulty in personal relationship and estrangement of family relationship; (2) Overflowing materialism causes more and more cases of conflicts in values and anti-human crimes.

On the contrary, the followings were voted low by average respondents but voted high by people with a strong relative concern as the reasons for unhappiness: (10) As it is becoming increasingly clear that only few can rise from humble background, people are losing hopes for a better life; (11) Conditions in both global and domestic markets have slowed down and economic growth potential has been weakened; (12) There is a growing sense of 'relative deprivation' caused by showing off and propensity to compare among people; (13) The degree of satisfaction that could be earned through material possession besides meeting basic needs has decreased; (14) South Korea's security has become unstable due to North Korea's nuclearization and threats.

Therefore, as the reason for unhappiness, those who have stronger relative concerns think that relative deprivation, which accounts for the biggest coefficient, reduced opportunities of upward mobility, economic slowdown, and diminishing marginal utility from material possession are more important than isolated personal relationship or conflicts in values. As such, their materialistic, secular values appear to penetrate into their diagnoses of the reasons for unhappiness in the society.

Koreans might find it relatively hard to be happy in both nature and nurture. Based on race-variant Serotonin transporters in DNA, recent neural studies provide a genetic background to the lower levels of

happiness in Asian counties than their GDP per capita.³⁸ In addition, East Asians also show higher tendency for social comparison under their interdependent culture than Westerners under more independent culture (Kang et al., 2013; Chung and Mallery, 1999). The negative relationship between social comparison and psychological well-being completes this story of Koreans' unhappiness.

Moreover, if one's income increases but at a slower rate than the average increase in income, then his relative position worsens, which leads to a deeper relative deprivation. Thus, if income inequality is becoming more skewed towards the highest income group as in many countries under the influence of globalization and financialization, then the vast majority of people feel less happy.

Table 40 | Why Are Koreans Unhappy? Differently Perceived Reasons by Relative Concern

Overall rank	Perceived Reasons for Low Happiness	Mean	Coef.	Std. Err.	z-value
1	More and more people feel isolated due to increased difficulty in personal relationship and estrangement of family relationship	4.300	-0.117	0.054	-2.18
2	Overflowing materialism causes more and more cases of conflicts in values and anti-human crimes	4.267	-0.111	0.054	-2.05
3	Employment is increasingly unstable as non-regular jobs and early-retirement increase	4.216	-0.055	0.060	-0.92
4	The economic polarization has shrunk the middle class and their consciousness	4.163	-0.010	0.061	-0.16
5	Social conflicts between different social classes, regions and generation have intensified	4.138	-0.086	0.056	-1.53
6	People are under the influence of fatigue, obsessive compulsion and stress due to heated competition	4.101	-0.005	0.059	-0.08
7	The sense of stability weakens due to rapidly changing society and increasing uncertainty over the future	4.061	0.033	0.065	0.51

38 See "Happiness is in your DNA; and different races may have different propensities for it" (The Economist, October 13, 2011) and the original paper "Genes, Economics, and Happiness" (De Neve et al. 2012).

Table 40 | (Continued)

Overall rank	Perceived Reasons for Low Happiness	Mean	Coef.	Std. Err.	z-value
8	High discontent or frustration with malfunctioning politics and political leadership	3.937	-0.173	0.045	-3.86
9	The lack of social trust has caused higher expenses and increased wariness	3.930	-0.027	0.062	-0.44
10	As it is becoming increasingly clear that only few can rise from humble background, people are losing hopes for a better life	3.855	0.141	0.046	3.04
11	Conditions in both global and domestic markets have slowed down and economic growth potential has been weakened	3.813	0.122	0.054	2.28
12	There is growing sense of 'relative deprivation' caused by showing off and propensity to compare	3.762	0.247	0.050	4.93
13	The degree of satisfaction that could be earned through material possession besides meeting the basic needs has decreased	3.723	0.101	0.049	2.04
14	South Korea's security has become unstable due to North Korea's nuclearization and threats	3.414	0.130	0.038	3.43

Note: In this ordered logistic regression (N=3,000), the degree of relative concern (5-point scale) of respondents is the dependent variable and their responses (5-point scale) to each suggested reason of unhappiness are included as explanatory variables with socio-demographic variables in Table 2 as control variables.

2. Why and How to Reduce Positional Externalities?

Looking at the personal luxury goods market in the world, Seoul is ranked 6th among top 10 cities following New York, Paris, London, Hong Kong, and Tokyo in 2013.³⁹ Luxury goods are a representative example of a positional good, which is a product or service whose value is at least in part (if not exclusively) a function of its ranking in the degree to which the good is desired by others, in comparison to substitutes. The extent to which a good's value depends on such a ranking is referred to as its positionality.

39 Bain & Company, 2013 Luxury Goods Worldwide Market Study.

As Robert Frank (2008) points out, positional externalities arising from concerns about relative position incur tangible economic costs. The conditions that give rise to positional races such as outfits for job interviews or private tutoring for higher academic accomplishments, are basically similar to conventional military arms races, which does not make each nation safer but induces them to spend more leading to inefficient outcomes.

However, it is often practically hard to negotiate private solutions in which everyone agrees to some form of collective restraint on expenditure on positional goods. Frank (2008) argues that positional externalities become legitimate objects of public policy concern because many positional externalities cause not only negative feelings but also substantial economic costs to others who do not have adequate means to avoid them. He seeks for a less interventionist policy remedy for positional externalities than direct banning or quantity control, which is modeled after the use of pollution tax to remedy excessive emission that reduces social welfare. Here arises Pigouvian rationale for taxing conspicuous consumption (e.g., luxury goods) or excessive labor supply that makes long work hours as a social norm leading to break healthy work-life balance.⁴⁰

In this vein, our survey includes a question on positional externalities asking about people's perceived positionality of some selected (luxury) goods that need Pigouvian taxation as in <Box 7>. Government can improve social welfare by imposing high luxury tax on certain luxury goods to correct for this perceived externality and mitigate the posited social waste.

40 Layard (1980; 2005) argues that rivalry (a.k.a., positional concern) and habituation distort our life towards work to a “self-defeating” level and away from other pursuits, which should be offset by corrective taxation on spending. Although he also admits that such taxation is almost certainly reducing our measured GDP by reducing work effort, he emphasizes that GDP is a faulty measure of well-being and people underestimate the process of habituation. (For example, academics think that gaining tenure will make them happier for longer than it actually does.)

Box 7

Q. Please take time to read the paragraph about a certain type of consumption in the following box, and decide whether each type of good in (1) through (8) belongs to such consumption.

Some consumption goods are designed to show off buyer’s economic power or higher status. In economic theory, these goods cause other people—who don’t possess them—to feel economically deprived or socially inferior, and is socially better for them to be consumed in less quantity. For this reason, some economists have suggested that aggregate consumption should be reduced in a manner that imposes higher taxes on goods that do not care compensating others, and rather undermine their satisfaction.

