International Journal of Social Science and Economic Research

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

THE EFFECTS OF NONCOGNITIVE SKILLS OF TIME PREFERENCE ON STUDY TIME AND SCHOOL RECORDS AMONG JAPANESE JUNIOR HIGH SCHOOL STUDENTS[1]

[1]TAKESHITA Ryo, [2]IMAI Moe

[1]Junior Associate Professor, Faculty of Law, Tokoha University, Japan

[2]Master's Student, Graduate School of Humanities and Social Sciences, Shizuoka University, Japan

ABSTRACT

In this study, we investigate whether noncognitive skills of time discounting preference have 1) an effect on the attitude toward studying, and 2) a direct effect on school records. From the estimation results which investigate the relationship between noncognitive skills of time preference and the attitude toward studying, we reveal that students with low time discount rates study longer than students who think that the present is more important than the future. Moreover, the estimation results concerning the relationship between noncognitive skills of time preference and school records show that noncognitive skills of time preference still have positive effects on school record even when we controlled for study time.

Keywords: Noncognitive Skills, Time Preference, Study Time, School Record

JEL Classification: C13, C21, C25, I24

1. INTRODUCTION

In Japan, the relationship between family background and children's test scores or educational achievements has been investigated. For example, many previous studies have examined the relationship between the parents' income and children's school decisions, and education expense and children's test score.[2] However, children's educational performance does not only depend on parents' income. Needless to say, children's attitude toward studying is very important.

[1] The data for this secondary analysis, *2011 Survey on the Everyday Consciousness of Parents and Children* was provided by the Social Science Japan Data Archive, Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo.

[2] For associated studies, see Kubota (2013) and Mimizuka (2007).

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

Then why is important to study and go on to a higher grade school? One of the major reasons is to accumulate human capital during students' educational years. Another reason is to gain an advantage in the labor market by passing difficult entrance examinations thus showing high ability to others.[3] However, the effects of an academic background become apparent when children enter the labor market and while studying at school the future seems very far away to children. Children who study hard to gain advantage when they enter the labor market, or can study harder toward a distance future might have low time discount rate. On the other hand, children who don't study and think that the present is more important than the future might have high discount rate and be myopic.

Generally, cognitive skills are measured by IQ score, word knowledge, mathematical knowledge, and so forth. On the other hand, the characteristics of diligence, self-control, time preference, sociability, etc. are called noncognitive skills.[4] Recently, the relationship between noncognitive skills and wages and between noncognitive skills and test score have become investigated (Heckman et al. (2006) and Toda et al. (2013)). However, although Rauber (2007) shows that noncognitive skills have positive and significant effects on test scores, he doesn't control for study time.[5] Thus, whether noncognitive skills directly affect test scores or indirectly through attitude toward studying is not examined.

In this paper, we investigate whether noncognitive skills have 1) an effect or not on the attitude toward studying, and 2) whether they have a direct effect on school records.

This paper is organized as follows: In Section 2, the relevant literature is discussed. The data and variables used in estimations are described in Section 3, and the estimation results in Section 4. Finally, Section 5 summarizes the major findings.

2. LITERATURE REVIEW

In this section, we review previous studies that have investigated noncognitive skills. First, we introduce previous studies which have examined the relationship between noncognitive skills and wages or the labor market. Heckman et al. (2006) analyzed the effects of cognitive and noncognitive skills on wages, choice of occupation, work experience, and antisocial behavior using NLSY79 sample. The results reveal that wages are affected equally by noncognitive skills and cognitive skills. Moreover, they show that both cognitive and noncognitive skills have an

[3] These two ideas are known as the human capital theory and the signaling theory, respectively. For the human capital theory, see Becker (1962). The signaling theory is described by Spence (1978) in detail.

[4] For detail explanations of cognitive and noncognitive skills, see Heckman et al. (2006).

[5] Rauber (2007) includes the independent variables of the number of evenings spent at home and a residential school dummy to check for robustness; the results indicated that the more evenings spent at home the more the average grade improved three years later. These variables might be interpreted as the proxy variables of study time.

