THREE ESSAYS ON FAMILY FORMATION AND SOCIAL MOBILITY

By

DA EUN KWAN

Dissertation

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY
IN DEVELOPMENT POLICY

2022

THREE ESSAYS ON FAMILY FORMATION AND SOCIAL MOBILITY

By

Da eun Kwan

Dissertation

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY
IN DEVELOPMENT POLICY

2022

Professor Seulki Choi

THREE ESSAYS ON FAMILY FORMATION AND SOCIAL MOBILITY

By

Da eun Kwan

Dissertation

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY
IN DEVELOPMENT POLICY

Committee in charge:

Professor Seulki CHOI, Supervisor	Choi Seulki
Professor Joeun KIM	Joeun Kim
Professor Inbok RHEE	
Professor Meejung CHIN	Meejung Chin
Professor Hisam KIM	

Approval as of December, 2022

Dedicated to

my family

ACKNOWLEDGEMENTS

Ph.D journey is rarely about a mere academic training process, and mine is no exception. I owe enormous gratefulness to so many persons who have made it possible up to this point.

First of all, I am honored to have a dream team as my committee members. I am sincerely grateful for meeting my advisor Prof. Seulki Choi timely and having worked closely with him. As an advisor, he has introduced me to the new world of sociology and demography. As a mentor, he has broadened my boundary not only in terms of knowledge but also networks with the established scholars at every possible occasion. As a collaborator, his thoughtful approach and insights have continually reinforced me to think about the meanings and values of research, helping me not to lose my way while pursuing stars. Under his guidance, not only have my term papers been developed into the dissertation of today, but my Ph.D journey has become much smoother and memorable one and I also could have become as I am today.

I am also honored to have Prof. Inbok Rhee as one of my committee members and I know I would be more so in coming years. Despite the different discipline, he has been on top of my list to ask for a committee member ever since I have known him. Having a conversation with him has always inspired me. I've learned from him how the research itself could be an enjoyable process, and much of my statistical skills in R has been attained in his class. I appreciate him for being always generous with his time, invaluable comments and heartfelt advice. I hope to become a similarly inspirational and motivating educator in the near future.

Many thanks also go to Prof. Joeun Kim for sharing her radiant insights and introducing various new statistical methods. With her passion and positive attitudes which were contagious, she revitalized my third chapter and led me to take a different approach.

It was also an honor to have Prof. Meejung Chin and Prof. Hisam Kim as external committee members. I was fortunate to have opportunities to meet them regularly for RA projects. With their expertise and constructive comments, my dissertation could be improved and finalized.

There are others who also deserve appreciation. Prof. Changyong Choi, the former advisor was the one who has opened a new door in my life by giving me an admission. It was truly a privilege to be a part of such an enriched community of KDI school and I hope to become proud alumni in the coming years. Prof. Jisun Baek deserves my special thanks for her oversized role as a supervisor for SRC during 2021 summer. I have enjoyed working with her, whose excellent guidance has led to produce the first draft of one of my chapters. Another draft for my dissertation was shaped during the class of Prof. Chungeun Yoon, who I confidently and strongly recommend to others as one of the best courses in the KDIS.

Without invaluable friendships and all the supports, I would have not been survived. The batch of 2020, Jinyoung, Iegor, Wytone and Junior, have witnessed how I've been struggled starting from the scratch. I was lucky to come through with them, who were the motivation for me to give up a wish to give up every moment I felt like. With warm and caring natures, my carrel mates happily surprised me all the time with small happiness with sweets and cheering up. My lovely Population Policy Lab members, Mokyung and Yeonwook, have been such a vitamin for me over the last hurdle of this journey. They have transformed stressful situations into the merry moments. After laughing my head off with them, I always became refresh to restart. I am also greatly indebted to my neighbor Sookyung and Hyunjae. Part of my degrees should attribute to them. No one could ever have the better neighbors as I do, who perfectly filled in for me during my absence at home over the long marathon from master's degree to here. If not my neighbors, my son would have not been as he is now. I am afraid if I can appreciate them enough for their constant supports during last years.

Thinking about my families both of my own and in-law, it is hard not to be emotional. All the process of facing my limitation, challenging seemingly impossibilities, overcoming frustrating moments, and finally learning how to focus on research and projects have never been free of costs. I have been so blessed to have such extraordinary parents and sister, who have been more than willing to lavish their blind love and unconditional supports through prayers, taking care of my son and every other possible way. They continuously assured me of the reason why I'm studying and believed my potential when I was doubtful of mine.

My life has been full of miracles. My family is one of them. Indescribable love to a priceless gift given to me, my husband Yangwon and my son Elim.

Last but not least important, everything was by God's grace. Thank you, LORD.

TABLE OF CONTENTS

TABLE OF CONTENTS ..... **ix**

I. TIME INCREASE AT HOME AND FERTILITY PLAN CHANGE DURING THE COVID-19 IN SOUTH KOREA: MEDIATING EFFECTS OF HOUSEWORK CHANGE 1

Abstract 2
A. Introduction 3
B. Background 5
C. Methodology 10
D. Main findings 18
E. Further analysis 20
F. Discussion 25
Reference 28
Appendix 37

II. FUTURE PROSPECTS AND FERTILITY DESIRE 44

Abstract 45
A. Introduction 46
B. Background 48
C. Methodology 53
D. Main findings 58
E. Further analysis 61
F. Discussion 63
Reference 67
Appendix 77

III. PARENT-ADOLESCENT DISCUSSIONS AND CHILD'S EDUCATIONAL OUTCOMES 78

Abstract 79
A. Introduction 80
B. Background 81
C. Estimation Strategies 86
D. Analysis Results 95
E. Further Analysis 98
F. Robustness Check 100
G. Discussion and Conclusion 103
Reference 105
Appendix 117

LIST OF TABLES

[Table 1.1] Descriptive statistics..... 15

[Table 1.2] Logistic regression on the predicted probability of fertility intention change 18

[Table 1.3] Marginal effects of the time increase on fertility intention change 19

[Table 1.4] Logistic regression on the predicted probability of fertility intention change 22

[Table 1.5] Predicted probabilities of fertility intention change by sex 23

[Table 1A.1] Time increase and housework change 38

[Table 1A.2] Multinomial logit regression 40

[Table 2.1] Descriptive statistics..... 55

[Table 2.2] Future prospects for child's SES..... 59

[Table 2.3] Subgroup analysis 61

[Table 3.1] Descriptive statistics..... 91

[Table 3.2] Ordered logistic regression of educational transmission..... 95

[Table 3.3] Karlson-Holm-Breen (KHB) results 97

[Table 3.4] Karlson-Holm-Breen (KHB) results 98

[Table 3.5] Parent-adolescent conversation by topics..... 99

[Table 3.6] Ordered logistic regression by cohort..... 100

[Table 3.7] Logistic regression 101

[Table 3A.1] Cohort effect on the parent-adolescent conversations..... 119

[Table 3A.2] Parent-adolescent conversation by topics..... 120

LIST OF FIGURES

[Figure 1.1] Increase of time at home and housework change 20

[Figure 1.2] Distribution of housework division 21

[Figure 1.3] The causal mediation analysis 25

[Figure 1A.1] Self-reported change in share of housework by sex..... 37

[Figure 1A.2] An increase in time spent at home during the COVID-19 37

[Figure 1A.3] Marginal effects of the increase of time spent at home..... 39

[Figure 1A.4] Change of housework load by task 39

[Figure 2.1] Future prospects and fertility desires 58

[Figure 2.2] Future prospects and fertility desires despite the current status..... 60

[Figure 3.1] Analysis framework 86

[Figure 3A.1] Parent-adolescent conversations, family dinner and family leisure 117

[Figure 3A.2] Frequency of parent-adolescent conversation by topics 118

I. TIME INCREASE AT HOME AND FERTILITY PLAN CHANGE DURING THE COVID-19 IN SOUTH KOREA: MEDIATING EFFECTS OF HOUSEWORK CHANGE

Time Increase at Home and Fertility Plan Change during the COVID-19 in South Korea: Mediating Effects of Housework Change[1]

Abstract

We examine the effect of the time increase at home on married individuals' fertility intention change in South Korea. At the backdrop of the COVID-19, the social distancing measure has led to the overall increase of the time spent at home, which offers valuable opportunity to examine the time increase effect on fertility intention. Employing the Korean value survey implemented in June 2022, we tested this correlation controlling the potential effects of the COVID-19. The analysis results reveal that when the time at home increases, individuals are more likely to give up or delay fertility plan. A mechanism of the adverse correlation is found to be through the increased housework burden. The mediating effects of the increase of the housework is observed prominent among females, dual-earning couples, and those who have one child. This study provides that the adverse effect of the increased housework burden outweighs the potential positive effects even though time spent at home increases, giving suggestive implications the low fertility in South Korea.

Key words: housework burden, fertility intention, increase of time at home, COVID-19

[1] Coauthored with Prof. Seulki Choi

A. Introduction

How would individual's fertility intentions change when the time spent at home increases? Limited time at home is generally thought to be negatively correlated with fertility intention and behavior. This motivated the policy to increase the time spent at home such as Family Love Day campaign by the South Korean government as part of the efforts to address the low fertility issue by improving work and family compatibilities. The campaign encourages employees to spend more time with their family by leaving their workplace on-time every Wednesday, assuming that spending more time with family at home alleviates dual burden of family and work. Yet, the empirical evidence is surprisingly limited whether the fertility intention would increase when the individuals spend more time at home.

Theoretically, the consequence of the increase in time spent at home on fertility can be both positive and negative. Fertility would increase if the additional time with partner and family improves the spousal relationships (Ahmed et al., 2020; Szabo et al., 2020). In case where the increase of time at home is driven by the remote work availability, it can also have positive effects on fertility as it lowers the opportunity costs of women to have another baby (Andrew et al., 2020; H. Chung et al., 2020). On the other hand, negative impacts are expected to outweigh the positive ones if the additional time spent at home is accompanied by the increased burden of household labor, deteriorating the spousal relationships (Chin et al., 2020; Fegert et al., 2020; Waddell et al., 2021). Marital conflicts or domestic violence are also reported to increase as a consequence of time increase at home (Campbell, 2020).

Taken the diverging consequences of the increase in time spent at home, this study aims to answer the question whether the increase in time spent at home has influenced fertility intentions in Korea during the COVID-19, and what would be the channel behind it. In order to net out the time increase effects on fertility intention change during the COVID-19, we controlled the potential effects of the pandemic such as economic shock and health crisis based

on the previous literature (Voicu & Bădoi, 2021). As for a mechanism, the housework division change will be examined as a mediator in the association between the increase of time at home and fertility intention change.

Building up on the existing literature on the housework division and fertility, this study is expected to contribute at least three aspects.

First, this study identifies the effect of the increase in time spent at home on fertility intention changes, alleviating the endogeneity issue employing the COVID-19 as exogenous shock. Usually, the effect of the time increase at home on fertility intention is hard to be identified because the third factor such as individual's norms and values can influence both of them. For example, the ample evidence has been documented on the positive association between husband's participation in the housework and the fertility (J. Kim & Luke, 2020; Mills et al., 2008; Torr & Short, 2004), or on the housework division change and fertility (Baxter et al., 2008) in case of the employment status (Zamberlan et al., 2021). Yet, endogeneity issue remains in that decisions on the employment, housework division, and fertility intention are all affected by the third factor such as gender norms. In this regard, COVID-19 provides a valuable opportunity to observe the influence of time change at home since the time spent at home has increased overall due to the social distancing measure during the COVID-19.

Secondly, this study provides the empirical evidence of the effect of the housework division change on fertility intention in South Korea during the COVID-19. Much has been done on the housework division change or gender equality during the COVID-19 (Chin et al., 2020; H. Chung et al., 2021; Costoya et al., 2021; Petts et al., 2021; Shafer et al., 2020; Zamberlan et al., 2021). Yet, empirical evidence is limited regarding the fertility intention change as a consequence of the housework division change in Korea during the COVID-19 contrary to the context of European countries (A. Aassve et al., 2020; Malicka et al., 2021). Also, most of the studies on the housework division during the COVID-19 have been done at the early stage of

the Pandemic, less than a year of the prevalence of the epidemic. As the COVID-19 has protracted, this study is to enhance the previous findings by examining if the change in contour of the domestic work division is still being found.

Lastly, this study provides suggestive implications regarding the dual burden of the paid work and the unpaid domestic work to address the low fertility in Korea. One of the reasons for the persistently declining and the world-lowest level of the total fertility rate in Korea is known to be women's avoidance or hesitation for marriage and childbearing due to a dual burden of work and family (Hwang et al., 2018). The link between the gendered housework division and fertility intentions or behavior has well been investigated (Kan et al., 2019; Miettinen et al., 2015; Okun & Raz-Yurovich, 2019), but evidence on the correlation between the *change* of housework division and the *change* of fertility intention is limited. In this regard, extending the existing studies, this study takes further step to assess the influence of housework division change on fertility intention change when time spent at home increases during the COVID-19 Pandemic. Hopefully, the findings on the link between the housework division changes and childbearing intentions change can shed light on the population policy direction.

The remainder of this study is constructed as following. The next section will explore the existing studies regarding the time increase at home, fertility intention change, and housework division change during the COVID-19. Data explanation, measurement, and estimation strategy will be introduced in the third section, followed by the main findings. Further analysis and sensitivity check result will be presented in the subsequent section. Discussions and implications will conclude the study.

B. Background

Increase of time spent at home and fertility intention change

When the time spent at home increases, individuals are expected to react to readjust their fertility intentions either in a positive or negative direction. On the one hand, the fertility intention can be readjusted positively, if family cohesion increases and personal growth is achieved. During the COVID 19, the social distancing measure is found to have such benefits as it has increased the overall time spent at home (Andrew et al., 2020; Szabo et al., 2020). Also, the enhanced flexibility of work during the pandemic can have positive impacts on females' fertility intention, lowering the opportunity costs of having another child and improving the work and family compatibility (H. Chung et al., 2020). On the other hand, fertility intention can be negatively readjusted if the spousal relationship is deteriorated. Fegert et al. (2020) reported the the mental health was thretened during the pandemic due to the change of family life and relationships. Waddell et al. (2021) provides the empirical evidence of the exacerbated gendered division of housework which undermines females' satisfaction. Chin et al. (2020) also showed that the marital stress could increase as a result of the increased housework burden in South Korea.

Given the contested possibilities of the fertility intention change as a consequence of the time increase at home, this study employs the Korean value survey to test the fertility intention change in South Korea.

In order to show that the correlation between the time increase at home and fertility intention change is not spurious, we will control the potential impacts of the COVID-19. Previous literature has suggested three channels of the COVID-19 impacts: economic crisis, health crisis, and social distancing effects. From the aspect of the economic crisis, the increased unemployment rate or the overall downturn generates a climate of uncertainty can depress fertility intentions (A. Aassve et al., 2020; Malicka et al., 2021; Fahlén & Oláh, 2018; Matysiak et al., 2021; Vignoli et al., 2020). From the aspect of the health crisis, individuals can delay the fertility due to concerns of the limited access to health services or potential side effects (Stone,

2020; Hall et al, 2020). Historically, in case of Spanish flue or the Zika epidemic, the fertility rate has been observed to decline (Marteleto et al., 2020; Vrachnis et al., 2014).

Thus, this study aims to test the correlation between the time increase and fertility intention change, controlling the prescribed channels of the COVID-19 impacts in South Korea. Hypothesizing that the time increase at home is negatively associated with fertility intention change, this study focuses on the housework division as a mediator to explain the correlation.

The housework division change during the COVID-19

Then. has the housework division been changed among the married individuals during the COVID-19? On one hand, it is reported that the Pandemic has affected disproportionately across the gender and widened the gender gap as the increased demand for domestic load mostly assigned to female. Social distancing measure and domestic confinement have provoked the additional unpaid domestic labor, among which a large proportion of the unpaid work is reported to be taken by females (Costoya et al., 2021; Kristal & Yaish, 2020; Meraviglia & Dudka, 2021). If so, gender inequality has been exacerbated as a setback from the equal division of housework takes place. On the other hand, based on the needs exposure hypothesis, presence and physical availability at home encourage males to take up the unpaid domestic work (Shafer et al., 2020). Albeit it is females who still take up the greater portion of the unpaid domestic work, a general positive association between time availability of husband and participation in housework was observed in case of the Great Recession (Aguiar et al., 2013). Shafer et al. (2020) suggested that the public orders of social distancing during the COVID-19 has pushed husbands to be more available at home and shift toward a more equal housework division.

There are three theoretical approaches to explain how the unpaid household labor is divided among married couples in terms of time, money and ideology (Greenstein, 2000; Horne et al., 2018; Perry-Jenkins & Gerstel, 2020; Zamberlan et al., 2021). *Time availability perspective* emphasizes the significance of time constraints and time availability of each partner in the

household task division (Presser, 1994). According to time availability perspective, a partner who spends fewer hours in paid work or spends more time at home takes more responsibilities in household labor. So, according to time availability theory, it can be expected that time increase of husbands at home will be associated with the increase of a share in the housework. On the contrary, *the relative resource perspective or dependency model* is based on the economic framework, assuming that household labor is an undesirable task, purports that partners will use their power which can be formed with either educational status, occupational prestige or incomes to do away from the domestic responsibilities (Brines, 1994; Greenstein, 2000). According to the relative resource theory, the greater power and the less dependency mean other alternatives to the marital relationship and current arrangement. Thus, it reduces the cost of leaving from it, providing a leverage in negotiating the distribution of the house chores (Baxter, 2000; Lennon & Rosenfield, 1994). Thus, according to the relative resource perspective, despite or regardless of time increase at home, the increased domestic responsibilities during the COVID-19 are more likely to be taken by the one with lower resources in terms of income or education. *Gender perspectives* assert that gender identities and gender role attitudes are central to housework division (Carriero & Todesco, 2018), asserting that couples' ideology and attitudes are what decide the housework distribution regardless of who has more time or more financial power. Gender ideology is "a belief about the appropriate role for females and males" across various life spheres (McHugh & Frieze, 1997). For example, if a husband believes that doing housework is against masculinity and it's 'women's work', then he would not be willing to share domestic responsibilities regardless of time availability or relative earnings. Such traditional gender norms have been particularly prominent in East Asian countries influenced by the prevailing Confucianism legacy, and a burgeoning body of research noted the gender norms as an impediment to the domestic gender equality (Hudde et al., 2021; Lachance-Grzela & Bouchard, 2010; Nitsche & Grunow, 2016).

Among these perspectives, this study focuses on the time availability perspective. Existing studies mostly measure the time availability using weekly working hours or employment status, whether wife is working for full-time, part-time, or not working (Arnstein Aassve et al., 2014; Bianchi et al., 2000). Yet, housework division and decisions for working hours have endogeneity issue in that both of them can be influenced by the third factor. Also, it has reversal causality issue. This study alleviates such issue employing the change of the time spent at home during the pandemic.

The housework division and fertility intention

Association between the division of household task and fertility has been drawing intensive interest in fertility studies. As Hochschild described as the *stalled revolution* in 1989, a lag in change in domestic sphere which marks a sharp contrast to a dramatic growth of female representation in the public sphere has been a major impediment to fertility and female labor force participation both. Tensions caused by women's double burden of juggling between a first shift at work and a *second shift* at home (Hochschild & Machung, 2012) have brought repercussion of a question whether it's possible to catch two birds with one stone, leading females to make a choice between family and work. According to the Survey on Korean′s set of values regarding marriage and family in the COVID-19 era (hereafter 'Korea Value Survey'), equal division of household task is reported to account for mere 23.2% among dual earning couples, while 49.2% of respondents answered that wife is shouldering more domestic duties. Particularly, in the context of the continuing plummet of the fertility rate in spite of decades-long whole-out endeavors by the South Korean government, public and academic attentions are being directed toward gender equality in the realm of unpaid domestic labor.

In regards of the link between housework division and fertility, a general consensus has been reached that husband's contribution to the household labor is positively associated with the process to second birth. (Kim & Luke, 2020; Mills et al., 2008; Torr & Short, 2004). Also, a

growing body of research has documented evidence of the association between reallocation of housework division and fertility such as a transition to parenthood (Baxter et al., 2008) or change in employment status (Zamberlan et al., 2021). However, those transitions are usually planned and expected based on the couple's gender ideologies (Sánchez et al., 2021), thus it is hard to tell the causality of such transitions on fertility intention and behavior. Holding more traditional gender role attitude affects a decision on labor market participation, types of job, housework division, and having a child or further children (Hudde et al., 2021). Also, gender role attitudes are reshaped and influenced by such life course events (Beringer et al., 2022).

On the contrary, the COVID-19 pandemic was unexpected and abruptly interrupted across almost all sectors of life, providing a valuable opportunity to observe the effect of situational change on the gendered division of household labor and childbearing intentions.

Hypotheses

Based on the previous literature review, the hypotheses of this study are drawn as follows.

H1: Increase of time spent at home is negatively associated with fertility intention change.

H2: The association between the time increase at home and fertility intention change is mediated by the housework change.

C. Methodology

Data and Sample

In order to assess the influence of the increase in time spent at home and change of housework division in the change of short-term fertility intention during the COVID-19, we use 'the Korea Value Survey'. It has a nationally representative sample of 2,000 Korean individuals, aged between 25 and 49, stratified by age, sex, and region. Samples are selected randomly from the

Embrain internet panel, which is one of the representative internet panels in Korea, consisting of approximately 1,580,000 as of June 2022.

The internet panel has a risk to have different characteristics from the population. Yet, a range of the sample's age between 25 and 49 alleviates such concern of representativeness, as a disparity in digital appliances use or digital literacy is not significantly different among the group of these ages comparing to old age groups. Additionally, the internet survey has a strength of reducing the measurement error in terms of the socially desirable answers compared to a telephone survey or face-to-face survey (Berzelak & Vehovar, 2018). For example, to the questions regarding housework division in our survey, respondents could be less susceptible to answer the egalitarian division rather than the actual division in case of the internet survey compared to the telephone or the face-to-face survey.

The analytical sample of this study is 598 married individuals who have not yet realized the ideal fertility. The logic is that those who have already realized the ideal number of children are less likely to change their plans to have further child regardless of the environmental changes. Thus, we limited our analytical sample to those who have children less than their ideal fertility in order to exclude those who are not exposed to the probability of fertility change.

Measurement

To examine associations between increase in time spent at home, changes in the division of unpaid work, and fertility intention change during the COVI19, the survey questions are designed in a pair, one is the current level and the other is a change during the Pandemic in the format of "Has there been changes in ~ since the COVID-19 pandemic?". Being aware of a possibility that all changes are not necessarily caused by the COVID-19, we controlled the potential impact of the COVID-19 including infection worries and the income fall during the COVID-19.

Dependent Variables

Fertility intention change. Dependent variable is a change of short-term fertility intention. Theoretically, the fertility intention within a short time window, such as two or three years is the most precise predictor of fertility behaviors compared to other measures of fertility desire, such as the ideal number of children or the desired number of children (Bernardi, et al., 2013; Malicka et al., 2021). Thus, our study uses fertility plan even though the survey had various measures of fertility desire. Respondents were asked to answer the question, "Has your plan to have a child changed after the COVID-19 pandemic?" by 1) Not changed, more or less the same 2) Decided to have fewer children or gave up altogether 3) Decided to have children or have more children 4) Decided to postpone having a child 5) Decided to have a child sooner. We dichotomized the answer to measure the change of short-term fertility plan, recoding 1 in case of positive change or no change during the COVID-19. If a respondent has decided either to reduce the number of children, to delay, or to forego childbearing, it is coded as 0.

Independent Variables

Time spent at home. The key explanatory variable is a change of time spent at home during the COVID-19. The survey includes a statement that "I now spend more time at home after the COVID-19 outbreak" and ask respondents to answer from strongly disagree to strongly agree in 5 scales. We dichotomized the key variable for easier interpretation. A majority of respondents (63.88%, n=382) answered the time spent at home has increase, while 21.74% of respondents experienced no change in time at home in [Table1.1]. Those who have answered the time at home decreased the amount to14.4% (n=86).

Mediating Variables

Housework division change. The mediator of our main interest is the housework change during the COVID-19. This study uses the change of a relative share in the housework compared to partners.

Change of a relative share in the housework is asked through a question, “Have there been changes in the distribution of household tasks between you and your spouse/partner since the COVID-19 pandemic?” The answers are in 5 scales, from 1) There is a lot less work that I do, 2) There is a little less work that I do, 3) Not changed, 4) There is a little more work that I do, 5) There is a lot more work that I do.

Measurement errors might possibly arise due to the self-reported perception in housework division (Charles et al., 2018; Shafer et al., 2020) and in particular a tendency of males to overestimate their involvement in housework under the pressure of socially desirable answers (Mikelson, 2008). Even though the dataset is not a dyadic structure, we checked the distributions of the perception of the housework division change by sex in [Figure A1.1]. It reveals that the self-reported relative increase is greater than the self-reported relative decrease in other sexes, indicating that both males and females are prone to persceived their own shares of the housework have increased during the COVID-19. Nevertheless, a strand of literature focuses on the importance of subjective perceptions of the housework division rather than the objective measure (Gillespie et al., 2019; Lennon & Rosenfield, 1994; Roh, 2021). Therefore, this study uses the self-reported housework division change measure.

Control Variables

Egalitarian gender norm. According to the previous literature (Carriero & Todesco, 2018), gender norm is controlled to explain the housework division. Egalitarian gender norm is constructed using three questions: “The main responsibility for household living still lies with the husband even if both of them work”, “The main responsibility for housework still lies with the wife even if the couple shares the housework”, “The main responsibility for childcare still lies with the wife even if the couple takes care of the children together”. Respondents are asked to answer the prescribed questions in 4 scales, 1 in case of strongly disagree, 2 somewhat disagree, 3 somewhat agree, and 4 strongly agree. The answers were reverse-coded and added

up. The total sum of variable ranges from 3 to 12, 3 indicating the traditional gender attitude while 12 indicating the egalitarian gender norms. The variable is normalized to range from 0 to 1.

*Relative resource*s. As another determinant for the housework division among the married couples, the relative resources are included based on the previous literature (Baxter, 2000; Lennon & Rosenfield, 1994). This study measures the relative resources in terms of income level, following previous studies (Arnstein Aassve et al., 2014; Bianchi et al., 2000; Evertsson & Nermo, 2007). The relative income is constructed using the measure for monthly income of each respondent and spouse. To construct the relative income, first, all missing values of income which indicates out of economic activity are imputed with zero. We compared the monthly income level between respondent and spouse, and coded 1 in case a partner has higher monthly income level than the respondent, 2 when respondent and spouse have the same income level, 3 in case that respondent's income level is higher than the spouse. According to the relative resource theory, the respondent leverages his/her relative power to negotiate the housework division. Thus, one can expect that the higher relative resource will be associated with the less share of housework.

COVID-19 Effect. The potential impacts of the COVID-19 on childbearing intention change are controlled based on the previous studies. The pathways of the COVID-19 effects are suggested as health emergency, social distancing and economic crisis (Voicu & Bădoi, 2021). To control the health emergency and economic crisis, we included measures of the income fall and infection worries during the COVID-19. The income fall is controlled as a binary variable to indicate if there has been a household income decrease. Infection worries are asked through a question, "How much did you worry about you and your family members getting infected with COVID-19?" and answered in four scales from 1 not at all worried, 2 rather unworried, 3 a little bit worried, 4 very much worried.

Descriptive statistics

[Table 1.1] presents the descriptive statistics of the variables used in our study. Among the total analytical sample (n=598), 19.9% of respondents answered they postponed or gave up the childbearing plan during the COVID-19. Time spent at home is reported to increase among a majority of the respondents (63.9%), although 21.7% of respondents perceive no change, and 14.4% of respondents report a decrease in time spent at home. The mean of housework load change 0.635 indicates the overall increase of the amount of the housework. In terms of change in housework division, while a majority of the respondents perceived no change (71.7%, n=425), among those who perceive changes, the relative increase is greater than the relative decrease. Relative resource in terms of the income level provides that 42.5% of the respondents have higher income level than spouses, 19.2% have the same level, and 38.3% have lower level than spouses. Overall, the gender norm is slightly closer to the egalitarian, as the mean 0.58 provides. Regarding the impact of the COVID-19, 34.95% of the respondents experienced the income fall, while a majority of the respondents report no change or even increase in household income during the COVID-19 (65.1%).

In terms of the sociodemographic characteristics such as age, sex, the number of children, the sample is distributed in balance. That he 20s are fewer compared to the other age groups reflects the increase of the average age of the first marriage in Korea, which is 31.1 for females, 33.4 for males in 2021 (Statistics Korea, 2022).