Such consumption includes		Extremely	Slightly	Not much	Not at all
(1)	Expensive belongings, such as luxury bags, clothes, accessories, etc.	①	②	③	④
(2)	Expensive durable goods, such as high-end imported cars and home appliances	①	②	③	④
(3)	Expensive imported luxury goods such as fine liquor, wine and tobacco	①	②	③	④
(4)	Luxury homes	①	②	③	④
(5)	Luxury overseas travel	①	②	③	④
(6)	Overseas language program	①	②	③	④
(7)	Expensive private tutoring	①	②	③	④
(8)	Expensive cosmetic surgery	①	②	③	④

According to <Table 41> which sorted consumption items by the mean value of respondents’ approval of the positionality of each item (not at all=1~4=extremely), Koreans appear to think that expensive belongings (e.g., luxury bags, clothes, accessories, etc.) and expensive durable goods (e.g., high-end imported cars and home appliances) are highly positional, and, therefore, require levying high luxury tax. In fact,

luxury bags and luxury cars are mostly desired items for Korean (young) women and men respectively, who often show vanity and seek for relative position. But all items including luxury homes, expensive liquor, luxury overseas travel, expensive private tutoring, expensive plastic surgery, and even overseas language program are regarded as positional goods by the majority of respondents in that their mean values are all greater than 2.5, i.e., the threshold of approval (3 or 4) and disapproval (1 or 2).

Overall, people’s view of positional externalities are not quite different by the strength of their concerns about relative position except the last two items: First, those with a strong relative concern are less likely to think that expensive plastic surgery causes positional externalities, which reminds us of our finding that social comparison is most prevalent in the Gangnam area of Seoul, the mecca of plastic surgeons. And second, however, they are a little more likely to think overseas language program, which is considered least positional on average, causes positional externalities.

Table 41 | Perceived Positionality of Selected Goods and Relative Concern

Rank	Perceived positionality (not at all=1~4=extremely)	Mean	Coef.	Std. Err.	z-value
1	Expensive belongings, such as luxury bags, clothes, accessories, etc.	2.983	.023	.067	0.34
2	Expensive durable goods, such as high-end imported cars and home appliances	2.848	.038	.079	0.48
3	Luxury homes	2.708	.077	.074	1.03
4	Expensive imported goods such as fine liquor, wine and tobacco	2.641	-.059	.062	-0.95
5	Luxury overseas travel	2.633	.031	.076	0.41
6	Expensive private tutoring	2.613	.019	.071	0.27
7	Expensive cosmetic[plastic] surgery	2.605	-.221	.066	-3.37
8	Overseas language program	2.518	.110	.055	1.98

Note: Same as the previous table.

In some cases, however, negative positional externalities can be compensated by the public goods of infant industry effects and research and development (Kashdan and Klein, 2009). These critics on Frank's idea of positional goods taxation argue that technological advance can be attained partly thanks to wealthy individuals who are willing to purchase new and untested goods, which are luxuries at first, then become ordinary goods by mass production.

But when it comes to certain positional goods that lie in the context of zero-sum races and also cause detrimental effects other than relative deprivation effect, government actions could be justified. Such examples may include the outrageous arms race of private tutoring in Korea, which is one of the main reasons for extremely low birth rate.

3. Are Koreans Caught by Materialism?

In Chapter 2, we find that people with stronger materialistic values tend to have stronger relative concerns. Given that Koreans tend to have stronger relative concerns than Westerners, can we say that Koreans are more likely to be caught by materialism? This question is not that simple because we also know that East Asians have traditionally valued non-materialistic philosophy demonstrated by their appreciation of spiritual values and preferring justification to profit under the influence of Zen, Buddhism, and Confucianism.

Based on extensive international surveys, Ronald Inglehart posited that advanced industrial countries were undergoing transformation of individual values, from materialist values of modernization process to post-materialist values of post-modernization process. According to Fournier (1998)'s review of Inglehart (1997)'s book, "During modernization, industrialization brings forth urbanization, mass education, occupational specialization and a shift from traditional to rational-legal authority. But, when economic development yields diminishing marginal gains in material and subjective well-being, the process turns to postmodernization. On the cultural front, postmodernization, aside from continued secularization and individualization, involves shifts from survival values to well-being values, from achievement motivation to postmaterialist motivation and

from bureaucratic authority to participatory management.” (Fournier, 1998: 391).

Materialism and postmaterialism are probably reflected in people’s political values. Inglehart suggested that political values are a function of individual needs and life experiences specifically during an individual’s early character formation period. Those who have experienced economic uncertainty and physical insecurity in developmental process become materialists. As a result, they tend to give priority to order and stability and to economic and military strength. On the contrary, those who have experienced greater economic and physical security in developed era become post-materialists. This new generation tends to place priority to individual well-being, social bonds, and tolerance towards diversity.

The World Values Survey (WVS) contains questions on materialism vs. postmaterialism and the latest 2010-2014 wave also provides such information. Questions are read: “People sometimes talk about what the aims of this country should be for the next ten years. On this card are listed some of the goals which different people would give top priority. Would you please say which one of these you, yourself, consider the most important? And which would be the next most important?” As provided in <Table 42>, respondents were given three sets of choice items comprised of two

Table 42 | Questions on Materialism vs. Post-materialism in the World Values Survey

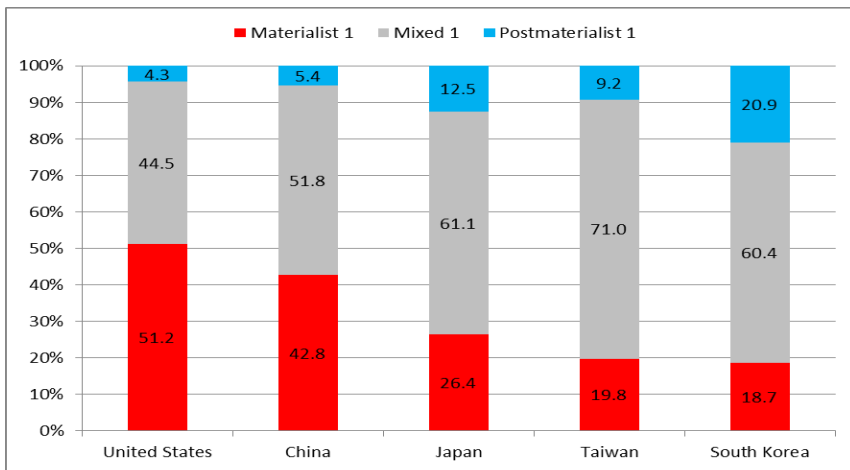
Choice	Materialism	Post-materialism
Set 1	1a. A high level of economic growth	1c. Seeing that people have more say about how things are done at their jobs and in their communities
	1b. Making sure this country has strong defense forces	1d. Trying to make our cities and countryside more beautiful
Set 2	2a. Maintaining order in the nation	2c. Giving people more say in important government decisions
	2b. Fighting rising prices	2d. Protecting freedom of speech
Set 3	3a. A stable economy	3c. Progress toward a less impersonal and more humane society
	3b. The fight against crime	3d. Progress toward a society in which ideas count more than money

materialist values and two post-materialist values. We classified each respondent as materialist, post-materialist, or mixed according to the number of items chosen from each value. In the case of choice set 1, for example, those who consider 1a and 1b the most important element or the next most important element (their orders are not counted in) are categorized as materialists. And those who select 1c and 1d are grouped as post-materialists. Respondents selecting a mixture of materialist and post-materialist items are classified as mixed. The proportion of materialists and post-materialists will show a bird's eye view of a country's stage of development process.

