JOURNAL OF ASIAN SOCIOLOGY
Volume 50 | Number 1 | March 2021, 203-245
DOI 10.21588/dns.2021.50.1.009 **Article**

Kim Ji-young, Born 1982 Revisited: Statistical Evidence from Time Use Surveys*

Hoyong Jung | Kookmin University

This study conducts a graphical and empirical analysis of a day in the lives of South Korean women by employing data from the 2004, 2009, and 2014 Korean Time Use Surveys to examine the gendered difference of time use through the lens of life course. We focus on the Kim Ji-young generation, who were born in the 1970s and 1980s, and who face conflicts in their daily time use due to traditional and modern gender norms. While the real-time allocation of 24 hours was similar between men and women when they were between the ages of 20-29 in 2004, gender differences in actual time allocation became noticeable after marriage and childbearing when the cohort reached the ages of 25-34 in 2009 and 30-39 in 2014. Women in a dual-earning household are less likely to work and or spend time on leisure and social activities in their non-working hours, while they assume more responsibility for household chores and family care, which possibly indicates a lower quality of life. Furthermore, we find that married men have a crucial role in sharing the burden of housework shouldered by women in the home.

Keywords: *Gender difference, discrimination, Korean women, Kim Ji-young born 1982, time study*

*We thank our four anonymous reviewers for providing helpful comments.

Introduction

Dramatic social changes in the second half of the twentieth century have transformed the role of women in society significantly, highlighting them as a primary labor force, and accordingly as employed wives and mothers in families. Modern society no longer considers the sole male breadwinner a commonly accepted norm for the household economy and social policies, and the South Korean community is no exception. The increase in higher educational achievement among South Korean women has helped them advance in the labor market; according to the annual report by Statistics Korea,[1] women in dual-earner families account for more than 40% of the total married population. However, despite social advancements toward a gender-equal society, it is argued that traditional gender norms have not yet dissipated and continue to influence every aspect of personal and social life. For example, conventional gender norms developed under Confucian culture still assign different roles to men and women, whereby women are expected to be responsible for routine housework and men are exempt from it, despite both being employed. South Korea is no exception to the second shift phenomenon that highlights double burden of working women both in the home and workplace (Hochschild and Machung 2012).

Recently, such tensions rose to the surface, partially as a result of the best-selling novel *Kim Ji-young, Born 1982*. First published in October 2016, it sold more than half a million copies within 14 months. *Kim Ji-young, Born 1982* illustrates the daily life of a woman named Kim Ji-young, the most common name given to girls born in 1982. It describes the implicit and explicit discrimination faced by members of the protagonist's generation in the family, school, and workplace. The book also depicts the time poverty of married women caused by discriminatory divisions of housework. With its popularity and appeal, the book was adapted into a movie in January 2019, attracting an audience of more than 3.5 million. By drawing a great deal of public attention and sympathy, *Kim Ji-young, Born 1982* brought the gender discrimination issue to the public's attention. It spurred much public and media attention to gender inequality, especially the unequal division of household labor.

Gender inequality remains a growing concern, and an equitable allocation

[1] The figures are as follows: 43.5% (2012), 42.9% (2013), 43.9% (2014), 43.9% (2015), 44.9% (2016).

of time across the 24 hours that make up a day is one of the ways to achieve a gender-egalitarian society. In particular, time is a ubiquitous, yet scarce resource for everyone. Therefore, the way we allocate tasks in the available 24 hours, such as the distribution of work, household chores, family care, and social and leisure activities, is critical, since it can shape our lives significantly. As described in the book *Kim Ji-young, Born 1982*, South Korean women are constantly struggling with gender discrimination, which is a vestige of traditional norms, and one central aspect of their struggle is the daily use of time. If gender-based divisions of tasks related to family life adversely affect daily time use for women, the realization of a gender-egalitarian society is still a distant goal. Therefore, examining daily time usage in a detailed way is essential to understanding the situation more precisely and establishing appropriate policies.

Surprisingly, there is a gap in the literature that investigates the Kim Ji-young generation in a direct and detailed manner. The current study aims to address this major gap by overcoming approaches that generally enumerate anecdotes of small samples, exploit only a one-year dataset, or do not focus on the pattern and distributions of life behaviors across 24 hours from a dynamic perspective. By employing the 2004, 2009, and 2014 Korean Time Use Surveys, we both graphically and empirically examine trends in time usage of the Kim Ji-young cohort, with samples from the age groups 20-29, 25-34, and 30-39. In particular, the study incorporates the total *amount* and *distribution* of time use across the day, and documents how such time allocation differs based on gender during and following significant life events such as marriage and childbearing.

To summarize the results, while behavioral patterns across the 24 hours are similar between men and women prior to marriage, these patterns significantly diverge after marriage and childbearing, when the cohort reaches the ages of 25-34 and 30-39. We observe the differences between dual-earner couples in non-working hours, before 9 am and after 6 pm. From the ages of 25-34 (30-39) onward, women who are both married and employed are likely to spend 46 (37) minutes less time at work per day and 16 (25) minutes less time on leisure and social activities per day in the non-working periods of a weekday. In contrast, they take on 53 (49) more minutes of household chores per day and 41 (40) more minutes of family care a day during the same hours. This trend holds consistent on Saturdays and Sundays, which refutes the argument that married men compensate for the fewer hours they spend on housework during the week over the weekend. Interestingly, we find little statistical evidence to support the argument that

hourly income rates are different between the two sexes throughout the whole period. While most of the current discussions of the glass ceiling in the workplace are centered on the issue of "equal pay for equal work," and there is no doubt that such discrimination still exists (Albrecht, Björklund, and Vroman 2003; Blau and Kahn 2017), our findings suggest another type of explanation that is not dependent on wage rate and emphasizes gender disparity originating from time use. Finally, we discuss the possibility of improving gender equality with the finding that married men's help with household chores can alleviate the burden of family care faced by married women.

Overall, the findings in this study demonstrate that time management is crucial to understanding the gender discrimination issues that plague the Kim Ji-young generation, as depicted in the book *Kim Ji-young, Born 1982*. They make it possible to discern specific graphical and empirical evidence more clearly and will help to construct relevant policies.

Our study is organized as follows. Section 2 introduces the background of the study. Section 3 outlines the data and sample construction. Section 4 presents the empirical results, including graphical and regression analyses. Section 5 discusses the implications of the results, and Section 6 presents the conclusion.

Background of the Study

Gendered Time Use within the Household

Time is a universal resource for human beings, and everyone is equally constrained to 24 hours per day. Since time allocation has the characteristics of a zero-sum game, people must assign and distribute life tasks into time slots. This implies that time management throughout the day can affect the quality of a person's life. For example, excess usage of time for specific tasks inevitably requires sacrificing time for other tasks, which can influence the life path of the individual. In this regard, Robinson and Godbey (2010) describe that a survey of daily time is a complete record of individual behaviors in various social contexts and is something of a societal microscope that allows for the examination of people's lives. To be precise, investigating time use data can help researchers understand the value, excess, and paucity of time, and interaction of diverse aspects of life in depth. Additionally, exploiting the time use dataset can provide invaluable insights including its

implications for the policy sphere.