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

effect on work experience and the choice of white- versus blue-collar occupations.[6]

Flossmann et al. (2007), using longitudinal data from the 1999 wave of the German Social Economic Survey, investigated the relationship between noncognitive skills and wages. Using standard least square regression and the factor structure model according to gender, the results reveal that noncognitive skills have a significant effect on the wage determination process. They suggest that economic success is already partly determined in early childhood because noncognitive skills are influenced by parental behavior and education.

Toda et al. (2013), using Japanese data, investigated the relationship between noncognitive skills and educational attainment, employment status of first job, employment status of current job, and current wages. They adopt the lifestyle habits at the age of 15 years as proxy variables of noncognitive skills. These proxy variables are retrospective information because the data set which they use is cross-section data. Specifically, they used information such as diligence, extroversion, and agreeableness as noncognitive skills. The results of the probit model show that noncognitive skills affect educational attainment and employment status. Moreover, using ordinary least squares (OLS) regression, they found that high noncognitive skills lead to higher wages. Particularly, they reveal that diligence has the strongest effect on educational attainment and employment status and that a parson with high diligence tends to have higher education and to be regular employee.

Next, we show previous studies that investigate the relationship between noncognitive skills and school performance. In an analysis of Cornwell et al. (2013), using data from primary school students', it was revealed that noncognitive skills have a positive effect on test scores and grades in reading, math, and science and that noncognitive skills account for almost all gender disparity in grades.[7]

Rauber (2007) addressed how noncognitive skills affect academic performance using a data set from Germany. Rauber (2007) reveals that students with a high regulatory capacity are about one-eighth grade better than students with a low regulatory capacity and that students with high internal attribution and low external attribution have better grades.[8] Rauber (2007) states that noncognitive skills are nearly as important as cognitive skills for school performance.

We have introduced many previous studies concerning noncognitive skills. In addition to these

[6] Heckman et al. (2006) also reveal that the effects of noncognitive skills vary across schooling levels and gender.
[7] In their investigations, noncognitive skills are rated by students' teachers along several dimensions of classroom behavior.
[8] Rauber (2007) defines internal attribution as attributing success to effort and ability, while conversely, external attribution is defined as family and luck (among other things).

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

studies, a few have investigated the relationship between time preference and educational attainment. Breen et al (2014) investigated the role of risk aversion and time discounting preferences in course selection around 16 years old in Denmark. They assumed three options: an academically oriented program, a vocationally oriented program, or leaving the educational system, and revealed that students with a low time discount rate tended to choose academic secondary education over no education and vocational education.

Ogawa (2016), using data from Japanese high school students, found that time discounting preference has an effect on educational expectation after high school graduation. He states that more patient students are likely to stay in education.

The results of these previous studies confirm that noncognitive skills have an effect on labor market outcomes and school performance, however, while most studies include the variables of noncognitive skills they do not provide an explanation concerning that process. In other words, these studies used the variables of noncognitive skills as independent variables in wage equations or academic performance equations. However, it is natural to think that the labor market outcomes and school performance are affected by noncognitive skills indirectly through a person's behavior. Thus, in this paper, we investigate whether noncognitive skills only have an indirect effect on school records from attitude toward study or also have a direct effect after controlling the effects of study time.

In the next section, we explain the data used in our estimations.

3. DATA

In this study, we use the data from a nationally representative sample of junior high school students and their parents, "Survey on the Everyday Consciousness of Parents and Children (2011)," conducted by the Cabinet Office. The respondents of the data were ninth grade students and their parents. The student respondents consisted of 1,677 males and 1,515 females. The questionnaire was distributed to both junior high school students and their parents to gather information about their family backgrounds.