Among other countries, we compare Japan, China, Taiwan, and the United States because of cultural similarities or close relationships with Korea. The relative strength of materialism varies depending on the choice set of 4 items.

First, as <Figure 7> shows, when we define materialists by taking those who chose "A high level of economic growth" and "Making sure

Figure 7 Materialism vs. Post-materialism in Selected Countries: WVS Choice Set 1



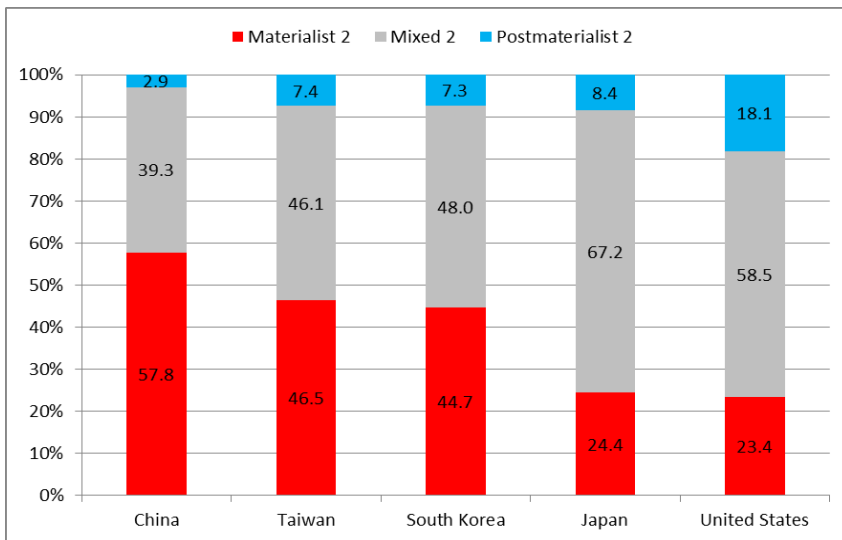
Note: "Materialist 1" chose "A high level of economic growth" and "Making sure this country has strong defense forces" instead of "Seeing that people have more say about how things are done at their jobs and in their communities" and "Trying to make our cities and countryside more beautiful" while "post-materialist 1" chose the opposites. "Mixed 1" chose both a materialist and a post-materialist item. The number of valid responses (N): United States 2,184, China 2,052, Japan 2,008, Taiwan 1,170, South Korea 1,175.

Source: Calculated by the authors using the WVS 2010-2014 data.

this country has strong defense forces” in set 1, half of the United States respondents are classified as materialists. In this criterion, Korean respondents are relatively non-materialistic and rather post-materialistic. The proportion of Korean respondents who select “Seeing that people have more say about how things are done at their jobs and in their communities” and “Trying to make our cities and countryside more beautiful” as their first two priorities is 20.9%, which is the highest among five countries.

Second, using a different set of materialist/post-materialist items, <Figure 8> shows a different result in terms of relative dominance of materialism in five countries. When we define materialists as those who chose both “Maintaining order in the nation” and “Fighting rising prices” in set 2, the proportion of materialists in Korea is 44.7%, which is closer to Taiwan (46.5%) or China (57.8%) than to Japan (24.4%) or the United

Figure 8 | Materialism vs. Post-materialism in Selected Countries: WVS Choice Set 2



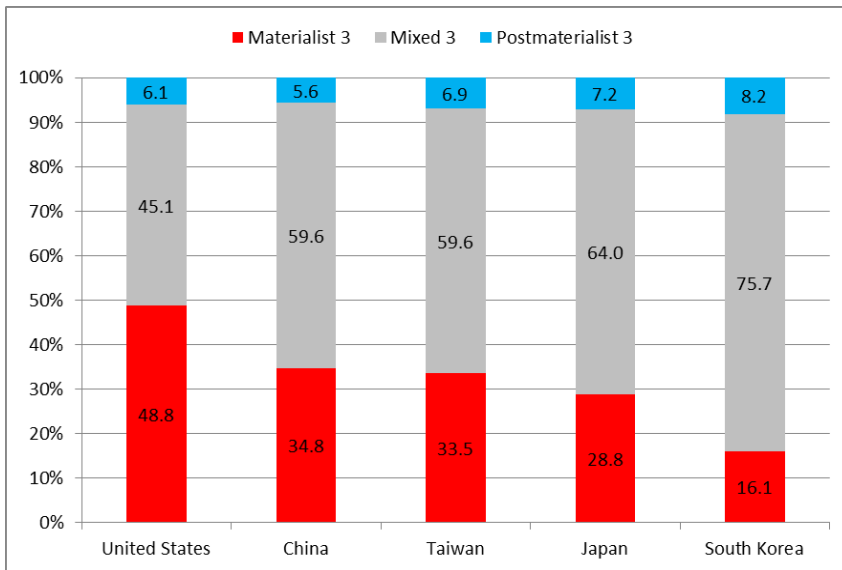
Note: “Materialist 2” chose “Maintaining order in the nation” and “Fighting rising prices” instead of “Giving people more say in important government decisions” and “Protecting freedom of speech” while “post-materialist 2” chose the opposites. “Mixed 2” chose both a materialist and a post-materialist item. The number of valid responses (N): China 2,071, Taiwan 1,171, South Korea 1,179, Japan 1,931, United States 2,187.

Source: Calculated by the authors using the WVS 2010-2014 data.

States (23.4%). And post-materialism measured by the proportion of respondents who chose both “Giving people more say in important government decisions” and “Protecting freedom of speech” makes the United States look more post-materialistic.

Third, when we define materialists by taking those who select “A stable economy” and “The fight against crime” in set 3, nearly half of the United States respondents are classified as materialists. As <Figure 9> shows, Korean respondents are relatively non-materialistic in this criterion with only 16.1% of materialists. The proportion of post-materialists, defined as those who chose both “Progress toward a less impersonal and more humane society” and “Progress toward a society in which ideas count more than money,” does not vary significantly across countries.

Figure 9 Materialism vs. Post-materialism in Selected Countries:
WVS Choice Set 3



Note: “Materialist 3” chose “A stable economy” and “The fight against crime” instead of “Progress toward a less impersonal and more humane society” and “Progress toward a society in which ideas count more than money” while “post-materialist 3” chose the opposites. “Mixed 3” chose both a materialist and a post-materialist item. The number of valid responses (N): United States 2,184, China 2,046, Taiwan 1,181, Japan 2,232, South Korea 1,178.