Time study in the context of this study is particularly significant since one of the most noticeable gender inequities faced by the Kim Ji-young generation can be observed in their daily time usage. Women are both explicitly and implicitly forced to follow social norms that restrict their time allocation. For instance, women in dual-earner families are still expected to assume responsibilities for housework and childcare after business hours, and this can lead to long-term imbalance and inequality throughout an individual's life process (Frederiksen, Kato, and Smith 2018). If they have a chance to accumulate human capital or share their burden with their partner, the quality of women's lives will be remarkably different. Therefore, empirical analyses of their time use can complement the sensational book, *Kim Ji-young, Born 1982,* in which gender discrimination is dimly disclosed with anecdotal evidence. Moreover, investigating the patterns and sequences of diverse activities on how women spend the entire 24 hours of their days via minute-by-minute diaries can shed light on their precise circumstances and help draw pertinent policy implications (Michelson 2015).

Theoretical discussions of time allocation between genders within the household begun in the household production model of Becker's (1965) seminal study, in which couples within the household are assumed to allocate resources, including daily time, to produce basic commodities to maximize their utility. He argued that husbands and wives allocate their time usage based on comparative advantages and budget constraints, and that doing so generally leads to market labor for husbands and housework for wives.

The theory of time allocation between genders has been subsequently developed to accommodate various perspectives (Pollak 2003; Chiappori and Lewisbel 2015). First, there was a development in terms of its theoretical model. In an extension of the viewpoint of neo-classical economics, advances have been made to enhance Becker's approach to reflecting complex phenomena observed in the household to the family's behavioral model (DeSerpa 1971; Pollak and Watter 1975). The theory has also progressed in the direction of embracing changing social phenomena, with a focus on changes in time allocation due to differences in time availability constraints and relative resources (Kamo 1988; Lindberg and Pollak 1996; Davis and Greenstein 2004). Moreover, the change in the status of women in society is considered important since women's participation in economic activities has increased and their social status has improved as well. The perception of gender discrimination was emphasized, and by recognizing social norms as a critical factor, a widely accepted perspective from feminism such as the theory of the

socialization gender roles was broadly considered beyond the approach based on economic comparative advantage within the couples (Hardesty and Bokemeyer 1989; Thompson and Walker 1989; Presser 1994; Bianchi, Milkie, Syer, and Robinson 2000).

Coupled with the advancement of theoretical backgrounds and the availability of time use survey data, empirical studies begun in earnest to verify time allocation within families. In general, by focusing on whether the theoretical models are supported by the actual data, these studies aim to examine whether the main events of the family, such as childbirth and parenting, cause actual differences in the use of time by members of the household, and they are working toward identifying the causal relationship regarding how these situations affect performance in the labor market or quality of life in the family. Based on these causality validations, they seek to provide relevant policy proposals to overcome gender discrimination (Carlson and Lynch 2013). These studies have been conducted at various levels, including case-studies of specific countries (Phipps, Burton, and Osberg 2001; Kimmel and Connelly 2007; Bloemen, Pasqua, and Stancanelli 2010; Neilson and Stanfors 2018; Alvarez and Miles-Touya 2019; Cortés and Pan 2019), comparisons across multiple countries (Craig and Mullan 2011; Giménez-Nadal and Sevilla 2012; Burda, Hammermesh, and Weil 2013; Campaña, Giménez-Nadal, and Molina 2018), ethnicities (Hwang 2016), or specific jobs and tasks (Sasser 2005; Goldin 2014; Goldin and Katz 2016; Azmat and Ferrer 2017). A few pieces of literature focus on the possibilities of multitasking and divisions of labor across domestic tasks inside the household through the lens of gender coupled with life-cycle status (Blair and Lichter 1991; South and Spitze 1994; Offer, Schneider 2011).

When it comes to South Korean examples, most research applies either the Korean Time Use Survey by Statistics Korea or the Korean Labor & Income Panel Study by the Korea Labor Institute to examine the gender-based time allocation issue. While analyzing social and family factors of the time distribution of dual-earner couples, especially working mothers, several studies point to the fact that childbirth and parenting have a significant impact on time use (Sung 2006; Eun 2009; Yoon 2010a; Cho 2016; Seok and You 2019). Some focus on gender consciousness such as social norms, male preferences, and attitudes towards gender (Yoon 2010b; Lee 2014; Hwang, Lee, and Lee 2019), and others emphasize economic and structural dimensions such as household economic constraints, the share of marital income, and aspects of the labor market that are unfriendly to households in order to examine how these traits affect time allocation in people's lives (Kim

and Kim 2007; Heo 2008; Bae 2015, An 2017).

Overall, this study fits within the main topics of the extant literature: economic models of time use as optimizing opportunity cost, the more sociological approach of "doing gender," and convincing evidence of cultural lags that are experienced by the specific generation. It is an empirical study that concentrates on a specific generation (Lee and Lee 2018). Beyond any anecdotal evidence that is addressed in *Kim Ji-young, Born 1982*, examining this generation's time use patterns and deriving their social implications are meaningful since the cohort, currently in their 30s, plays a significant role in both family and society. Furthermore this generation has developed an oppositional identity as they simultaneously experience traditional Confucian cultural norms that have strengthened gender discrimination and modern culture that aims for gender equality. Examinations across three datasets are used to allow chronicle observations of the generation's use of time. Furthermore, this study is an attempt to examine the *distribution* of activities during each 24-hour day (Joo and Choi 2019). To our knowledge, most of the existing literature focuses on gender differences in the total amount of time allocated to certain tasks. Solely focusing on the total amount of allocated time may not reveal the actual allocation of time within a household. Widening the perspective to the time distribution across 24 hours can provide a more balanced and in-depth analysis of gender differences in time usage. By rigorously using the dataset to draw the pattern of activities across the day, analyzing the factors that affect the time allocation, and examining the effects of time use on labor market performance and mental satisfaction, this study provides meaningful evidence to derive policy alternatives.

Why Kim Ji-young, Born 1982?

Discourses on generations require specific categorization to distinguish a particular peer group from others. The fact that a group of people were born around the same time and shared certain experiences does not transform them into a meaningful generation. For them to be categorized as a specific generation, first, the stratification of experiences that they undergo on a cumulative basis must be seen as affecting the formation of their consciousness, and second, the cohort should formulate a common sense of solidarity, which can be triggered by catalysts such as prominent social events (Park 2003; Park 2009). The emergence of a distinctive generation is not only influenced by the structural situation faced by each generation, but everyday life experiences

also have a significant impact on the perception and solidarity of the generation (Choi 2014).[2]

In this sense, it is not unreasonable to classify the Kim Ji-young generation as an object of interest. First, they accumulated unique experiences in the milieu of rapid democratization, industrialization, and gender-conflict during a critical period of their lives. Second, and more importantly, their solidarity was catalyzed and intensified by the best-selling book *Kim Ji-young, Born 1982*, similar to the case of the 880,000 won generation named after the book *880,000 Won Generation* by Woo and Park (2007).