[TABLE 1.1] DESCRIPTIVE STATISTICS (N=598)

Variable	Obs.	Distribution or mean	Min.	Max.
Fertility plan change				
Negative change	119	19.90%	0	1
Positive or no change	479	80.10%	0	1

Time increase at home				
Strongly disagree	19	3.18%	0	1
Disagree	67	11.20%	0	1
Neither disagree nor agree	130	21.74%	0	1
Agree	246	41.14%	0	1
Strongly agree	136	22.74%	0	1
Housework division change				
A lot less work	7	1.17%	0	1
A little bit less work	47	7.86%	0	1
Not changed	425	71.07%	0	1
A little bit more work	99	16.56%	0	1
A lot more work	20	3.34%	0	1
Housework load change	598	.635	0	1
Relative resources (income)				
Partner higher	229	38.29%	0	1
Similar	115	19.23%	0	1
Respondent higher	254	42.47%	0	1
Egalitarian gender norms	598	.580	0	1
Income fall during the COVID-19				
Income fall	209	34.95%	0	1
No income fall	389	65.05%	0	1
Infection worries				
Not at all worried	35	5.85%	0	1
Rather unworried	92	15.38%	0	1
A little bit worried	292	48.83%	0	1
Very much worried	179	29.93%	0	1
Age groups				
25-29	27	4.52%	0	1
30-34	93	15.55%	0	1
35-39	151	25.25%	0	1
40-44	160	26.76%	0	1
45-49	167	27.93	0	1
Sex				
Female	289	48.33%	0	1
Male	309	51.67%	0	1
Children number				
Childless	207	34.62%	0	1
One child	272	45.48%	0	1
Two and more	119	19.90%	0	1
Dual earning				
Single income	237	39.63%	0	1
Dual income	361	60.37%	0	1

Model Specification

To estimate the mediation effects of the housework change in the influence of time increase at home on fertility intention change, first, we will test a set of equations following the standard approach (Imai et al., 2011).

$$reg\ (HouseworkChg\ ) = \alpha_1 + \beta_1\ Time\ incrs\ + \delta_1 X\ + \varepsilon \quad (1)$$

$$logit\ \ (IntentionChg\ \ ) = \alpha_2 + \beta_2\ Time\ incrs\ + \delta_2 X\ + \varepsilon \quad (2)$$

$$logit\ (IntentionChg) = \alpha_3 + \beta_3\ Time\ incrs\ + \gamma_3 HouseworkChg\ + \delta_3\ X\ + \varepsilon \quad (3)$$

To examine the indirect effect of the time increase on the fertility intention through the housework division change, the effect of the time increase on the housework division is tested in the equation (1). $\widehat{\beta_2}$ in the equation (2) represents direct effects of the time increase on fertility intention change, $\widehat{\beta_3}$ in the equation (3) represents total effects. The average causal mediation effects can be obtained through the difference of coefficients method, $\widehat{\beta_2}$ - $\widehat{\beta_3}$.

Since the outcome variable is a dichotomized measure, logistic regression is used in the equation (2) and (3). Even though the fertility intention is measured in five Likert scale in the Korea Value Survey, a size of the respondents who answered positive change is no more than 15. So, the logistic regression analysis is employed as a main analysis, with the multinomial logit analysis result provided in the Appendix.

In the equation (1), in order to assess the housework change, relative resource and egalitarian gender norms are controlled based on the literature (Greenstein, 2000; Horne et al., 2018; Perry-Jenkins & Gerstel, 2020; Zamberlan et al., 2021). A set of sociodemographic characteristics controls consists of age, sex, dual income status and children number following the previous literature (Baxter, 2000).

As potential impacts of the COVID-19 on childbearing plan, we controlled the income fall during the COVID-19 and infection worries following the prior studies (Voicu & Bădoi, 2021).

D. Main findings

Time Increase at Home and Fertility Intention Change

Results of the logistic regression on the predicted probability of fertility intention change are presented in [Table 1.2]. The model (1) provides the result of equation (2) regarding the correlation of the time increase at home and fertility intention change, while the model (2) provides the evidence of the mediating role of housework change (equation (3)).

Supporting the hypothesis 1, when time spent at home increase, fertility intention is more likely to fall in the model (1). The coefficient size becomes smaller in the model (2), indicating that the negative correlation is explained by housework division change. As the self-rated share of the housework increases, the predicted probability of fertility intention is more likely to fall.

[TABLE 1.2] LOGISTIC REGRESSION ON THE PREDICTED PROBABILITY OF FERTILITY INTENTION CHANGE

	(1) Intention change	(2) Intention change
Time increase	-0.301**	-0.270*
	(0.114)	(0.116)
Division change		-0.308+
		(0.173)
Income change	0.232+	0.225
	(0.138)	(0.138)
Infection worry	-0.388**	-0.362*
	(0.143)	(0.144)
Male	0.0348	0.0617
	(0.224)	(0.225)
Dual	-0.0937	-0.0801
	(0.226)	(0.228)
Age	-0.387	-0.377
	(0.245)	(0.245)

Age square	0.00671*	0.00660*
	(0.00325)	(0.00325)
Children number	-0.118	-0.0979
	(0.161)	(0.162)
Constant	8.005+	8.552+
	(4.624)	(4.639)
N	598	598
Pseudo R^2	0.106	0.111

Standard errors in parentheses

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The marginal effects on the fertility intention change are presented in [Table 1.3]. For the easier interpretation, the increase of time at home is dichotomized here, 1 to indicate the increase of time spent at home and 0 no change or decrease of time spent at home. It can be interpreted that when time spent at home increase, the probability to delay or give up childbearing is 22.8% (the predicted probability of positive or no change is 77.2%) in the model (1). When the housework division variable is introduced in the model (2), the predictive power of the time change at home becomes 22.4%. The difference between these probabilities are explained by housework division change.

[TABLE 1.3] MARGINAL EFFECTS OF THE TIME INCREASE ON FERTILITY INTENTION CHANGE

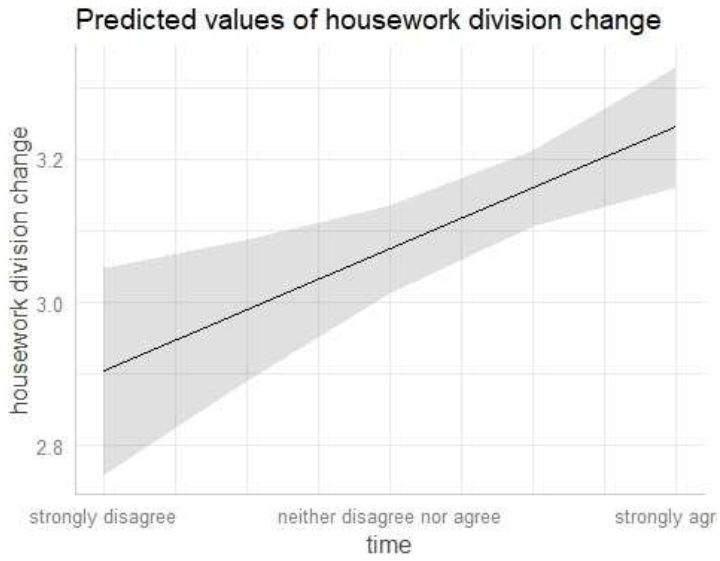
Increase of time spent at home	(1) Direct effect	(2) Total effect
No increase	0.858***	0.852***
	(0.240)	(0.025)
Increase	0.772***	0.776***
	(0.020)	(0.020)

The analysis result provides that even though the mediating effect of the housework division is statistically significant but substantially small. To address this, we employed the alternative measure of the housework change in the further analysis.

Housework change during the COVID-19

Before proceeding to further analysis, the correlation between the increase of time at home and the housework division change is tested using the equation (1). The result is visualized in [Figure 1.1]. Time increase is observed to be positively associated with the increased amount of the housework. Full regression results are provided in [Table 1A.1] in appendix.

[FIGURE 1.1] INCREASE OF TIME AT HOME AND HOUSEWORK CHANGE



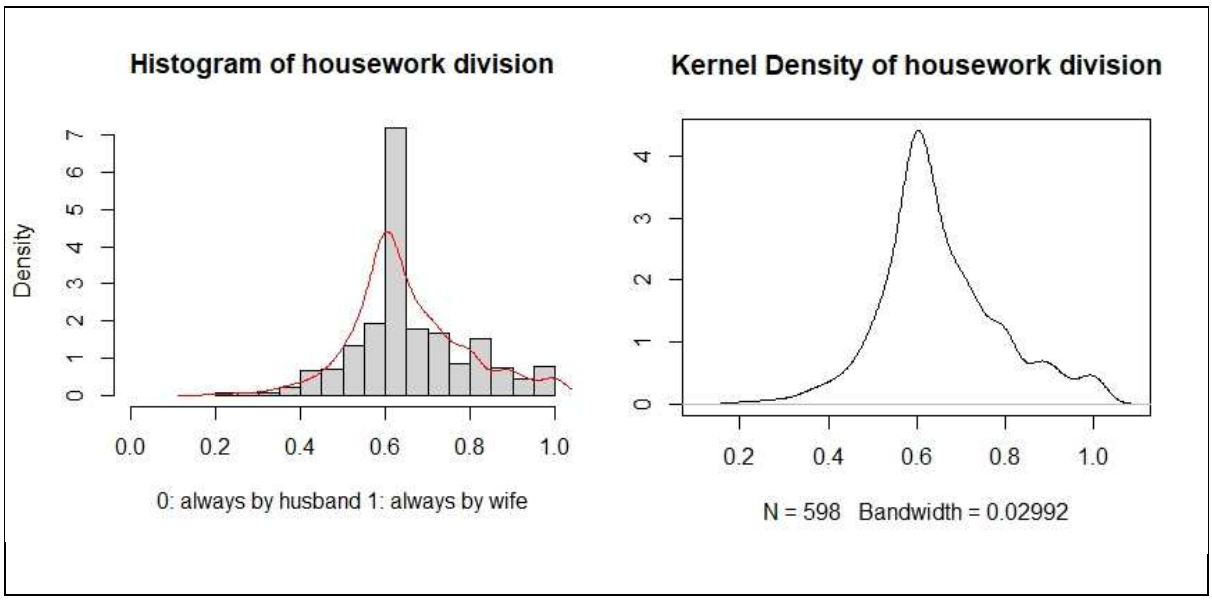
E. Further analysis

Alternative measure of housework change

Despite the perceived change of housework division, still, females do much more housework responsibilities than males. The distribution of the housework is visualized both in histogram and kernel density plots in [Figure 1.2]. The housework division is a normalized total sum of housework division by 5 tasks, 0 indicating a case when the housework is always done by husband, while 1 means the housework is always done by wife. The plots reveal that the distribution is slightly skewed to left, indicating females are still more likely to take the greater amount of domestic labors despite whatsoever the division has changed between couples.

Thus, instead of the relative change of the housework compared to partners', we will examine the housework change using the housework load change compared to the pre-pandemic.

[FIGURE 1.2] DISTRIBUTION OF HOUSEWORK DIVISION



The housework load change is asked by a question, "Have there been changes in the time spent doing the following household tasks since the COVID-19 pandemic?". The question distinguishes each task: preparing a meal, washing dishes, cleaning the house, garbage disposal and recycling, laundry and organizing clothes. Respondents are asked to answer to each task by 5 scales from 1 decreased considerably, 2 decreased slightly, 3 not changed, 4 increased slightly, 5 increased considerably. We made a total sum of values and normalized it from 0 to 1. Therefore, 0 indicates a case when the total sum of housework decreased considerably while 1 indicates the considerable increase. The mean of a normalized value is 0.635 (standard deviation 0.177), and the distribution of answers by each task is provided in [Figure 1A.4] in the appendix.

Analysis results using the alternative measure of housework change in [Table 1.4] reports the significant mediating effects. The Wald Test result for the nested model also provides the statistical significance (8.03^{**}).

[TABLE 1.4] LOGISTIC REGRESSION ON THE PREDICTED PROBABILITY OF FERTILITY INTENTION CHANGE

	(1) Intention change	(2) Intention change
Time increase	-0.301**	-0.232*
	(0.114)	(0.117)
Housework load change		-1.798**
		(0.634)
Income change	0.232+	0.213
	(0.138)	(0.139)
Infection worry	-0.388**	-0.396**
	(0.143)	(0.143)
Male	0.0348	0.0374
	(0.224)	(0.226)
Dual	-0.0937	-0.111
	(0.226)	(0.229)
Age	-0.387	-0.400
	(0.245)	(0.247)
Age square	0.00671*	0.00685*
	(0.00325)	(0.00327)
Children number	-0.118	-0.0587
	(0.161)	(0.164)
Constant	8.005+	9.217*
	(4.624)	(4.695)
N	598	598
Pseudo R^2	0.106	0.120

Standard errors in parentheses

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Logistic regression results by different subgroups in [Table 1.5] suggest that the negative influence of time increase at home on fertility intention change is mediated by the housework change among females, dual earning couples and those who have a child.

[TABLE 1.5] PREDICTED PROBABILITIES OF FERTILITY INTENTION CHANGE BY SEX

	Male		Female		Dual earner		Single earner		Child=0		Child=1		Child>=2	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Time increase	-0.371*	-0.321+	-0.271+	-0.185	-0.408*	-0.338*	-0.193	-0.127	-0.592**	-0.580**	-0.192	-0.0232	-0.132	-0.0957
	(0.174)	(0.177)	(0.158)	(0.164)	(0.159)	(0.162)	(0.170)	(0.178)	(0.213)	(0.214)	(0.158)	(0.171)	(0.335)	(0.348)
Housework change		-1.569		-2.155*		-2.316**		-1.485		-0.887		-3.207***		-0.801
		(1.011)		(0.838)		(0.811)		(1.124)		(1.046)		(0.974)		(1.886)
Constant	12.47	12.92	5.459	7.128	5.888	7.798	9.534	9.839	16.76+	17.51+	5.729	6.102	-10.69	-7.820
	(7.920)	(7.935)	(6.129)	(6.253)	(6.108)	(6.268)	(7.261)	(7.237)	(10.02)	(10.07)	(6.106)	(6.220)	(20.11)	(21.18)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
N	309	309	289	289	361	361	237	237	207	207	272	272	119	119
Wald Chi^2	2.41		6.61+		8.15**		1.75		0.72		10.83***		0.18	
Pseudo R^2	0.121	0.130	0.121	0.143	0.122	0.143	0.074	0.081	0.178	0.181	0.083	0.123	0.174	0.177

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Causal mediation analysis

The conventional mediation analysis of comparing the coefficient between nested models is criticized for its limitation in non-linear model (Imai et al., 2011). Thus, we additionally implemented the causal mediation analysis.

$$\bar{\delta}_i(t) \equiv Y_i\big(t,\ M_i(1)\big) - Y_i(t,\ M_i(0)) \tag{4}$$

$$\bar{\zeta}_i(t) \equiv Y_i\big(1,\ M_i(t)\big) - Y_i\big(0,\ M_i(t)\big) \tag{5}$$

In the model (4), $\bar{\delta}_i(t)$ represents average causal mediation effects. In our study, it estimates the indirect effects of the time increase on the fertility intention change through the housework change. Model (4) isolate the hypothesized mechanism by fixing the time increase effects and changing housework change effects.

In the model (5), $\bar{\zeta}_i(t)$ represent the average direct effects of the time increase on the fertility intention change. Here, the direct effect of the time increase is not mediated by the hypothesized mediator.

$$\{Y_i(t', m),\ M_i(t)\} \perp T_i | X_i = x, \tag{6}$$

$$Y_i(t', m) \perp M_i(t) | T_i = t,\ X_i = x, \tag{7}$$

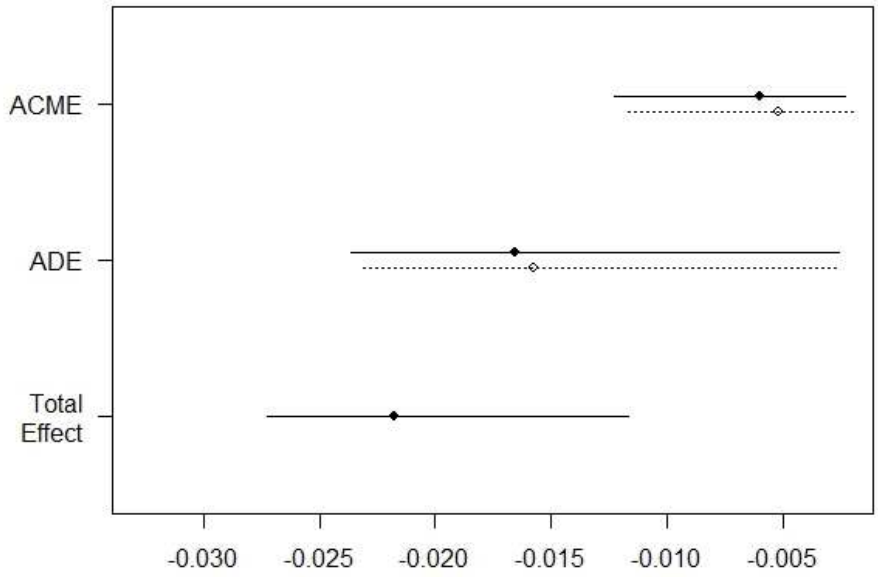
$$where\ \ 0 < Pr(T_i = t | X_i = x) and\ 0 < p(M_i = m | T_i = t,\ X_i = x)$$

$$for\ \ t = 0,1, and\ \ all\ \ x\ and\ \ m\ in\ \ the\ support\ \ \ of\ X_i and\ M_i, respectively\ \ \ .$$

The key difference of the causal mediation analysis from the conventional method lies at the sequential ignorability assumption in the equation (6) and (7). Under the assumption of a random assignment of treatment in the standard mediation analysis, it is rather the average treatment effects rather than average causal mediation effects or average direct effects since both the direct and indirect effects yield potential outcome that would never be realized (Imai

et al., 2011). On the contrary, by assuming the random treatment assignment in a sequence in the equation (6), and the exogeneity of mediator in the equation (7), the causal mediation analysis provides the causal mediation effect rather than the causal effect of the mediator (ibid.). The causal mediation analysis result is presented in [Figure 1.3].

[FIGURE 1.3] THE CAUSAL MEDIATION ANALYSIS



Out of the total effects of the time increase on fertility intention, -0.022, the estimated average direct effect if -0.016 and the average causal mediation effect is -0.006. All are significant at 0.1% level, providing consistent evidence of the mediating effects of housework division change.

F. Discussion

It is generally assumed that the increase of time spent at home would positively influence the fertility intention. This provides a foundation for the South Korean government policy such as campaign of Family Love Day that refrains from over-time working and encourages to spend more time with family. Yet, surprisingly the empirical evidence is limited whether the fertility intention would increase when the time spent at home increases. In our study, we examined the

effect of the time increase at home on the fertility intention change at the backdrop of the COVID-19. The social distancing measure during the COVID-19 offered a valuable chance to test the effect of the time increase at home. Using the Korea Value Survey, we analyzed the time increase at home and fertility intention change of the married individuals. The analysis result reveals that individuals are more likely to give up or delay a childbearing plan when the time at home increases, with the economic shock by the pandemic and infection worries for the virus taken into consideration. To explain the channel of a negative correlation, this study focused on the housework division change. The increased burden of the housework as a consequence of the increase of time spent at home is observed to mediate the effect of time increase on fertility intention change. The mediating effects of increased housework burden are turned out to be significant both statistically and substantially among females, dual earning couples and those who have one child.

This study provides a suggestive policy implication regarding the low fertility in South Korea. When the time spent at home increases, it is revealed that the adverse effect of the increased housework burden outweighs the potential positive effects such as the improved intimacy of the marital relationships. As Hochschild & Machung (2012) called a stalled revolution, the increased burden of housework depresses female's fertility intention. The negative effect of dual burdens of paid work and the unpaid domestic work on fertility intention is pronounced among the dual earning couples, while making the couples to hesitate or give up the second child birth.

This study is not without limitations. In order to control the COVID-19 effects on the fertility intention change, the economic crisis and the health crisis are controlled, following the previous literature. Yet, there's a possibility that the COVID-19 effects are not perfectly controlled. For example, the economic crisis was measured with the monthly household income change compared to the pre-pandemic period. This might not fully capture the dynamics of the income

change over the course of the COVID-19 as well as the change of respondent's own employment status or own income. Also, the health crisis, measured with the overall infection worries during the COVID-19, might not reflect other health-related concerns such as fears for potential adverse effects to the pregnant or the prospective new-born babies. In terms of the housework change, the self-reported measurement is known to be imprecise or exaggerated compared to the time-diary data (Charles et al., 2018; Shafer et al., 2020). Yet, a recent trend of research shifts from the objective distribution of household tasks to subjective perceptions of division, emphasizing the significance of subjective perceptions over the actual measure (Baxter, 2000; Lennon & Rosenfield, 1994). Despite such limitations, this study examined the correlation of the time increase and the fertility intention change using the available data.

Recently, a burgeoning body of research focuses on the perceived fairness in the housework division regardless of the objective division itself (Baxter, 2000; Gillespie et al., 2019; Hiekel & Ivanova, 2022; Lennon & Rosenfield, 1994). This study concludes here, leaving the investigation of the nexus between the perceived fairness and a family formation motivation as another interesting avenue for the future research.

Reference

Aassve, A., Cavalli, N., Mencarini, L., Plach, S., & Bacci, M. L. (2020). The COVID-19 pandemic and human fertility. *Science*, *369*(6502), 370–371. https://doi.org/10.1126/science.abc9520

Aassve, Arnstein, Biliari, F. C., & Pessin, L. (2016). Trust and fertility dynamics. *Social Forces*, *95*(2), 663–692. https://doi.org/10.1093/sf/sow080

Aassve, Arnstein, Fuochi, G., & Mencarini, L. (2014). Desperate Housework: Relative Resources, Time Availability, Economic Dependency, and Gender Ideology Across Europe. *Journal of Family Issues*, *35*(8), 1000–1022. https://doi.org/10.1177/0192513X14522248

Aassve, Arnstein, Le Moglie, M., & Mencarini, L. (2021). Trust and fertility in uncertain times. *Population Studies*, *75*(1), 19–36. https://doi.org/10.1080/00324728.2020.1742927

Aguiar, B. M., Hurst, E., & Karabarbounis, L. (2013). Time Use During the Great Recession Author. *American Economic Review*, *103*(5), 1664–1696.

Ahmed, D., Buheji, M., & Merza Fardan, S. (2020). Re-Emphasising the Future Family Role in 'Care Economy' as a Result of Covid-19 Pandemic Spillovers. *American Journal of Economics*, *10*(6), 332–338. https://doi.org/10.5923/j.economics.20201006.03

Andrew, A., Cattan, S., Dias, M. C., Farquharson, C., Kraftman, L., Krutikova, S., Phimister, A., & Sevilla, A. (2020). *How are mothers and fathers balancing work and family under lockdown? IFS Briefing Note BN290*. https://www.ifs.org.uk/publications/14860

Aschaffenburg, K., & Maas, I. (1997). Cultural and Educational Careers : The Dynamics of Social Reproduction. *American Sociological Review*, *62*(4), 573–587.

Baxter, J. (2000). The Joys and Justice of Housework. *Sociology*, *34*(4), 609–631.

Baxter, J., Hewitt, B., & Haynes, M. (2008). Life Course transitions and housework: Marriage, parenthood, and time on housework. *Journal of Marriage and Family*, *70*(2), 259–272. https://doi.org/10.1111/j.1741-3737.2008.00479.x

Becker, G. S., & Barro, R. J. (1988). A reformulation of the economic theory of fertility. *Quarterly Journal of Economics*, *103*(1), 1–25. https://doi.org/10.2307/1882640

Bellani, D., & Arpino, B. (2022). Risk tolerance and fertility: Evidence from a lottery question in Italy. *Journal of Marriage and Family*, *March 2021*, 1–19. https://doi.org/10.1111/jomf.12820

Beringer, S., Bujard, M., & Diabaté, S. (2022). *Changes in personal attitudes and perceived public opinions towards external childcare*.

Bernardi, L., Huinink, J., & Settersten, R. A. (2019). The life course cube: A tool for studying lives. *Advances in Life Course Research*, *41*(November 2018), 100258. https://doi.org/10.1016/j.alcr.2018.11.004

Bernardi, L., Ryser, V.-A., & Goff, J.-M. Le. (2013). Gender Role-Set, Family Orientations, and Women's Fertility Intentions in Switzerland. *Swiss Journal of Sociology*, *39*(1), 9–31.

Berzelak, N., & Vehovar, V. (2018). Mode effects on socially desirable responding in web

surveys compared to face-to-face and telephone surveys. *Metodoloski Zvezki*, *15*(2), 21–43. https://doi.org/10.51936/lrkv4884

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? trends in the gender division of household labor. *Social Forces*, *79*(1), 191–228. https://doi.org/10.1093/sf/79.1.191

Boudon, R. (1974). *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. John Wiley & Sons.

Bourdieu, P. (1977). Cultural Reproduction and social Reproduction. In J. Karabel & A. H. Halsey (Eds.), *Power and Ideology in Education* (pp. 487–511). Oxford University Press.

Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood Press.

Bourdieu, P., & Passeron, J.-C. (1990). *Reproduction in Education, Society and Culture* (second). Sage Publications.

Bras, H., Kok, J., & Mandemakers, K. (2010). Sibship size and status attainment across contexts: evidence from the netherlands, 1840-1925. *Demographic Research*, *23*(December), 73–104. https://doi.org/10.4054/DemRes.2010.23.4

Breen, R., Bernt Karlson, K., & Holm, A. (2021). A Note on a Reformulation of the KHB Method. *Sociological Methods and Research*, *50*(2), 901–912. https://doi.org/10.1177/0049124118789717

Brines, J. (1994). Economic Dependency , Gender , and the Division of Labor at Home. *American Journal of Sociology*, *100*(3), 652–688.

Brunori, P. (2017). The Perception of Inequality of Opportunity in Europe. *Review of Income and Wealth*, *63*(3), 464–491. https://doi.org/10.1111/roiw.12259

Byun, S. yong, Schofer, E., & Kim, K. keun. (2012). Revisiting the Role of Cultural Capital in East Asian Educational Systems: The Case of South Korea. *Sociology of Education*, *85*(3), 219–239. https://doi.org/10.1177/0038040712447180

Campbell, A. M. (2020). An increasing risk of family violence during the Covid-19 pandemic: Strengthening community collaborations to save lives. *Forensic Science International: Reports*, *2*(April), 100089. https://doi.org/10.1016/j.fsir.2020.100089

Carriero, R., & Todesco, L. (2018). Housework division and gender ideology: When do attitudes really matter? *Demographic Research*, *39*(1), 1039–1064. https://doi.org/10.4054/DemRes.2018.39.39

Charles, P., Spielfogel, J., Gorman-Smith, D., Schoeny, M., Henry, D., & Tolan, P. (2018). Disagreement in Parental Reports of Father Involvement. *Journal of Family Issues*, *39*(2), 328–351. https://doi.org/10.1177/0192513X16644639

Chin, M., Han, J., & Noh, S. (2019). An Association Between Latent Profiles of Marriage and Childbirth Attitudes and Individual Perceptions on Korean Society and Own Future Prospect among Young Adults. *Family and Culture*, *31*(1), 166–188.

Chin, M., Sung, M., Son, S., Yoo, J., Lee, J., & Chang, Y. (2020). Changes in Family Life and Relationships during the COVID-19 Pandemic and their Associations with Perceived Stress. *Family and Environment Research*, *58*(3), 447–461.

https://doi.org/10.1377/hlthaff.21.2.163

Choi, Y., & Park, H. (2016). Shadow education and educational inequality in South Korea: Examining effect heterogeneity of shadow education on middle school seniors' achievement test scores. *Research in Social Stratification and Mobility*, *44*, 22–32. https://doi.org/10.1016/j.rssm.2016.01.002

Chung, H., Birkett, H., Forbes, S., & Seo, H. (2020). Working from Home and the Division of Housework and Childcare Among Dual Earner Couples During the Pandemic In the UK. *SocArXiv Papers*, *1*(December), 1–33. https://osf.io/preprints/socarxiv/4esf7/

Chung, H., Birkett, H., Forbes, S., & Seo, H. (2021). Covid-19, Flexible Working, and Implications for Gender Equality in the United Kingdom. *Gender and Society*, *35*(2), 218–232. https://doi.org/10.1177/08912432211001304

Chung, I., Choi, S., Hwang, S., & Choi, Y. (2020). Intergenerational Social Mobility and Educational Inequality in South Korea : A Comprehensive Review of Empirical Studies since 2000. *Economy and Society*, 12–59.