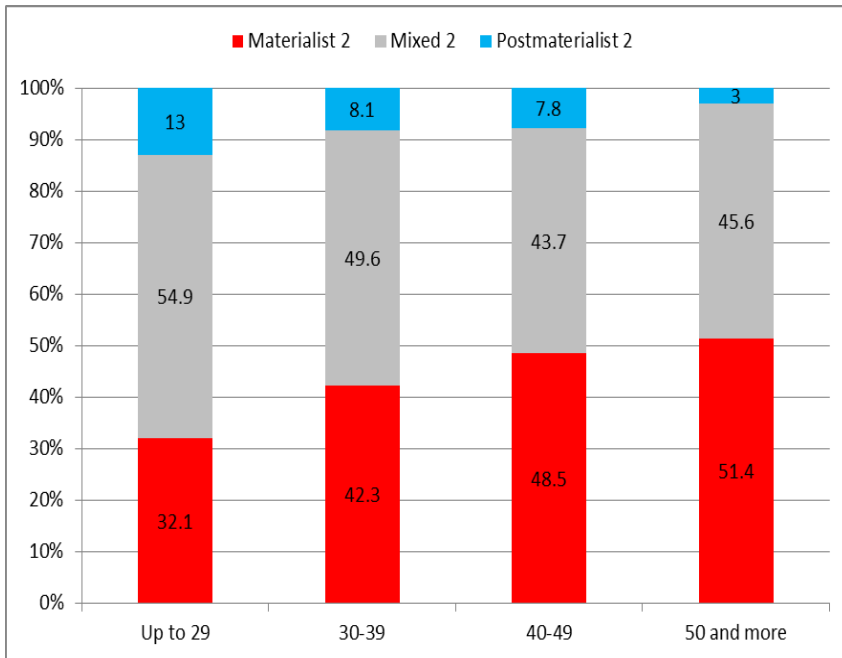
Source: Calculated by the authors using the WVS 2010-2014 data.

As such, the relative dominance of materialists across countries differs depending on the specific elements of each choice set, and, therefore, we should be cautious in concluding that Koreans are more/less likely to be materialists after looking at only one of the results provided in <Figure 7> through <Figure 9>. Moreover, the timing of a survey can also influence respondents' choice. Recent macroeconomic condition (e.g. global economic crisis in 2008-2009) and events involving national security (e.g. 9/11 terror) could have affected respondents' priority between materialistic values (e.g. economic growth and homeland security) and post-materialistic values.

In order to see whether a country is undergoing transformation of individual values, we may compare respondents' choices by their age cohort. If younger generation is less likely to choose materialistic values than older generation even faced with similar socio-economic environments at the current period with the generational difference being systematic, it may hint at an ongoing trend of value change in the society. To this end, we investigated potential difference by age band in Koreans' materialistic priority relatively well found in <Figure 8>. As depicted in <Figure 10>, the proportion of materialists is increasing as respondents are aging and, at the same time, post-materialists are more easily found in younger generation.

In general, materialism induces people set their life-time goal to acquisition and accumulation of material wealth and reinforces their competition over the same goal, which leads to an exhausting zero-sum game. However, Koreans' strong relative concern does not necessarily mean that they are caught by materialism because younger generation seems to have stronger relative concerns but weaker materialistic values.

Figure 10 Materialism vs. Post-materialism of Koreans by Age Cohort:
WVS Choice Set 2



Note: "Materialist 2" chose "Maintaining order in the nation" and "Fighting rising prices" instead of "Giving people more say in important government decisions" and "Protecting freedom of speech" while "post-materialist 2" chose the opposites. "Mixed 2" chose both a materialist and a post-materialist item. The number of valid responses of each age cohort among 1,179 Korean respondents (N): Up to 29: 246, 30-39: 260, 40-49: 270, 50 and more: 403.

Source: Calculated by the authors using the WVS 2010-2014 data.

4. How Can We Reduce Negative Effects of Social Comparisons?

Relative concerns can have both positive effects in its drive for self-improvement efforts and negative effects of unhappiness resulting from relative deprivation and blind herding. In the context of contemporary Korea, what can we say about the realities of these pros and cons of relative concerns and what should we do about them?

First, motivation triggered by upward comparison and imitating

efforts can be a stimulus for self-improvement. Koreans' high educational fervor and strong will to economize in the rapid growth period can also be interpreted as self-improvement efforts stimulated from upward comparison such as "I can also be like them if I study hard!" or "We can also get rich if we work hard!" Nowadays, however, the conventional method of upward mobility via entering prestigious universities or passing the bar exam or the higher civil service exam is collapsing because an increasing portion (and the majority) of these limited seats is taken by those from well-to-do families and elite high schools.

In such situations, upward comparison only leads to a source of frustration and discomfort much less playing the role of a catalyst for self-improvement. It is not an easy but necessary policy agenda to ensure "fair starting point" and equal opportunity in the midst of widening disparity in both the quantity and quality of investment in children owing to growing income inequality. Government must give support to underprivileged children in the early stages of their life. Local communities must also encourage them not to give up too early through mentoring and care. In addition, universities, public institutions, large corporations and others can expand affirmative action to discover the gifted but underdeveloped ("pearl in mud") and provide them with an opportunity to flourish.

Second, as found in this study, people's tendency for constant comparison with others and eagerness to outdo others cause negative externalities to society as it undermines consideration or sympathy for others, harms cooperation, and spreads distress and anxiety by triggering excessive competition. In addition, it leads to a zero sum situation in which winners are limited, people become blind followers and competition becomes rat race as social inefficiency causes people involved in competition to pay greater cost without improving their rankings. Now that people believe that social mobility is weakening, social comparison induces individual discontent and discouragement rather than it serving as a driver of self-improvement. Then, also in the social context, social comparison may not contribute to economic growth through motivational effect but only serves as detrimental factor that makes the majority of people feel unhappy.

In order to rectify this situation, we may need institutional reforms

specifically in education system and the labor market that drive individuals to compete with others without considering and helping them to win the race by all means. Parents who experienced modernization and rapid economic growth possess highly materialistic values and take the “ends justifies the means” approach. And their values and way of thinking are reflected on the upbringing and education of their children, which is reflected in the current Korean education state, boasting highest test scores but embarrassed by the lowest interests in learning and self-efficacy.

Now Koreans need to set their educational goal as enhancement of self-esteem, avoidance of excessive peer competition, and teaching youth the value of mutual respect and the power of cooperation. And, therefore, they should stop mass production of young losers from the school and make up for the insufficiency of social capital such as social trust, cooperative problem solving, and conflict resolution. In addition, making compensatory wage differentials work in the labor market, they must increase the compensation for hardworking or risk-taking actions in innovative sectors in conjunction with decrease in economic rent of coveted occupations that give insiders both high income and job security thanks to entrance barriers and institutional protections.

5. Can We Make Good Use of Relative Concerns?

If we believe that “every cloud has a silver lining,” we may also find some ways to make good use of people’s concern about relative position. In this study, we suggest some ideas of utilizing relative concern for the whole society and using it as a motivator for self-improvement.

A. Nudge Ideas Using Relative Concern

The nudge effect, now broadly known to the public via a popular book *Nudge* by Thaler and Sunstein (2008), is a way of influencing people’s behavior without telling them specifically what to do. Here, we seek for behavioral approaches to nudge those who have a strong relative concern into desirable actions such as donation or energy saving.

1) Conspicuous Donation

First, we need to know that, in what conditions, the selfish, non-altruistic, jealous, snobbish persons act better for the society. We employ the question in <Box 8> to obtain relevant information on individual preference for making their good deeds visible to others.

Box 8

As the saying goes, do not let your left hand know what your right hand is doing, some say that doing a good deed is not for others to see and but to be done secretly. Others claim that good deeds should be known to others as it can serve as an inspiration to others for wanting to help. Please, circle the number that corresponds to your level of agreement.

Do not let your left hand know what your right hand is doing	←————→	Let others know good deeds you are doing								
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

The mean value of respondents' answers (scale from 0 to 10) to the above question is 4.555 implying that slightly more people are sympathetic to the Bible's teaching, "Do not let your left hand know what your right hand is doing". But taking this information with the regression analysis shown in <Table 43> into account, we find that those with stronger relative concerns would prefer letting others know their good deeds. Following Veblen (1899)'s naming of "conspicuous consumption" or "conspicuous leisure" to show off to other people, we may call this interdependent behavior "conspicuous good deed".