Then, why do must we focus on the lives of those who belong to the Kim Ji-young generation? For the Kim Ji-young's generation, the meaning of time use is special in terms of gender as it is coupled with cultural and historical experiences. Socially prescribed gender norms, which have been reinforced by Confucian principles, have remained intact for a long time in South Korea, and continue to govern various aspects of people's lives. For example, within the family, these gender stereotypes ascribe financial responsibility to husbands and housework and childcare to wives. However, traditional gender roles and behaviors were openly challenged following social changes that arose around 1970. Since this time, it has become more common for both men and women to access opportunities to achieve advanced educational qualifications, and industrialization paved the way for more women to join the labor market (Ahmed Lahsen, Piper, and Thiele 2020).[3] Improving the status of women in the education and labor markets has made dual-earner families become commonplace in modern society, and it leads us to reconsider time allocation within the household.

While these social changes require people to adopt new gender roles and norms in their personal and social lives, South Korean society still faces difficulties in fully resolving these challenges under the lingering shadow of Confucianism. Conflicts and confusion caused by these disparities are particularly acute for the generation born in the 1970s and 1980s. While they have been formally taught these new gender norms and their importance for

[2] For instance, Park (2009) divides the South Korean people born between 1957 and 1994 into four categories based on their stratification of experience and shared solidarity (Yushin-, 386-, IMF-, and 880,000 won-generation), and these rhetorical divisions are commonly used in both academic research and public discussion.

[3] According to the Statistics Korea, the rate of participation in economic activities of female (male) is increasing (stalemate) from 48.8% (74.4%) in 2000 to 49.6% (73.2%) in 2010 and 53.5% (73.5%) in 2019. The rate of college entrance of female (male) is also increasing (stalemate) from 60.3% (63.5%) in 2000 to 78.0% (73.0%) in 2010 and 72.7% (65.3%) in 2017.

self-realization, traditionally prescribed gender roles persist in daily life across families and workplaces, and the older generation implicitly demands acquiescence to such conventional gender beliefs. For instance, mothers are still expected to assume responsibility for mundane housework and childcare in the family even if both husband and wife are employed.

Moreover, while we assume that the traditional norms have dissipated and calls for gender-equality have increased, a commonly shared exogenous event such as the IMF crisis in 1997 imposed an unbalanced shock to Korean women, which reinforced the male-dominated work culture. This caused the divergence between genders both in the education and labor markets and hampered progress on gender equality (Bae 2009). Therefore, it is crucial to examine the time use of the Kim Ji-young generation in both the public and private spheres, and we must understand how time use is adjusted and allocated in the spheres of work, the household, and personal leisure, which are associated with one's quality of life.

The strife arising from these traditional gender norms persisting is highlighted in a recently published book, *Kim Ji-young, Born 1982*. The feminist novel written by Cho Nam-joo was first published in October 2016. The titular Kim Ji-young represents the most common family (Kim) and first name (Ji-young) of the 1980s. The book describes the everyday sexism to which South Korean women are exposed, following the story of the protagonist after her birth in 1982 up to 2016. The book is meaningful in that it highlights socially inscribed gender discrimination to the public, builds a strong solidarity among young Korean women who make significant contributions to the labor market and family, and catalyzes various feminist campaigns that are now raging in society, such as the Me Too movement. Attracting great popularity and sympathy from the public, the novel became an immediate bestseller and by October 2019 had sold more than 1.2 million copies. It was also translated into English, and the story was featured in influential press such as the New York *Times*, the BBC, the Financial *Times*, and the Guardian.[4]

[4] The following news article illustrates the book: "Kim Ji-young, Born 1982: Feminist film reignites tensions in South Korea," *BBC*, October 23, 2019; "Cho Nam-joo: The novelist inspiring East Asia's #MeToo movement," *Financial Times*, January 17, 2020; "Globetrotting," *The New York Times*, January 8, 2020; "South Korean author Cho Nam-joo: 'My book is braver than I am,'" The Guardian, February 15, 2020.

Data & Sample Construction

Data Resources

We apply the Korean Time Use Survey constructed by Statistics Korea. It surveys around 20,000 to 30,000 people aged 10 years and older in 1999, 2004, 2009, and 2014.[5] Participants are asked to complete a coded diary with 10-minute intervals for two consecutive days covering a weekday and a day in the weekend. Respondents record both principal and secondary activities (which are carried out simultaneously with the principal activity). The behavioral codes are constructed and divided on a three-classification level (category-division-section). The surveyed items also include personal information such as sex, birth date, education, income, employment status, and family characteristics. The Korean Time Use Survey has distinctive advantages from several perspectives. First, unlike other time use surveys, including the American Time Use Survey, it considers multiple members of the household including heads of household, partners, children, and relatives. It allows us to study time allocation at the couple-level. Moreover, substantial batteries of demographic information are helpful for controlling for possible confounding effects on a person's time usage.

In this study, we primarily focus on nine categories of behavioral codes to illustrate and examine the sample's activities: 1) personal maintenance; 2) work; 3) learning; 4) household chores; 5) family care; 6) participatory and voluntary activities; 7) leisure and social activities; 8) movement; and 9) others. We concentrate on the principal activity and exclude the secondary activity when using the coded diary.[6]

---

[5] The dates of the survey are September 2-14 in 1999; September 2-13 in 2004; March 12-23 & September 9-22 in 2009; and July 18-27, September 19-October 1, & November 28-December 7 in 2014.

[6] The reasons are as follows. First, most of the respondents record only the principal activity in each 10-minute interval; thus, measuring both the principal and secondary activities can cause difficulties in comparing time usage across the sample. Second, measuring two activities simultaneously can make the total time for each person exceed 24 hours a day. Third, studying the principal activity solely is advantageous to examine the qualitative aspect of time use. For example, when women record household chores as the principal activity and social and leisure activities as the secondary activity, it is better to consider the principal activity, since it reflects the reality of the sample's time allocation more precisely.

Sample Construction

Since our focus is the Kim Ji-young generation born around 1982, we needed to construct closed samples that represent this generation. Based on data availability and life cycle, we selected and categorized the samples in the following ways:

Kim Ji-young born in 1982 was 22 years old in 2004, 27 in 2009, and 32 in 2014. Based on this, we chose samples aged 20-29 from the 2004 dataset, 25-34 from the 2009 dataset, and 30-39 from the 2014 dataset, respectively, excluding farming families, which comprised less than one percent of the entire data.[7] The 10-year interval is common in age groupings such as the 20s and 30s, and it can secure sufficient samples for each dataset and avoid any risk of losing the sample's required representativeness of the Kim Ji-young generation. This 10-year interval is also beneficial in that people in the same age group are more or less homogeneous in experiencing life cycle events, which is advantageous when examining a specific generation. Under this classification, each category can incorporate three main life cycle events—employment, marriage, and childbearing—which potentially caused the gender disparity during this period. Moreover, while we group the generation by 10-year intervals, the application of a 5-year term dataset (2004, 2009, and 2014) allows us to encompass samples that overlap or are under transition, which alleviates the concerns of losing representativeness of the Kim Ji-young generation.[8]

Below is a specific background of our construction of comparison groups.