We first investigated whether time preference has an effect on the students' study time which affects their school record. Second, we examined whether time preference has an effect on the students' study record directly or indirectly through the students' study time. Therefore, the next two equations are estimated, respectively.

$$Study\ time_i = \beta_0 + \beta_1 Time\ preference_i + \beta_2 Satisfaction_i + \beta_3 Having\ strong\ point_i + \beta_4 Self\_esteem_i + \mathbf{X}'\beta + \varepsilon_i \quad (1)$$

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

$$School\ record_i = \gamma_0 + \gamma_1 Time\ preference_i + \gamma_2 Satisfaction_i + \gamma_3 Having\ strong\ point_i + \gamma_4 Self\_esteem_i + \gamma_5 Study\ time_i + \mathbf{X}'\gamma + \mu_i \quad (2)$$

Concerning equation (1), the dependent variable is the students' study time, which consists of the number of study hours on weekdays except the hours of instruction at school. The respondents were asked to choose a number between 1 and 6 to reflect their study time, where the number 1 represents no study at all outside of classes, the number 6 represents more than three hours of study besides classes[9]. Thus, we adopted the ordered probit model as the estimation method.

Regarding equation (2), the dependent variable is the students' study record at the school which he attends and this variable is also an ordinal number which takes the numbers from 1 to 5, where 1 represents unsatisfactory results, 2 means a little below average, 3 is average. The student who responds 4 has a little above the average record, while 5 represents a good result. Thus, we also used the ordered probit model in estimating equation (2).

In both equations, i represents the respondent, β's and γ's represent the coefficients of the independent variables, and ε_i and μ_i the error terms.

Our analysis also includes some independent variables that have been used in many previous studies, namely, female dummy, economic circumstances of the family and parents' education. The female dummy variable takes 1 if the respondent is female and 0 if a male student. The variable of economic circumstances of the family takes the numbers from 1 to 5, where 1 represents poverty and the number 5 signifies very wealthy. Concerning parents' education, we used years of father's and mother's education separately. If final academic background is junior high school, the variable of educational years is represented by 9. If final academic background is university, the variable is 16.

Finally, we explain the variables of noncognitive skills. The variable of time preference is a ordinal variable and takes the numbers from 1 to 4, where the lower value of this variable means that the respondent thinks the present is more important than the future. The actual statement put forward: "I would rather enjoy life in the present than make more effort now and save money for the future."

We also used other noncognitive skills variables that were used by Heckman et al. (2006) and Flossmann et al. (2007). The question sentence of the variable of "satisfaction" is "I am satisfied with myself," the sentence for the variable of "having strong points" is "I think I have good

[9] In more detail, the options for the study hours on weekdays are as follows: (1) no study, (2) < 30 minutes, (3) 30 minutes to <1 hour, (4) 1-2 hours, (5) 2-3 hours, and (6) more than 3 hours.

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

points," and the sentence for the variable of "self-esteem" is "I strongly feel that I am worthless", respectively. These variables take the values from 1 to 4. We rearranged these values to mean that high value shows high noncognitive skills. Table 1 shows the descriptive statistics.

In the following section, we present the estimation results.

Table 1: Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
School record	2,878	3.004	1.276	1	5
Study time	2,928	4.149	1.424	1	6
Female	2,928	0.477	0.500	0	1
Economic circumstances	2,928	2.969	0.862	1	5
Father education	2,928	13.930	2.170	9	18
Mother educaton	2,928	13.366	1.553	9	18
Time preference	2,928	2.330	0.916	1	4
Satisfaction	2,920	2.423	0.912	1	4
Having strong points	2,920	2.883	0.897	1	4
Self-esteem	2,920	2.353	0.989	1	4

4. ESTIMATION RESULTS

In this section, we first show the estimation results from equation (1) to investigate whether time preference has an effect on students' attitude toward study. Next, we simultaneously include the variables of study time and time preference as the independent variables in equation (2). By these estimations, we can examine whether noncognitive skills affect the school record directly or indirectly through the study hours on weekdays.

4.1 The effect of noncognitive skills on study time

Many previous studies have reported that study time has a positive effect on students' school performance. For example, Mimizuka (2007) using Japanese data revealed that studying at home raised the math score of the sixth grade students. Moreover, Sudo (2010) using the data of Japanese tenth grade students showed the same results as Mimizuka (2007), while Kobari (2002), revealed that studying on weekends has a positive effect on school records.

Similar to these previous studies using our data set, our results confirm that the number of study hours has a positive effect on school records. As previously stated, the dependent variable is ordinal and we adopted the ordered probit model. Table 2 shows the estimation results using

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

equation (1).