Coleman, James, S. (1988). Social Capital in the Creation of Human Captial. *The American Journal of Sociology*, *94*(1988), 95-S120. http://doi.apa.org/getdoi.cfm?doi=10.1037/0012-1649.22.6.723

Costoya, V., Echeverría, L., Edo, M., Rocha, A., & Thailinger, A. (2021). Gender Gaps within Couples: Evidence of Time Re-allocations during COVID-19 in Argentina. *Journal of Family and Economic Issues*, *43*(2), 213–226. https://doi.org/10.1007/s10834-021-09770-8

Currie, J., Schwandt, H., & Wachter, K. W. (2014). Short- And long-term effects of unemployment on fertility. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(41), 14734–14739. https://doi.org/10.1073/pnas.1408975111

De Graaf, N. D., De Graaf, P. M., & Kraaykamp, G. (2000). Parental cultural capital and educational attainment in the Netherlands: A refinement of the cultural capital perspective. *Sociology of Education*, *73*(2), 92–111. https://doi.org/10.2307/2673239

Dika, S. L., & Singh, K. (2002). Applications of social capital in educational literature: A critical synthesis. *Review of Educational Research*, *72*(1), 31–60. https://doi.org/10.3102/00346543072001031

Dimaggio, P. (1982). Cultural Capital and School Success : The Impact of Status Culture Participation on the Grades of U.S. High School Students. *American Sociological Review*, *47*(2), 189–201.

Dribe, M., Van Bavel, J., & Campbell, C. (2012). Social mobility and demographic behavior: Long term perspectives. *Demographic Research*, *26*(June), 173–190. https://doi.org/10.4054/DemRes.2012.26.8

Easterlin, R. A. . (1976). The Conflict between Aspirations and Resources. *Population and Development Review*, *2*(3/4), 417–425.

Erikson, R., Goldthorpe, J. H., Jackson, M., Yaish, M., & Cox, D. R. (2005). On class differentials in educational attainment. *Proceedings of the National Academy of Sciences of the United States of America*, *102*(27), 9730–9733. https://doi.org/10.1073/pnas.0502433102

Evertsson, M., & Nermo, M. (2007). Changing resources and the division of housework: A longitudinal study of Swedish couples. *European Sociological Review*, *23*(4), 455–470. https://doi.org/10.1093/esr/jcm018

Fahlén, S., & Oláh, L. S. (2018). Economic uncertainty and first-birth intentions in Europe. *Demographic Research*, *39*(1), 795–834. https://doi.org/10.4054/DemRes.2018.39.28

Fegert, J. M., Vitiello, B., Plener, P. L., & Clemens, V. (2020). Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: A narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child and Adolescent Psychiatry and Mental Health*, *14*(1), 1–11. https://doi.org/10.1186/s13034-020-00329-3

Fulkerson, J. A., Pasch, K. E., Stigler, M. H., Farbakhsh, K., Perry, C. L., & Komro, K. A. (2010). Longitudinal Associations Between Family Dinner and Adolescent Perceptions of Parent-Child Communication Among Racially Diverse Urban Youth. *Journal of Family Psychology*, *24*(3), 261–270. https://doi.org/10.1037/a0019311

Gatta, A., Mattioli, F., Mencarini, L., & Vignoli, D. (2021). Employment uncertainty and fertility intentions: Stability or resilience? *Population Studies*, *0*(0), 1–20. https://doi.org/10.1080/00324728.2021.1939406

Gillespie, B. J., Peterson, G., & Lever, J. (2019). Gendered perceptions of fairness in housework and shared expenses: Implications for relationship satisfaction and sex frequency. *PLoS ONE*, *14*(3), 1–18. https://doi.org/10.1371/journal.pone.0214204

Gimpelson, V., & Treisman, D. (2018). Misperceiving inequality. *Economics and Politics*, *30*(1), 27–54. https://doi.org/10.1111/ecpo.12103

Greenstein, T. N. (2000). Economic dependence, gender, and the division of labor in the home: A replication and extension. *Journal of Marriage and Family*, *62*(2), 322–335. https://doi.org/10.1111/j.1741-3737.2000.00322.x

Han, J., Kim, S., Ha, S. E., & Shin, I. C. (2014). Ambivalent Effects of Social Relations on Subjective Well-being Joon. *Korean Journal of Sociology*, *48*(5), 1–24.

Han, S., & Kim, A. (2018). Social capital and the improvement of academic achievement: The interrelated effects of families and schools. *Korean Journal of Sociology of Education*, *28*(2), 157–182.

Hauser, O. P., & Norton, M. I. (2017). (Mis)perceptions of inequality. *Current Opinion in Psychology*, *18*, 21–25. https://doi.org/10.1016/j.copsyc.2017.07.024

Hiekel, N., & Ivanova, K. (2022). Changes in Perceived Fairness of Division of Household Labor Across Parenthood Transitions: Whose Relationship Satisfaction Is Impacted? *Journal of Family Issues*, *0*(0), 1–28. https://doi.org/10.1177/0192513X211055119

Hochschild, A. R., & Machung, A. (2012). The second shift : working families and the revolution at home / Arlie Hochschild with Anne Machung. In *Penguin Books*.

Hofmann, B., & Hohmeyer, K. (2013). Perceived economic uncertainty and fertility: Evidence from a labor market reform. *Journal of Marriage and Family*, *75*(2), 503–521. https://doi.org/10.1111/jomf.12011

Horne, R. M., Johnson, M. D., Galambos, N. L., & Krahn, H. J. (2018). Time, Money, or Gender? Predictors of the Division of Household Labour Across Life Stages Rebecca. *Sex*

Roles, *78*, 731–743.

Hudde, A., Hank, K., & Jacob, M. (2021). Gender Role Attitudes Cannot Explain How British Couples Responded to Increased Housework Demands during the COVID-19 Pandemic. *Socius*, *7*(1). https://doi.org/10.1177/23780231211064395

Hwang, J., Park, S., & Shin, D. (2018). Two birds with one stone: Female labor supply, fertility, and market childcare. *Journal of Economic Dynamics and Control*, *90*, 171–193. https://doi.org/10.1016/j.jedc.2018.02.008

Imai, K., Keele, L., Tingley, D., & Yamamoto, T. (2011). Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies. *American Political Science Review*, *105*(4), 765–789. https://doi.org/10.1017/S0003055411000414

Jeon, H. R., & Kim, K. (2006). Determinants of educational aspiration of high school students: With special reference to the effect of significant others. *Korean Journal of Sociology of Education*, *16*(4), 185–206.

Kan, M. Y., Hertog, E., & Kolpashnikova, K. (2019). Housework share and fertility preference in four East Asian countries in 2006 and 2012. *Demographic Research*, *41*(December), 1021–1046. https://doi.org/10.4054/DemRes.2019.41.35

Karlson, K. B., Holm, A., & Breen, R. (2012). Comparing Regression Coefficients Between Same-sample Nested Models Using Logit and Probit: A New Method. *Sociological Methodology*, *42*(1), 286–313. https://doi.org/10.1177/0081175012444861

Kim, Hisam. (2010). *Analysis of the Effects of Private Education on Academic Achievement and Labor Market Performance*.

Kim, Hyunju, & Lee, B.-H. (2007). Effects of Family Background, Social Capital and Cultural Capital on the Children's Academic Performance. *Korea Journal of Population Studies*, *30*(1), 125–148.

Kim, J., & Luke, N. (2020). Lowest-low fertility in South Korea: Policy and domestic labor supports and the transition to second birth. *Social Forces*, *99*(2), 700–731. https://doi.org/10.1093/sf/soz159

Kim, K., & Byun, S. (2007). The impact of cultural capital on student achievement in South Korea. *Korean Journal of Sociology of Education*, *17*(1), 23–51.

Kim, S. (2022). A Socio-psychological Approach to Low Fertility: Who Can't, and Why Can't They Dream of Marriage and Childbearing? *Survey Research*, *23*(2), 1–33. https://kiss.kstudy.com/thesis/thesis-view.asp?key=3948157

Kim, Y. H. (2012). The evolution of and issues in the cultural capital theory. *Korean Journal of Sociology of Education*, *22*(2), 31–63.

Kim, Yong-hoi, & Han, C. (2019). A Semantic Network Analysis of the Web News Articles on 'Spoon Class.' *Korean Journal of Social Welfare*, *71*(3), 55–81.

Kim, Young-eun, & Um, M. (2018). The effect of parents' socioeconomic status on academic achievement: Focusing on the mediating effect of parental emotional support and student's ego resilience. *Korean Journal of Social Welfare Studies*, *49*, 5–30.

Kingston, P. W. (2001). The Unfulfilled Promise of Cultural Capital Theory Author. *Sociology*

of Education, *74*(2001), 88–99.

Kohler, U., Karlson, K. B., & Holm, A. (2011). Comparing coefficients of nested nonlinear probability models. *Stata Journal*, *11*(3), 420–438. https://doi.org/10.1177/1536867x1101100306

Kristal, T., & Yaish, M. (2020). Does the coronavirus pandemic level the gender inequality curve? (It doesn't). *Research in Social Stratification and Mobility*, *68*(May), 100520. https://doi.org/10.1016/j.rssm.2020.100520

Kroger, J. (2006). *Identity Development: Adolescence Through Adulthood*. Sage Publications.

Kye, B. (2011). Intergenerational transmission of women's educational attainment in South Korea: An application of a multi-group population projection model. *Demographic Research*, *24*(June), 79–112. https://doi.org/10.4054/DemRes.2011.24.3

Lachance-Grzela, M., & Bouchard, G. (2010). Why Do Women Do the Lion's Share of Housework? A Decade of Research. *Sex Roles*, *63*(11), 767–780. https://doi.org/10.1007/s11199-010-9797-z

Lamont, M., & Lareau, A. (1988). Cultural Capital: Allusions, Gaps and Glissandos in Recent Theoretical Developments. *Sociological Theory*, *6*(2), 153. https://doi.org/10.2307/202113

Lareau, A. (2002). Invisible Inequality : Social Class and Childrearing in Black Families and White Families. *American Sociological Review*, *67*(5), 747–776.

Lareau, A. (2011). *Unequal Childhoods: Class, Race, and Family Life* (second). University of California Press.

Lareau, A., & Weininger, E. B. (2003). Cultural capital in educational research: A critical assessment. *Theory and Society*, *32*(5–6), 567–606. https://doi.org/10.1023/B:RYSO.0000004951.04408.b0

Lee, Y., & Lee, S. (2017). A Study of the Effect of Social Status on Happiness: A Focus on Objective and Subjective Social Status. *Korean Journal of Public Administration*, *55*(1), 1–39.

Lennon, M. C., & Rosenfield, S. (1994). Relative Fairness and the Division of Housework : The Importance of Options. *American Journal of Sociology*, *100*(2), 506–531.

Long, J. S. (1997). *REGRESSION MODELS FOR CATEGORICAL DEPENDENT VARIABLES USING STATA J.* Thousand Oaks.

Lutz, W., Skirbekk, V., & Testa, M. R. (2006). The low-fertility trap hypothesis: Forces that may lead to further postponement and fewer births in Europe. *Vienna Yearbook of Population Research*, *March*, 167–192. https://doi.org/10.1553/populationyearbook2006s167

Malicka, I., Mynarska, M., & Świderska, J. (2021). Perceived consequences of the COVID-19 pandemic and childbearing intentions in Poland. *Journal of Family Research*, *33*(3), 674–702. https://doi.org/10.20377/jfr-666

Marteleto, L. J., Guedes, G., Coutinho, R. Z., & Weitzman, A. (2020). Live Births and Fertility Amid the Zika Epidemic in Brazil. *Demography*, *57*(3), 843–872. https://doi.org/10.1007/s13524-020-00871-x

Matysiak, A., Sobotka, T., & Vignoli, D. (2021). The Great Recession and Fertility in Europe: A Sub-national Analysis. In *European Journal of Population* (Vol. 37, Issue 1). Springer Netherlands. https://doi.org/10.1007/s10680-020-09556-y

McHugh, M. C., & Frieze, I. H. (1997). The measurement of gender-role attitudes: A review and commentary. *Psychology of Women Quarterly*, *21*(1), 1–16. https://doi.org/10.1111/j.1471-6402.1997.tb00097.x

Meraviglia, C., & Dudka, A. (2021). The gendered division of unpaid labor during the Covid-19 crisis: did anything change? Evidence from Italy. *International Journal of Sociology*, *51*(1), 64–75. https://doi.org/10.1080/00207659.2020.1832346

Miettinen, A., Lainiala, L., & Rotkirch, A. (2015). Women's housework decreases fertility: Evidence from a longitudinal study among Finnish couples. *Acta Sociologica (United Kingdom)*, *58*(2), 139–154. https://doi.org/10.1177/0001699315572028

Mikelson, K. S. (2008). He said, she said: Comparing mother and father reports of father involvement. *Journal of Marriage and Family*, *70*(3), 613–624. https://doi.org/10.1111/j.1741-3737.2008.00509.x

Mills, M., Mencarini, L., Tanturri, M. L., & Begall, K. (2008). Gender equity and fertility intentions in Italy and the Netherlands. *Demographic Research*, *18*(June), 1–26. https://doi.org/10.4054/demres.2008.18.1

Modena, F., Rondinelli, C., & Sabatini, F. (2014). Economic insecurity and fertility intentions: The case of Italy. *Review of Income and Wealth*, *60*(S1), 233–255. https://doi.org/10.1111/roiw.12044

Niehues, J. (2014). Subjective Perceptions of Inequality and Redistributive Preferences: An International Comparison. *IW-Trends*, 1–23. file:///Users/orhantorul/Downloads/Inequality_Perception_Discussion_Paper_Judith_Niehues.pdf

Nitsche, N., & Grunow, D. (2016). Housework over the course of relationships: Gender ideology, resources, and the division of housework from a growth curve perspective. *Advances in Life Course Research*, *29*, 80–94. https://doi.org/10.1016/j.alcr.2016.02.001

OECD. (2018). A Broken Social Elevator? How to Promote Social Mobility. In *OECD*. https://doi.org/10.1787/9789264301085-en

OECD. (2022). *Education at a Glance 2022: OECD Indicators*. https://doi.org/10.1787/3197152b-en.

Okun, B. S., & Raz-Yurovich, L. (2019). Housework, Gender Role Attitudes, and Couples' Fertility Intentions: Reconsidering Men's Roles in Gender Theories of Family Change. *Population and Development Review*, *45*(1), 169–196. https://doi.org/10.1111/padr.12207

Park, H., Byun, S. yong, & Kim, K. keun. (2011). Parental involvement and students' cognitive outcomes in Korea: Focusing on private tutoring. *Sociology of Education*, *84*(1), 3–22. https://doi.org/10.1177/0038040710392719

Park, S. (2017). A structural explanation of recent changes in life-cycle labor supply and fertility behavior of married women in the United States. *European Economic Review*, *102*, 129–168. https://doi.org/10.1016/j.euroecorev.2017.11.006

Perry-Jenkins, M., & Gerstel, N. (2020). Work and Family in the Second Decade of the 21st

Century. *Journal of Marriage and Family*, *82*(1), 420–453. https://doi.org/10.1111/jomf.12636

Petts, R. J., Carlson, D. L., & Pepin, J. R. (2021). A gendered pandemic: Childcare, homeschooling, and parents' employment during COVID-19. *Gender, Work and Organization*, *28*(S2), 515–534. https://doi.org/10.1111/gwao.12614

Presser, H. B. (1994). Employment Schedules Among Dual-Earner Spouses and the Division of Household Labor by Gender. *American Sociological Review*, *59*(3), 348. https://doi.org/10.2307/2095938

Reese, L., Arauz, R. M., & Bazán, A. R. (2012). Mexican parents' and teachers' literacy perspectives and practices: construction of cultural capital. *International Journal of Qualitative Studies in Education*, *25*(8), 983–1003.

Roh, M. (2021). The Effects of Perceived Social Fairness and the Possibility of Upward Social Mobility on Emotional Depression. *The Journal of the Korea Contents Association*, *21*(1), 173–184.

Roksa, J., & Potter, D. (2011). Parenting and academic achievement: Intergenerational transmission of educational advantage. *Sociology of Education*, *84*(4), 299–321. https://doi.org/10.1177/0038040711417013

Ryu, D., & Kang, C. (2013). Do Private Tutoring Expenditures Raise Academic Performance? Evidence from Middle School Students in South Korea. *Asian Economic Journal*, *27*(1), 59–83. https://doi.org/10.1111/asej.12002

Sánchez, A. R., Fasang, A. E., & Harkness, S. (2021). Gender division of housework during the COVID-19 pandemic: Temporary shocks or durable change? *Demographic Research*, *45*(December), 1297–1316. https://doi.org/10.4054/DEMRES.2021.45.43

Shafer, K., Scheibling, C., & Milkie, M. A. (2020). The Division of Domestic Labor before and during the COVID-19 Pandemic in Canada: Stagnation versus Shifts in Fathers' Contributions. *Canadian Review of Sociology*, *57*(4), 523–549. https://doi.org/10.1111/cars.12315

Smith, K. M., Freeman, P. A., & Zabriskie, R. B. (2009). An examination of family communication within the core and balance model of family leisure functioning. *Family Relations*, *58*(1), 79–90. https://doi.org/10.1111/j.1741-3729.2008.00536.x

Song, H., Lee, M., & Choi, S. (2013). What Causes Gap between Objective Class Position and Subjective Class Identification in Korea Society? *Korea Journal of Population Studies*, *36*(3), 97–119.

Statistics Korea. (2022). *2021 Marriage and Divorce Statistics*. Vital Statistics Division.

Sullivan, A. (2001). Cultural Capital and Educational Attainment. *Socioloby*, *35*(4), 893–912.

Szabo, T. G., Richling, S., Embry, D. D., Biglan, A., & Wilson, K. G. (2020). From Helpless to Hero: Promoting Values-Based Behavior and Positive Family Interaction in the Midst of COVID-19. *Behavior Analysis in Practice*, *13*(3), 568–576. https://doi.org/10.1007/s40617-020-00431-0

Torr, B. M., & Short, S. E. (2004). Second births and the second shift: A research note on gender equity and fertility. *Population and Development Review*, *30*(1), 109–130. https://doi.org/10.1111/j.1728-4457.2004.00005.x

Tzanakis, M. (2011). Bourdieu's social reproduction thesis and the role of cultural capital in educational attainment: A critical review of key empirical studies. *Educate~*, *11*(1), 76–90. http://www.educatejournal.org/index.php/educate/article/view/251

Van Bavel, J., Moreels, S., Van de Putte, B., & Matthijs, K. (2011). Family size and intergenerational social mobility during the fertility transition: Evidence of resource dilution from the city of Antwerp in nineteenth century Belgium. *Demographic Research*, *24*(June), 313–344. https://doi.org/10.4054/DemRes.2011.24.14

Verme, P., Milanovic, B., AL-Shawarby, S., Eltawila, S., Gadallah, M., & Ali.El-Majeed, E. (2014). *Inside Inequality in the Arab Republic of Egypt*. The Wolrd Bank.

Vignoli, D., Bazzani, G., Guetto, R., Minello, A., & Pirani, E. (2020). Uncertainty and Narratives of the Future: A Theoretical Framework for Contemporary Fertility. *Springer Series on Demographic Methods and Population Analysis*, *51*, 25–47. https://doi.org/10.1007/978-3-030-48519-1_3

Vignoli, D., Guetto, R., Bazzani, G., Pirani, E., & Minello, A. (2020). A reflection on economic uncertainty and fertility in Europe: The Narrative Framework. *Genus*, *76*(1). https://doi.org/10.1186/s41118-020-00094-3

Vignoli, D., Tocchioni, V., & Mattei, A. (2020). The impact of job uncertainty on first-birth postponement. *Advances in Life Course Research*, *45*(May 2018), 100308. https://doi.org/10.1016/j.alcr.2019.100308

Voicu, M., & Bădoi, D. (2021). Fertility and the COVID-19 crisis: do gender roles really matter? *European Societies*, *23*(S1), S199–S214. https://doi.org/10.1080/14616696.2020.1822537

Vrachnis, N., Vlachadis, N., Iliodromiti, Z., Vlachadi, M., & Creatsas, G. (2014). Greece's birth rates and the economic crisis. *The Lancet*, *383*(9918), 692–693. https://doi.org/10.1016/S0140-6736(14)60251-8

Waddell, N., Overall, N. C., Chang, V. T., & Hammond, M. D. (2021). Gendered division of labor during a nationwide COVID-19 lockdown: Implications for relationship problems and satisfaction. *Journal of Social and Personal Relationships*, *38*(6), 1759–1781. https://doi.org/10.1177/0265407521996476

Wooldridge, J. M. (2002). *Econometric Analysis Of Cross Section And Panel Data*. MIT Press.

Yamamoto, Y., & Brinton, M. C. (2010). Cultural capital in East Asian educational systems: The case of Japan. *Sociology of Education*, *83*(1), 67–83. https://doi.org/10.1177/0038040709356567

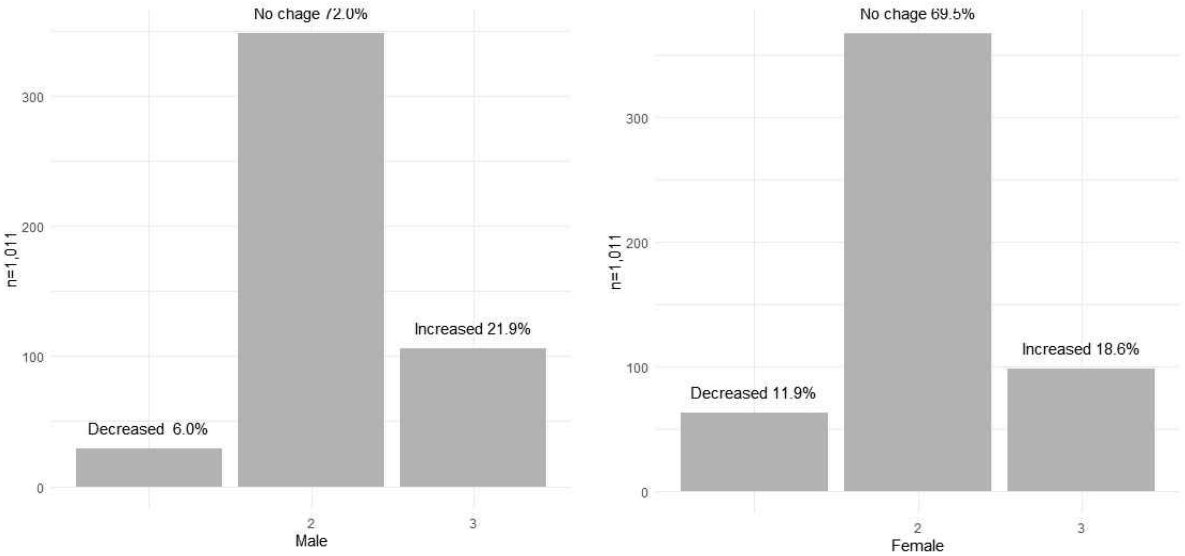
Yoo, G. S., Yang, D. Y., & Jeong, B. (2019). Effects of Subjective Socioeconomic Status on Relative Deprivation and Subjective Well-being among College Students: Testing the 'Silver-Spoon-Discourse' based Belongingness in Korean Society. *Family and Environment Research*, *57*(3), 329–340. https://doi.org/10.6115/fer.2019.024

Zamberlan, A., Gioachin, F., & Gritti, D. (2021). Work less, help out more? The persistence of gender inequality in housework and childcare during UK COVID-19. *Research in Social Stratification and Mobility*, *73*, 100583. https://doi.org/10.1016/j.rssm.2021.100583

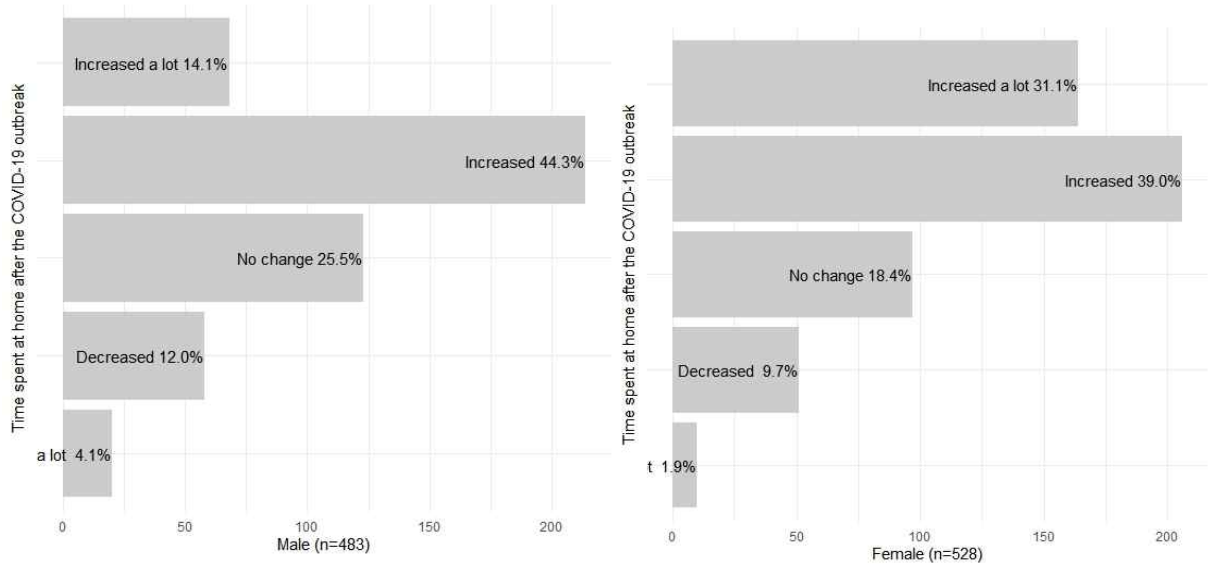
Zuanna, G. D. (2007). Social mobility and fertility. *Demographic Research*, *17*, 441–464.

Appendix

[FIGURE 1A.1] SELF-REPORTED CHANGE IN SHARE OF HOUSEWORK BY SEX



[FIGURE 1A.2] AN INCREASE IN TIME SPENT AT HOME DURING THE COVID-19



[TABLE 1A.1] TIME INCREASE AND HOUSEWORK CHANGE

	(1) Division change	(2) Housework change
Time increase	0.0852***	0.0380***
	(0.0256)	(0.00698)
Relative resource (income)	-0.0320	-0.00381
	(0.0401)	(0.0109)
Egalitarian gender norms	-0.125	-0.0719
	(0.187)	(0.0509)
Male	0.00177	-0.0750
	(0.175)	(0.0528)
Gender norms * Male	0.226	0.152*
	(0.265)	(0.0721)
Income change	-0.0364	-0.0128
	(0.0334)	(0.00909)
Dual income	0.0675	0.00909
	(0.0543)	(0.0148)
Age	0.000576	-0.00200
	(0.00492)	(0.00134)
Children number	0.0781*	0.0349***
	(0.0375)	(0.0102)
Constant	2.851***	0.619***
	(0.276)	(0.0752)
N	598	598
adj. R^2	0.021	0.059

Standard errors in parentheses

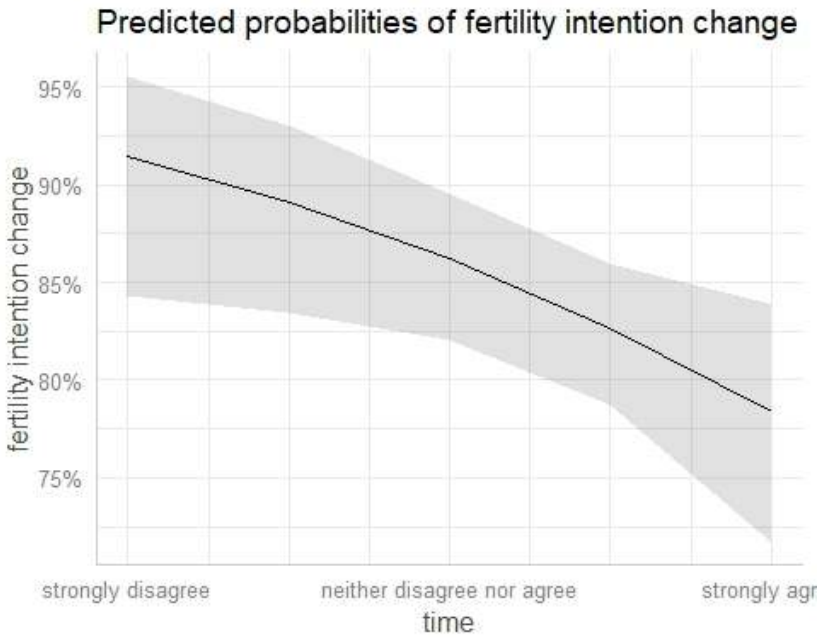
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Housework change is measured in a relative term with partners in model (1) and in a relative term with the pre-pandemic level in model (2).