(1) Samples from the 2004 dataset are aged 20-29, and the major life cycle event is becoming employed after graduation from college. Since it is commonly believed that women face discrimination in the hiring process, we compare the samples across employment status and gender for this period.
(2) Samples from the 2009 dataset are aged 25-34, the ages at which the heroine in *Kim Ji-young, Born 1982* succeeds in securing a job,

[7] We excluded the 1999 dataset. During this period, the generation was adolescent and attending elementary, middle, or high school. Since they follow fixed schedules as students, there is less merit in comparing the gender-based differences in time use during this phase.

[8] We would like to thank anonymous reviewers for helpful advice on the availability of the 2014 dataset, the interpretation of the dataset, and the composition of Kim Ji-young generation.

getting married, and having a child. This is common to many South Korean women at this stage.[9] Therefore, we use marital status and childbearing as significant life cycle cases to examine the gender difference.

(3) Samples from the 2014 dataset are aged 30-39. Married Korean women in this period are burdened with housework and childcare, and they are perhaps even forced to sideline paid work,[10] hence, we exploit employment and marital status to distinguish the samples.[11]

While we conduct the cross-sectional regression analysis by each dataset, we argue that samples can be tracked across the dataset via the linkage of age, so the results can be interpreted as continuous which is similar to the approach of a pseudo-panel analysis (Deaton 1985). This interpretation is the next best option as an actual panel dataset related to individuals' time use does not exist or is not disclosed. However, considering that samples for each dataset were randomly selected by Statistics Korea and there exists little risk of bias concerning attrition issues, the characteristics of individuals of different ages across the dataset can be maintained homogenously without systematic errors.

We divide the cases into weekday and weekend since time usage differs during these days. Table 1 shows the total number of final samples and diaries used for the sample construction procedure. In the following analysis, we conduct descriptive statistical and regression analysis based on the total number of people surveyed and draw time usage graphs based on coded diaries.

[9] To be precise, the average age of first marriages is 30.6 for men and 27.5 for women, according to Statistics Korea (2005).

[10] This phenomenon is referred to by the Korean acronym *gyeong-dan-nyeo* (career-interrupted woman). Afraid of interrupting their careers, a growing number of educated women give up on marrying and having a child, which is described as the "gold miss" phenomenon.

[11] We could not use childbearing as a classification standard because the dataset did not contain the survey item that asks whether they have a preschool-aged child. However, the examination using the 2009 dataset can fill the vacuum if the samples remain homogeneous across the dataset, which is a plausible assumption considering the construction of the dataset.

Table 1
Selected Samples from Time Survey

Panel A. Weekday			
2004 (20-29)	Non-Worker & Single	Worker & Single	
Men	552 (840)	643 (966)	
Women	359 (538)	849 (1359)	
2009 (25-34)	Worker & Single	Worker & Married	Worker & Married with Child
Men	418 (651)	437 (642)	313 (449)
Women	326 (500)	311 (466)	188 (282)
2014 (30-39)	Worker & Single	Worker & Married	
Men	390 (597)	1085 (1638)	
Women	218 (338)	637 (993)	
Panel B. Weekend			
2004 (20-29)	Non-Worker & Single	Worker & Single	
Men	390 (516)	488 (656)	
Women	288 (396)	669 (901)	
2009 (25–34)	Worker & Single	Worker & Married	Worker & Married with Child
Men	320 (455)	362 (492)	263 (349)
Women	239 (326)	247 (338)	146 (198)
2014 (30-39)	Worker & Single	Worker & Married	
Men	263 (389)	792 (1052)	
Women	167 (236)	466 (651)	

Note: Figure in parentheses represents total number of observed diaries.

Descriptive Statistics

Table 2 reports descriptive statistics for each categorized group in the 2004, 2009, and 2014 dataset. Schooling levels do not differ greatly between men and women. About 58-59% of the non-worker and single group had attended

a four-or-more-year college, while the figure decreased to 37% for the worker and single group. Upon comparing monthly incomes for the worker and single group, it is found that men are more likely to belong to a higher income level. As for time use during non-working hours, which span from 6 pm to 9 am during weekdays, male workers expend 144 minutes per day, whereas female employees use 99 minutes per day. Time use for household chores, family care, and leisure and social activities during this non-working time is similar between genders, and this is reasonable considering that both are single.[12]

When the samples from the 2009 dataset turned ages 25-34, many became married and had children. Here we can see that marriage and childbearing cause a big gender difference in monthly income and time use, whereas demographic characteristics such as age, residence, and schooling level remain moderately balanced. About 56% of men in the worker and married group earn more than 2 million KRW per month, while only 19% of women in the same group earn the same amount. A considerable proportion of married working women fall into a lower monthly income bracket. One of the most noticeable disparities came from time use for household chores and family care during non-working hours. When working women get married, the time they spend on household chores increases from 22.24 to 79.45 minutes per day, and it rises further to 80.27 minutes upon having a child. However, marriage and childbearing do not affect the time spent by working men on household chores. The amount of time spent on family care during non-working hours for working women also increases significantly from 0.21 to 63.54 and 92.66 minutes per day after getting married and having a child, respectively, while the time use of working men stays relatively the same. Increased time for work in non-working hours may compensate for this stalemate (109.47>120.57>123.77 min/day), but the magnitude is still not enough considering that working women's time for leisure and social activities decreases drastically compared to that of working men (136.38>87.88>69.73 min/day for women and 161.00>130.82>125.62 min/day for men).

Similar patterns appear again when the samples are aged 30-39. Men's work time in both total and off-business-hour increases after marriage (49.14→51.95 hr/week and 120.67→122.86 min/day), but the stark difference

[12] The reason why we focus on employees' use of non-working time is that official working hours are commonly fixed at 9 am to 6 pm, and out-of-work activities are conducted during non-working hours.