Table 2: Estimation results using study time as the dependent variable

Independent variables	Model (1) all			Model (2) male			Model (3) female		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Female	0.2155	***	0.0388	-		-	-		-
Economic circumstances	0.1236	***	0.0245	0.1256	***	0.0327	0.1193	***	0.0369
Father education	0.0441	***	0.0105	0.0535	***	0.0145	0.0337	**	0.0153
Mother education	0.0604	***	0.0141	0.0378	**	0.0192	0.0880	***	0.0207
Time preference	0.1597	***	0.0221	0.1628	***	0.0306	0.1540	***	0.0320
Pseudo R^2	0.0222			0.0189			0.0212		
Observations	2928			1530			1398		

Independent variables	Model (4) all			Model (5) male			Model (6) female		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Female	0.2320	***	0.0390	-		-	-		-
Economic circumstances	0.1093	***	0.0247	0.1153	***	0.0329	0.1035	***	0.0374
Father education	0.0450	***	0.0105	0.0530	***	0.0144	0.0374	**	0.0153
Mother education	0.0573	***	0.0141	0.0361	*	0.0193	0.0826	***	0.0208
Time preference	0.1597	***	0.0222	0.1696	***	0.0311	0.1499	***	0.0320
Satisfaction	-0.0072		0.0258	0.0169		0.0344	-0.0516		0.0391
Having strong points	0.0913	***	0.0252	0.0973	***	0.0339	0.0873	**	0.0380
Self-esteem	0.0541	***	0.0208	0.0094		0.0280	0.1147	***	0.0311
Pseudo R^2	0.0251			0.0213			0.0263		
Observations	2920			1528			1392		

Note: Standard errors are robust.

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level

In model (1), the variables used were female dummy, economic circumstances of family, parents' education, and time preference. The coefficients of these variables are positive and statistically significant. The results of the female dummy indicate that female students study for longer hours than male students. The economic circumstances of family and parents' education are directly and significantly related to how many hours are spent on study out of school and these results are consistent with the results of Kariya (2000) who, using Japanese data revealed that father's

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

occupation and parents' education are related to high school students' study time. The results show that the coefficient of time preference is positive and statistically significant which means that the value sense of a student affects the study time. Specifically, students who don't discount the value of future tend to study longer. Models (2) and (3) shows the estimation results according to gender. The gender made no difference to the results.

In model (4), we added other proxy variables of noncognitive skills. Even though we controlled for the other aspects of noncognitive skills, the coefficient of time preference was still positive and highly statistically significant. Models (5) and (6) show the estimation results according to gender and these results do not differ greatly from model (4).

From these results, we can say that the students who have a low time discount rate study longer than students who think the present is more important than the future. We confirm that noncognitive skills affect students' study time from the estimation results using equation (1).

4.2 The effect of noncognitive skills on school records

Next, we estimate equation (2) to investigate the effect of noncognitive skills on school records when we control the study time affected by noncognitive skills.[10] Table 3 shows the estimation results using students' school records as the dependent variable.

First, in model (7), we used study time as the independent variable in addition to the female dummy and parents' education which were used by Rauber (2007). We can confirm that the coefficients of economic circumstances of family, parents' education, time preference and the weekday study time are positive and statistically significant. As Cunha and Heckman (2007) and Toda et al. (2014) stated, the students of a wealthy family are more likely to have good scores. The more years parents spend in education, the higher the student's school records. This result is consistent with Rauber (2007) and Toda et al. (2014).[11] Both the coefficients of the weekday study time and time preference are positive and statistically significant. These results concur with previous studies concerning noncognitive skills; that they directly affect students' school records. In models (8) and (9), we estimate equation (2) according to gender. The trend of these estimation results is the same as for model (7).

[10] Kobari (2002) reports that only weekend study hours affect junior high school students' school records, not weekday study hours. However, he used both the weekend and weekday study hours as independent variables simultaneously. Thus, these estimation results might suffer from multicollinearity. To avoid multicollinearity in our estimations, we used these variables separately and the results indicate that both types of study hours have positive effects on the students' school records.