Here, we provide an example of nudging people into conspicuous donation. Our goal is to make those who have a strong relative concern donate more because they make more money but donate less as shown before. In <Box 9>, six hypothetical situations are given to respondents – situations (1) and (2) suppose increased demand for donation, situations (3) and (4) create an atmosphere to follow others, and

Table 43 | Relative Concern and Preference for Conspicuous Good Deed

Dependent variable	Mean of dep. var.	Coef.	Std. Err.	t-value	Model
I would like to let others know the good deeds that I am doing. (0~10)	4.555	.280	.054	5.23	OLS

Note: The regression estimates are on the key explanatory variable, the degree of relative concern (5-point scale). We controlled for socio-demographic variables in Table 2.

situations (5) and (6) provide an environment for conspicuous donation. They are given three choices of donation amount – reduce to 5,000 won, no change (10,000 won), and increase to 50,000 won using their possessions of each one bill of 5,000 won, 10,000 won, and 50,000 won.⁴¹

Box 9

Q. (Hypothetical situation) You have been donating 10,000 won to charity at monthly gatherings of donors. It is an anonymous donation in a sealed envelope. Of the following situations, which would be your response? (You currently have one bill of 5,000 won, 10,000 won, and 50,000 won respectively, and all other conditions are assumed to remain unchanged in each situation.)

When I was told that		I would reduce my donation to 5,000 won	I would not change and donate 10,000 won	I would increase my donation to 50,000 won
(1)	the number of people the charity decided to support increased five folds this month,	①	②	③
(2)	the number of people the charity decided to support increased two folds this month,	①	②	③
(3)	average monthly donation per donor is 5,000 won,	①	②	③

41 As respondents’ hypothetical money possession, we design this package of three kinds of notes – 5,000 won, 10,000 won, and 50,000 won considering the present currency note system of Bank of Korea, which has four kinds of bill including 1,000 won, and that 1,000 won is too small to donate compared to assumed usual donation amount of 10,000 won.

(4)	average monthly donation per donor is 50,000 won,	①	②	③
(5)	donation envelope is not ready this month and I would have to reveal my donation in front of other people,	①	②	③
(6)	donors will be given a donation envelope with their name written on it this month and the amount of donation will be posted on the charity's newsletter,	①	②	③

a) Relative Concern and Altruistic (Need-Based) Donation

First, when the number of people who need support increased five folds, 15.6% of respondents chose to increase their donation (also five folds from 10,000 won to 50,000 won) and 72.5% to stay at their usual donation (10,000 won). To the increased demand for donation by two folds, however, only 4.8% would increase their donation and 86.7% would not change their usual donation amount.

Table 44 | Relative Concern and Altruistic (Need-Based) Donation

Dependent variable		Coef.	Std. Err.	z-value	Model
If the number of people the charity decided to support increased five folds this month, 0=I would not change the amount and donate 10,000 won (72.5%); 1=I would increase my donation to 50,000 won (15.6%); 2=I would reduce my donation to 5,000 won (11.9%)	Increase	-.081	.056	-1.44	Multinomial logit
	Reduce	.189	.065	2.89	
If the number of people the charity decided to support increased two folds this month, 0=I would not change the amount and donate 10,000 won (86.7%); 1=I would increase my donation to 50,000 won (4.8%); 2=I would reduce my donation to 5,000 won (8.5%)	Increase	-.169	.094	-1.80	Multinomial logit
	Reduce	.209	.075	2.78	

Note: Same as the previous table.

<Table 44> shows that notifying the increasing demand for donation money is not an effective way to make those with a strong relative concern donate more. On the contrary, they are more likely to reduce their donation in such situations that require more donation.

b) Relative Concern and Herding (Following Others) Donation

Second, we examine how respondents would adjust their donation amount when they are told that the average donation amount is either half (5,000 won) or five folds (50,000 won) compared to their usual donation. The fraction of respondents who would follow the average is 24.7% when donation is reduced (decreasing amount herding), 19.7% when donation is increased (increasing amount herding), and 6% in both directions (two-way herding).

<Table 45> reports that those with a strong relative concern are more likely to follow the average amount of donation. As a result, they show higher tendencies to reduce their donation when they know that the average is lower than their usual donation and increase when they know the average is higher than their usual one. Therefore, a fundraising strategy making use of their herding inclination might work. But we also need to consider that they would readily follow the average when donation amount is reduced (coefficient = .030) than when donation is increased (coefficient = .018). And the strength of concern about relative

|| Table 45 || Relative Concern and Herding (Following Others) Donation

Dependent variable	Coef.	Std. Err.	z-value	Model
Decreasing amount herding donation dummy (0/1) =1 if reducing donation to 5,000 won when average monthly donation per donor is 5,000 won (24.7%)	.030	.009	3.42	Derivative probit
Increasing amount herding donation dummy (0/1) =1 if increasing donation to 50,000 won when average monthly donation per donor is 50,000 won (19.7%)	.018	.008	2.25	Derivative probit
Two-way herding donation dummy (0/1) =1 if reducing donation to 5,000 won when average is 5,000 won <i>and</i> increasing donation to 50,000 won when average is 50,000 won (6%)	.007	.005	1.56	Derivative probit

Note: Same as the previous table.

position does not show a significant association with two-way herding, which implies that relative concern does not necessarily mean always following the average. As such, their herding behavior might be skewed in favor of their own interest. Nonetheless, as long as their spending for others tends to be lower than the average, letting them know the average can drive them to increase donation.

c) Relative Concern and Conspicuous (Showing Off) Donation

Then, what would be the case if people have to reveal their donation amount in front of other donors or if their donation amount will be posted along with their names on the newsletter? When their donation amount, not sealed in envelopes can be detected by other donors, 9.6% of respondents choose to increase their donation by five-fold. Furthermore, if the amount of donation with their names will be open to the public via the newsletter, 15.6% would make a five-fold donation to the charity.

The regression results in <Table 46> show that in these situations, those who have stronger relative concerns are more likely to increase their donation. The multinomial logit estimates are much more significant economically and significantly than previous estimates in <Table 44> and <Table 45>. Therefore, making a situation of conspicuous donation would be the most effective way to open the fat wallet of those who have a strong relative concern.

As such, this study finds a possibility that we utilize the relative concern of people, especially the rich to nudge them into more contribution to philanthropic capitalism via charitable donation or honest tax payment. For example, we may seek more strategic fundraising that considers people's inclination of social comparison (conspicuous donation) and more tailored approach that accounts for the different degree of relative concern by the characteristics of individual and region as found in Chapter 4, which may improve the effectiveness of social campaigns.