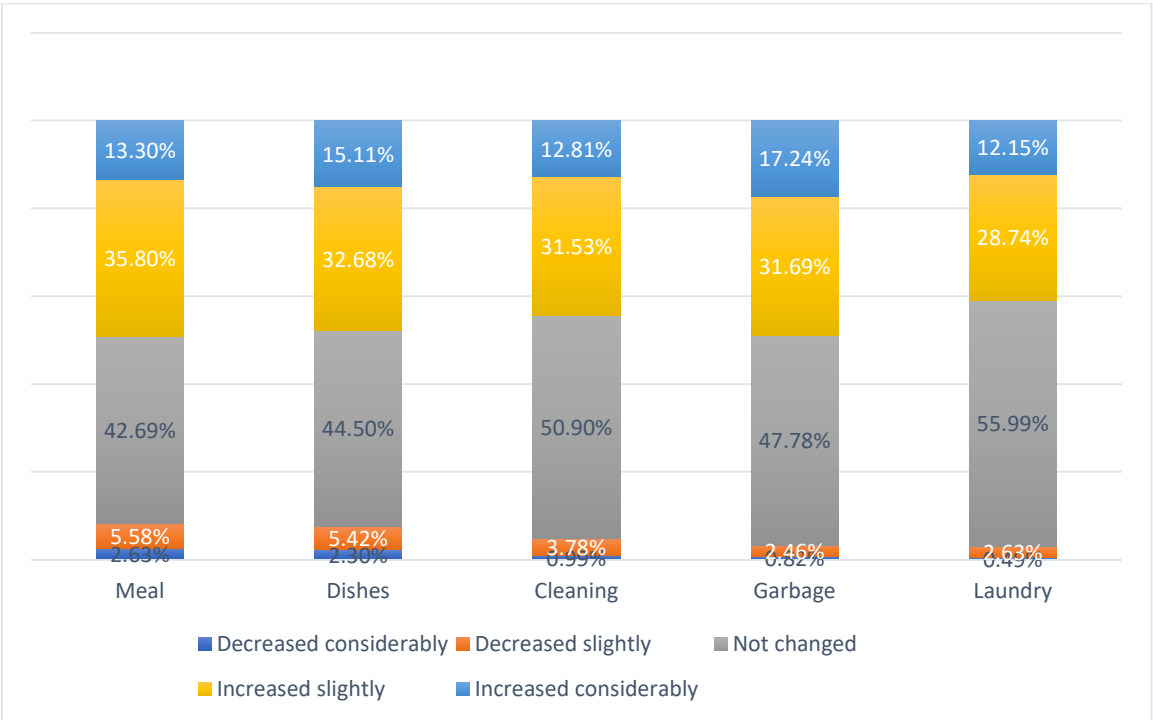
As expected, direction of the association with the housework change is positive in terms of time increase and the egalitarian gender norms, and positive in terms of the relative resource consistent with the previous literature. It is presumed that the weak statistical significance levels of relative income and the egalitarian gender attitude are derived from a limitation of the

dataset. In terms of monthly income level for each respondent and spouse, and gender norms, we do not have measure for change throughout the COVID19.

[FIGURE 1A.3] MARGINAL EFFECTS OF THE INCREASE OF TIME SPENT AT HOME



[FIGURE 1A.4] CHANGE OF HOUSEWORK LOAD BY TASK



[TABLE 1A.2] MULTINOMIAL LOGIT REGRESSION

	(1) Fertility intention change	(2) Fertility intention change
Negative change (ref. no change)		
Time increase	0.302**	0.269*
	(0.115)	(0.116)
Division change		0.330+
		(0.174)
Income change	-0.242+	-0.234+
	(0.138)	(0.139)
Infection worry	0.366*	0.338*
	(0.143)	(0.145)
Male	-0.0334	-0.0622
	(0.224)	(0.225)
Dual	0.114	0.100
	(0.227)	(0.228)
Age	0.363	0.352
	(0.246)	(0.246)
Age squared	-0.00640*	-0.00627+
	(0.00326)	(0.00327)
Children number	0.109	0.0855
	(0.161)	(0.162)
Constant	-7.411	-7.991+
	(4.654)	(4.668)
Positive change (ref. no change)		
Time increase	0.0274	-0.0232
	(0.271)	(0.278)
Division change		0.670
		(0.419)
Income change	-0.317	-0.277
	(0.334)	(0.341)
Infection worry	-0.638*	-0.667*
	(0.304)	(0.303)
Male	-0.0134	-0.0712
	(0.543)	(0.545)

Dual	0.974	0.859
	(0.668)	(0.669)
Age	-0.693	-0.676
	(0.521)	(0.527)
Age square	0.00888	0.00864
	(0.00674)	(0.00682)
Children number	-0.349	-0.470
	(0.396)	(0.404)
Constant	11.79	9.729
	(9.884)	(10.02)
N	598	598
adj. R^2	0.101	0.109

Standard errors in parentheses

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Consistent with the result of logit regression analysis, the multinomial logit regression result provides that the increase of time at home positively predicts the probability of negative fertility change. This correlation is mediated by housework division change.

On the contrary, no significant effect of the time increase is found among those who change their fertility intention change positively. It is due to the small sample size, which is 15.

Survey questions

C5-1. Has your plan to have a child changed after the COVID-19 pandemic?

① Not changed/ more or less the same

② Decided to have fewer children or gave up altogether

③ Decided to have children or have more children

④ Decided to postpone having a child

⑤ Decided to have a child sooner

C7. Have there been changes in the time spent doing the following household tasks since the COVID-19 pandemic?

	Decreased considerably	Decreased slightly	Not changed	Increased slightly	Increased considerably
1) Preparing a meal (Cooking)	①	②	③	④	⑤
2) Washing dishes	①	②	③	④	⑤
3) Cleaning the house	①	②	③	④	⑤
4) Garbage disposal and recycling	①	②	③	④	⑤
5) Laundry and organizing clothes	①	②	③	④	⑤

C8-2. Have there been changes in the distribution of household tasks between you and your spouse/partner since the COVID-19 pandemic?

① There is a lot less work that I do ② There is a little less work that I do

③ Not changed ④ There is a little more work that I do

⑤ There is a lot more work that I do

E10-2. Has your household income changed after the COVID-19 pandemic?

① Decreased considerably

② Decreased slightly

③ Not changed / more or less the same

④ Increased slightly

⑤ Increased considerably

E12. How would you describe your everyday life?

	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
I now spend more time at home since the COVID-19 outbreak.	①	②	③	④	⑤

E15. How much did you worry about you and your family members getting infected with COVID-19?

① Not at all worried ② Rather unworried

③ A little bit worried ④ Very much worried

II. FUTURE PROSPECTS AND FERTILITY DESIRE

Future Prospects and Fertility Desire[2]

Abstract

What motivates individuals to want to have children? As the low fertility became a social problem in South Korea, endeavors to understand the family formation motivation have been made both in academic and public discourse. While much of the discussion focus on economic conditions or structural constraints as major obstacle in fertility decision, a burgeoning body of research emphasizes the importance of subjective perceptions particularly regarding future prospects. There can be hardly a disagreement on the importance of future expectation in family formation motivation, yet the empirical evidence is surprisingly lacked. To fill this niche, this study aims to assess the link between the prospect for the next generation in the future and fertility desire. Using the survey dataset on 1,998 individuals in age between 25 and 49, this study examines the correlation between the future prospects and fertility desire. The analysis results present the positive correlation. In particular, positive future prospect is observed to moderate the association between the household income level and fertility desires. Our study is expected to contribute to addressing the low fertility in Korea, providing the empirical evidence of future prospects. As a policy implication, we suggest that the policy should be designed with the fundamental goal to convict individuals of the promising future for the next generation.

Key words: Future prospects, Subjective perceptions, Social mobility, Fertility desire, Family formation motivation

[2] Coauthored with Prof. Seulki Choi

A. Introduction

Does individual make fertility decision *according to* objective constraints or *in spite of* the constraints? Examination of factors that influence the fertility motivation have drawn intensive scholarly attentions. A stream of literature focuses on the economic constraints and employment insecurity as impediments of fertility motivation (Currie et al., 2014; Ba', 2020; Modena et al., 2014) based on cost-benefit analysis (Becker & Barro, 1988). On the other hand, structural constraints and insufficient domestic support are pointed to be another obstacle that discourages fertility desire among females (Hwang et al., 2018; J. Kim & Luke, 2020; Park, 2017; Clark, 2001; Raybould, 2022; Yoon, 2017). Yet, as Vignoli, Guetto, et al. (2020) pointed out, fertility decision is more or less influenced by individuals' perception and interpretation *regardless of* such constraints rather than *depending on* them. This study is motivated to examine and provide the empirical evidence of the association between the future prospect and fertility desire, positing that future prospects for the next generation have predictability of the fertility desire.

The aim of this study is twofold. First, it is to examine correlation of the future prospects for the next generation and fertility desire, and second is to examine the moderating role of future prospects in the association between economic affluence and fertility desire.

This study focuses on the influence of future prospects in the formation of fertility desire. The family formation decisions, by nature, entail fundamental uncertainty. Thus, individuals consider not only current conditions but also long-term prospects. As John Dewey puts, "Imaginative forecast of the future is the forerunning quality of behavior rendered available for guidance in the present" (quoted by Vignoli, Bazzani, et al., 2020), the forward-looking perception plays a significant role in life course decision at least as much as the current conditions and constraints. Particularly, considering a double aspiration of individuals for their own wellbeing and next

generation's wellbeing (Zuanna, 2007), future prospects for children should be an influential predictor in fertility decision making process.

Also, this study aims to examine the moderating role of the subjective perception in the association between objective conditions and fertility motivation. Even though the objective measures of individuals' status in terms of education, income and occupation in overall are correlated with fertility desire, it is not necessarily true for everyone. It is evident that a gap exists between objective measures and subjective perceptions (Brunori, 2017; Gimpelson & Treisman, 2018; Verme et al., 2014). This study proposes that fertility motivation differs between those who have an optimistic future prospect despite the low level of status and those who have a pessimistic view despite the high level of status. Vignoli, Guetto, et al. (2020) demonstrated that individual's family plan depends on what they *perceive* as prerequisite for having a (another) child. Considering the lack of the empirical evidence of the moderating role of subjective perception, this study aims to examine the moderating role of future prospects for the next generations in the fertility motivation.

In order to test the link between future prospects and fertility motivation, the 2nd wave of the Korea Value Survey is used. The Korea Value Survey best suits for the purpose of this study in that it has both measures of future prospects and fertility desire. Whereas existing datasets have either future prospect or fertility motivation, this dataset enables to examine the correlation between future prospects and fertility desires.

This study is expected to shed a light to the better understanding of the low fertility in Korea at least two aspects. First, this study examines the correlation of future prospects and the family formation motivation, providing suggestive evidence of the importance of social mobility. Extending the Easterlin's hypothesis, which emphasized the relative affluence between

generations in formation of the perception (Easterlin, 1976), the analysis results in this study provide a suggestive implication of the intergenerational mobility. Although there is a study that focused on the perceived social mobility within the generation (Kim, 2022), consideration of the perceived social mobility between generations is neglected. Focusing on the future prospects for children, this study extends the previous discussion into the intergenerational social mobility.

Second, this study considers future aspect in fertility desire formation. Building up on the Narrative Framework (Vignoli, Bazzani, et al., 2020), this study identifies the association between the future prospects and fertility desire. Future imaginary is an important component of narratives of future, which influences fertility motivation. As the social mobility draws a growing interest in the academic and the public realms, this study is expected to add empirical evidence to the better understanding of the low fertility in Korea.

In the next section, the theoretical framework will be presented after the overview of previous literatures on future prospects and fertility intentions in the existence of uncertainty. Then estimation strategy section follows, with micro-level analysis results. The study will conclude with implications and discussions.

B. Background

Future prospects and fertility under uncertainty

Family formation decisions entail the uncertainty in fundamental, as no one can predict the future with confidence (Beckert and Bronk, 2018). Fertility decisions are also “irreversible” (Modena et al., 2014) in that long-term expenditures and parental time are required as a consequence. In this regard, the nexus of fertility and uncertainty has drawn a considerable attention. The uncertainty has been defined and measured diversely across studies. For example, Currie et al. (2014)

examined the influence of the employment status as a proxy for the economic uncertainty. Recently, a trend has been shifted to the subjective perception of uncertainty from the objective one. Fahlén & Oláh (2018) emphasized the effect of *perceived* job and income security, and Hofmann & Hohmeyer (2013) found a significant correlation between perceived economic concerns and fertility, exploiting the announcement of German unemployment benefit reform as an instrumental variable.

Under the existence of the fundamental uncertainty by nature, the fertility decision is more or less influenced by future expectations and perceptions, so-called "shadow of the future" besides the current objective constraints (Bernardi, et al., 2019). Perceptions of the status and future prospects have drawn attentions in the demographic studies. Introducing the concept of the low fertility trap, Lutz et al. (2006) highlighted a gap between aspirations and expectations as one of the components that result in a downward spiral of fertility. The Narrative Framework proposes that it is not a mere "statistical shadow of the past", but "narrative of the future" that shapes individuals' fertility decision in a condition of uncertainty (Vignoli, Guetto, et al., 2020). In the context of Korea, a burgeoning literature focuses on perceptions and future prospects among the young adults (Chin et al., 2019; Kim, 2022)

Yet, the empirical evidence of the correlation between future prospects and fertility desire is limited. Chin et al. (2019) classified different types of perceptions regarding Korean society and future prospect and how it is associated with marriage and childbirth attitudes among young adults in Korea. But fertility desire and decision-making were not considered in their study, as the study investigated the associations among different perceptions. Drawing on the survey on the young adults in Korea, this study examines the predictability of future prospects in fertility desire,

providing new insights based on empirical evidence to the policy in addressing low fertility in Korea.

Objective or subjective perceptions

In this study, we focus on the perceived social mobility as a predictor of fertility emphasized the importance of the perceived intra-generational social mobility among the young generation (Kim, 2022). Recently, the academic attention has shifted to the link between subjective perceptions and fertility decisions, such as the perceived uncertainty (Gatta et al., 2021; Hofmann & Hohmeyer, 2013), generalized trust level (Arnstein Aassve et al., 2016, 2021), or risk tolerance disposition (Bellani & Arpino, 2022).

It is not surprising that subjective perception differs from actual reality. A recently burgeoning body of literature takes note of a gap between subjective perception and the objective measure. For example, the prevailing perception of the degree of unequal opportunity is only weakly correlated with its objective measure (Brunori, 2017), based on which beliefs and policy preferences are shaped (Hauser & Norton, 2017; Niehues, 2014). After carefully reviewing 60 years of studies on inequality in Egypt, Verme et al. (2014) suggested that what lead social unrest was perceptions of inequality rather than facts Gimpelson & Treisman (2018) also argues that most theories should be reframed as the effects of *perceived* inequality rather than inequality since it is the perceived inequality, not the actual level, that is strongly correlated with demand for redistribution and causes conflict between rich and poor. Subjective perceptions on social mobility is connected to self-efficacy and emotional depression, implying that future prospects could be closely related to fertility desire and intention (Roh, 2021).

Social mobility and fertility desire

Social motility can be defined in various aspects. There are intergenerational social mobility and intra-generational social mobility in terms of time perspective. Intergenerational social mobility refers to the mobility across generation, while the intra-generational social mobility covers during one's life course. Unlike the general perception of social mobility as the upward mobility, the downward mobility is also an important aspect. Not only "sticky ceilings", the upward mobility, but also "sticky floors", downward mobility, is also what prevents people from moving up the social ladder (OECD, 2018). Due to the economic, social, and political consequences, the perceived social mobility is drawing attention from both policy makers and academics. The nexus between the social mobility and life satisfaction or depression (J. Han et al., 2014; Lee & Lee, 2017; Roh, 2021; Song et al., 2013) and political attitudes or social cohesion (OECD, 2018) have been well investigated. Yet, the evidence of the association with fertility decision and behavior is limited.

The intersection of family formation and social mobility is a topic with longstanding interest (Bras et al., 2010; Dribe, et al., 2012; Kye, 2011; Van Bavel et al., 2011). Individuals have double burden for themselves and their children at the same time, which drives fertility decline (Zuanna, 2007). In an effort to maximize the well-being of family members, the family is motivated to reduce the family size for the mobility of parents (intragenerational) and children (intergenerational).

From the perspective of intergenerational mobility, according to the resource dilution hypothesis, smaller family size is a strategic decision in an exchange of investment (Dribe, et al, 2012). Historically, before the demographic transition, family size was not negatively affected by concerns for children's status, since it was a rigid society where children's status was determined

by parents (Bras et al., 2010). On the contrary, in a flexible society where social mobility is probable, parents strategically limit the children number to give better chance for their children.

In terms of the intragenerational social mobility, luggage hypothesis stipulates that individuals are driven to reduce family size in an effort to improve the personal well-being, career development, and living conditions. In this case, more children are "inconvenient luggage" (Dumont 1890/1990:77, quote by Dribe et al., 2012).

The examination of the correlation between intergenerational mobility and fertility desire on the empirical grounds in the context of Korea is lacked. Most recently, Kim (2022) confirmed the importance of forecast of the future in explaining the marriage and childbearing give-up among young adults in Korea. Yet, the prospect for mobility was measured in terms of the mobility within the generation. On the contrary, this study, highlights the mobility between generations, measuring the future prospects with the expectation for the next generation.

Hypothesis

Building up on the previous studies, this study draws on hypothesis on the correlation between the perceived status and fertility desire as below.

H1: Future prospects for children's status positively predicts desired number of children.

H2: Future prospects for children moderate the association between household income level and fertility desire.

H2A: Individuals who are optimistic about their children's status are more likely to have higher fertility desire compared to those who are pessimistic, given the household income level.

C. Methodology

Data and Sample

In order to assess the role of future prospects in fertility desire, the 2nd Survey on Koreans' set of values (hereafter 'Korea Value Survey') regarding marriage and family in the COVID-19 era is used. It has a nationally representative sample of 2,000 Korean individuals, aged between 25 and 49, stratified by age, sex, and region. Samples are selected randomly from the Embrain internet panel, which is one of the biggest internet panels in Korea, consisting of approximately 1,580,000 as of June 2022.

The internet panel has a risk to have different characteristics from the population. Yet, a range of the sample's age between 25 and 49 alleviates such concern of representativeness, as a disparity in digital appliances use or digital literacy is not significantly different among the group of these ages comparing to old age groups.

The analytical sample is 1,998 individuals without any missing values. Systematically, the online survey did not allow the respondents to skip any questions, yet we have two missing values in the region for urban area, which was the open-answer question.

Measurement

In order to assess the link between fertility desire with prospects for child's status in the future, the desired number of children is employed as the outcome variable. The mean of the desired number of children is observed to be 1.689 as in [Table 1].

The explanatory variable of key interest is future prospects for children. Future prospects for the next generations are asked through a question, "If you consider the future where your children will

be about your current age, which of the following socioeconomic status do you think they will belong to? If you don't have children, please answer as if you had children." Respondents are asked to answer 1in case of the lowest level, and 9 in case of the highest level. While the continuous variable in 9 scales is used in the main analysis, the variable is also operationalized into three group and used in the further analysis for the sake of the better presentation. It is grouped into three: the upper group, from the self-rated level of 7 to 9 in the status, the middle group between 4 to 6, and the lower group between 1 to 3. Out of the total sample, 42.54% of respondents expect their children to belong to the upper class(n=850). 20.07% of respondents have pessimistic prospects answering the prospected status between 1 and 3 (n=401), while 37.39% of the respondents answered middle level of status.

A self-rated level of respondents' socioeconomic status is also controlled to net out the influence of future prospects for the next generation. It is asked through a question, "If we were to say that the lowest level of socioeconomic status in Korean society was 1 and the highest level was 9, where do you think you belong?".

A set of sociodemographic characteristics include age, sex, marital status, rural area, education, employment, possession of house, and monthly household income. For education, this study classified respondents into 1) high school graduates 2) 2- or 3-year college graduates 3) 4-year college excluding colleges in Seoul 4) 4-year college in Seoul and MA or above. Considering the context of South Korea where attending the 4-year college becomes quite common and the concentration of the high quality of the educational infrastructure in Seoul, we distinguished 4-year colleges in Seoul. Among our samples, 12.2% are high school graduates, 20.1% are 2- or 3-year college graduates, 40.8% are 4-year college graduates, and 26.9% are graduates from 4-year college in Seoul and MA or above. Household income level is a categorical variable in 11 scale,

from 1 indicating less than 1 million Korean won and 2 indicating the monthly income between 1 million won and 2 million won, and so on. 11 indicates the monthly household income is more than 10 million won. Besides the rural area, five mega regional areas are also controlled through a way of clustering the standard errors, as each mega region is diverse in characteristics. The mega regional areas are as such: 1) Seoul, Gyeonggi, Incheon 2) Busan, Ulsan, Gyeongnam 3) Daegu, Gyeongbuk 4) Gwangju, Jeolla, Jeju 5) Daejeon, Sejong, Chungcheong.

Descriptive Statistics

Descriptive statistics on the outcome variable and key explanatory variables are presented in [Table 2.1]. Of the total sample of 1,998, the average desired number of children is 1.69. In terms of the perceived status, compared to the mean of the self-reported respondents' status (mean=4.469), the prospects for children's status is observed to be higher (mean=5.378), implying that future prospects for the social mobility for children is more or less hopeful.

[TABLE 2.1] DESCRIPTIVE STATISTICS (N=1,998)

Variable	Obs.	Distribution or mean	Min.	Max.
Desired number of children	1998	1.689	0	9
0	259	12.96%	0	1
1	418	20.92%	0	1
2	1063	53.20%	0	1
3~	258	12.91%	0	1
Perceived respondent's SES	1998	4.469	1	9
Lower	906	45.35%	0	1
Middle	688	34.43%	0	1
Upper	404	20.22%	0	1

Future prospects for child SES	1998	5.378	1	9
Lower	401	20.07%	0	1
Middle	747	37.39%	0	1
Upper	850	42.54%	0	1
Age	1998	37.479	25	49
Male	1998	.515	0	1
Married	1998	.505	0	1
Rural	1998	.107	0	1
Education				
High school	244	12.21%	0	1
2- or 3-year college	401	20.07%	0	1
4-year college (excluding college in Seoul)	816	40.84%	0	1
College in Seoul and MA or above	537	26.88%	0	1
Employed	1998	.801	0	1
Possession of house	1998	.657	0	1
Monthly household income				
~2M won	112	5.61	0	1
~4M won	562	28.13%	0	1
~6M won	650	32.53%	0	1
8M won ~	674	33.73%	0	1
Regional area				
Seoul/Incheon/Gyeonggi	1087	54.40%	0	1
Busan/Ulsan/Gyeongnam	283	14.16%	0	1
Daegu/Gyeongbuk	173	8.66%	0	1
Gwangju/Jeolla/Jeju	197	9.86%	0	1
Daejeon/Sejong/Chungcheong	258	12.91%	0	1

Model Specification

Since the dependent variable is the desired number of children, count regression analysis is employed to examine the correlation between future prospects and fertility desire. This study employs the Poisson model. The assumption of the Poisson model is that the expected value (mean) should be equal to its variance. In case of the existence of the overdispersion issue, the alternative model such as the negative binomial model should be used. In our model, the skewness the outcome variable is 0.26 (the acceptable range is between -.8 and .8 as a rule of thumb), while kurtosis 5.92. So, this study employs the Poisson model.

$$\text{Poisson}\ (Desire) = \alpha_1 + \beta_2 prospects + \gamma_1 X + \varepsilon_1 \quad (1)$$

$$\text{Poisson}\ (Desire) = \alpha_2 + \beta_3 prospects + \zeta_2 hhincome + \delta_2 prospects * hhincome + \gamma_2 X + \varepsilon_2 \quad (2)$$

Key independent variable is the expected level of socioeconomic status for (prospective) children. To net out the influence of future prospects for the next generation, the current status is controlled in terms of the objective measure and subjective measure. As an objective measure of the current status, monthly household income level, possession of house, employment status, and graduation from 4-year college in Seoul or above are used.

In order to examine the moderating effects of the future prospects in the association of the household income level on fertility desire, the interaction term is introduced in the equation (2). Future prospect is interacted with monthly household income to test the hypothesis 2.

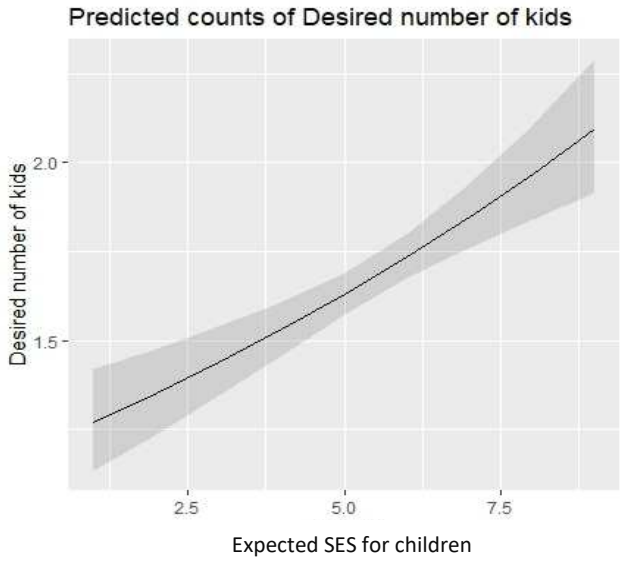
As a set of demographic characteristics, age, sex, marital status, religion, and rural area are controlled following the previous literature (S. Kim, 2022).

D. Main findings

Future prospects and fertility desire

Marginal effects of future prospects for children's status on the predicted number of desired are visualized in [Figure 2.1]. The future prospect for children is positively correlated with the desired number of children. The predicted number of desired children is 1.29 if the individual expects the level of socioeconomic status for their (prospective) children as 1. This is observed to increase constantly up to 2.09 if the individuals' prospected SES for their children is 9.

[FIGURE 2.1] FUTURE PROSPECTS AND FERTILITY DESIRES



[Table 2.2] is a result of the Poisson regression analysis. The positive correlation of future prospects and fertility desire remains significant throughout models. The model (1) presents the effect with a set of demographic controls, while model (2) and (3) present the result with the additional control of the current status in terms of subjective measure and objective measure respectively. In order to address the multicollinearity of objective measure and subjective measure of the socioeconomic status, the subjective measure and the objective measures are controlled separately in each model. Whereas the self-rated status, employment status and higher education

level are negatively associated with fertility desire, the monthly household income level positively predicts the desired number of children.