Table 2
Descriptive Statistics

		Age 20-29 (2004 Dataset)				Age 25-34 (2009 Dataset)						Age 30-39 (2014 Dataset)			
		Non-Worker & Single		Worker & Single		Worker & Single		Worker & Married		Worker & Married with Child		Worker & Single		Worker & Married	
Variable		Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age		23.49	22.42	25.17	24.06	28.65	27.99	31.12	31.02	31.26	31.37	33.52	33.02	35.25	35.26
Residence (%)	Seoul	18.84	17.83	19.91	21.49	19.86	20.86	12.59	12.54	11.50	11.17	17.44	18.81	11.61	11.77
	Non-Seoul	81.16	82.17	80.09	78.51	80.14	79.14	87.41	87.46	88.50	88.83	82.56	81.19	88.39	88.23
Schooling Level (%)	4-year college and above	59.24	58.22	37.17	37.64	41.15	51.53	35.47	27.01	34.82	28.72	44.10	48.62	48.76	38.46
	2-year college and below	40.76	41.78	62.83	62.36	58.85	48.47	64.53	72.99	65.18	71.28	55.90	51.38	51.24	61.54
Industry (%)	Agroforestry	-	-	0.31	0.22	0.00	0.00	0.00	0.64	0.00	0.00	0.26	0.00	0.18	0.00
	Manufacturing	-	-	28.15	13.25	22.49	8.90	35.24	14.79	35.46	13.83	27.59	11.93	32.53	11.30
	Construction	-	-	5.44	2.45	6.70	2.45	9.38	2.57	9.90	1.06	7.18	1.38	7.83	1.41
	Wholesale & Retail	-	-	16.33	15.37	16.51	17.48	13.96	15.43	15.02	12.77	13.33	15.14	14.10	15.23
	Accommodation	-	-	9.49	7.13	5.02	2.15	3.66	7.72	4.47	7.98	6.41	5.50	3.04	6.12
	Real Estate & Leasing Service	-	-	13.37	10.24	12.44	6.44	8.24	6.11	6.07	6.91	8.97	5.96	9.40	7.69
	Educational Service & Others	-	-	26.91	51.34	36.84	62.58	29.52	52.73	29.07	57.45	35.90	60.09	32.90	58.24
Monthly Income	0-99	-	-	35.42	46.05	14.59	17.79	4.81	37.30	5.11	39.89	6.41	7.34	1.01	26.37
(10-thousand KRW, %)	100-199	-	-	58.17	50.56	61.48	64.42	39.13	44.05	40.89	38.30	33.85	47.71	12.72	35.48
	200-299	-	-	6.25	3.16	18.42	14.72	38.67	11.25	35.78	13.30	44.62	36.70	36.31	23.23
	300-	-	-	0.16	0.23	5.50	3.07	17.39	7.40	18.21	8.51	15.13	8.26	49.95	14.91
Time for Work (hr / week)		-	-	50.39	45.51	49.46	45.64	52.97	41.88	53.32	40.81	49.14	44.64	51.95	38.83
Time for Work in Non-Working Hours (min / day)		-	-	144.62	99.16	109.47	89.57	120.57	60.58	123.77	50.27	120.67	78.49	122.86	50.46
Time for Household Chores in Non-Working Hours (min / day)		-	-	7.08	16.06	9.19	22.24	9.15	79.45	7.99	80.27	11.36	31.65	10.85	82.97
Time for Family Care in Non-Working Hours (min / day)		-	-	0.62	0.82	0.41	0.21	19.98	63.54	26.55	92.66	0.18	0.37	25.40	65.92
Time for Leisure & Social Activities in Non-Working Hours (min / day)		-	-	156.80	154.02	161.00	136.38	130.82	87.88	125.62	69.73	132.21	129.77	106.33	78.68

Note 1: The descriptive statistics is based on weekday samples from the 2004, 2009, and 2014 dataset.
Note 2: Non-Working Hours are from 18:00 to 08:59.

again occurs in the case of time use of working women. During non-business hours, working women's time spent on household chores and family care increases by 82.97 and 65.92 minutes per day, while the same category for male workers is 10.85 and 25.40 minutes per day. Also, women's time for leisure and social activities diminishes markedly after marriage (129.77→ 78.68 min/day). Since this behavioral code ordinarily represents the qualitative aspect of time management, it further shows the gendered discrimination of time use within a dual-earning household.

All in all, the descriptive statistics in Table 2 provide a glimpse of how women belonging to the Kim Ji-young generation face gender discrimination in time use patterns, both quantitatively and qualitatively, over their life cycle.

Empirical Analysis

In this section, based on chronicle constitutions, we present a graphical representation of the Kim Ji-young generation's time use across 24 hours and draw several implications through ordinary least squares (OLS) regression analysis.[13] In particular, the graphical illustration of daily time use is one of the main contributions to the extant literature, as it shows not only the total amount of time allocation but also the *distribution* of time during and outside of typical work hours, which may provide us with a hint of gender disparity in time management. Thus, it will help to show the reality of gendered differences in time management more clearly.

Regarding the OLS regression analysis, first, we examine whether there are differences in labor market performance between men and women, and investigate the impact on time management by gender afterward. To measure the labor market performance, we segment a dependent variable into average monthly income and self-calculated hourly income rate. To be specific, considering the number and availability of samples in the dataset, we categorize the average monthly income into four levels (0-99, 100-199, 200-299, 300-10 thousand KRW) and calculate the hourly income rate as

[13] We want to point out that the OLS regression analysis here should not be interpreted as a causal inference since we cannot omit the possibility of self-selection into marriage and childbearing, which can confound the result. For example, more capable men are more likely to get married to women who can take care of family matters. In such a situation, we cannot conclude that diverged daily time management between the two genders definitely reflect gender discrimination. Thus, we need to be extremely careful when interpretating the results. Nevertheless, the estimation result can give some clues to how pivotal life events such as marriage and childcare could affect different economic outcomes and time allocations between men and women.

'(average monthly income) / (total working hours per week * 4),' since we can observe total working hours per week in the survey and one month consists of about four weeks.[14] The reason why we examine the labor market performance by these two classifications is that, if we can witness a difference in the effect of gender on the average monthly income and the hourly income rate, the result provides possible evidence that there exists a gender gap in *time use* in the labor market. Based on the result, it is more feasible to directly analyze changes in the use of time by gender. Throughout the regression, we apply a battery of variables as a covariate to alleviate the concerns of omitted variable bias. Age, residence, schooling level, industry type, job task, and job position—factors that are commonly considered to affect the level of income—are included in the covariate.[15]

Graphical Analysis

(1) Year 2004: Age of 20-29

Figure 1 (and Figure A1) illustrate the time use of the non-worker and single group aged 20-29. For the non-workers who are most likely to be college students, there is not much disparity between men and women in time management across 24 hours. For both men and women, learning and leisure and social activities take up substantial proportions of behavioral codes during weekdays, and the pattern is also similar. While household chores and family care account for a bigger component of behavioral codes in women, the difference between genders is negligible; a maximum of approximately 10% and 4% of women and men, respectively, are reported to undertake these activities. This result is reasonable considering that both genders are non-workers and single, a category that does not ordinarily care for these

[14] We define this formula as the hourly income rate rather than the hourly wage rate. This is because the variable of income surveyed in the dataset includes not only wages but also other incomes. Thus, it is difficult to define the average monthly income divided by the total monthly working hours as the hourly wage rate. We would like to thank the reviewer for pointing out this.