[11] In the estimation result of Rauber (2007), only the mother's education was statistically significant. In this regard, Rauber (2007) suspects the existence of multicollinearity between mother's education and father's education.

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

Moreover, in model (10), we checked the robustness of the results of model (7) to include other noncognitive skills as independent variables. Concerning the variables of time preference and study time, these results do not differ from model (7). We also estimated according to gender in model (11) and (12) and reached the same results.

From the results of Table 3, we find that not only study time, but also time preference has a positive effect on school records. Moreover, from Table 2, the results clearly indicate that noncognitive skills affect study time. Consequently, noncognitive skills not only affect the school records through the study time (indirectly), but also affect the school records directly. Put differently, the longer the study time, the higher the school record. Further to this, even with the same study time, different levels of noncognitive skills make a difference to students' school records. The students with low noncognitive skills might study without concentration and achieve only low school records. On the other hand, students with high noncognitive skills could study with much more concentration and thus achieve higher school records.

From these results, we can say that there is a difference in school scores between students with low noncognitive skills and those with high noncognitive skills because the former have a shorter study time than the latte. To make matters worse, the difference in school scores between the two types of student has widened because noncognitive skills directly affect school records.

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

Table 3: Estimation results using school records as the dependent variable

Independent variables	Model (7) all			Model (8) male			Model (9) female		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Female	-0.0146		0.0398	-		-	-		-
Economic circumstances	0.1582	***	0.0259	0.1595	***	0.0342	0.1569	***	0.0394
Father education	0.0712	***	0.0108	0.0761	***	0.0149	0.0658	***	0.0156
Mother education	0.0943	***	0.0151	0.0800	***	0.0207	0.1112	***	0.0219
Time preference	0.1713	***	0.0225	0.1386	***	0.0312	0.2085	***	0.0324
Study time	0.2132	***	0.0164	0.2162	***	0.0215	0.2070	***	0.0251
Pseudo R^2	0.0704			0.0696			0.0720		
Observations	2878			1503			1375		

Independent variables	Model (10) all			Model (11) male			Model (12) female		
	Coef.		Std. Err.	Coef.		Std. Err.	Coef.		Std. Err.
Female	0.0167		0.0405	-		-	-		-
Economic circumstances	0.1385	***	0.0263	0.1446	***	0.0348	0.1286	***	0.0397
Father education	0.0754	***	0.0108	0.0781	***	0.0150	0.0722	***	0.0157
Mother education	0.0887	***	0.0153	0.0759	***	0.0211	0.1041	***	0.0221
Time preference	0.1758	***	0.0228	0.1405	***	0.0318	0.2126	***	0.0328
Satisfaction	-0.0253		0.0262	-0.0430		0.0343	0.0004		0.0406
Having strong points	0.1878	***	0.0258	0.1630	***	0.0350	0.2144	***	0.0383
Self-esteem	0.1071	***	0.0216	0.1222	***	0.0296	0.0865	***	0.0320
Study time	0.2045	***	0.0164	0.2105	***	0.0216	0.1965	***	0.0253
Pseudo R^2	0.0819			0.0788			0.0870		
Observations	2870			1501			1369		

Note: Standard errors are robust.

* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level

5. CONCLUSION

In this paper, we analyzed whether noncognitive skills affect students' school records directly or indirectly by increasing study time using data from Japanese ninth grade students. In particular, we focused on noncognitive skills of time preference. The estimation results reveal that students

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

with a low time discount rate study longer than students who think that the present is more important than the future. Moreover, the estimation results show that noncognitive skills of time preference still have positive effects on school records even when we controlled for study time.

These results suggest that the difference in school score between students with low noncognitive skills and those with high noncognitive skills exists because the former study for shorter hours than the latter. This is the indirect noncognitive effect on school records because these are affected by the amount of study time. To make matters worse, noncognitive skills have direct effects on school records. Put differently, even if the study time of students with low noncognitive skills and those with high noncognitive skills was the same, there is a difference in school performance. In reality, the high noncognitive skills' students study for longer hours than students with low noncognitive skills. As a result of these factors, the difference in school scores between them has widened because noncognitive skills have both direct and indirect effects on school performance. These results show that we cannot expect that the effects of financial educational investment in low noncognitive skills' students will be as high as that for high noncognitive skills' students.