[TABLE 2.2] FUTURE PROSPECTS FOR CHILD'S SES

	(1) Fertility desire	(2) Fertility desire	(3) Fertility desire
Expected SES of children	0.0655***	0.0765***	0.0633***
	(0.0140)	(0.0164)	(0.0145)
Age	0.00248+	0.00226	0.00233
	(0.00149)	(0.00146)	(0.00171)
Male	0.105***	0.102***	0.124***
	(0.0105)	(0.00996)	(0.0107)
Marital status	0.0703*	0.0737*	0.0587+
	(0.0326)	(0.0313)	(0.0344)
Rural area	0.0968***	0.0948***	0.0910***
	(0.00860)	(0.00842)	(0.0105)
Perceived SES of respondents		-0.0228**	
		(0.00733)	
Household income			0.00935*
			(0.00468)
Possession of House			0.0648***
			(0.0151)
Employed			-0.100*
			(0.0445)
Education			-0.0123
			(0.0181)
Constant	-0.0301	0.0212	0.000971
	(0.115)	(0.110)	(0.0691)
N	1998	1998	1998

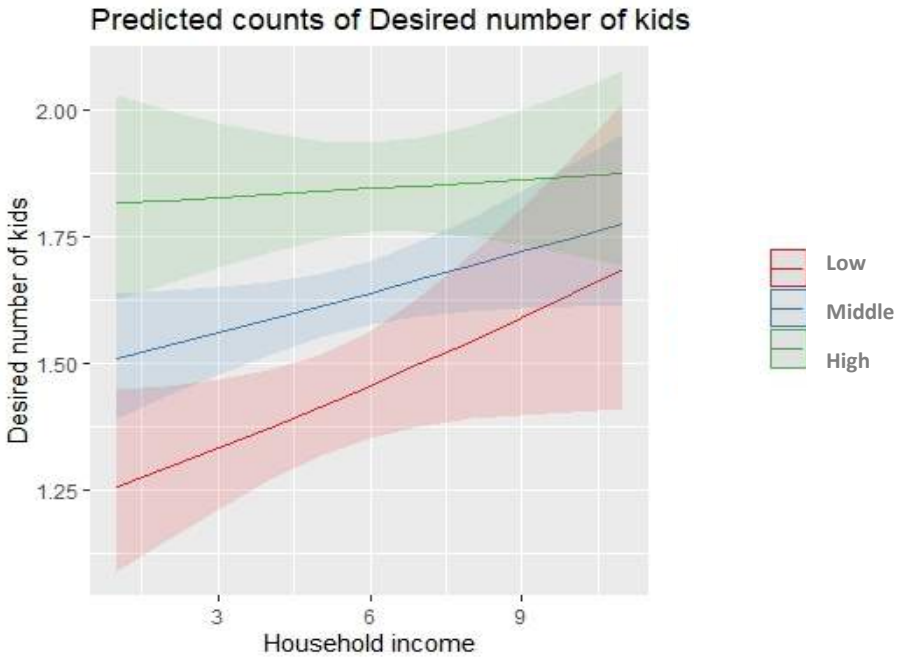
Standard errors are clustered by region

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Moderating effects of future prospects

[Figure 2.2] visualizes the result of the equation (2) which assesses the moderating effects of future prospects for children in the association of the household income level and fertility desire. For the better presentation, the categorized measure of the future prospect is employed, and each line with different color depicts the different marginal effects according to the future prospects. The green line visualizes the predicted number of the desired children among those who have high expectation of their children's status lass ranging from 7 to 9. The blue line presents the predicted fertility desire of those who have a moderate expectation of their children, between 4 and 6 in the level of the socioeconomic status. Lastly, the red line suggests the predicted fertility desire of those who have low level of children's status between 1 and 3.

[FIGURE 2.2] FUTURE PROSPECTS AND FERTILITY DESIRE DESPITE THE CURRENT STATUS



[Figure 2.2] shows that individuals who are positive about their children's future have the highest fertility desire whereas those who are pessimistic have the lowest fertility desire through all the household income levels. The predicted fertility desire of the individuals with positive prospect remains the highest despite the different slopes of the lines. This result implies that despite the seemingly greater economic constraints, if the individual has positive expectations, then s/he is likely to have the higher fertility motivation than those who are affluent financially but pessimistic about the future. The result supports the hypotheses that future prospects moderate the association between household income level and fertility desire.

E. Further analysis

The further analysis is implemented by various subgroups for the fertility motivation or hesitation can differ across different groups. For example, those who have higher fertility desire are more likely to want to get married to make a family, so the fertility motivation can be observed higher among those who get married compared to those who have never married. In terms of sex, females are reported to have less fertility desire than males in previous studies. It is also well known that the younger generation do not have fertility desire as much as the older generation. Thus, [Table 2.3] presents the subgroup analysis result by marital status in model (1) and (2), by sex in model (3) and (4), and by the age cohort from model (5) to (7).

[TABLE 2.3] SUBGROUP ANALYSIS

	(1) Never-married	(2) Married	(3) Male	(4) Female	(5) 20s	(6) 30s	(7) 40s
Expected	0.0878***	0.0334**	0.0601***	0.0719**	0.0708+	0.0882***	0.0398*

SES of children	(0.0159)	(0.0127)	(0.00756)	(0.0249)	(0.0382)	(0.0136)	(0.0173)
Household income	0.00360	0.00727*	0.00309	0.0150**	0.0110***	0.000551	0.00557
	(0.0107)	(0.00289)	(0.00630)	(0.00579)	(0.00275)	(0.00839)	(0.00644)
Possession of House	0.123***	-0.00133	0.0996*	0.0354	0.148***	0.0528+	0.0312
	(0.0234)	(0.0233)	(0.0404)	(0.0231)	(0.0264)	(0.0309)	(0.0239)
Employed	-0.0762+	-0.0650	-0.0549	-0.0919	-0.0389	-0.208**	-0.0160
	(0.0414)	(0.0600)	(0.0644)	(0.0617)	(0.0744)	(0.0679)	(0.0351)
Education	0.00265	-0.0156+	0.0340*	-0.0635**	-0.0301	-0.0152	0.00703
	(0.0322)	(0.00929)	(0.0165)	(0.0213)	(0.0245)	(0.0327)	(0.0143)
Age	-0.00361	0.0102***	0.000251	0.00324+	0.0123	-0.00185	0.00290
	(0.00323)	(0.00222)	(0.00349)	(0.00188)	(0.00989)	(0.00899)	(0.00464)
Male	0.206***	0.0677**	0	0	0.143***	0.189***	0.0615***
	(0.0267)	(0.0216)	(.)	(.)	(0.0400)	(0.0297)	(0.0181)
Married	0	0	0.00580	0.101	0.0820	-0.0271	0.171***
	(.)	(.)	(0.0371)	(0.0665)	(0.0978)	(0.0662)	(0.0487)
Rural	0.0992***	0.0856***	0.0839***	0.103**	0.0836+	0.0865	0.0866*
	(0.0240)	(0.0187)	(0.0151)	(0.0339)	(0.0489)	(0.0632)	(0.0349)
Constant	-0.0421	-0.0156	0.0872	0.0132	-0.319	0.114	0.00415
	(0.113)	(0.100)	(0.157)	(0.110)	(0.270)	(0.258)	(0.152)
N	941	1009	1028	970	381	727	890

Standard errors are clustered by region

$^{+}\ p < 0.10$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

The subgroup analysis result is consistent with main findings. The positive correlations of the expected status of children with fertility desire remain robust across various subgroup analysis. Comparing those who are married and those who get never married, the mean of the expected

socioeconomic status of children in the future is reported to be 5.78 among the married individuals, while to be 4.97 among the never married individuals. Despite the difference in the mean, the expected status of children explains the fertility motivation in both groups, controlling the current status of respondents measured by the household income, possession of house, education level, and employment status. It is interesting to note that among the 20s the currents condition such as household income and the house possession is important while the future prospects for children does not have statistical power in predicting the fertility motivation. Presumably, it might reflect the characteristics of the young generation which value the certain condition in the present over the uncertainty in the future. Among the females and the 30s, education level or employment status is negatively correlated with fertility motivation, implying the work and family compatibility as an impediment to the fertility. It is also interesting to note that the coefficients of the future prospects are comparatively small among the married and the 40s. It is probable that future prospects for children are made based on their actual characteristics of their children if the respondents are married and have children.

F. Discussion

The perception of "broken social elevator" is well known to be associated with individual's disposition or decision making (OECD, 2018). One example is a wide spread of "the spoon class theory[3]" and the "N-po-generation[4]" in South Korea. It suggests that the recent prevalence of give-

[3] The terminology has appeared and rapidly spread in Korea since 2015, derived from the expression "born with a silver spoon in one's mouth." It reflects psychological superiority or deprivation in terms of socioeconomic status, social mobility, equality of opportunity (Kim & Han, 2019; Yoo et al., 2019)

[4] The original terminology was suggested first as "Sam-po (3 give-up) generation" to refer to give up of dating, marriage, and childbearing in 2011. Since then, "Oh-po (5 give-up) generation" was suggested to additionally give up house and career, and "chil-po (7 give-up) generation" to refer to the additional give-up of hobby and relationships. Now, it came to "gu-po (9 give-up) generation" to additional give-up of physical condition and appearance.

up or delay of the marriage and fertility among young adults are due to the pessimistic view of their own status and social mobility. Yet, the empirical evidence of the link between the perceived social mobility and fertility desire is surprisingly limited. To fill this gap, our study used the survey implemented in June 2022 to empirically examine the correlation between the future prospects for children and fertility desire.

The analysis result presents that positive future prospects for their children are associated with the greater fertility desire. When the interaction term with the household income level is introduced, the future prospect for children is observed to moderate the household income effect. Given the household income level, those who have positive prospects for children's future are more likely to have greater fertility desire compared to those who have the pessimistic views for their children.

The result provides a suggestive policy implication in addressing the low fertility issue in South Korea. The plummeting fertility rate despite a considerable effort by the government can be, at least partly, explained by future prospects. Whereas much of the existing literature focuses on the economic or structural constraints as impediments of fertility desire, the results of our study provide that individual's future prospects for their children more or less explain the formation of fertility desire with the objective conditions taken into consideration. As the fertility decision entails the fundamental uncertainty, individuals make decisions based on the long-term expectations rather than the short-term ones. The fertility desire becomes higher if the individual is competent and positive about children's socioeconomic status in the future, but when if individuals are doubtful about their children's future, they will be hesitant under the pressure to rear children to be successful in their lives

Therefore, this study suggests that the low fertility issue should be approached carefully. For the young generations who are compelled to give up or delay the fertility in fear of hopelessness for

the future, it might not help resolving the issue to emphasize the threats to the sustainability of a country due to the low fertility rate. Rather it could intrigue antipathy among the young generation. The policy design and strategy should start with a question how can we build a society with hopeful prospects for the future.

This study has limitations in two aspects, giving room for the further study. First, there can be the issue of under-sampling of those who have the low socioeconomic status. Most of the sample lives in the urban area, having the education level higher than 4-year college and are distributed in high level in terms of the household income compared to the census of South Korea. Presumably, it might be derived from the characteristics of the online survey. At the same, the age of the sample ranges from 25 to 49, which falls the period of the highest earnings in the course of lifecycle. Thus, if we only consider the equivalent ages from the population, the under-sampling issue can be alleviated. Nonetheless, the evidence of the link between future prospects and fertility desire was found to remain robust across the various subgroups.

Second, it is beyond the scope of this study to investigate factors that shape the future prospects for children. In our dataset, future prospects for children are observed to be generally corresponding to the self-rated status or the monthly household income level, but it is not always consistent. On one hand, there is an unignorable share of respondents who are optimistic about their children's future despite the low level of the perceived status, whereas there are a bunch of respondents who are pessimistic about their children's future in spite of the economic affluence or high level of socioeconomic status. Presumably, there is a list of possible factors that affect divergence of the future prospects and the current status, such as social connections or social bonds. This study leaves the examination of the potential mechanism as an avenue for the future study.

Hopefully, this study is expected to consolidate the foundation of the population policy by igniting discussions on the nexus of future prospects and family formation motivation. Providing the evidence of future prospects in fertility desires, it suggests that the policy should be designed with the fundamental goal to convict individuals of the promising future for next generation. As the social mobility gains more importance in the public debate (OECD, 2018), now it is just right time to focus on building up the society with bright future.

Reference

Aassve, A., Cavalli, N., Mencarini, L., Plach, S., & Bacci, M. L. (2020). The COVID-19 pandemic and human fertility. *Science*, *369*(6502), 370–371. https://doi.org/10.1126/science.abc9520

Aassve, Arnstein, Biliari, F. C., & Pessin, L. (2016). Trust and fertility dynamics. *Social Forces*, *95*(2), 663–692. https://doi.org/10.1093/sf/sow080

Aassve, Arnstein, Fuochi, G., & Mencarini, L. (2014). Desperate Housework: Relative Resources, Time Availability, Economic Dependency, and Gender Ideology Across Europe. *Journal of Family Issues*, *35*(8), 1000–1022. https://doi.org/10.1177/0192513X14522248

Aassve, Arnstein, Le Moglie, M., & Mencarini, L. (2021). Trust and fertility in uncertain times. *Population Studies*, *75*(1), 19–36. https://doi.org/10.1080/00324728.2020.1742927

Aguiar, B. M., Hurst, E., & Karabarbounis, L. (2013). Time Use During the Great Recession Author. *American Economic Review*, *103*(5), 1664–1696.

Ahmed, D., Buheji, M., & Merza Fardan, S. (2020). Re-Emphasising the Future Family Role in 'Care Economy' as a Result of Covid-19 Pandemic Spillovers. *American Journal of Economics*, *10*(6), 332–338. https://doi.org/10.5923/j.economics.20201006.03

Andrew, A., Cattan, S., Dias, M. C., Farquharson, C., Kraftman, L., Krutikova, S., Phimister, A., & Sevilla, A. (2020). *How are mothers and fathers balancing work and family under lockdown? IFS Briefing Note BN290*. https://www.ifs.org.uk/publications/14860

Aschaffenburg, K., & Maas, I. (1997). Cultural and Educational Careers : The Dynamics of Social Reproduction. *American Sociological Review*, *62*(4), 573–587.

Baxter, J. (2000). The Joys and Justice of Housework. *Sociology*, *34*(4), 609–631.

Baxter, J., Hewitt, B., & Haynes, M. (2008). Life Course transitions and housework: Marriage, parenthood, and time on housework. *Journal of Marriage and Family*, *70*(2), 259–272. https://doi.org/10.1111/j.1741-3737.2008.00479.x

Becker, G. S., & Barro, R. J. (1988). A reformulation of the economic theory of fertility. *Quarterly Journal of Economics*, *103*(1), 1–25. https://doi.org/10.2307/1882640

Bellani, D., & Arpino, B. (2022). Risk tolerance and fertility: Evidence from a lottery question in Italy. *Journal of Marriage and Family*, *March 2021*, 1–19. https://doi.org/10.1111/jomf.12820

Beringer, S., Bujard, M., & Diabaté, S. (2022). *Changes in personal attitudes and perceived public opinions towards external childcare*.

Bernardi, L., Huinink, J., & Settersten, R. A. (2019). The life course cube: A tool for studying lives. *Advances in Life Course Research*, *41*(November 2018), 100258. https://doi.org/10.1016/j.alcr.2018.11.004

Bernardi, L., Ryser, V.-A., & Goff, J.-M. Le. (2013). Gender Role-Set, Family Orientations, and Women's Fertility Intentions in Switzerland. *Swiss Journal of Sociology*, *39*(1), 9–31.

Berzelak, N., & Vehovar, V. (2018). Mode effects on socially desirable responding in web surveys compared to face-to-face and telephone surveys. *Metodoloski Zvezki*, *15*(2), 21–43. https://doi.org/10.51936/lrkv4884

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? trends in the gender division of household labor. *Social Forces*, *79*(1), 191–228. https://doi.org/10.1093/sf/79.1.191

Boudon, R. (1974). *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. John Wiley & Sons.

Bourdieu, P. (1977). Cultural Reproduction and social Reproduction. In J. Karabel & A. H. Halsey (Eds.), *Power and Ideology in Education* (pp. 487–511). Oxford University Press.

Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood Press.

Bourdieu, P., & Passeron, J.-C. (1990). *Reproduction in Education, Society and Culture* (second). Sage Publications.

Bras, H., Kok, J., & Mandemakers, K. (2010). Sibship size and status attainment across contexts: evidence from the netherlands, 1840-1925. *Demographic Research*, *23*(December), 73–104. https://doi.org/10.4054/DemRes.2010.23.4

Breen, R., Bernt Karlson, K., & Holm, A. (2021). A Note on a Reformulation of the KHB Method. *Sociological Methods and Research*, *50*(2), 901–912. https://doi.org/10.1177/0049124118789717

Brines, J. (1994). Economic Dependency , Gender , and the Division of Labor at Home. *American Journal of Sociology*, *100*(3), 652–688.

Brunori, P. (2017). The Perception of Inequality of Opportunity in Europe. *Review of Income and Wealth*, *63*(3), 464–491. https://doi.org/10.1111/roiw.12259

Byun, S. yong, Schofer, E., & Kim, K. keun. (2012). Revisiting the Role of Cultural Capital in East Asian Educational Systems: The Case of South Korea. *Sociology of Education*, *85*(3), 219–239. https://doi.org/10.1177/0038040712447180

Campbell, A. M. (2020). An increasing risk of family violence during the Covid-19 pandemic: Strengthening community collaborations to save lives. *Forensic Science International: Reports*, *2*(April), 100089. https://doi.org/10.1016/j.fsir.2020.100089

Carriero, R., & Todesco, L. (2018). Housework division and gender ideology: When do attitudes really matter? *Demographic Research*, *39*(1), 1039–1064. https://doi.org/10.4054/DemRes.2018.39.39

Charles, P., Spielfogel, J., Gorman-Smith, D., Schoeny, M., Henry, D., & Tolan, P. (2018). Disagreement in Parental Reports of Father Involvement. *Journal of Family Issues*, *39*(2), 328–351. https://doi.org/10.1177/0192513X16644639

Chin, M., Han, J., & Noh, S. (2019). An Association Between Latent Profiles of Marriage and Childbirth Attitudes and Individual Perceptions on Korean Society and Own Future Prospect

among Young Adults. *Family and Culture*, *31*(1), 166–188.

Chin, M., Sung, M., Son, S., Yoo, J., Lee, J., & Chang, Y. (2020). Changes in Family Life and Relationships during the COVID-19 Pandemic and their Associations with Perceived Stress. *Family and Environment Research*, *58*(3), 447–461. https://doi.org/10.1377/hlthaff.21.2.163

Choi, Y., & Park, H. (2016). Shadow education and educational inequality in South Korea: Examining effect heterogeneity of shadow education on middle school seniors' achievement test scores. *Research in Social Stratification and Mobility*, *44*, 22–32. https://doi.org/10.1016/j.rssm.2016.01.002

Chung, H., Birkett, H., Forbes, S., & Seo, H. (2020). Working from Home and the Division of Housework and Childcare Among Dual Earner Couples During the Pandemic In the UK. *SocArXiv Papers*, *1*(December), 1–33. https://osf.io/preprints/socarxiv/4esf7/

Chung, H., Birkett, H., Forbes, S., & Seo, H. (2021). Covid-19, Flexible Working, and Implications for Gender Equality in the United Kingdom. *Gender and Society*, *35*(2), 218–232. https://doi.org/10.1177/08912432211001304

Chung, I., Choi, S., Hwang, S., & Choi, Y. (2020). Intergenerational Social Mobility and Educational Inequality in South Korea : A Comprehensive Review of Empirical Studies since 2000. *Economy and Society*, 12–59.

Coleman, James, S. (1988). Social Capital in the Creation of Human Captial. *The American Journal of Sociology*, *94*(1988), 95-S120. http://doi.apa.org/getdoi.cfm?doi=10.1037/0012-1649.22.6.723

Costoya, V., Echeverría, L., Edo, M., Rocha, A., & Thailinger, A. (2021). Gender Gaps within Couples: Evidence of Time Re-allocations during COVID-19 in Argentina. *Journal of Family and Economic Issues*, *43*(2), 213–226. https://doi.org/10.1007/s10834-021-09770-8

Currie, J., Schwandt, H., & Wachter, K. W. (2014). Short- And long-term effects of unemployment on fertility. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(41), 14734–14739. https://doi.org/10.1073/pnas.1408975111

De Graaf, N. D., De Graaf, P. M., & Kraaykamp, G. (2000). Parental cultural capital and educational attainment in the Netherlands: A refinement of the cultural capital perspective. *Sociology of Education*, *73*(2), 92–111. https://doi.org/10.2307/2673239

Dika, S. L., & Singh, K. (2002). Applications of social capital in educational literature: A critical synthesis. *Review of Educational Research*, *72*(1), 31–60. https://doi.org/10.3102/00346543072001031

Dimaggio, P. (1982). Cultural Capital and School Success : The Impact of Status Culture Participation on the Grades of U.S. High School Students. *American Sociological Review*, *47*(2), 189–201.

Dribe, M., Van Bavel, J., & Campbell, C. (2012). Social mobility and demographic behavior: Long term perspectives. *Demographic Research*, *26*(June), 173–190. https://doi.org/10.4054/DemRes.2012.26.8

Easterlin, R. A. . (1976). The Conflict between Aspirations and Resources. *Population and*

Development Review, *2*(3/4), 417–425.

Erikson, R., Goldthorpe, J. H., Jackson, M., Yaish, M., & Cox, D. R. (2005). On class differentials in educational attainment. *Proceedings of the National Academy of Sciences of the United States of America*, *102*(27), 9730–9733. https://doi.org/10.1073/pnas.0502433102

Evertsson, M., & Nermo, M. (2007). Changing resources and the division of housework: A longitudinal study of Swedish couples. *European Sociological Review*, *23*(4), 455–470. https://doi.org/10.1093/esr/jcm018

Fahlén, S., & Oláh, L. S. (2018). Economic uncertainty and first-birth intentions in Europe. *Demographic Research*, *39*(1), 795–834. https://doi.org/10.4054/DemRes.2018.39.28

Fegert, J. M., Vitiello, B., Plener, P. L., & Clemens, V. (2020). Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: A narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child and Adolescent Psychiatry and Mental Health*, *14*(1), 1–11. https://doi.org/10.1186/s13034-020-00329-3

Fulkerson, J. A., Pasch, K. E., Stigler, M. H., Farbakhsh, K., Perry, C. L., & Komro, K. A. (2010). Longitudinal Associations Between Family Dinner and Adolescent Perceptions of Parent-Child Communication Among Racially Diverse Urban Youth. *Journal of Family Psychology*, *24*(3), 261–270. https://doi.org/10.1037/a0019311

Gatta, A., Mattioli, F., Mencarini, L., & Vignoli, D. (2021). Employment uncertainty and fertility intentions: Stability or resilience? *Population Studies*, *0*(0), 1–20. https://doi.org/10.1080/00324728.2021.1939406

Gillespie, B. J., Peterson, G., & Lever, J. (2019). Gendered perceptions of fairness in housework and shared expenses: Implications for relationship satisfaction and sex frequency. *PLoS ONE*, *14*(3), 1–18. https://doi.org/10.1371/journal.pone.0214204

Gimpelson, V., & Treisman, D. (2018). Misperceiving inequality. *Economics and Politics*, *30*(1), 27–54. https://doi.org/10.1111/ecpo.12103

Greenstein, T. N. (2000). Economic dependence, gender, and the division of labor in the home: A replication and extension. *Journal of Marriage and Family*, *62*(2), 322–335. https://doi.org/10.1111/j.1741-3737.2000.00322.x

Han, J., Kim, S., Ha, S. E., & Shin, I. C. (2014). Ambivalent Effects of Social Relations on Subjective Well-being Joon. *Korean Journal of Sociology*, *48*(5), 1–24.

Han, S., & Kim, A. (2018). Social capital and the improvement of academic achievement: The interrelated effects of families and schools. *Korean Journal of Sociology of Education*, *28*(2), 157–182.

Hauser, O. P., & Norton, M. I. (2017). (Mis)perceptions of inequality. *Current Opinion in Psychology*, *18*, 21–25. https://doi.org/10.1016/j.copsyc.2017.07.024

Hiekel, N., & Ivanova, K. (2022). Changes in Perceived Fairness of Division of Household Labor Across Parenthood Transitions: Whose Relationship Satisfaction Is Impacted? *Journal of Family Issues*, *0*(0), 1–28. https://doi.org/10.1177/0192513X211055119

Hochschild, A. R., & Machung, A. (2012). The second shift : working families and the revolution at home / Arlie Hochschild with Anne Machung. In *Penguin Books*.

Hofmann, B., & Hohmeyer, K. (2013). Perceived economic uncertainty and fertility: Evidence from a labor market reform. *Journal of Marriage and Family*, *75*(2), 503–521. https://doi.org/10.1111/jomf.12011

Horne, R. M., Johnson, M. D., Galambos, N. L., & Krahn, H. J. (2018). Time, Money, or Gender? Predictors of the Division of Household Labour Across Life Stages Rebecca. *Sex Roles*, *78*, 731–743.

Hudde, A., Hank, K., & Jacob, M. (2021). Gender Role Attitudes Cannot Explain How British Couples Responded to Increased Housework Demands during the COVID-19 Pandemic. *Socius*, *7*(1). https://doi.org/10.1177/23780231211064395

Hwang, J., Park, S., & Shin, D. (2018). Two birds with one stone: Female labor supply, fertility, and market childcare. *Journal of Economic Dynamics and Control*, *90*, 171–193. https://doi.org/10.1016/j.jedc.2018.02.008

Imai, K., Keele, L., Tingley, D., & Yamamoto, T. (2011). Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies. *American Political Science Review*, *105*(4), 765–789. https://doi.org/10.1017/S0003055411000414

Jeon, H. R., & Kim, K. (2006). Determinants of educational aspiration of high school students: With special reference to the effect of significant others. *Korean Journal of Sociology of Education*, *16*(4), 185–206.

Kan, M. Y., Hertog, E., & Kolpashnikova, K. (2019). Housework share and fertility preference in four East Asian countries in 2006 and 2012. *Demographic Research*, *41*(December), 1021–1046. https://doi.org/10.4054/DemRes.2019.41.35

Karlson, K. B., Holm, A., & Breen, R. (2012). Comparing Regression Coefficients Between Same-sample Nested Models Using Logit and Probit: A New Method. *Sociological Methodology*, *42*(1), 286–313. https://doi.org/10.1177/0081175012444861

Kim, Hisam. (2010). *Analysis of the Effects of Private Education on Academic Achievement and Labor Market Performance*.

Kim, Hyunju, & Lee, B.-H. (2007). Effects of Family Background, Social Capital and Cultural Capital on the Children's Academic Performance. *Korea Journal of Population Studies*, *30*(1), 125–148.

Kim, J., & Luke, N. (2020). Lowest-low fertility in South Korea: Policy and domestic labor supports and the transition to second birth. *Social Forces*, *99*(2), 700–731. https://doi.org/10.1093/sf/soz159

Kim, K., & Byun, S. (2007). The impact of cultural capital on student achievement in South Korea. *Korean Journal of Sociology of Education*, *17*(1), 23–51.

Kim, S. (2022). A Socio-psychological Approach to Low Fertility: Who Can't, and Why Can't They Dream of Marriage and Childbearing? *Survey Research*, *23*(2), 1–33. https://kiss.kstudy.com/thesis/thesis-view.asp?key=3948157

Kim, Y. H. (2012). The evolution of and issues in the cultural capital theory. *Korean Journal of Sociology of Education*, *22*(2), 31–63.

Kim, Yong-hoi, & Han, C. (2019). A Semantic Network Analysis of the Web News Articles on 'Spoon Class.' *Korean Journal of Social Welfare*, *71*(3), 55–81.

Kim, Young-eun, & Um, M. (2018). The effect of parents' socioeconomic status on academic achievement: Focusing on the mediating effect of parental emotional support and student's ego resilience. *Korean Journal of Social Welfare Studies*, *49*, 5–30.

Kingston, P. W. (2001). The Unfulfilled Promise of Cultural Capital Theory Author. *Sociology of Education*, *74*(2001), 88–99.

Kohler, U., Karlson, K. B., & Holm, A. (2011). Comparing coefficients of nested nonlinear probability models. *Stata Journal*, *11*(3), 420–438. https://doi.org/10.1177/1536867x1101100306

Kristal, T., & Yaish, M. (2020). Does the coronavirus pandemic level the gender inequality curve? (It doesn't). *Research in Social Stratification and Mobility*, *68*(May), 100520. https://doi.org/10.1016/j.rssm.2020.100520

Kroger, J. (2006). *Identity Development: Adolescence Through Adulthood*. Sage Publications.

Kye, B. (2011). Intergenerational transmission of women's educational attainment in South Korea: An application of a multi-group population projection model. *Demographic Research*, *24*(June), 79–112. https://doi.org/10.4054/DemRes.2011.24.3

Lachance-Grzela, M., & Bouchard, G. (2010). Why Do Women Do the Lion's Share of Housework? A Decade of Research. *Sex Roles*, *63*(11), 767–780. https://doi.org/10.1007/s11199-010-9797-z

Lamont, M., & Lareau, A. (1988). Cultural Capital: Allusions, Gaps and Glissandos in Recent Theoretical Developments. *Sociological Theory*, *6*(2), 153. https://doi.org/10.2307/202113

Lareau, A. (2002). Invisible Inequality : Social Class and Childrearing in Black Families and White Families. *American Sociological Review*, *67*(5), 747–776.

Lareau, A. (2011). *Unequal Childhoods: Class, Race, and Family Life* (second). University of California Press.