[15] Age is a continuous variable. Residence is equal to 1 if the sample lives in Seoul. Schooling level is equal to 1 if the sample attends/attended a four-year college course and above. We control for seven types of industry (agroforestry, manufacturing, construction, wholesale and retail, accommodation, real estate and leasing service, and educational service and others), eight types of job task (manager, engineer, office clerk, sales person, agroforestry specialist, technical professional, assembler, and simple laborer), and four types of job position (salaried worker, employee, self-employed, and unpaid family business worker). Due to the limitations of the survey data, we could not include possible factors which may affect time use allocation, such as gender role attitudes, numbers of children, and co-residence with grandparents. Throughout the paper, we apply the same control variables.

behaviors. Time allocation on weekends is similar to that of weekdays.

We turn our focus to the worker and single group aged 20-29 in Figure 2 (and Figure A2). When it comes to the nine behavioral codes and the specific component, time use allocation and its pattern across 24 hours are almost homogeneous between men and women, irrespective of weekdays or weekends. This means that there is not much difference between the lives of men and women, from a time management perspective, across 24 hours at least during a relatively younger age range before marriage and childbearing.

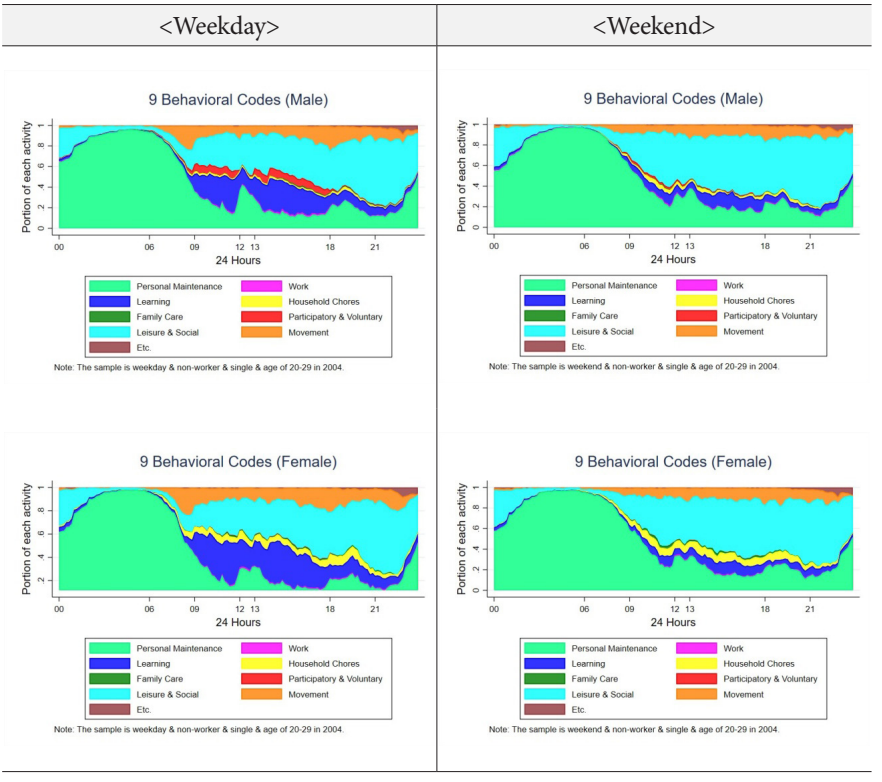

Fig. 1.—Non-Worker & Single, Age of 20-29

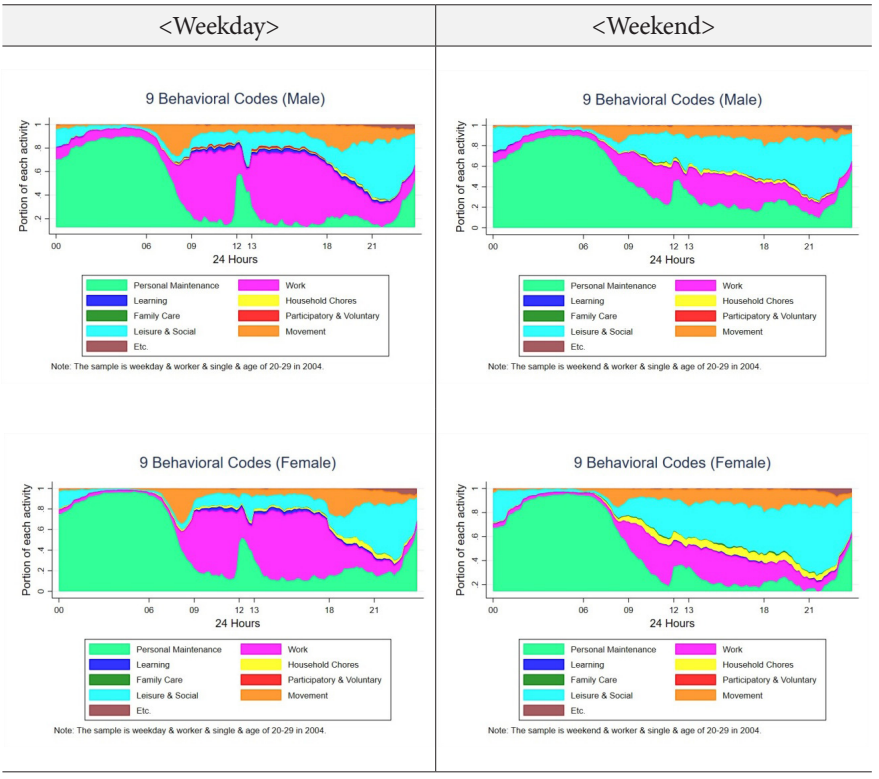

Fig. 2.—Worker & Single, Age of 20-29

(2) Year 2009: Age of 25-34

In the 2009 dataset, when the respondents are between the ages of 25 and 34, we observe that many of them move onto the working stage from their previous non-worker status. Figure 3 (and Figure A3) shows time use on a weekday and weekend for the worker and single group aged 25-34. They indicate that the time allocation of each behavioral code across 24 hours is nearly identical to when they were ages 20-29, as shown in Figure 2 (and Figure A2). During business hours, they are most likely to work, and the proportion of working men and women reported to enjoy leisure and social activities after business hours increases by about 60% at 9 pm. Less than 10% of both genders in this group take care of household chores and engage in family care for an entire day.

However, drastic divergences in time management between men and

women occur after marriage and starting a family. Figure 4 (and Figure A4) show a weekday of the worker and married (and with a child) group, aged 25-34. Right before and after business hours, the proportion of women who conduct household chores and family care increases significantly, and this change is more noticeable when we restrict our attention to women who have a child. We observe that a higher percentage of men work during non-working hours. One aspect we are concerned with is leisure and social activities. After business hours, fewer employed women (with a child) spent their time on leisure and social activities from 6 pm to 10 pm. The figure is about 10-35%, while it is higher for men at around 20-45%. This may indicate that women are more likely to be deprived of their free time because they take care of family matters by sacrificing their personal and social life.