In this paper, we mainly investigated the effects of the noncognitive skill of time preference on school records. However, there are several limitations to the study. We cannot explicitly consider the quality of study time. Moreover, there might be the reverse causality that the school scores affect noncognitive skills. This reverse causality can only be identified by using the longitudinal data set that looks at both school performance and noncognitive skills on a long-term basis. The studies examining who gets the high noncognitive skills also must be carried out. The investigation of these topics will be a task for the future.

REFERENCES

Becker, G. S. (1962) "Investment in Human Capital: A Theoretical Analysis," *The Journal of Political Economy*, Vol. 70, No. 5, part 2, pp. 9-49.

Breen, R., van de Werfhorst, H. G., Jæger, M. M. (2014) "Deciding under Doubt: A Theory of Risk Aversion, Time Discounting Preferences, and Educational Decision-making," *European Sociological Review*, Vol. 30, No. 2, pp. 258-270.

Cornwell, C., Mustard, D. B. and Parys, J. V. (2013) "Non-cognitive Skills and the Gender Disparities in Test Scores and Teacher Assessments: Evidence from Primary School," *The Journal of Human Resources*, Vol. 48, No. 1, pp. 236-264.

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

Cunha, F. and Heckman, J. (2007) "The Technology of Skill Formation," *The American Economic Review,* Vol. 97, No .2, pp. 31-47.

Flossmann, A.L., Piatek, R. and Wichert, L. (2007) "Going Beyond Returns to Education: The Role of Noncognitive Skills on Wages in Germany," *European Meeting of the Econometric Society, Budapest*

Heckman, J. J., Stixrud, J. and Urzua, S. (2006) "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior," *Journal of Labor Economics,* Vol. 24, No. 3, pp. 411-482.

Kariya T. (2000) "A Study of Study Hours: In equality of Efforts in a Meritocracy," *The Japan Society of Education Sociology,* Vol. 66, pp. 213-230. (In Japanese.)

Kobari M. (2002) "One Consideration Concerning School Record of Primary and Junior High School Students and Study Time of Outside School Using Social Class as Mediation," *Journal of Child Study,* Vol. 8, pp. 79-91 (In Japanese.)

Kubota K. (2013) "The Effects of Parents' Income on Education Level of Child," *Japanese Journal of Research on Household Economics*, No. 97, pp. 50-62. (In Japanese.)

Mimizuka H. (2007) "Determinants of Children's Academic Achievements in Primary Education," *The Japan Society of Education Sociology*, Vol. 80, pp. 23-39. (In Japanese.)

Ogawa K. (2016) "Time Discounting Preference, Risk Aversion, and Educational Expectation among High School Students: Clarifying the beliefs in rational choice theory," *The Japan Society of Education Sociology*, Vol. 98, pp. 135-154. (In Japanese.)

Rauber, M. (2007) "Noncognitive Skills and Success in Life: The Importance of Motivation and Self-Regulation," *Diskussionspapiere der DFG-Forschergruppe*

Spence, M. (1973) "Job Market Signaling," *The Quarterly Journal of Economics,* Vol. 87, No. 3, pp. 355-374.

Sudo K. (2010) "Influence of Learning Strategy on PISA Achievement: From the Viewpoint of Strategy Differences between Social Classes," *The Japan Society of Education Sociology*, Vol. 86, pp. 139-158 (In Japanese.)

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

Toda A., Tsuru K. and Kume K. (2014) "The Effects of Family Background and Noncognitive Skills of Childhood on the Educational Attainment, Employment Status and Wages," *RIETI Discussion Paper Series 14-J-019* (In Japanese.)

DATA

Social Science Japanese Data Archive, Center for Social Research and Data Archives, Institute of Social Science, The University Tokyo (2012) *2011 Survey on the Everyday Consciousness of Parents and Children*