Lareau, A., & Weininger, E. B. (2003). Cultural capital in educational research: A critical assessment. *Theory and Society*, *32*(5–6), 567–606. https://doi.org/10.1023/B:RYSO.0000004951.04408.b0

Lee, Y., & Lee, S. (2017). A Study of the Effect of Social Status on Happiness: A Focus on Objective and Subjective Social Status. *Korean Journal of Public Administration*, *55*(1), 1–39.

Lennon, M. C., & Rosenfield, S. (1994). Relative Fairness and the Division of Housework : The Importance of Options. *American Journal of Sociology*, *100*(2), 506–531.

Long, J. S. (1997). *REGRESSION MODELS FOR CATEGORICAL DEPENDENT VARIABLES USING STATA J.* Thousand Oaks.

Lutz, W., Skirbekk, V., & Testa, M. R. (2006). The low-fertility trap hypothesis: Forces that may lead to further postponement and fewer births in Europe. *Vienna Yearbook of Population Research*, *March*, 167–192. https://doi.org/10.1553/populationyearbook2006s167

Malicka, I., Mynarska, M., & Świderska, J. (2021). Perceived consequences of the COVID-19 pandemic and childbearing intentions in Poland. *Journal of Family Research*, *33*(3), 674–702. https://doi.org/10.20377/jfr-666

Marteleto, L. J., Guedes, G., Coutinho, R. Z., & Weitzman, A. (2020). Live Births and Fertility Amid the Zika Epidemic in Brazil. *Demography*, *57*(3), 843–872. https://doi.org/10.1007/s13524-020-00871-x

Matysiak, A., Sobotka, T., & Vignoli, D. (2021). The Great Recession and Fertility in Europe: A Sub-national Analysis. In *European Journal of Population* (Vol. 37, Issue 1). Springer Netherlands. https://doi.org/10.1007/s10680-020-09556-y

McHugh, M. C., & Frieze, I. H. (1997). The measurement of gender-role attitudes: A review and commentary. *Psychology of Women Quarterly*, *21*(1), 1–16. https://doi.org/10.1111/j.1471-6402.1997.tb00097.x

Meraviglia, C., & Dudka, A. (2021). The gendered division of unpaid labor during the Covid-19 crisis: did anything change? Evidence from Italy. *International Journal of Sociology*, *51*(1), 64–75. https://doi.org/10.1080/00207659.2020.1832346

Miettinen, A., Lainiala, L., & Rotkirch, A. (2015). Women's housework decreases fertility: Evidence from a longitudinal study among Finnish couples. *Acta Sociologica (United Kingdom)*, *58*(2), 139–154. https://doi.org/10.1177/0001699315572028

Mikelson, K. S. (2008). He said, she said: Comparing mother and father reports of father involvement. *Journal of Marriage and Family*, *70*(3), 613–624. https://doi.org/10.1111/j.1741-3737.2008.00509.x

Mills, M., Mencarini, L., Tanturri, M. L., & Begall, K. (2008). Gender equity and fertility intentions in Italy and the Netherlands. *Demographic Research*, *18*(June), 1–26. https://doi.org/10.4054/demres.2008.18.1

Modena, F., Rondinelli, C., & Sabatini, F. (2014). Economic insecurity and fertility intentions: The case of Italy. *Review of Income and Wealth*, *60*(S1), 233–255. https://doi.org/10.1111/roiw.12044

Niehues, J. (2014). Subjective Perceptions of Inequality and Redistributive Preferences: An International Comparison. *IW-Trends*, 1–23. file:///Users/orhantorul/Downloads/Inequality_Perception_Discussion_Paper_Judith_Niehues.pdf

Nitsche, N., & Grunow, D. (2016). Housework over the course of relationships: Gender ideology, resources, and the division of housework from a growth curve perspective. *Advances in Life Course Research*, *29*, 80–94. https://doi.org/10.1016/j.alcr.2016.02.001

OECD. (2018). A Broken Social Elevator? How to Promote Social Mobility. In *OECD*. https://doi.org/10.1787/9789264301085-en

OECD. (2022). *Education at a Glance 2022: OECD Indicators*. https://doi.org/10.1787/3197152b-en.

Okun, B. S., & Raz-Yurovich, L. (2019). Housework, Gender Role Attitudes, and Couples' Fertility Intentions: Reconsidering Men's Roles in Gender Theories of Family Change. *Population and Development Review*, *45*(1), 169–196. https://doi.org/10.1111/padr.12207

Park, H., Byun, S. yong, & Kim, K. keun. (2011). Parental involvement and students' cognitive outcomes in Korea: Focusing on private tutoring. *Sociology of Education*, *84*(1), 3–22. https://doi.org/10.1177/0038040710392719

Park, S. (2017). A structural explanation of recent changes in life-cycle labor supply and fertility behavior of married women in the United States. *European Economic Review*, *102*, 129–168. https://doi.org/10.1016/j.euroecorev.2017.11.006

Perry-Jenkins, M., & Gerstel, N. (2020). Work and Family in the Second Decade of the 21st Century. *Journal of Marriage and Family*, *82*(1), 420–453. https://doi.org/10.1111/jomf.12636

Petts, R. J., Carlson, D. L., & Pepin, J. R. (2021). A gendered pandemic: Childcare, homeschooling, and parents' employment during COVID-19. *Gender, Work and Organization*, *28*(S2), 515–534. https://doi.org/10.1111/gwao.12614

Presser, H. B. (1994). Employment Schedules Among Dual-Earner Spouses and the Division of Household Labor by Gender. *American Sociological Review*, *59*(3), 348. https://doi.org/10.2307/2095938

Reese, L., Arauz, R. M., & Bazán, A. R. (2012). Mexican parents' and teachers' literacy perspectives and practices: construction of cultural capital. *International Journal of Qualitative Studies in Education*, *25*(8), 983–1003.

Roh, M. (2021). The Effects of Perceived Social Fairness and the Possibility of Upward Social Mobility on Emotional Depression. *The Journal of the Korea Contents Association*, *21*(1), 173–184.

Roksa, J., & Potter, D. (2011). Parenting and academic achievement: Intergenerational transmission of educational advantage. *Sociology of Education*, *84*(4), 299–321. https://doi.org/10.1177/0038040711417013

Ryu, D., & Kang, C. (2013). Do Private Tutoring Expenditures Raise Academic Performance? Evidence from Middle School Students in South Korea. *Asian Economic Journal*, *27*(1), 59–83. https://doi.org/10.1111/asej.12002

Sánchez, A. R., Fasang, A. E., & Harkness, S. (2021). Gender division of housework during the COVID-19 pandemic: Temporary shocks or durable change? *Demographic Research*, *45*(December), 1297–1316. https://doi.org/10.4054/DEMRES.2021.45.43

Shafer, K., Scheibling, C., & Milkie, M. A. (2020). The Division of Domestic Labor before and during the COVID-19 Pandemic in Canada: Stagnation versus Shifts in Fathers' Contributions. *Canadian Review of Sociology*, *57*(4), 523–549. https://doi.org/10.1111/cars.12315

Smith, K. M., Freeman, P. A., & Zabriskie, R. B. (2009). An examination of family communication within the core and balance model of family leisure functioning. *Family Relations*, *58*(1), 79–90. https://doi.org/10.1111/j.1741-3729.2008.00536.x

Song, H., Lee, M., & Choi, S. (2013). What Causes Gap between Objective Class Position and Subjective Class Identification in Korea Society? *Korea Journal of Population Studies*, *36*(3), 97–119.

Statistics Korea. (2022). *2021 Marriage and Divorce Statistics*. Vital Statistics Division.

Sullivan, A. (2001). Cultural Capital and Educational Attainment. *Socioloby*, *35*(4), 893–912.

Szabo, T. G., Richling, S., Embry, D. D., Biglan, A., & Wilson, K. G. (2020). From Helpless to Hero: Promoting Values-Based Behavior and Positive Family Interaction in the Midst of COVID-19. *Behavior Analysis in Practice*, *13*(3), 568–576. https://doi.org/10.1007/s40617-020-00431-0

Torr, B. M., & Short, S. E. (2004). Second births and the second shift: A research note on gender equity and fertility. *Population and Development Review*, *30*(1), 109–130. https://doi.org/10.1111/j.1728-4457.2004.00005.x

Tzanakis, M. (2011). Bourdieu's social reproduction thesis and the role of cultural capital in educational attainment: A critical review of key empirical studies. *Educate~*, *11*(1), 76–90. http://www.educatejournal.org/index.php/educate/article/view/251

Van Bavel, J., Moreels, S., Van de Putte, B., & Matthijs, K. (2011). Family size and intergenerational social mobility during the fertility transition: Evidence of resource dilution from the city of Antwerp in nineteenth century Belgium. *Demographic Research*, *24*(June), 313–344. https://doi.org/10.4054/DemRes.2011.24.14

Verme, P., Milanovic, B., AL-Shawarby, S., Eltawila, S., Gadallah, M., & Ali.El-Majeed, E. (2014). *Inside Inequality in the Arab Republic of Egypt*. The Wolrd Bank.

Vignoli, D., Bazzani, G., Guetto, R., Minello, A., & Pirani, E. (2020). Uncertainty and Narratives of the Future: A Theoretical Framework for Contemporary Fertility. *Springer Series on Demographic Methods and Population Analysis*, *51*, 25–47. https://doi.org/10.1007/978-3-030-48519-1_3

Vignoli, D., Guetto, R., Bazzani, G., Pirani, E., & Minello, A. (2020). A reflection on economic uncertainty and fertility in Europe: The Narrative Framework. *Genus*, *76*(1). https://doi.org/10.1186/s41118-020-00094-3

Vignoli, D., Tocchioni, V., & Mattei, A. (2020). The impact of job uncertainty on first-birth postponement. *Advances in Life Course Research*, *45*(May 2018), 100308. https://doi.org/10.1016/j.alcr.2019.100308

Voicu, M., & Bădoi, D. (2021). Fertility and the COVID-19 crisis: do gender roles really matter? *European Societies*, *23*(S1), S199–S214. https://doi.org/10.1080/14616696.2020.1822537

Vrachnis, N., Vlachadis, N., Iliodromiti, Z., Vlachadi, M., & Creatsas, G. (2014). Greece's birth rates and the economic crisis. *The Lancet*, *383*(9918), 692–693. https://doi.org/10.1016/S0140-6736(14)60251-8

Waddell, N., Overall, N. C., Chang, V. T., & Hammond, M. D. (2021). Gendered division of labor during a nationwide COVID-19 lockdown: Implications for relationship problems and satisfaction. *Journal of Social and Personal Relationships*, *38*(6), 1759–1781. https://doi.org/10.1177/0265407521996476

Wooldridge, J. M. (2002). *Econometric Analysis Of Cross Section And Panel Data*. MIT Press.

Yamamoto, Y., & Brinton, M. C. (2010). Cultural capital in East Asian educational systems: The case of Japan. *Sociology of Education*, *83*(1), 67–83. https://doi.org/10.1177/0038040709356567

Yoo, G. S., Yang, D. Y., & Jeong, B. (2019). Effects of Subjective Socioeconomic Status on Relative Deprivation and Subjective Well-being among College Students: Testing the 'Silver-Spoon-Discourse' based Belongingness in Korean Society. *Family and Environment Research*, *57*(3), 329–340. https://doi.org/10.6115/fer.2019.024

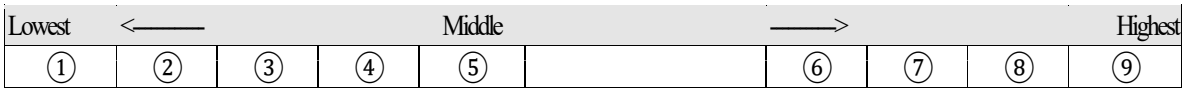
Zamberlan, A., Gioachin, F., & Gritti, D. (2021). Work less, help out more? The persistence of gender inequality in housework and childcare during UK COVID-19. *Research in Social Stratification and Mobility*, *73*, 100583. https://doi.org/10.1016/j.rssm.2021.100583

Zuanna, G. D. (2007). Social mobility and fertility. *Demographic Research*, *17*, 441–464.

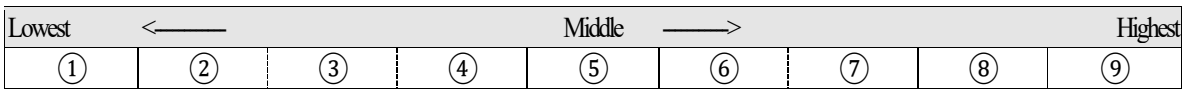
Appendix

Survey Questions

E11. If we were to say that the lowest level of socioeconomic status in Korean society was 1 and the highest level was 9, where do you think you belong?



E11-2. If you consider the future where your children will be about your current age, which of the following socioeconomic status do you think they will belong to? If you don't have children, please answer as if you had children.



III. PARENT-ADOLESCENT DISCUSSIONS AND CHILD'S EDUCATIONAL OUTCOMES

Parent-Adolescent Discussions and Child's Educational Outcomes

Abstract

A considerable research has documented the evidence of correlation between parents' education and children's educational outcomes, yet the mechanism is to be debated. Scholars have explored broadly three channels to explain the mechanism of the influence of the parental education level on child's educational attainments: economic capital, social capital and cultural capital. Among others, this study focuses on the role of the parent-adolescent conversations from the perspective of the cultural capital. In most existing studies regarding the parent-adolescent communication, the social capital aspect was highlighted while the cultural capital attributes have been neglected. Focusing on the cultural capital attrbutes of the parent-adolescent converstiona, this study provides that the parent-adolescent conversation explains 5.15% of the influence of parents' education on child's educational attainments. Considering a growing pessimism on the intergenerational mobility, this study suggests political implications by providing an evidence of the mechanism of parents' education. Compared to the economic capital or the social capital, the policy can be designed to improve the cultural capital with relatively low costs by addressing the communication problem within the family.

Key words: parent-adolescent conversations, educational outcomes, social reproduction, social capital, cultural capital.

Introduction

The influence of parents' education on child's education is a long-standing interest in various disciplinaries. Scholars have explored broadly three channels to explain the mechanism of the intergenerational mobility of education: economic capital, social capital and cultural capital. Economic capital perspectives focus on the role of economic resources in transmission of parental advantages (Boudon, 1974). The social capital perspective has examined the benefits of various networks and connections in reproducing the educational attainments from relational, structural and cognitional dimensions (Bourdieu, 1986; I. Chung et al., 2020; Coleman, James, 1988; Dika & Singh, 2002). The cultural capital perspective mostly emphasizes the role of cultural traits and appetite.

The purpose of this study is to examine the mechanism of the effect of parents' education on child's education. Based on the theoretical discussions, this study will focus on the parent-adolescent conversations at 14 years old as a mechanism of the intergenerational educational mobility from the perspective of the cultural capital. Using the KLIPS, this study analyzes those who are born between 1971 and 1991 in Korea to provide the empirical evidence.

Even though this study is not the first to examine the role of the parent-child communications, it will advance the existing discussion in three aspects.

First, this study approaches the parent-adolescent communication from the perspective of the cultural capital. In most existing discussions, the social capital aspect of the parent-adolescent communication has been highlighted as a way of the emotional support (Kim & Lee, 2007; Kim & Um, 2018) or comfort with authority figures, familiarity with abstract concepts, and emotional

stability (Lareau, 2011), while the cultural capital aspect has been neglected. This study provides that through frequent conversations with parents at adolescent years the cultural the cultural capital can be attained in terms of communication skills and familiarity with 'educated' language (Bourdieu & Passeron, 1990).

Second, this study provides supportive evidence that the social capital and the cultural capital can be fostered during the adolescent years. While social reproduction theory focuses on the growing-up climate at the early childhood (Reese et al., 2012), this study posits that the cultural capital and social capital can be inherited during the adolescent period.

Lastly, in terms of estimation strategy, this study enhances the existing studies by providing the extent to which cultural capital mediates in the influence of parents' education on child's educational outcomes, employing the mediation analysis. Using the Karlson-Holm-Breen (KHB) method, this study decomposes the total effect of parents' education into direct and indirect effects and provides the predicting power of the mediating effect of the cultural capital.

This study is structured as following. The second section outlines the literature review and theoretical framework, and then describes the data, analytical sample, measurement and estimation strategy in the third section. The analysis results and robustness check will be followed in the fourth and the fifth section respectively. And then it will conclude with discussions and implications.

A. Background

Social reproduction theory and its mechanism

The intergenerational mobility of education is a long-standing interest in stratification studies. According to the social reproduction theory, children from different family backgrounds enter into the education system with different initial endowments, which reproduces social inequalities (Aschaffenburg & Maas, 1997). As the mechanism of the social reproduction, a considerable research has documented evidence from three approaches broadly: economic capital, social capital and cultural capital.

Economic capital perspective holds that the affluent parents provide their children with the access to more opportunities and privileges using their financial resources (Boudon, 1974). From the economic capital perspective, the influence of the parental economic investment has drawn scholarly interest, particularly focusing on the effect of private education. In Korea, where private education, often called shadow education, is prevalent, positive correlation between the private education and child's academic achievement have been consistently reported albeit variations in terms of size of effectiveness or differential effects across various groups (Choi & Park, 2016; Kim, 2010; Park et al., 2011; Ryu & Kang, 2013).

Social capital perspective considers three dimensions broadly: relational, structural, and cognitional dimensions. From the relational aspect, social capital is measured through parental emotional support or parental involvement. Kim & Lee (2007; Kim & Um, 2018). Jeon & Kim (2006) empirically tested the effect of significant others from the structural dimensions of the social capital. Networks and connections are also well-known components of social capital giving benefits in term of information sharing (Bourdieu, 1986; Coleman, James, 1988; Dika & Singh, 2002). In regards of the cognitional dimensions, academic aspirations from others and the shared motivations are considered as a significant component of the social capital.

Cultural capital plays an important role in class reproduction according to Bourdieu (1977). Cultural capital is defined and interpreted as familiarity and competence with the dominant cultural codes and practices in a society (Coleman, James, 1988; Kim, 2012; Sullivan, 2001). According to cultural reproduction theory, cultural capital is transmitted from parents and children, perpetuating the educational stratification, as schools and teachers recognize and reward students who are endowed with the elite cultural capital (Tzanakis, 2011). Most commonly, cultural capital has been measured with "high-status" cultural visits such as museum or classical concerts and possession of arts and books, which is criticized for the narrow definition and cultural exclusion (Kingston, 2001; Lareau & Weininger, 2003).

While the positive role of the economic capital and social capital in educational outcomes have been consistently reported, effects of the cultural capital are found to be divergent across the institutional contexts. For example, positive association between the cultural capital and educational outcomes is found in England (Sullivan, 2001) or in Netherlands (De Graaf et al., 2000), while a weak or no association is reported found in East Asian countries (Byun et al., 2012; H. Park et al., 2011). The reason for the inconclusive findings is derived from different institutional contexts and divergent definitions of the cultural capital across studies. For example, the Korean educational system is characterized by the uniformity of curriculum and standardized exam for college admission, thus the cultural capital, if measured with taste for highbrow cultural activities, is not associated with academic outcomes (Byun et al., 2012; Fulkerson et al., 2010; Roksa & Potter, 2011; Yamamoto & Brinton, 2010). In a considerable studies, cultural capital has been narrowly defined as "high-status" cultural visits or possession of arts and books, yet a growing body of literature which is criticized for the narrow definition and cultural exclusion (Kingston, 2001; Lareau & Weininger, 2003)

Cultural capital

The concept of cultural capital is criticized for its neglection of consideration of different institutional context and ambiguous definition of the "high" culture (Kim, 2012).

First of all, different educational institutionas across countries have differential rewarding systems which resulted in the incongruence in the role of cultural capital in educational outcomes. For example, Sullivan (2001) asserts that the correlation between cultural capital and educational attainment is weak because the evaluation is based on objective criteria, preventing the recognition and reward of the students with 'elite' cultrual capital. Likewise, Korean's uniformed curriculum and standardized exams for competitive college entrance have few room for the cultural capital to intervene if it is measured with cultural taste and visits (Byun et al., 2012; Kim & Byun, 2007).

Next, divergenet definitions and incongruent measurement of cultural capital are another reason for the inconclusive empirical evidence of the culutral capital role in educational outcomes. Due to ambiguousness of the concept of cultural capital, various interpretations have emerged (Kim, 2012; Lamont & Lareau, 1988). One of the dominant interpretation of the cultural capital is traced back to Dimaggio (1982), who interpreted the cultural capital as the "prestigious" cultural practices and "status attainment process". Yet, against the narrow interpretation of the cultural capital, a growing body of studies demonstrated that the definition of cultural capital should be broadened. The ability to understand and use the 'educated' language is suggested as an important component of cultural capital. For example, Sullivan (2001) asserted that cultural capital should be measured with linguistic style and cognitive abilities, besides the aesthetic disposition. Roksa & Potter (2011) included parent-child discussions as a form of parenting styles to measure the cultural capital based on the concerted cultivation. The 'concerted cultivation' refers to the parenting styles of the

middle-class families against ‘natural growth’ of the working-class parents in the US, is proposed by Lareau (2002). Active discussions between parents and children is one of the characteristics of the concerted cultivation, through which diverse advantages can be transmitted such as verbal ability, vocabularies, comfort with authority figures, and familiarity with abstract concepts (Lareau, 2011).

Building up on the prior studies, this study focuses on the role of parent-adolescent discussions as a proxy for social capital and cultural capital in the educational mobility.

Parent adolescent discussions

Parent adolescent communication is considered to be a challenge due to the nature of the adolescent years as transition times from childhood to adulthood. This is when teenagers by nature keep a distance from parents, seeking for independence and authority from parents (Kroger, 2006). In this regard, frequency and types of communications with parents at these times reflect more than mere conversation itself.

In the previous literature, communications between parents and children are often considered as a part of the social capital in terms of emotional support (Kim & Um, 2018) or parental involvement (Han & Kim, 2018; Kim & Lee, 2007). However, the cultural capital aspect of the parent-adolescent communication needs to be highlighted in that communication styles and skills can be transmitted, which is an important component of the cultural capital (Sullivan, 2001). Fulkerson et al. (2010) also demonstrated that not only information is transferred from parents to children through communication, but parents can also influence their children with shaping values or attitudes and fostering skills.

This study, will focus on the attributes of the cultural capital of the parent-adolescent communications.

Hypothesis

Based on the literature review, hypotheses are drawn as below.

H1: Parents' education is positively correlated with child's educational outcomes.

H2: Parent-adolescent conversations mediate the influence of parents' education on child's educational attainments.

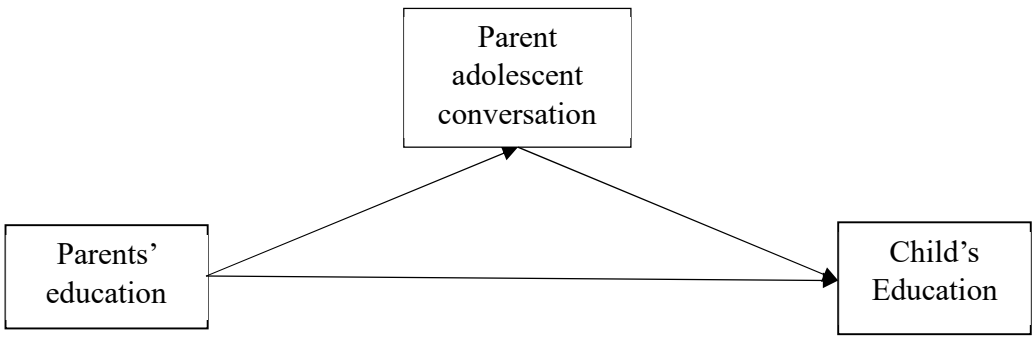
H3: The mediating effects of parent-adolescent conversation differ by the topic of conversation.

B. Estimation Strategies

Analysis Framework

To answer the question regarding the mechanism of the influence of parents' education on child's educational attainment, the analytical framework is suggested in [Figure 3.1]. The mediating role of the parent-adolescent conversation will be examined using the mediation analysis.

[FIGURE 3.1] ANALYSIS FRAMEWORK



Data and Samples

To examine the mediating role of the parent-adolescent conversations in the effect of parental educational level on child's educational attainment, this study uses the Korea Labor Income and Panel Study (KLIPS). The KLIPS is the longest annual panel surveys in Korea, starting from 1998 with 5,000 households with its members who are 15 years old and above. In order to address the attrition problem and the oversampling of the urban area issue, the KLIPS conducted the additional sampling twice in 2009 and 2018. To ensure the representative of the whole population, the rural area samples are added during the additional sampling process.

For the purpose of this study, the 9^{th} and 11^{th} additional surveys on young adults and education are combined with the annual surveys on household, individual and job history. Since the key variables are retrospective answers about the experience at 14 years old, as collected one time during the additional survey, the final dataset is dealt as a cross-sectional through the imputation, rather than the panel.

The final analytical sample is 2,203 individuals, who were born between 1971 and 1991 defined as the young adults in the additional surveys in 2006 and 2008. The final sample is limited to those who have cohabited with biological parents at 14 years old. Since the variable of the main interest is the frequency of conversation between parents and adolescent and the relationship with step parents can differ from the relationship with biological parents, the analytical sample is limited only those who have cohabited with biological parents. Missing values in the key variables are excluded.

Measurement

Dependent variable: educational outcomes

Respondents' educational outcome is measured by final educational degrees. The raw data of the KLIPS has information of the final degree of education by seven classes, from no education, elementary school graduate, middle school, high school, two-or-three-year college, four-year college and master's degree or above.

We considered two reasons to recode the final educational degree into four groups: high school graduates, two- or three-year college graduates, four-year college graduate excluding Seoul area, and 4-year college in Seoul and MA or above. First, we considered the policy change to stipulate the middle school as mandatory education in 1985. This coincides with the year of entering the school of the analytical sample, thus the final education level below middle school degree accounts to 1.91% (n=46) among our analytical sample. Second, we considered a trend of fast increase in a share of the tertiary education attainment in Korea. Particularly, among the young generation aged between 25 and 34 years old, the share of the tertiary education is reported to have increased from 37% to 69% over the period of 2000 and 2021 (OECD, 2022). In our data as well, 37.1% of the analytical sample has 4-year college degree. For this reason, a necessity is suggested to divide the 4-year-college in order to measure the educational achievement more precisely. Thus, the 4-year college is recoded by its location, whether it is located in Seoul or not, considering the concentration of educational infrastructure and top-tier colleges in Seoul.

Independent variables: parental education

The independent variable is the parental education level. Among mother and father's education, the higher educational degree is used. The education level is by seven in the raw data just as respondents' educational degree. Considering the outliers of no education (n=68) and mater's

degree (n=28), the parental education level is recoded as five from elementary school graduate, middle school, high school, two- or three-year college, to four-year college or master's degree and above.

Mediator: parent-adolescent discussions

Frequency of conversations with parents at 14 years old is a variable of main interest in this study. Respondents are asked to give the retrospective answers regarding the frequency of conversations with parents on various topics in the 9th additional survey in 2006. The topics include 1) conversations on the cultural issues such as books, TV, and movies, 2) conversations on the political and social issues are used to measure the cultural capital, 3) conversations regarding school life, 4) conversations regarding the personal issues. The answers are in five scales, 1) rarely having, 2) one or two times in a year, 3) one or two times in a quarter, 4) one or two times in a month, 5) more than once a week. The frequency of conversation is used as an indexed variable of a total sum of each topic. The mean of the frequency of the conversation is 9.828 in [Table 1], The frequencies of the parent-adolescent conversation by each topic are presented in [Figure A1] in the appendix.

In order to examine the effect of the conversation by each topic, the variables are also dichotomized to indicate whether the conversation took place at least once or twice a month. The logic is that if the conversation takes place once or twice per year or once or twice per quarter, it could mean not much difference from conversation at all. It is interesting to note that the frequency of conversation greatly differs by topic, as a majority talked about school life at least once or twice a month with their parents at 14 years old (56.1%), which reduces to 30.3% regarding the personal issues and 27.4% in talks about the cultural issues. Conversation on social issues is observed to be

the topic of the least frequently talked, as the share of respondents who had conversation with parent at least once or twice a month merely account for 11.1%.

Control variables

Based on the existing discussions, cultural capital, economic capital, and social capital are controlled. As *the economic capital*, the possession of own room and own desk, and receiving private education at 14 years old is controlled along with the self-rated economic status at 14 years old. Economic status was measured by the Likert scale from 1 to 5 to indicate the spectrum from far below the average, through average, to higher than the average.