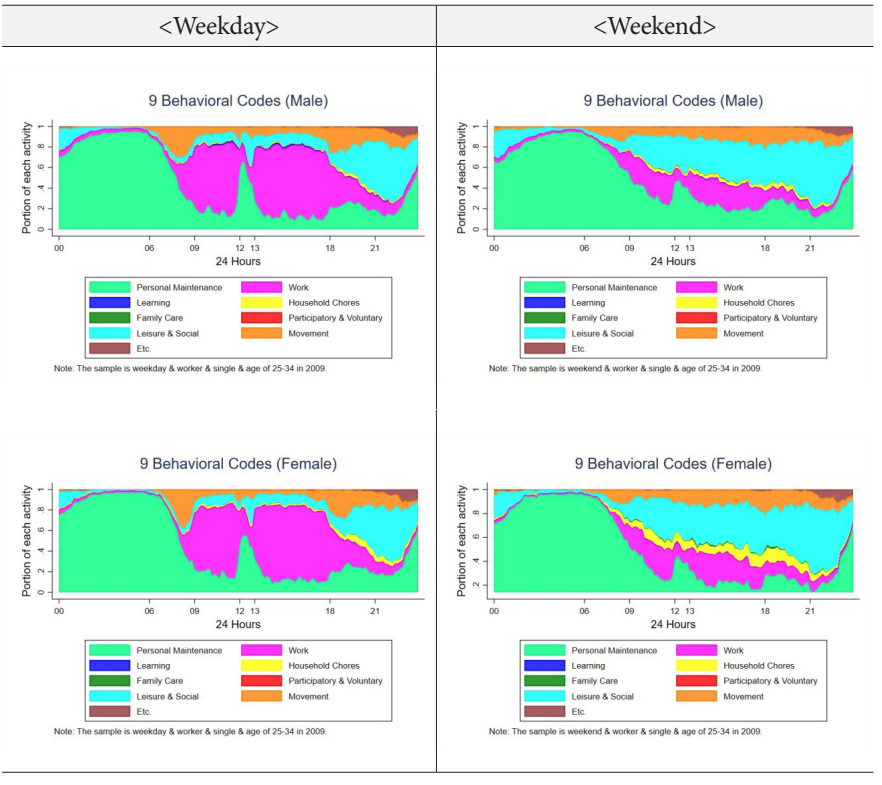

FIG. 3.—WORKER & SINGLE, AGE OF 25-34

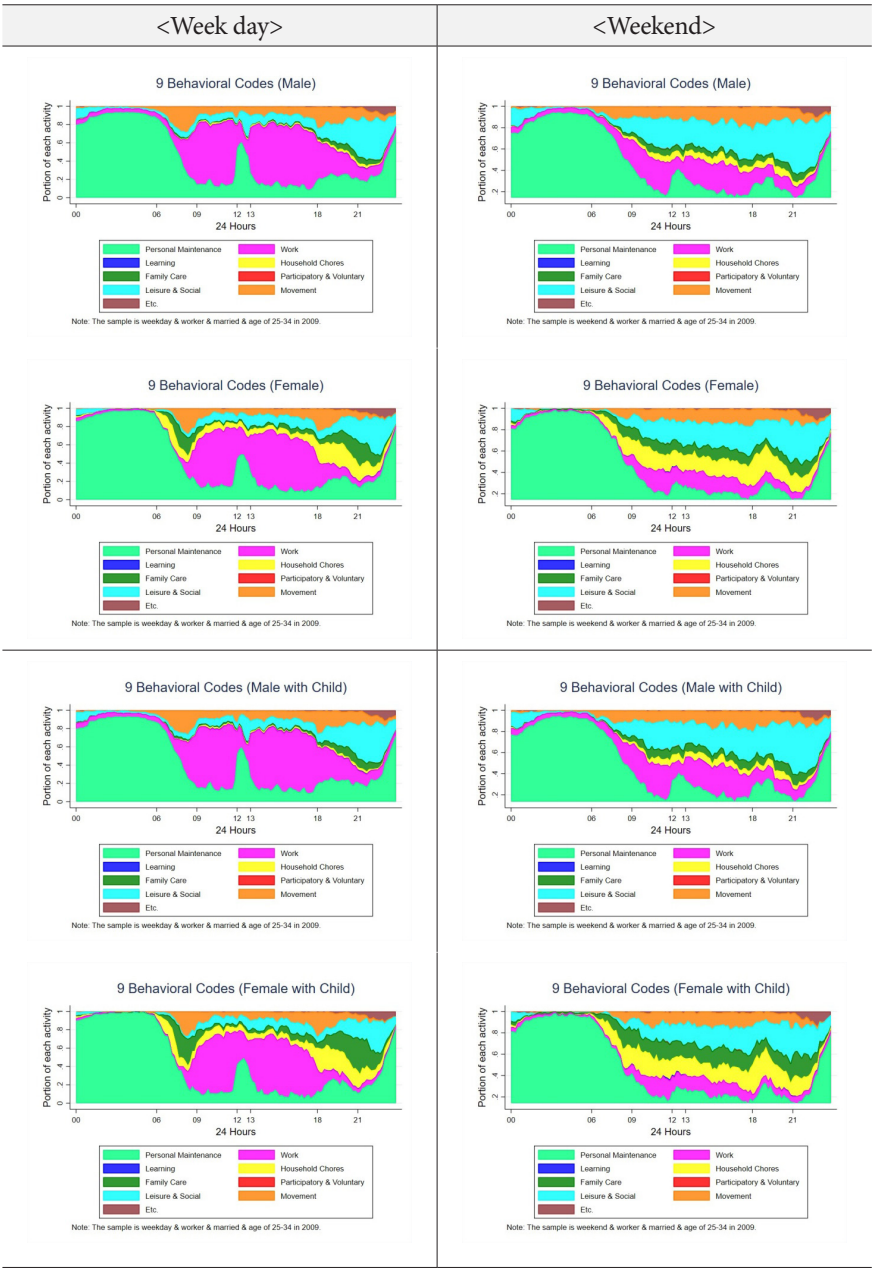

Fig. 4.—Worker & Married (& with Child), Age of 25-34

There is an argument (an excuse for married men) that men help with household chores and family care over the weekend to compensate for their reduced contribution during weekdays. However, Figure 4 (and Figure A4) illustrate that this argument is not very convincing. For the entirety of the weekend, a much higher proportion of married women still assume family responsibilities, such as household chores and family care, and enjoy fewer leisure and social activities compared to married men. In general, the traditional gender norm that prescribes "men for work and women for home" prevails in the actual time allocation of the Kim Ji-young generation.