Table 46 | Relative Concern and Conspicuous (Showing Off) Donation

Dependent variable		Coef.	Std. Err.	z-value	Model
If donation envelope for this month is unprepared and I have to reveal my donation amount in front of other people, 0=I would not change the amount and donate 10,000 won (85.4%); 1=I would increase my donation to 50,000 won (9.6%); 2=I would reduce my donation to 5,000 won (5.0%)	Increase	.344	.073	4.71	Multinomial logit
	Reduce	.159	.095	1.68	
If donors will be given a donation envelope for this month along with their name on it and if the amount of donation will be posted on the charity's newsletter , 0=I would not change the amount and donate 10,000 won (79.5%); 1=I would increase my donation to 50,000 won (15.6%); 2=I would reduce my donation to 5,000 won (4.9%)	Increase	.331	.060	5.56	Multinomial logit
	Reduce	.152	.096	1.59	

Note: Same as the previous table.

2) Energy Saving by Peer Pressure

The following question and related analysis show another example of nudging people into desirable actions such as saving energy. The hypothetical question in <Box 10> examines what kind of campaign slogan would be effective to make people save electricity.⁴²

Box 10

Q. (Hypothetical situation) You have your air conditioner running full-time every day in summer. One day you come across a campaign slogan promoting the use of fans instead of air conditioning. Of the slogans listed below, which one would induce you to turn off your air conditioning and turn on your fans?

⁴² This question in our survey was inspired by Alex Laskey's TED lecture (Feb. 2013).

- ① “Did you know you could save more than 10,000 won a month this year? Turn off your air conditioning, turn on your fans!”
- ② “Energy overuse destroys environments, causing climate change. Turn off your air conditioning, turn on your fans!”
- ③ “Mature citizenship can prevent blackouts brought by the lack of electricity. Turn off your air conditioning, turn on your fans!”
- ④ “Recent survey shows that 77% of residents in your community turned off their air conditioning and turned on their fans. Please join them. Turn off your air conditioning, turn on your fans!”
- ⑤ Any of the above (①~④) slogans will make me turn on my fans instead of air conditioning.
- ⑥ None of the above (①~④) slogans will make me turn on my fans instead of air conditioning.

Hereafter, we will use abbreviated version of slogans such as “Save money,” “Save the planet,” “Be a good citizen,” and “Your neighbors are doing better” to indicate each campaign slogan in a concise manner. Around 20% of respondents choose “Save money”, “Save the planet”, or “Be a good citizen” respectively as the slogan that is personally appealing. The proportion of respondents who select “Your neighbors are doing better” is a mere 6%.

Table 47 | Relative Concern and Effective Motives to Save Energy

Turning off air conditioning when coming across a campaign slogan that reads:	Choice frequency	Coef.	Std. Err.	z-value
Save money	21.7%	.358	.128	2.80
Save the planet	20.3%	-.064	.131	-0.49
Be a good citizen	20.2%	.091	.131	0.69
Your neighbors are doing better	6.0%	.582	.176	3.31
Any of the above slogans	20.7%	-.082	.131	-0.62
None of the above slogans	11.1%	0	(omitted)	

Note: The dependent variable is the degree of relative concern (5-point scale) and the estimates are from an ordered logistic regression (N=3,000). Socio-demographic variables in Table 2 are controlled for in the regression.

Our main goal, however, is to induce those people with strong relative concern to turn off the air conditioning despite their tendency to pursue their own interest at the expense of others as shown before (recall <Table 30> for example). In <Table 47>, we can see that “Save the planet” and “Be a good citizen” are ineffectual slogans in affecting them. Instead, they respond to “Save money,” which looks plausible taking their materialistic values into account. But the most effective slogan for them is “Your neighbors are doing better” in terms of both economical and statistical significance. This finding suggests that we can exploit their keen sense of comparison with others to induce saving energy through means of peer pressure.

B. Self-Improvement and Self-Enhancement via Upward Comparison

Upward social comparisons are more likely to motivate people to achieve more or reach higher (i.e., self-improvement), while downward social comparisons are more likely to make them feel better about themselves (i.e., self-enhancement) (Gibbons, 1986). As such, a strong desire to improve themselves, often motivated by upward comparison, is the bright side of relative concern specifically for those who want to triumph over adverse situations. This strong desire for self-improvement, reinforced by upward comparison may also help those with stronger relative concerns outdo others in labor market performances and accumulate wealth as our study shows.

As previously mentioned in Chapter 3, Easterners typically have a stronger desire to make upward comparisons than Westerners (Chung and Mallery, 1999) and to improve themselves via self-criticism (Heine et al., 1999; Heine et al., 2001; Lehman et al., 2001). In addition, Easterners place greater importance on collectivistic values which is at variance with Westerners who stress the importance of individualistic values, and, therefore, advance themselves on collectivist attributes (Sedikides et al., 2003; Kurman, 2001). In other words, Easterners tend to strive to follow up the superior comparison group and typically feel the notion of self-enhancement as a group in the interdependent collectivistic culture.

Apart from the influences of downward comparison or culture of

self-enhancement, psychologists suggest the possibility that upward social comparison itself induces self-enhancement through assimilation of the self to the comparison target's characteristics (Collins, 1996). In an upward comparison, people can improve their views of self or form a more positive perception of their personal reality by finding similarities of themselves with the comparison group and feeling that they are part of the elite or superior (Suls and Wheeler, 2002). This possibility, however, can be realized only when: (1) there does not exist too large gap between the self and the target (Wheeler, 1966); (2) the skill or success being compared is attainable (Lockwood et al., 1997); and (3) the comparison target is perceived as a competitor (Wood, 1989). Otherwise, upward comparisons targeted to unreachably higher status or exclusive groups with high entrance barriers only lead to lowered self-regard or self-esteem (Tesser et al., 1988).

In the context of contemporary Korea, what does a strong concern about relative position, which essentially includes upward social comparisons, mean to people? As long as such relative concerns provide a strong motivation for self-improvement, upward comparisons can continue to help both individuals and the society to advance forward with further development and prosperity specifically in an interdependent collectivistic culture (White and Lehman, 2005). But now Koreans may no longer be able to expect such a rapid economic growth as they did in the developing era of compressed growth. Moreover, most Koreans share a common definition of success – working in the government, public enterprises, financial world or the “chaebol” (i.e. Korea's family-owned conglomerates) that provide secure, well-paid and prestigious jobs, which require winning in educational arms race to enter a select few elite universities beginning from the very early stages of life. Hence Koreans tend to make the same kind of upward comparison and compete too narrowly for defined routes of success, which hinders students' cooperative learning and makes their competition extremely tough. Among the OECD countries, Korea has the highest depression and lowest happiness of adolescents, the highest PISA scores but lowest self-efficacy and lowest interest in learning of students aged 15, the highest private tutoring expenses and lowest birth rates, the highest college advancement rates of youths which churns out

highly educated jobless youth lost in its direction. Their desperate status race makes the vast majority of people feel like losers. In such situation, upward social comparison does not necessarily result in desirable outcomes even from an individual perspective, and even in terms of self-improvement, not to mention from the social perspective and in terms of self-enhancement.⁴³

43 Park and Huebner (2005) found that Korean students reported lower life satisfaction than their American counterparts, consistent with the results in adult studies (e.g. Diener and Diener, 1995). Korean students report significantly less satisfaction in the self-domain while American students report less satisfaction in the school domain (Park et al. 2004), reminiscent of a stylized fact that Easterners typically show self-criticism that overshadows self-enhancement (Kitayama et al., 1995). Park (2005) also found that the life satisfaction of Korean youth in global domain decreased from childhood to adolescence.