As a proxy for *the cultural capital,* the frequency of visits to the cultural activities, number of books at home at 14 years old are employed. Cultural activities consist of 1) museum or art gallery 2) pop concert 3) classical concerts or opera 4) movie theatre 5) theatre 6) sports game. Respondents were asked to answer to each category by four scales, 1) rarely, 2) once or twice a year, 3) three or four times a year, and 4) more than five times a year. The number of books at home at 14 years old, excluding magazines, newspapers, cartoons, and textbooks, is asked by a category 1) less than 10, 2) 11-25 3) 26-100 4) 101-200 5) 201-500, 6) more than 501.

To control *the social capital*, parents' expectation, family dinner and family leisure are controlled. The KLIPS has variables for the retrospective answers of each parent's expectation at 14 years old about the final educational attainment of the respondents. It is asked on five Likert scale: 1) vocational high school, 2) ordinary high school, 3) two- or three-year college, 4) four-year college, and 5) master's degree or above. Comparing each parent's expectation, the higher expectation is employed in the analysis. Frequency of having family dinner and family leisure are used as a proxy for the social capital based on the previous literature, which emphasized the development of

interpersonal relationships, various social skills while spending time together during the family leisuas well as emotional bonds during spending time together (Fulkerson et al., 2010; Smith et al., 2009). The variable is dichotomized to indicate having a family dinner more than once a week. Likewise, family leisure is dichotomized to indicate the frequency of having family leisure more than once a year. Among the analytical sample, a majority (67.6%, n=1,799) had a family dinner more than once a week, while 59% (n=1,299) of the respondents had a family leisure more than once a year.

Socio-demographic characteristics

As a socio-demographic characteristic, sex, age, sibling numbers, and regional areas at 14 years old are controlled. Regional areas at 14 years old are controlled by clustering as four areas such as rural area, urban area, five metropolitan cities, and Seoul.

[TABLE 3.1] DESCRIPTIVE STATISTICS

Variable	Obs.	Distribution or mean	Min.	Max.
Outcome variables: education				
High school	624	28.33	0	1
2- or 3-year college	603	27.37	0	1
4-year college	669	30.37	0	1
4-year college in Seoul and MA or above	307	13.94		
Explanatory variables: parents' education				
Elementary school	456	20.70	0	1
Middle school	561	25.47	0	1
High school	870	39.49	0	1
2- or 3-year college	101	4.58	0	1
4-year college and above	215	9.76	0	1
Mediating variable: conversation at 14	2203	9.828	4	20

Conversation on school life	2203	.561	0	1
Conversation on personal issues	2203	.303	0	1
Conversation on social issues	2203	.111	0	1
Conversation on cultural issues	2203	.274	0	1
Control variables: economic capital				
Own room at 14	2203	.49	0	1
Own desk at 14	2203	.732	0	1
Private education at 14	2203	.482	0	1
Economic status at 14				
Low a lot	119	5.40	0	1
Low a little bit	504	22.88	0	1
Average	1301	59.06	0	1
High a little bit	247	11.21	0	1
High a lot	32	1.45	0	1
Control variables: cultural capital				
Cultural visits at 14	2203	8.529	6	24
Book number at 14				
Less than 10	161	7.31	0	1
11-25	597	27.10	0	1
26-100	1031	46.80	0	1
101-200	319	14.48	0	1
201-500	78	3.54	0	1
More than 501	17	0.77	0	1
Control variables: social capital				
Family dinner	2203	.676	0	1
Family leisure	2203	.590	0	1
Parents' expectation				
Vocational high school	191	8.67	0	1
Ordinary high school	209	9.49	0	1
2- or 3-year college	177	8.03	0	1
4-year college	1541	69.95	0	1
Master's degree or above	85	3.86	0	1
Socio-demographic characteristics				
Male	2203	.453	0	1
Age	2203	40.79	29	49
Sibling number	2203	2.631	0	8

Regions at 14				
Rural	91	4.13	0	1
Urban	985	44.71	0	1
Metropolitan cities	696	31.59	0	1
Seoul	431	19.56	0	1

Analytical model

Ordered logistic regression

To assess the mediating effect of the cultural capital at 14 years old on the educational attainment, first, the regression without and with the mediator will be performed in a sequence. The order logistic regression is implemented because the outcome variable of child's education level is the categorical variable, 1 indicating high school graduates, 2 two-year college graduates, and 3 four-year university and above.

$$Obgit\ (ChildEdu) = \beta_0 + \beta_1 ParentsEdu + \beta_2 X + \varepsilon_i \quad (1a)$$

$$Obgit\ (ChildEdu) = \beta_0 + \beta_1 ParentsEdu + \beta_2 Discussions + \beta_3 X + \varepsilon_i \quad (1b)$$

The key explanatory variable is the parents' education. The higher level of education among both parents is used as prescribed.

The mediating variable of main interest is parent-adolescent conversations at 14 years old. The conversation variable is a sum of the frequency of discussion on each topic including social issues, cultural issues, personal issues and school life.

A set of controls include economic capital, social capital, cultural capital, and sociodemographic characteristics. The economic capital is measured by possession of own room, own desk, private education at 14 years old and perceived status at 14 years old. Cultural capital measure consists of book number at 14 years old and a sum of cultural visits to museum, pop concert, opera, movie,

theatre, sports game at 14. Social capital is measure with parental expectation in terms of education. Sociodemographic characteristics consists of age, sex, sibling numbers. Regions at 14 years old are controlled through the standard error clustering, considering the differing characteristics across regions.

The Karlson-Holm-Breen (KHB) Method

To examine the predictive power of the mediator, the Karlson-Holm-Breen (KHB) method is employed. The KHB method has an advantage in decomposing the total effect into direct and indirect effects in nonlinear probability models (Breen et al., 2021). In case of linear regression models, it is straightforward to estimate the indirect effect, using the difference of coefficients between the total effect and the direct effect. Whereas this method is so common, it should be used carefully in case of the nonlinear probability model. In the generalized linear models such as logit or probit, the difference of coefficients between models can arise due to rescaling issues as well as confounding issues (Kohler et al., 2011). That is, in the nonlinear probability model, the coefficient of the independent variable can change when the mediating variable is introduced, regardless of whether the mediator is associated with the independent variable. Suggested solutions to address this issue include standardization of the dependent variable (Long, 1997), the average partial effects (Wooldridge, 2002), or a decomposition method by Erikson et al. (2005). Yet, among others, the KHB method has advantages regardless of the degree of mediating effects of the mediator (Karlson et al., 2012). Also, the KHB method can be employed in decomposition of both continuous and discrete variables. It also provides the intuitive interpretations and can accommodate average partial effects (Kohler et al., 2011).

$$V = Obgit\ (ChildEd_i) = a_{0i} + a_{1i}ParentalEd + a_{2i}\widetilde{Conversation} + a_{3i}X \quad (2a)$$

(2b)

(2c)

Taking the latent index as the dependent variable

$$V = \theta_{0i} + \theta_{1i} ParentalEd + \theta_{2i} Conversation$$

$$V = \varphi_{0i} + \varphi_{1i} ParentalEd + \varphi_{2i}$$

C. Analysis Results

Mediating role of parent-adolescent discussions

The ordered logistic regression analysis results of the equation (1) are presented in [Table 3.2]. Model (1) is the baseline model which provides the effect of parents' educational level on child's educational attainment with socioeconomic characteristics controls. From model (2) to (4), the economic capital, cultural capital, and the social capital are introduced in sequence. Model (5) presents the full model with the parent-adolescent conversation added. The coefficient size of the parent's education is reducing from the model (1) to (5), consistent with the previous studies that explains the influence of parents' education on child's educational attainment.

[TABLE 3.2] ORDERED LOGISTIC REGRESSION OF EDUCATIONAL TRANSMISSION

	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Parents' education	0.535***	0.459***	0.410***	0.333***	0.318***
	(0.0588)	(0.0448)	(0.0311)	(0.0220)	(0.0235)
Conversation					0.0472***
					(0.00977)
Social Capital					
Parental expectation				0.686***	0.675***
				(0.106)	(0.102)
Family dinner				-0.0705	-0.127*
				(0.0639)	(0.0500)

Family leisure				0.162*	0.0688
				(0.0639)	(0.0731)
Cultural capital					
Book number at 14			0.260**	0.174*	0.159*
			(0.0859)	(0.0768)	(0.0709)
Cultural visits at 14			0.0344	0.0133	-0.00356
			(0.0257)	(0.0255)	(0.0277)
Economic capital					
Status at 14		0.130**	0.109**	0.00788	-0.000129
		(0.0455)	(0.0384)	(0.0412)	(0.0437)
Own room at 14		0.0672	0.0261	-0.0178	-0.0111
		(0.0500)	(0.0402)	(0.0358)	(0.0377)
Own desk at 14		0.340***	0.228***	0.0996	0.0908
		(0.0793)	(0.0657)	(0.0696)	(0.0866)
Private education at 14		0.493***	0.424***	0.254***	0.230***
		(0.0148)	(0.0352)	(0.0575)	(0.0631)
Controls					
Male	0.220**	0.246**	0.261**	0.113	0.163+
	(0.0796)	(0.0817)	(0.0803)	(0.0925)	(0.0862)
Age	-0.0508***	-0.0354***	-0.0360***	-0.0426***	-0.0382***
	(0.00602)	(0.00636)	(0.00562)	(0.00492)	(0.00548)
Siblings	-0.0780***	-0.0434*	-0.0461*	-0.0142	-0.0176
	(0.0198)	(0.0210)	(0.0202)	(0.0241)	(0.0244)
/					
cut1	-1.653***	-0.447	0.220	1.388*	1.647*
	(0.349)	(0.478)	(0.485)	(0.617)	(0.671)
cut2	-0.315	0.925+	1.611**	2.906***	3.175***
	(0.399)	(0.533)	(0.545)	(0.700)	(0.752)

cut3	1.470*	2.733**	3.441***	4.791***	5.072***
	(0.717)	(0.842)	(0.891)	(1.048)	(1.098)
N	2203	2203	2203	2203	2203
adj. R^2	0.071	0.082	0.088	0.127	0.130

Standard errors are clustered by region at 14 years old
$^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

The Karlson-Holm-Breen (KHB) Analysis

The result of KHB analysis of the equations from (2a) and (2c) is presented in [Table 3.3]. Model (1) and (2) is with and without control variables.

[TABLE 3.3] KARLSON-HOLM-BREEN (KHB) RESULTS

VARIABLES	(1) Education	(2) Education
Reduced model	0.659***	0.314***
	(0.036)	(0.042)
Full model	0.563***	0.297***
	(0.037)	(0.042)
Difference	0.097***	0.016***
	(0.013)	(0.005)
Controls	N	Y
Observations	2,203	2,203

The estimated total effect of parents' education is provided in the reduced model, while the direct effect in the full model. The difference indicates the estimated indirect effect of the parent-adolescent conversations. In model (2), the coefficients indicate that parents' education level increases the log odds of child's educational attainment by 0.314. Controlling for the parent-

adolescent conversation, the effect of parents' education reduces to 0.297, leaving an indirect effect of parents-adolescent conversation as 0.016

To address the difficulties of the interpretation of the magnitude of coefficients because of measurement on "arbitrary" scales, the confounding ratio and the percentage are presented in [Table 3.4].

[TABLE 3.4] KARLSON-HOLM-BREEN (KHB) RESULTS

VARIABLE	Confounding ratio	Confounding percentage	Rescale Factor
Parents' education	1.054	5.15	1.011

The total effect of parents' education on children's education is 1.05 times larger than the direct effect, and 5.15% of the total effect is attributed to the frequency of parent-adolescent conversation.

D. Further Analysis

In order to assess whether the mediating effects of the parent-adolescent conversation differ by the topic of the talks (Hypothesis 3), the frequency of conversation on each topic is examined. Model (1) through (4) in [Table 3.5] enable to compare the size of the effect by each topic. The conversation on school life is observed to have the prominent mediating effects substantially as well as significantly. The influence of parents' education can be partly explained by the frequent conversation with parents on social issues and cultural issues at 14 years old. This provides the supportive evidence of the cultural capital aspect of the parent-adolescent conversation in that the language and appetite for the high culture are transmitted from parents to children through the

conversation with parents. On the other hand, the conversation on personal issues are related with emotional bonds with parents and emotional supports which are more likely to be associated with the social capital aspect. It is presumed that the reason of the statistical insignificance of the talk on the personal issues is due to the limitation of the dataset. If the frequency of conversation were measured more sophisticatedly, then it might have been observed significant as well. [Table 3A.2] in the appendix suggest such a possibility as it uses the frequency of the conversation as categorical variable by 5 scales.

[TABLE 3.5] PARENT-ADOLESCENT CONVERSATION BY TOPICS

	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Parents' education	0.333***	0.326***	0.330***	0.328***	0.327***
	(0.0220)	(0.0245)	(0.0208)	(0.0223)	(0.0229)
School life		0.355***			
		(0.0973)			
Personal issues			0.102		
			(0.0834)		
Social issues				0.209**	
				(0.0759)	
Cultural issues					0.251***
					(0.0658)
/					
cut1	1.388*	1.476*	1.377*	1.392*	1.373*
	(0.617)	(0.624)	(0.630)	(0.625)	(0.638)
cut2	2.906***	3.004***	2.895***	2.910***	2.895***
	(0.700)	(0.700)	(0.713)	(0.707)	(0.721)
cut3	4.791***	4.899***	4.781***	4.797***	4.784***
	(1.048)	(1.040)	(1.061)	(1.056)	(1.070)
Controls	Y	Y	Y	Y	Y
N	2203	2203	2203	2203	2203

adj. R^2	0.127	0.130	0.127	0.127	0.128

Standard errors are clustered by region at 14 years old
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

E. Robustness Check

The frequency of parent-adolescent conversations can be heterogenous across generations. The younger parents are more likely try to converse with their children frequently and to have friendly relationships rather than authoritative relationships compared to the previous generations. It is evidenced in our dataset, as the cohort effects on the frequency of conversation is observed in [Table 3A.1]. Considering the heterogeneity in terms of the frequency of conversation across the cohort, the additional analysis is implemented by subgroup of the age cohort.

[TABLE 3. 6]ORDERED LOGISTIC REGRESSION BY COHORT

	(1) 1970s	(2) 1980s	(3) 1990s
Parents' education	0.273***	0.411***	0.551***
	(0.0355)	(0.0596)	(0.150)
Conversation	0.0408*	0.0457+	0.0745***
	(0.0187)	(0.0265)	(0.00471)
/			
cut1	1.883*	0.540	5.658
	(0.736)	(1.417)	(5.632)
cut2	3.334***	2.259	7.333
	(0.750)	(1.477)	(5.479)
cut3	5.353***	3.980*	9.560+
	(1.027)	(1.556)	(5.725)
Controls	Y	Y	Y

N	1280	744	179
adj. R^2	0.127	0.111	0.123

Standard errors are clustered by region at 14 years old
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[Table 3.6] presents subgroup analysis result by the age. The mediating effect of the parent-adolescent conversation in the influence of parents' education is found in all age groups, consistent with the main findings.

As the additional robustness check, the logistic regression is implemented employing the graduates from four-year college in Seoul and above as a dependent variable. The logistic regression analysis in [Table 3.7] presents consistent results with the ordered logistic regression.

[TABLE 3. 7] LOGISTIC REGRESSION

	(1)	(2)	(3)	(4)	(5)
Dependent variable: 4-year college in Seoul and above					
Parents' education	0.411***	0.356***	0.312***	0.257***	0.241***
	(0.0709)	(0.0480)	(0.0565)	(0.0635)	(0.0621)
Conversation					0.0335***
					(0.00970)
Social Capital					
Parental expectation				0.643***	0.630***
				(0.0950)	(0.0882)
Family dinner				-0.0737	-0.123*
				(0.0606)	(0.0563)
Family leisure				0.0632	0.0103
				(0.0904)	(0.0781)

Cultural capital					
Book number at 14			0.132***	0.0832***	0.0715**
			(0.0259)	(0.0193)	(0.0242)
Cultural visits at 14			0.0720**	0.0565*	0.0456
			(0.0272)	(0.0272)	(0.0314)
Economic capital					
Status at 14		-0.0846	-0.0988	-0.158	-0.166
		(0.161)	(0.168)	(0.174)	(0.168)
Own room at 14		-0.0888	-0.134	-0.167	-0.168
		(0.170)	(0.165)	(0.156)	(0.152)
Own desk at 14		0.536*	0.442*	0.374	0.365+
		(0.212)	(0.218)	(0.229)	(0.215)
Private education at 14		0.506***	0.459**	0.344*	0.329*
		(0.128)	(0.141)	(0.155)	(0.156)
Controls					
Male	-0.0172	0.00140	0.00868	-0.0614	-0.0234
	(0.164)	(0.169)	(0.156)	(0.166)	(0.168)
Age	-0.0729***	-0.0602***	-0.0593***	-0.0638***	-0.0606***
	(0.0205)	(0.0181)	(0.0171)	(0.0166)	(0.0167)
Siblings	-0.169	-0.131	-0.134	-0.117	-0.122
	(0.118)	(0.111)	(0.113)	(0.119)	(0.121)
Constant	0.0394	-0.851	-1.619	-3.131+	-3.289+
	(1.754)	(1.841)	(1.650)	(1.749)	(1.738)

N	2203	2203	2203	2203	2203
adj. R^2	0.092	0.102	0.109	0.129	0.132

Standard errors are clustered by region at 14 years old
$^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

F. Discussion and Conclusion

This study examined the mediating effects of the parent-adolescent conversations as a mechanism of the influence of parents' education on child's educational outcomes. A substantial amount of research has been done to explain the influence of parents' education on child's outcome and many researchers focused on the role of parent-child conversation from the perspective of the social capital. Yet, the cultural capital aspect of the parent-adolescent conversations has been neglected. This study attempts to extend the existing literature by highlighting the cultural capital aspect of the parent-adolescent conversations.

The analysis result reveals that parent-adolescent conversations explain 5.15% of the influence of parents' education on child's educational outcomes. Examining the mediating effects by topics, the sizable effect is observed with the conversation about school life, consistent with the previous literature which provides the importance of the academic involvement by parents (Chung et al., 2020). Meanwhile, the statistical significance of the conversation about social issues and cultural issues provides the supportive evidence of the cultural capital aspect of the parent-adolescent conversations. As the ability to understand and use the educated language and the cultural code is an important component of the cultural capital, the frequent conversation with parents on the social issues or cultural issues can imply the concerted cultivation in a broader sense. Also, the quantity (frequency) of the conversation can reflect the quality of the conversation. The adolescents are highly likely to keep away from the conversation with parents if they feel they are admonished or

taught unilaterally rather than communicating bilaterally, then the frequency will be reduced. In the opposite case, the frequency of the conversation will increase by nature if the adolescents enjoy conversing with parents. Thus, the frequency will be adjusted and converge into the point to represent the quality of the conversation.

Nevertheless, this study is without limitation. First of all, since the key variables are based on the retrospective answers, measurement error is possible due to the incorrect or distorted memory. Also, as prescribed, the frequency of the conversation is measured too broad to capture accurately. Still, the dataset has an advantage in that the frequency of the conversation is measured from the perspective of children, not from parents. The perception of conversation could be different from each side of parents and children. Even though parents think they have a good conversation with children, it could be complete opposite from the perspective of children. It is more so, considering the characteristics of the puberty which is represented as sensitivity and pursuit of independence from parents.

At the backdrop of a growing pessimism on the educational mobility, this study suggests a political implication by providing an evidence of the mechanism of parents' education. Even though the frequency of conversation is largely correlated with parents' education, there is a higher chance for the policy to improve the cultural capital compared to the economic capital or the social capital. The policy can be designed to address the communication problem within family with relatively low costs, for example by enhancing the trained consultants or developing programs for the better communication. Such policy efforts are expected not only to improve the familial relationships, but also can contribute to the social mobility by promoting the cultural capital.

Reference

Aassve, A., Cavalli, N., Mencarini, L., Plach, S., & Bacci, M. L. (2020). The COVID-19 pandemic and human fertility. *Science*, *369*(6502), 370–371. https://doi.org/10.1126/science.abc9520

Aassve, Arnstein, Biliari, F. C., & Pessin, L. (2016). Trust and fertility dynamics. *Social Forces*, *95*(2), 663–692. https://doi.org/10.1093/sf/sow080

Aassve, Arnstein, Fuochi, G., & Mencarini, L. (2014). Desperate Housework: Relative Resources, Time Availability, Economic Dependency, and Gender Ideology Across Europe. *Journal of Family Issues*, *35*(8), 1000–1022. https://doi.org/10.1177/0192513X14522248

Aassve, Arnstein, Le Moglie, M., & Mencarini, L. (2021). Trust and fertility in uncertain times. *Population Studies*, *75*(1), 19–36. https://doi.org/10.1080/00324728.2020.1742927

Aguiar, B. M., Hurst, E., & Karabarbounis, L. (2013). Time Use During the Great Recession Author. *American Economic Review*, *103*(5), 1664–1696.

Ahmed, D., Buheji, M., & Merza Fardan, S. (2020). Re-Emphasising the Future Family Role in 'Care Economy' as a Result of Covid-19 Pandemic Spillovers. *American Journal of Economics*, *10*(6), 332–338. https://doi.org/10.5923/j.economics.20201006.03

Andrew, A., Cattan, S., Dias, M. C., Farquharson, C., Kraftman, L., Krutikova, S., Phimister, A., & Sevilla, A. (2020). *How are mothers and fathers balancing work and family under lockdown? IFS Briefing Note BN290*. https://www.ifs.org.uk/publications/14860

Aschaffenburg, K., & Maas, I. (1997). Cultural and Educational Careers : The Dynamics of Social Reproduction. *American Sociological Review*, *62*(4), 573–587.

Baxter, J. (2000). The Joys and Justice of Housework. *Sociology*, *34*(4), 609–631.

Baxter, J., Hewitt, B., & Haynes, M. (2008). Life Course transitions and housework: Marriage, parenthood, and time on housework. *Journal of Marriage and Family*, *70*(2), 259–272. https://doi.org/10.1111/j.1741-3737.2008.00479.x

Becker, G. S., & Barro, R. J. (1988). A reformulation of the economic theory of fertility. *Quarterly Journal of Economics*, *103*(1), 1–25. https://doi.org/10.2307/1882640

Bellani, D., & Arpino, B. (2022). Risk tolerance and fertility: Evidence from a lottery question in Italy. *Journal of Marriage and Family*, *March 2021*, 1–19. https://doi.org/10.1111/jomf.12820

Beringer, S., Bujard, M., & Diabaté, S. (2022). *Changes in personal attitudes and perceived public*

opinions towards external childcare.

Bernardi, L., Huinink, J., & Settersten, R. A. (2019). The life course cube: A tool for studying lives. *Advances in Life Course Research*, *41*(November 2018), 100258. https://doi.org/10.1016/j.alcr.2018.11.004

Bernardi, L., Ryser, V.-A., & Goff, J.-M. Le. (2013). Gender Role-Set, Family Orientations, and Women's Fertility Intentions in Switzerland. *Swiss Journal of Sociology*, *39*(1), 9–31.

Berzelak, N., & Vehovar, V. (2018). Mode effects on socially desirable responding in web surveys compared to face-to-face and telephone surveys. *Metodoloski Zvezki*, *15*(2), 21–43. https://doi.org/10.51936/lrkv4884

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? trends in the gender division of household labor. *Social Forces*, *79*(1), 191–228. https://doi.org/10.1093/sf/79.1.191

Boudon, R. (1974). *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. John Wiley & Sons.

Bourdieu, P. (1977). Cultural Reproduction and social Reproduction. In J. Karabel & A. H. Halsey (Eds.), *Power and Ideology in Education* (pp. 487–511). Oxford University Press.

Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Greenwood Press.

Bourdieu, P., & Passeron, J.-C. (1990). *Reproduction in Education, Society and Culture* (second). Sage Publications.

Bras, H., Kok, J., & Mandemakers, K. (2010). Sibship size and status attainment across contexts: evidence from the netherlands, 1840-1925. *Demographic Research*, *23*(December), 73–104. https://doi.org/10.4054/DemRes.2010.23.4

Breen, R., Bernt Karlson, K., & Holm, A. (2021). A Note on a Reformulation of the KHB Method. *Sociological Methods and Research*, *50*(2), 901–912. https://doi.org/10.1177/0049124118789717

Brines, J. (1994). Economic Dependency , Gender , and the Division of Labor at Home. *American Journal of Sociology*, *100*(3), 652–688.

Brunori, P. (2017). The Perception of Inequality of Opportunity in Europe. *Review of Income and Wealth*, *63*(3), 464–491. https://doi.org/10.1111/roiw.12259

Byun, S. yong, Schofer, E., & Kim, K. keun. (2012). Revisiting the Role of Cultural Capital in

East Asian Educational Systems: The Case of South Korea. *Sociology of Education*, *85*(3), 219–239. https://doi.org/10.1177/0038040712447180

Campbell, A. M. (2020). An increasing risk of family violence during the Covid-19 pandemic: Strengthening community collaborations to save lives. *Forensic Science International: Reports*, *2*(April), 100089. https://doi.org/10.1016/j.fsir.2020.100089

Carriero, R., & Todesco, L. (2018). Housework division and gender ideology: When do attitudes really matter? *Demographic Research*, *39*(1), 1039–1064. https://doi.org/10.4054/DemRes.2018.39.39

Charles, P., Spielfogel, J., Gorman-Smith, D., Schoeny, M., Henry, D., & Tolan, P. (2018). Disagreement in Parental Reports of Father Involvement. *Journal of Family Issues*, *39*(2), 328–351. https://doi.org/10.1177/0192513X16644639

Chin, M., Han, J., & Noh, S. (2019). An Association Between Latent Profiles of Marriage and Childbirth Attitudes and Individual Perceptions on Korean Society and Own Future Prospect among Young Adults. *Family and Culture*, *31*(1), 166–188.

Chin, M., Sung, M., Son, S., Yoo, J., Lee, J., & Chang, Y. (2020). Changes in Family Life and Relationships during the COVID-19 Pandemic and their Associations with Perceived Stress. *Family and Environment Research*, *58*(3), 447–461. https://doi.org/10.1377/hlthaff.21.2.163

Choi, Y., & Park, H. (2016). Shadow education and educational inequality in South Korea: Examining effect heterogeneity of shadow education on middle school seniors' achievement test scores. *Research in Social Stratification and Mobility*, *44*, 22–32. https://doi.org/10.1016/j.rssm.2016.01.002

Chung, H., Birkett, H., Forbes, S., & Seo, H. (2020). Working from Home and the Division of Housework and Childcare Among Dual Earner Couples During the Pandemic In the UK. *SocArXiv Papers*, *1*(December), 1–33. https://osf.io/preprints/socarxiv/4esf7/

Chung, H., Birkett, H., Forbes, S., & Seo, H. (2021). Covid-19, Flexible Working, and Implications for Gender Equality in the United Kingdom. *Gender and Society*, *35*(2), 218–232. https://doi.org/10.1177/08912432211001304

Chung, I., Choi, S., Hwang, S., & Choi, Y. (2020). Intergenerational Social Mobility and Educational Inequality in South Korea : A Comprehensive Review of Empirical Studies since 2000. *Economy and Society*, 12–59.

Coleman, James, S. (1988). Social Capital in the Creation of Human Captial. *The American*

Journal of Sociology, *94*(1988), 95-S120. http://doi.apa.org/getdoi.cfm?doi=10.1037/0012-1649.22.6.723

Costoya, V., Echeverría, L., Edo, M., Rocha, A., & Thailinger, A. (2021). Gender Gaps within Couples: Evidence of Time Re-allocations during COVID-19 in Argentina. *Journal of Family and Economic Issues*, *43*(2), 213–226. https://doi.org/10.1007/s10834-021-09770-8

Currie, J., Schwandt, H., & Wachter, K. W. (2014). Short- And long-term effects of unemployment on fertility. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(41), 14734–14739. https://doi.org/10.1073/pnas.1408975111

De Graaf, N. D., De Graaf, P. M., & Kraaykamp, G. (2000). Parental cultural capital and educational attainment in the Netherlands: A refinement of the cultural capital perspective. *Sociology of Education*, *73*(2), 92–111. https://doi.org/10.2307/2673239

Dika, S. L., & Singh, K. (2002). Applications of social capital in educational literature: A critical synthesis. *Review of Educational Research*, *72*(1), 31–60. https://doi.org/10.3102/00346543072001031

Dimaggio, P. (1982). Cultural Capital and School Success : The Impact of Status Culture Participation on the Grades of U.S. High School Students. *American Sociological Review*, *47*(2), 189–201.

Dribe, M., Van Bavel, J., & Campbell, C. (2012). Social mobility and demographic behavior: Long term perspectives. *Demographic Research*, *26*(June), 173–190. https://doi.org/10.4054/DemRes.2012.26.8

Easterlin, R. A. . (1976). The Conflict between Aspirations and Resources. *Population and Development Review*, *2*(3/4), 417–425.

Erikson, R., Goldthorpe, J. H., Jackson, M., Yaish, M., & Cox, D. R. (2005). On class differentials in educational attainment. *Proceedings of the National Academy of Sciences of the United States of America*, *102*(27), 9730–9733. https://doi.org/10.1073/pnas.0502433102

Evertsson, M., & Nermo, M. (2007). Changing resources and the division of housework: A longitudinal study of Swedish couples. *European Sociological Review*, *23*(4), 455–470. https://doi.org/10.1093/esr/jcm018

Fahlén, S., & Oláh, L. S. (2018). Economic uncertainty and first-birth intentions in Europe. *Demographic Research*, *39*(1), 795–834. https://doi.org/10.4054/DemRes.2018.39.28

Fegert, J. M., Vitiello, B., Plener, P. L., & Clemens, V. (2020). Challenges and burden of the

Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: A narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child and Adolescent Psychiatry and Mental Health*, *14*(1), 1–11. https://doi.org/10.1186/s13034-020-00329-3

Fulkerson, J. A., Pasch, K. E., Stigler, M. H., Farbakhsh, K., Perry, C. L., & Komro, K. A. (2010). Longitudinal Associations Between Family Dinner and Adolescent Perceptions of Parent-Child Communication Among Racially Diverse Urban Youth. *Journal of Family Psychology*, *24*(3), 261–270. https://doi.org/10.1037/a0019311

Gatta, A., Mattioli, F., Mencarini, L., & Vignoli, D. (2021). Employment uncertainty and fertility intentions: Stability or resilience? *Population Studies*, *0*(0), 1–20. https://doi.org/10.1080/00324728.2021.1939406

Gillespie, B. J., Peterson, G., & Lever, J. (2019). Gendered perceptions of fairness in housework and shared expenses: Implications for relationship satisfaction and sex frequency. *PLoS ONE*, *14*(3), 1–18. https://doi.org/10.1371/journal.pone.0214204

Gimpelson, V., & Treisman, D. (2018). Misperceiving inequality. *Economics and Politics*, *30*(1), 27–54. https://doi.org/10.1111/ecpo.12103

Greenstein, T. N. (2000). Economic dependence, gender, and the division of labor in the home: A replication and extension. *Journal of Marriage and Family*, *62*(2), 322–335. https://doi.org/10.1111/j.1741-3737.2000.00322.x

Han, J., Kim, S., Ha, S. E., & Shin, I. C. (2014). Ambivalent Effects of Social Relations on Subjective Well-being Joon. *Korean Journal of Sociology*, *48*(5), 1–24.

Han, S., & Kim, A. (2018). Social capital and the improvement of academic achievement: The interrelated effects of families and schools. *Korean Journal of Sociology of Education*, *28*(2), 157–182.

Hauser, O. P., & Norton, M. I. (2017). (Mis)perceptions of inequality. *Current Opinion in Psychology*, *18*, 21–25. https://doi.org/10.1016/j.copsyc.2017.07.024

Hiekel, N., & Ivanova, K. (2022). Changes in Perceived Fairness of Division of Household Labor Across Parenthood Transitions: Whose Relationship Satisfaction Is Impacted? *Journal of Family Issues*, *0*(0), 1–28. https://doi.org/10.1177/0192513X211055119

Hochschild, A. R., & Machung, A. (2012). The second shift : working families and the revolution at home / Arlie Hochschild with Anne Machung. In *Penguin Books*.

Hofmann, B., & Hohmeyer, K. (2013). Perceived economic uncertainty and fertility: Evidence from a labor market reform. *Journal of Marriage and Family*, *75*(2), 503–521. https://doi.org/10.1111/jomf.12011

Horne, R. M., Johnson, M. D., Galambos, N. L., & Krahn, H. J. (2018). Time, Money, or Gender? Predictors of the Division of Household Labour Across Life Stages Rebecca. *Sex Roles*, *78*, 731–743.

Hudde, A., Hank, K., & Jacob, M. (2021). Gender Role Attitudes Cannot Explain How British Couples Responded to Increased Housework Demands during the COVID-19 Pandemic. *Socius*, *7*(1). https://doi.org/10.1177/23780231211064395

Hwang, J., Park, S., & Shin, D. (2018). Two birds with one stone: Female labor supply, fertility, and market childcare. *Journal of Economic Dynamics and Control*, *90*, 171–193. https://doi.org/10.1016/j.jedc.2018.02.008

Imai, K., Keele, L., Tingley, D., & Yamamoto, T. (2011). Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies. *American Political Science Review*, *105*(4), 765–789. https://doi.org/10.1017/S0003055411000414

Jeon, H. R., & Kim, K. (2006). Determinants of educational aspiration of high school students: With special reference to the effect of significant others. *Korean Journal of Sociology of Education*, *16*(4), 185–206.

Kan, M. Y., Hertog, E., & Kolpashnikova, K. (2019). Housework share and fertility preference in four East Asian countries in 2006 and 2012. *Demographic Research*, *41*(December), 1021–1046. https://doi.org/10.4054/DemRes.2019.41.35

Karlson, K. B., Holm, A., & Breen, R. (2012). Comparing Regression Coefficients Between Same-sample Nested Models Using Logit and Probit: A New Method. *Sociological Methodology*, *42*(1), 286–313. https://doi.org/10.1177/0081175012444861

Kim, Hisam. (2010). *Analysis of the Effects of Private Education on Academic Achievement and Labor Market Performance*.

Kim, Hyunju, & Lee, B.-H. (2007). Effects of Family Background, Social Capital and Cultural Capital on the Children's Academic Performance. *Korea Journal of Population Studies*, *30*(1), 125–148.

Kim, J., & Luke, N. (2020). Lowest-low fertility in South Korea: Policy and domestic labor supports and the transition to second birth. *Social Forces*, *99*(2), 700–731.

https://doi.org/10.1093/sf/soz159

Kim, K., & Byun, S. (2007). The impact of cultural capital on student achievement in South Korea. *Korean Journal of Sociology of Education*, *17*(1), 23–51.

Kim, S. (2022). A Socio-psychological Approach to Low Fertility: Who Can't, and Why Can't They Dream of Marriage and Childbearing? *Survey Research*, *23*(2), 1–33. https://kiss.kstudy.com/thesis/thesis-view.asp?key=3948157

Kim, Y. H. (2012). The evolution of and issues in the cultural capital theory. *Korean Journal of Sociology of Education*, *22*(2), 31–63.

Kim, Yong-hoi, & Han, C. (2019). A Semantic Network Analysis of the Web News Articles on 'Spoon Class.' *Korean Journal of Social Welfare*, *71*(3), 55–81.

Kim, Young-eun, & Um, M. (2018). The effect of parents' socioeconomic status on academic achievement: Focusing on the mediating effect of parental emotional support and student's ego resilience. *Korean Journal of Social Welfare Studies*, *49*, 5–30.

Kingston, P. W. (2001). The Unfulfilled Promise of Cultural Capital Theory Author. *Sociology of Education*, *74*(2001), 88–99.

Kohler, U., Karlson, K. B., & Holm, A. (2011). Comparing coefficients of nested nonlinear probability models. *Stata Journal*, *11*(3), 420–438. https://doi.org/10.1177/1536867x1101100306

Kristal, T., & Yaish, M. (2020). Does the coronavirus pandemic level the gender inequality curve? (It doesn't). *Research in Social Stratification and Mobility*, *68*(May), 100520. https://doi.org/10.1016/j.rssm.2020.100520

Kroger, J. (2006). *Identity Development: Adolescence Through Adulthood*. Sage Publications.

Kye, B. (2011). Intergenerational transmission of women's educational attainment in South Korea: An application of a multi-group population projection model. *Demographic Research*, *24*(June), 79–112. https://doi.org/10.4054/DemRes.2011.24.3

Lachance-Grzela, M., & Bouchard, G. (2010). Why Do Women Do the Lion's Share of Housework? A Decade of Research. *Sex Roles*, *63*(11), 767–780. https://doi.org/10.1007/s11199-010-9797-z

Lamont, M., & Lareau, A. (1988). Cultural Capital: Allusions, Gaps and Glissandos in Recent Theoretical Developments. *Sociological Theory*, *6*(2), 153. https://doi.org/10.2307/202113

Lareau, A. (2002). Invisible Inequality : Social Class and Childrearing in Black Families and White

Families. *American Sociological Review*, *67*(5), 747–776.

Lareau, A. (2011). *Unequal Childhoods: Class, Race, and Family Life* (second). University of California Press.

Lareau, A., & Weininger, E. B. (2003). Cultural capital in educational research: A critical assessment. *Theory and Society*, *32*(5–6), 567–606. https://doi.org/10.1023/B:RYSO.0000004951.04408.b0

Lee, Y., & Lee, S. (2017). A Study of the Effect of Social Status on Happiness: A Focus on Objective and Subjective Social Status. *Korean Journal of Public Administration*, *55*(1), 1–39.

Lennon, M. C., & Rosenfield, S. (1994). Relative Fairness and the Division of Housework : The Importance of Options. *American Journal of Sociology*, *100*(2), 506–531.

Long, J. S. (1997). *REGRESSION MODELS FOR CATEGORICAL DEPENDENT VARIABLES USING STATA J.* Thousand Oaks.

Lutz, W., Skirbekk, V., & Testa, M. R. (2006). The low-fertility trap hypothesis: Forces that may lead to further postponement and fewer births in Europe. *Vienna Yearbook of Population Research*, *March*, 167–192. https://doi.org/10.1553/populationyearbook2006s167

Malicka, I., Mynarska, M., & Świderska, J. (2021). Perceived consequences of the COVID-19 pandemic and childbearing intentions in Poland. *Journal of Family Research*, *33*(3), 674–702. https://doi.org/10.20377/jfr-666

Marteleto, L. J., Guedes, G., Coutinho, R. Z., & Weitzman, A. (2020). Live Births and Fertility Amid the Zika Epidemic in Brazil. *Demography*, *57*(3), 843–872. https://doi.org/10.1007/s13524-020-00871-x

Matysiak, A., Sobotka, T., & Vignoli, D. (2021). The Great Recession and Fertility in Europe: A Sub-national Analysis. In *European Journal of Population* (Vol. 37, Issue 1). Springer Netherlands. https://doi.org/10.1007/s10680-020-09556-y

McHugh, M. C., & Frieze, I. H. (1997). The measurement of gender-role attitudes: A review and commentary. *Psychology of Women Quarterly*, *21*(1), 1–16. https://doi.org/10.1111/j.1471-6402.1997.tb00097.x

Meraviglia, C., & Dudka, A. (2021). The gendered division of unpaid labor during the Covid-19 crisis: did anything change? Evidence from Italy. *International Journal of Sociology*, *51*(1), 64–75. https://doi.org/10.1080/00207659.2020.1832346

Miettinen, A., Lainiala, L., & Rotkirch, A. (2015). Women's housework decreases fertility: Evidence from a longitudinal study among Finnish couples. *Acta Sociologica (United Kingdom)*, *58*(2), 139–154. https://doi.org/10.1177/0001699315572028

Mikelson, K. S. (2008). He said, she said: Comparing mother and father reports of father involvement. *Journal of Marriage and Family*, *70*(3), 613–624. https://doi.org/10.1111/j.1741-3737.2008.00509.x

Mills, M., Mencarini, L., Tanturri, M. L., & Begall, K. (2008). Gender equity and fertility intentions in Italy and the Netherlands. *Demographic Research*, *18*(June), 1–26. https://doi.org/10.4054/demres.2008.18.1

Modena, F., Rondinelli, C., & Sabatini, F. (2014). Economic insecurity and fertility intentions: The case of Italy. *Review of Income and Wealth*, *60*(S1), 233–255. https://doi.org/10.1111/roiw.12044

Niehues, J. (2014). Subjective Perceptions of Inequality and Redistributive Preferences: An International Comparison. *IW-Trends*, 1–23. file:///Users/orhantorul/Downloads/Inequality_Perception_Discussion_Paper_Judith_Niehues.pdf

Nitsche, N., & Grunow, D. (2016). Housework over the course of relationships: Gender ideology, resources, and the division of housework from a growth curve perspective. *Advances in Life Course Research*, *29*, 80–94. https://doi.org/10.1016/j.alcr.2016.02.001

OECD. (2018). A Broken Social Elevator? How to Promote Social Mobility. In *OECD*. https://doi.org/10.1787/9789264301085-en

OECD. (2022). *Education at a Glance 2022: OECD Indicators*. https://doi.org/10.1787/3197152b-en.

Okun, B. S., & Raz-Yurovich, L. (2019). Housework, Gender Role Attitudes, and Couples' Fertility Intentions: Reconsidering Men's Roles in Gender Theories of Family Change. *Population and Development Review*, *45*(1), 169–196. https://doi.org/10.1111/padr.12207

Park, H., Byun, S. yong, & Kim, K. keun. (2011). Parental involvement and students' cognitive outcomes in Korea: Focusing on private tutoring. *Sociology of Education*, *84*(1), 3–22. https://doi.org/10.1177/0038040710392719

Park, S. (2017). A structural explanation of recent changes in life-cycle labor supply and fertility behavior of married women in the United States. *European Economic Review*, *102*, 129–168.

https://doi.org/10.1016/j.euroecorev.2017.11.006

Perry-Jenkins, M., & Gerstel, N. (2020). Work and Family in the Second Decade of the 21st Century. *Journal of Marriage and Family*, *82*(1), 420–453. https://doi.org/10.1111/jomf.12636

Petts, R. J., Carlson, D. L., & Pepin, J. R. (2021). A gendered pandemic: Childcare, homeschooling, and parents' employment during COVID-19. *Gender, Work and Organization*, *28*(S2), 515–534. https://doi.org/10.1111/gwao.12614

Presser, H. B. (1994). Employment Schedules Among Dual-Earner Spouses and the Division of Household Labor by Gender. *American Sociological Review*, *59*(3), 348. https://doi.org/10.2307/2095938

Reese, L., Arauz, R. M., & Bazán, A. R. (2012). Mexican parents' and teachers' literacy perspectives and practices: construction of cultural capital. *International Journal of Qualitative Studies in Education*, *25*(8), 983–1003.

Roh, M. (2021). The Effects of Perceived Social Fairness and the Possibility of Upward Social Mobility on Emotional Depression. *The Journal of the Korea Contents Association*, *21*(1), 173–184.

Roksa, J., & Potter, D. (2011). Parenting and academic achievement: Intergenerational transmission of educational advantage. *Sociology of Education*, *84*(4), 299–321. https://doi.org/10.1177/0038040711417013

Ryu, D., & Kang, C. (2013). Do Private Tutoring Expenditures Raise Academic Performance? Evidence from Middle School Students in South Korea. *Asian Economic Journal*, *27*(1), 59–83. https://doi.org/10.1111/asej.12002

Sánchez, A. R., Fasang, A. E., & Harkness, S. (2021). Gender division of housework during the COVID-19 pandemic: Temporary shocks or durable change? *Demographic Research*, *45*(December), 1297–1316. https://doi.org/10.4054/DEMRES.2021.45.43

Shafer, K., Scheibling, C., & Milkie, M. A. (2020). The Division of Domestic Labor before and during the COVID-19 Pandemic in Canada: Stagnation versus Shifts in Fathers' Contributions. *Canadian Review of Sociology*, *57*(4), 523–549. https://doi.org/10.1111/cars.12315

Smith, K. M., Freeman, P. A., & Zabriskie, R. B. (2009). An examination of family communication within the core and balance model of family leisure functioning. *Family Relations*, *58*(1), 79–

90. https://doi.org/10.1111/j.1741-3729.2008.00536.x

Song, H., Lee, M., & Choi, S. (2013). What Causes Gap between Objective Class Position and Subjective Class Identification in Korea Society? *Korea Journal of Population Studies*, *36*(3), 97–119.

Statistics Korea. (2022). *2021 Marriage and Divorce Statistics*. Vital Statistics Division.

Sullivan, A. (2001). Cultural Capital and Educational Attainment. *Socioloby*, *35*(4), 893–912.

Szabo, T. G., Richling, S., Embry, D. D., Biglan, A., & Wilson, K. G. (2020). From Helpless to Hero: Promoting Values-Based Behavior and Positive Family Interaction in the Midst of COVID-19. *Behavior Analysis in Practice*, *13*(3), 568–576. https://doi.org/10.1007/s40617-020-00431-0

Torr, B. M., & Short, S. E. (2004). Second births and the second shift: A research note on gender equity and fertility. *Population and Development Review*, *30*(1), 109–130. https://doi.org/10.1111/j.1728-4457.2004.00005.x

Tzanakis, M. (2011). Bourdieu's social reproduction thesis and the role of cultural capital in educational attainment: A critical review of key empirical studies. *Educate~*, *11*(1), 76–90. http://www.educatejournal.org/index.php/educate/article/view/251

Van Bavel, J., Moreels, S., Van de Putte, B., & Matthijs, K. (2011). Family size and intergenerational social mobility during the fertility transition: Evidence of resource dilution from the city of Antwerp in nineteenth century Belgium. *Demographic Research*, *24*(June), 313–344. https://doi.org/10.4054/DemRes.2011.24.14

Verme, P., Milanovic, B., AL-Shawarby, S., Eltawila, S., Gadallah, M., & Ali.El-Majeed, E. (2014). *Inside Inequality in the Arab Republic of Egypt*. The Wolrd Bank.

Vignoli, D., Bazzani, G., Guetto, R., Minello, A., & Pirani, E. (2020). Uncertainty and Narratives of the Future: A Theoretical Framework for Contemporary Fertility. *Springer Series on Demographic Methods and Population Analysis*, *51*, 25–47. https://doi.org/10.1007/978-3-030-48519-1_3

Vignoli, D., Guetto, R., Bazzani, G., Pirani, E., & Minello, A. (2020). A reflection on economic uncertainty and fertility in Europe: The Narrative Framework. *Genus*, *76*(1). https://doi.org/10.1186/s41118-020-00094-3

Vignoli, D., Tocchioni, V., & Mattei, A. (2020). The impact of job uncertainty on first-birth postponement. *Advances in Life Course Research*, *45*(May 2018), 100308.

https://doi.org/10.1016/j.alcr.2019.100308

Voicu, M., & Bădoi, D. (2021). Fertility and the COVID-19 crisis: do gender roles really matter? *European Societies*, *23*(S1), S199–S214. https://doi.org/10.1080/14616696.2020.1822537

Vrachnis, N., Vlachadis, N., Iliodromiti, Z., Vlachadi, M., & Creatsas, G. (2014). Greece's birth rates and the economic crisis. *The Lancet*, *383*(9918), 692–693. https://doi.org/10.1016/S0140-6736(14)60251-8

Waddell, N., Overall, N. C., Chang, V. T., & Hammond, M. D. (2021). Gendered division of labor during a nationwide COVID-19 lockdown: Implications for relationship problems and satisfaction. *Journal of Social and Personal Relationships*, *38*(6), 1759–1781. https://doi.org/10.1177/0265407521996476

Wooldridge, J. M. (2002). *Econometric Analysis Of Cross Section And Panel Data*. MIT Press.

Yamamoto, Y., & Brinton, M. C. (2010). Cultural capital in East Asian educational systems: The case of Japan. *Sociology of Education*, *83*(1), 67–83. https://doi.org/10.1177/0038040709356567

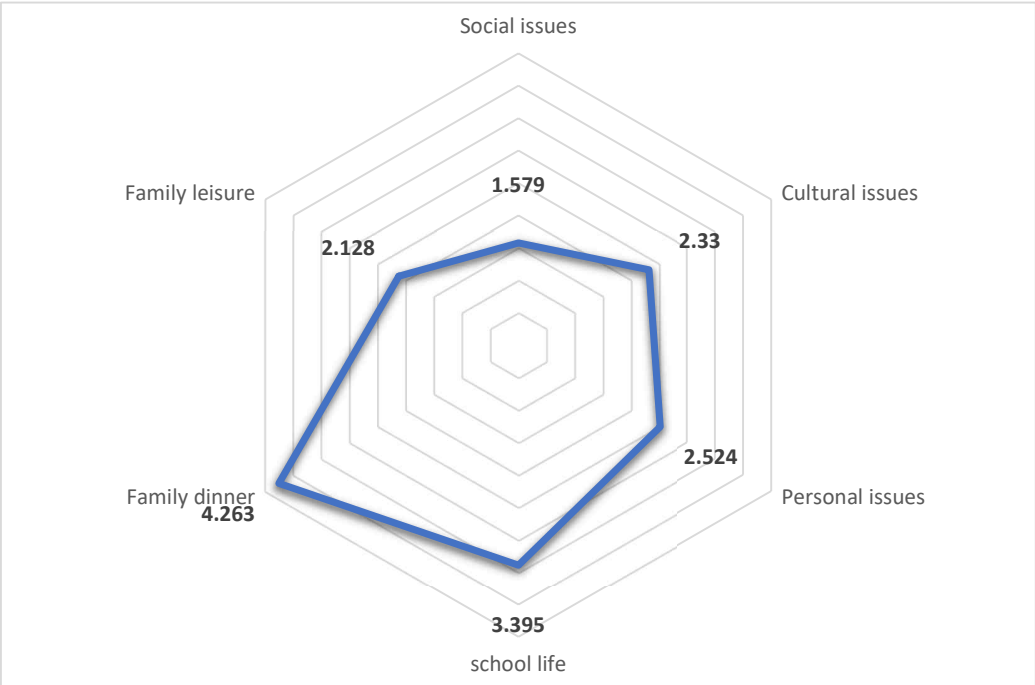
Yoo, G. S., Yang, D. Y., & Jeong, B. (2019). Effects of Subjective Socioeconomic Status on Relative Deprivation and Subjective Well-being among College Students: Testing the 'Silver-Spoon-Discourse' based Belongingness in Korean Society. *Family and Environment Research*, *57*(3), 329–340. https://doi.org/10.6115/fer.2019.024

Zamberlan, A., Gioachin, F., & Gritti, D. (2021). Work less, help out more? The persistence of gender inequality in housework and childcare during UK COVID-19. *Research in Social Stratification and Mobility*, *73*, 100583. https://doi.org/10.1016/j.rssm.2021.100583

Zuanna, G. D. (2007). Social mobility and fertility. *Demographic Research*, *17*, 441–464.

Appendix

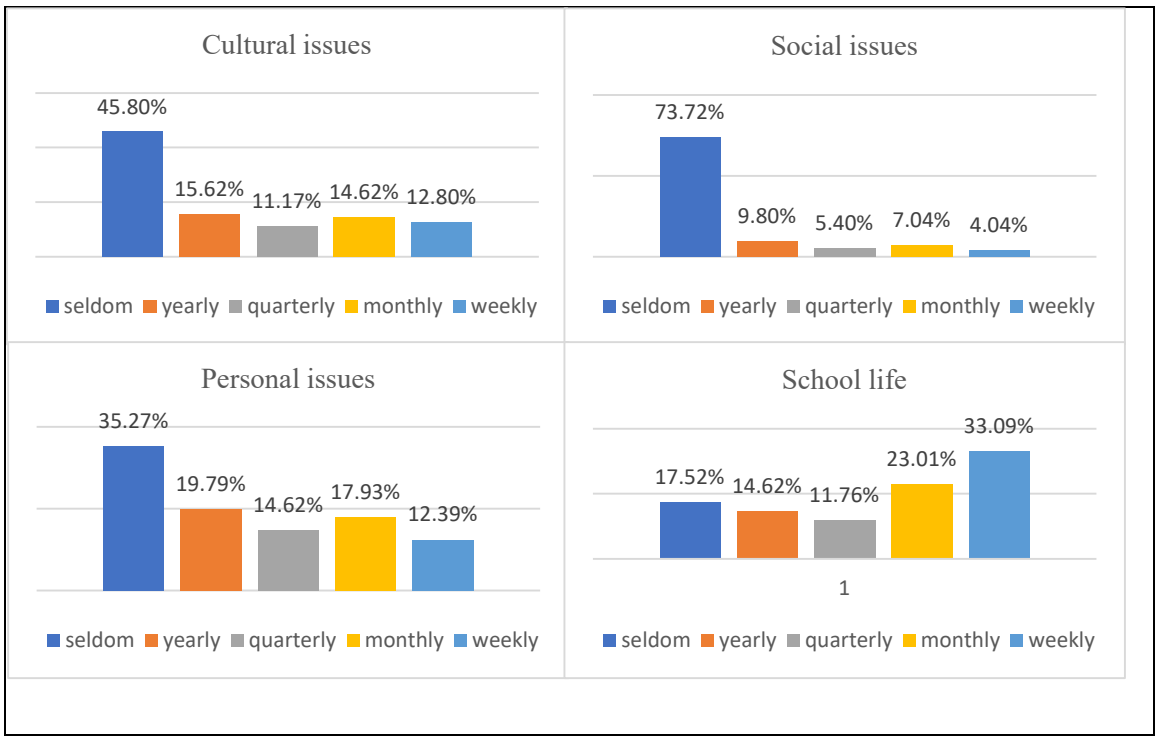
[FIGURE 3A.1] PARENT-ADOLESCENT CONVERSATIONS, FAMILY DINNER AND FAMILY LEISURE



1) seldom 2) once or twice a year 3) once or twice a quarter 4) once or twice a month 5) more than once a week

It is interesting to note that on average most family have family dinner more than monthly, but the average frequency of conversation is observed to be less than once or twice a month even the most frequently talked topic of school life (mean = 3.395). Particularly, the frequency of conversation on the topic of social issues record the lowest frequency (mean = 1.579), while talk on the school life is most frequent compared to other topics.

[FIGURE 3A.2] FREQUENCY OF PARENT-ADOLESCENT CONVERSATION BY TOPICS



The distribution of the frequency of the conversation is observed to be skewed, as a majority of respondents have conversation with their parents less than quarterly except on the talks about the school life. Majority of family seldom talk about the social issues (73.72%), and almost a half rarely talked about the cultural issues with their parents at 14 years old (45.8%). School life is observed to be the most frequent topic of the conversation as approximately a third of family talk about the school life more than once a week (33.09%), and 23% have a conversation at least once or twice a month.

[TABLE 3A.1] COHORT EFFECT ON THE PARENT-ADOLESCENT CONVERSATIONS

	(1) conversation
Reference=1970s	
1980s	1.471***
	(0.208)
1990s	2.759***
	(0.341)
Male	-1.276***
	(0.181)
Siblings	-0.228***
	(0.0632)
Cons	10.29***
	(0.252)
N	2203
adj. R^2	0.075

Standard errors in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[Table 3A.1] presents the cohort effect on the parent-adolescent conversations. The younger generations are more likely to have more frequent conversation with their parents compared to the previous generations.

[TABLE 3A.2] PARENT-ADOLESCENT CONVERSATION BY TOPICS

	(1) Education	(2) Education	(3) Education	(4) Education	(5) Education
Parents' education	0.333***	0.326***	0.330***	0.328***	0.327***
	(0.0220)	(0.0245)	(0.0208)	(0.0223)	(0.0229)
School life		0.139***			
		(0.0303)			
Personal issues			0.0798**		
			(0.0245)		
Social issues politics				0.117***	
				(0.0218)	
Cultural issues					0.0756*
					(0.0317)
/ cut1	1.388*	1.711**	1.474*	1.512*	1.468*
	(0.617)	(0.582)	(0.674)	(0.624)	(0.657)
cut2	2.906***	3.241***	2.995***	3.033***	2.989***
	(0.700)	(0.656)	(0.756)	(0.707)	(0.740)
cut3	4.791***	5.139***	4.884***	4.925***	4.878***
	(1.048)	(0.993)	(1.103)	(1.060)	(1.090)
Controls	Y	Y	Y	Y	Y
N	2203	2203	2203	2203	2203
adj. R^2	0.127	0.130	0.128	0.128	0.128

Standard errors are clustered by region at 14 years old

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[Table 3A.2] uses the frequency of conversation by each topic as the categorical variable by 5 scales. Unlike the results in [Table 3.6] which uses the binary measure for the frequency of conversation, all kinds of conversation topics have statistical significance. This suggests that if the measurement distinguishes the frequency more sophisticatedly the mediating effects by each topic could be estimated more accurately.