CHAPTER 8

Conclusion

Based on comprehensive analyses using experimental surveys that contain hypothetical questions, we find that one's strength of concern about relative position is associated with a variety of personal backgrounds and values as well as their outcomes and behaviors. Those who have stronger relative concerns are more likely to: be young, female, have children, and live in upscale districts (e.g., Gangnam area); place economic values above non-pecuniary values (e.g., meaning, contribution to the society); take risk for monetary gain; be affluent given the same socio-demographic conditions; exhibit traits of overconsumption and conspicuous consumption; have psychological health problems (e.g., stress, depression, anxiety, insomnia); be unhappy given the same socio-demographic and economic conditions; show high inclinations toward status race and herding; and have low degrees of altruism (or narrow altruism confined to children and spouse) or sympathy. However, this study also suggests that we can nudge them into desirable actions (by making use of their keen sense of other people's eyes), for example, into (conspicuous) donation and saving energy (by peer pressure). In addition, we discuss the role of upward social comparison (i.e., desire for status) as a powerful motivator for self-improvement and also the potential for self-enhancement, with the limitation in the context of contemporary Korea being tagged along.

We consider our future research in the following directions. First, we will try to model the heterogeneity of relative concerns in individual preference. Such theoretical models need to accommodate our findings

that those who have higher relative concerns allocate more time for moneymaking work and less for serving others (and maybe leisure too) and spend more money on their own consumption (specifically buying positional goods) but less on donation. Moreover, they seem to maximize consumption (or income) rather than happiness, which would be the trickiest part of modeling if we start with a conventional utility function.

Second, we would like to investigate the reason why those who have higher relative concerns outdo other people in labor market performance and wealth accumulation but are less happy than others. Their better financial outcomes can be attributed, at least in part to, their higher priority in moneymaking and risk-seeking for higher return as shown in this study, but further investigation may unveil other undocumented factors. Then, why are they less happy and suffer from psychological problems? One may point out that they live with a factor detrimental to their happiness – i.e., the disutility from upward comparison. Others may argue that ingredients for happiness such as joyfulness (what gives you pleasure), flow (complete absorption in what you do), and meaningfulness (often coming from sharing with or helping others) are found deficient, insufficient or imbalanced for these people.⁴⁴

As for the influence of volunteering on happiness from meaningful life, psychologists provide empirical evidences. For instance, Meier (2006) finds that volunteers report higher well-being scores than non-volunteers; they are less depressed, and their mortality rate is lower than average. Moreover, Meier and Stutzer (2008) suggest that volunteering causes happiness (not only vice-versa) from their finding that when people lost volunteering opportunities, subsequent happiness ratings declined. In the same vein, Harbaugh et al. (2006)'s neural study of

44 Gallup's comprehensive study on well-being of people in more than 150 countries also emphasizes balanced constitution of life. This study reveals five universal, interconnected elements that shape our lives: (1) Career Well-being: How you occupy your time/liking what you do each day; (2) Social Well-being: Relationships and love in your life; (3) Financial Well-being: Managing your economic life to reduce stress and increase security; (4) Physical Well-being: Good health and enough energy to get things done on a daily basis; (5) Community Well-being: Engagement and involvement in the area where you live (Rath and Harter, 2010).

charitable giving decisions made while in an fMRI machine finds that neural activation from charitable giving and receiving money for oneself demonstrate striking similarity. They also find that neural activity as well as subjective satisfaction is larger in the voluntary situation than in the mandatory situation such as being taxed.⁴⁵

Third, we will compare the results of Korea with those of other countries. For now, we cannot conduct comparable analyses for other countries because our new experimental questions were used only in Korean survey. On top of that, the lack of variables regarding the degree of relative concern crucially limits using other datasets for this topic, with an exception of European Social Survey. As for the best scenario, the inclusion of relevant questions in upcoming annual surveys from Osaka University's GCOE study, which we benchmarked for Korean survey, would enable us to extend our analyses to Japan, the United States, China, and India and conduct international comparison.

Finally, a longitudinal study may be conducted in the future to gauge the stability of relative concern and explore its fundamental determinants. The resultant panel data will also enable us to investigate the causal relationships between variables, which are found only as the correlations in this study. Then, more solid policy advices may be derived from the study.

This study leaves a message for South Koreans, particularly those who have a strong concern about relative position. Their social comparison can be helpful if it encourages them to work harder to meet their goals, or fix their weaknesses. Taken to the extreme, however, social comparison makes them profoundly unhappy as found in this study, which implies that they are caught in the practice of judging their self-worth by how well they compare to others. In order to become

45 Other studies also show that unpaid volunteer work pays in terms of satisfaction or self-esteem. Using data on volunteer firefighters, Carpenter and Myers (2010) find that the decision to volunteer is positively associated with altruism as well as with concern for social reputation or "image." Moreover, by utilizing variation in the presence and level of small stipends paid to the firefighters, they find that the positive effect of monetary incentives declines with image concerns, which supports a prediction that extrinsic incentives can crowd out image motivation for prosocial behavior.

happier, they must cultivate the mental habit of appreciating what they have and measuring their own success by internal standards. They should also revisit the conception of a good life for their own happiness, pursuing satisfying careers and meaningful daily life rather than prestigious careers and materialistic maximization. This is a way of transforming Korea into a less stressed-out country in which fewer students commit suicide, and more employees pursue a better work-life balance and the meaning of work, not just pay. Koreans' strong relative concern has been a double-edged sword contributing to both rapid growth and high stress; and now is time to contemplate their old slogan of getting ahead by all means to win the race.

Moreover, Koreans are facing economic slowdown and limited availability of good jobs, which have exacerbated competition in a zero-sum game with a narrow definition of success. Together with slowing economic growth, decreasing social mobility would make it more difficult to stimulate the beneficial effects of relative concern.

On the contrary, the damaging effects of relative concern are apparently clear. For example, the overheated competition for private tutoring has been noted to have detrimental effects on the sound development of children's brains and bodies, has drained the retirement savings of many families, and has caused social anxiety, a low birth rate, and a waste of social resources. Behind such wasteful competition, there exists relative concern to worry that someone else's children might be receiving a better education.

Therefore, the government should take action and develop policies to reduce negative externalities associated with relative concern and its inducing environment. In the sector of education, for instance, the government should prevent education gap between families and regions from widening further. In contemporary Korea, the goal of education should be defined as developing a sense of self-esteem that can be immune to comparison with others. The negative effects of a bell-curved grading system (i.e., relative evaluation) need to be redressed not to weaken students' ability to cooperate and solve the problem together and not to ingrain relative concern in the educational system. Instead, team project-based learning needs to be encouraged and extended in the classroom. In addition, caution is advised when it comes to introducing

an education system that could lead to vertical stratification based on test scores rather than horizontal diversification based on curricula and activities tailored to individual students' interests and career plans.

Since relative deprivation mirrors inequality in the society, the government also needs to make an effort to correct excessive gap in working conditions in the labor market between irregular workers and regular workers and between SMEs and large corporations. Furthermore, active support should be given to students who find themselves at a disadvantage in zero-sum status race so that they can pursue a variety of paths to success.

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| Appendix |

Selected Questions from KDI Happiness Study 2013

AQ 1. (Hypothetical situation) When you are compared for each of the followings, which one would you choose to be in between ① and ② situations? (The real value of money is always assumed to remain unchanged.)

※ Please, consider that “others” here refer to average people of the society you are living in.

Annual after-tax income	①	You: 50 million won Others: 25 million won	②	You: 100 million won Others: 200 million won
Number of days per year with physical ailments	①	You: 5 days Others: 10 days	②	You: 2 days Others: None
TV screen size	①	You: 32 inch Others: 24 inch	②	You: 46 inch Others: 63 inch
Number of criticism from your boss per year	①	You: 4 times Others: 8 times	②	You: 2 times Others: 1 time
Number of compliments from your boss per year	①	You: 2 times Others: None	②	You: 5 times Others: 12 times
Apartment size	①	You: 80m ² Others: 50m ²	②	You: 120m ² Others: 165m ²
Physical attractiveness (score out of 100 points)	①	You: 60 points Others: 40 points	②	You: 80 points Others: 100 points
Average days of night overtime per month	①	You: 8 days Others: 16 days	②	You: 4 days Others: None
Price of a job interview outfit	①	You: 600 thousand won Others: 400 thousand won	②	You: 800 thousand won Others: 100 million won
Intelligent quotient (IQ)	①	You: 110 Others: 90	②	You: 130 Others: 150

Government's financial support for a park nearby home	①	Park near your house: 100 million won Park near others' house: 50 million won	②	Park near your house: 200 million won Park near others' house: 400 million won
Number of potholes on the street within 500 meters of home	①	Of your house: 5 Of others' house: 10	②	Of your house: 2 Of others' house: None
Length of commute time	①	You: 2 hrs. Others: 4 hrs.	②	You: 1 hr. Others: 30 min.
Education level	①	You: High school graduate Others: Middle school graduate	②	You: Bachelor's degree Others: Master's degree
Weeks of vacation	①	You: 1 week Others: None	②	You: 2 weeks Others: 4 weeks
Lump-sum cancer insurance payment after cancer diagnosis	①	You: 60 million won Others: 40 million won	②	You: 80 million won Others: 100 million won

AQ 2. (Hypothetical situation) When your grandchild is compared for each of the followings, which one would you choose for them to be in between ① and ② situations? (The real value of money is always assumed to remain unchanged)

※ Please, consider that “others’ grandchildren” here refer to average peers of the society your grandchildren will be living in.

Grandchild's annual after-tax income	①	Your grandchild: 50 million won Others' grandchild: 25 million won	②	Your grandchild: 100 million won Others' grandchild: 200 million won
Grandchild's physical attractiveness (score out of 100 points)	①	Your grandchild: 60 points Others' grandchild: 40 points	②	Your grandchild: 80 points Others' grandchild: 100 points
Vehicle price, provided by grandchild's company	①	Your grandchild: 60 million won Others' grandchild: 40 million won	②	Your grandchild: 80 million won Others' grandchild: 100 million won
Average accident rate of the vehicle grandchild is	①	Your grandchild: 8% Others' grandchild: 10%	②	Your grandchild: 6% Others' grandchild: 4%

given by his/her company (a lower rate is safer)			
Price of a bag that granddaughter would carry for her school reunion party	①	Your granddaughter: 600 thousand won Others' granddaughter: 400 thousand won	② Your granddaughter: 800 thousand won Others' granddaughter: 1 million won
Pocket money expected from grandchild after retirement	①	Your grandchild: 500 thousand won Others' grandchild: 250 thousand won	② Your grandchild: 1 million won Others' grandchild: 2 million won
Grandchild's scholarship printed on a university tuition bill (5 million won)	①	Your grandchild: 1500 thousand won Others' grandchild: 500 thousand won	② Your grandchild: 3 million won Others' grandchild: 4 million won
Grandchild's test scores (out of 100 points)	①	Your grandchild: 50 points Others' grandchild: 49 points	② Your grandchild: 98 points Others' grandchild: 99 points
Average monthly expenditure on private tutoring for grandchild (middle school)	①	Your grandchild: 200 thousand won Others' grandchild: 100 thousand won	② Your grandchild: 400 thousand won Others' grandchild: 800 thousand won
Grandchild's study hours per week (high school)	①	Your grandchild: 10hrs. Others' grandchild: 5hrs.	② Your grandchild: 20hrs. Others' grandchild: 40hrs.
Grandchild's exercise hours per week (elementary school)	①	Your grandchild: 4hrs. Others' grandchild: 2hrs.	② Your grandchild: 8hrs. Others' grandchild: 16hrs.
Grandchild's intellectual quotient (IQ)	①	Your grandchild: 110 Others' grandchild: 90	② Your grandchild: 130 Others' grandchild: 150
Grandchild's education level	①	Your grandchild: High school graduate Others' grandchild: Middle school graduate	② Your grandchild: Bachelor's degree Others' grandchild: Master's degree
Grandchild's vacation period	①	Your grandchild: 1 week Others' grandchild: None	② Your grandchild: 2 weeks Others' grandchild: 4 weeks
Lump-sum cancer insurance payment grandchild would receive after cancer diagnosis	①	Your grandchild: 60 million won Others' grandchild: 40 million won	② Your grandchild: 80 million won Others' grandchild: 100 million won

AQ 3. (Hypothetical situation) You have paid 500,000 won every month for your child's private tutoring, which is about the average of the whole society. Of the following situations, which would be your response? (All other conditions are assumed to remain unchanged in each situation.)

		I will spend _____ on private tutoring expense.				
		0 won	250,000 won	500,000 won	750,000 won	1 million won
1	When my wage is raised by 500,000 won,	①	②	③	④	⑤
2	When my wage is raised by 250,000 won,	①	②	③	④	⑤
3	When my wage is cut by 250,000 won,	①	②	③	④	⑤
4	When my wage is cut by 500,000 won,	①	②	③	④	⑤
5	When my child is getting better scores,	①	②	③	④	⑤
6	When my child is getting lower or same scores,	①	②	③	④	⑤
7	When a study released shows that private tutoring is not that effective and causes adverse impacts in the long term,	①	②	③	④	⑤
8	When the hagwon my child goes to advises that private tutoring needs increasing to at least 750,000 won,	①	②	③	④	⑤
9	When all other parents raise private tutoring expense to 750,000 won,	①	②	③	④	⑤
10	When all other parents decide to spend just 250,000 won on private tutoring and continue their decision,	①	②	③	④	⑤

		I will spend _____ on private tutoring expense.				
		0 won	250,000 won	500,000 won	750,000 won	1 million won
11	When all other parents decide not to go for private tutoring and continue their decision,	①	②	③	④	⑤
12	When the school informs me of opening a good after-school program and letting me know that I don't need to send my child to any hagwon,	①	②	③	④	⑤
13	When university expands the system of evaluating self-directed learning which selects students who have taken no or few private tutoring,	①	②	③	④	⑤
14	When the KSAT's level of difficulty becomes very easier so that the test is no longer discriminatory,	①	②	③	④	⑤
15	When the government announces a policy that aims to increase the rate of matching the KSAT to contents of EBS's (Educational Broadcasting System) teaching materials to 100%,	①	②	③	④	⑤
16	When college graduates are less employed but high school graduates are given with more opportunities for hiring and promotion,	①	②	③	④	⑤
17	When the government and large enterprises decide not to include the information on college applicants graduated for the recruitment of new regular employees,	①	②	③	④	⑤