(3) Year 2014: Age of 30-39

Figure 5 (and Figure A5) display the time use of the worker and single group when aged 30-39 in 2014. The allocations and patterns of behavioral codes across 24 hours are similar between men and women for this group during the weekday. In the case of the weekend, both single working men and women

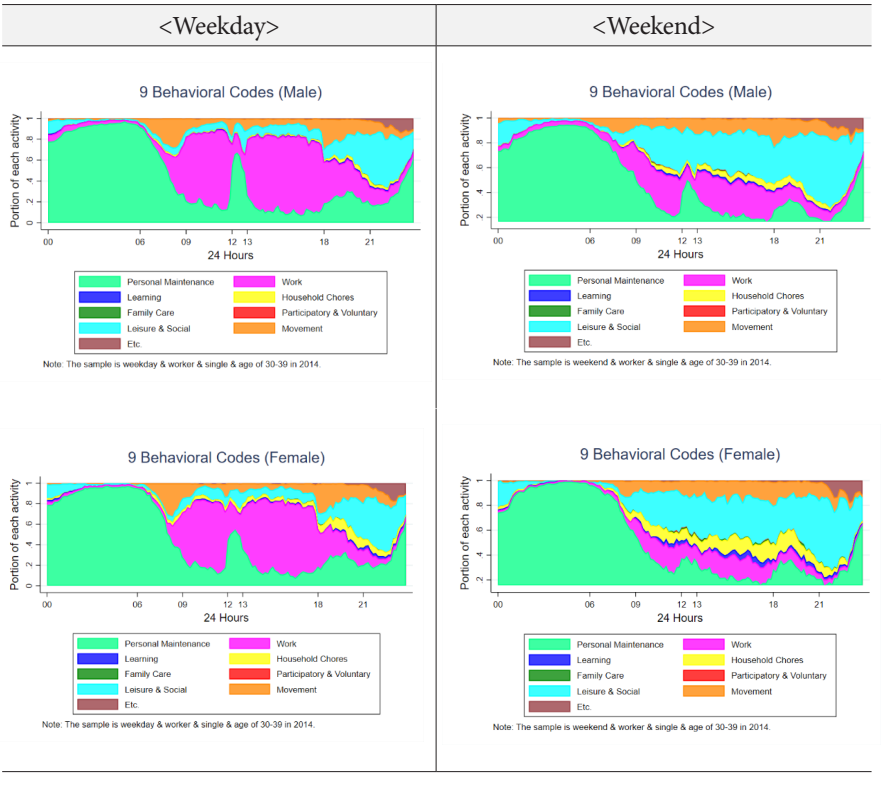

FIG. 5.—WORKER & SINGLE, AGE OF 30-39

are commonly not burdened with household chores and family care, but a higher proportion of women are shown to consistently assume these behaviors.

Figure 6 (and Figure A6) show time use of the worker and married group aged 30-39 during the weekday and weekend, respectively. When we compare the married male and female worker, the latter still assumes a higher portion of household chores and family care in the non-working hours, and has less time for leisure and social activities.

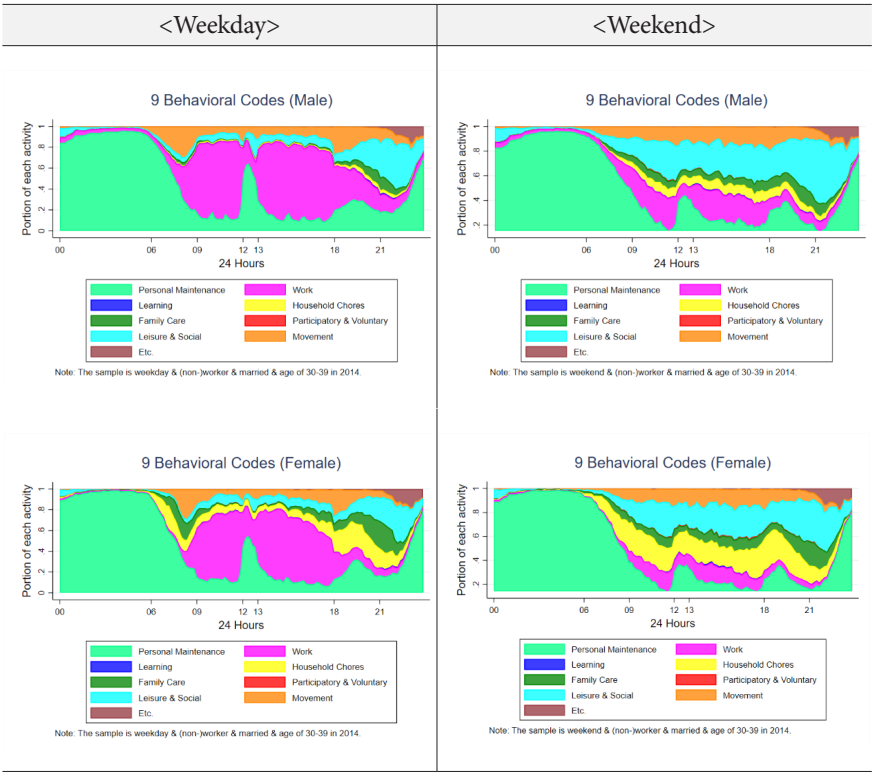

Fig. 6.—Worker & Married, Age of 30-39

Regression Analysis

(1) Effect on Income and Income Rate

Table 3 shows our findings When the age of the cohort is 20-29, young working women are less likely to be in a higher income bracket, even though

Table 3
Regression Result on Income and Income Rate

	Age 20-29		Age 25-34		Age 30-39	
	Average Monthly Income	Hourly Income Rate	Average Monthly Income	Hourly Income Rate	Average Monthly Income	Hourly Income Rate
Female	-0.089*	-0.001	-0.127*	-0.001	-0.241**	-0.001
	(0.035)	(0.001)	(0.054)	(0.001)	(0.069)	(0.001)
Age	0.063**	-0.000	0.037**	0.000	0.004	0.000
	(0.006)	(0.000)	(0.010)	(0.000)	(0.011)	(0.000)
Seoul	0.158**	0.003*	0.245**	0.002*	0.215**	0.004
	(0.036)	(0.001)	(0.062)	(0.001)	(0.080)	(0.002)
4-year college and above	0.067*	0.004**	0.293**	0.002**	0.244**	0.004*
	(0.030)	(0.001)	(0.050)	(0.001)	(0.066)	(0.002)
Total Working Hours per Week	0.006**	-	0.009**	-	0.011**	-
	(0.001)	-	(0.002)	-	(0.003)	-
Other Covariates	Y	Y	Y	Y	Y	Y
R^2	0.228	0.083	0.248	0.063	0.220	0.063
N	1541	1541	744	744	608	608

Standard errors in parentheses + p<0.10, * p<0.05, ** p<0.01.

we control various job characteristics in the equation (−0.089). Growing older, living in Seoul, earning a higher degree, and working longer hours are positively related to average monthly income. However, when we alternatively adopt the hourly income rate as a dependent variable, we find little evidence that women are treated differently with regard to their salary. We suspect that the levels, tasks, and positions of an initial job at the entry stage of work are the same on average, regardless of gender, which leads to a surprising lack of disparity when it comes to hourly income rates between men and women.

When the samples are aged above 25 and advance to an intermediate stage in the workplace, we find that the average monthly income is lower for women and the coefficient becomes larger (−0.127 and −0.241, respectively). However, similar to the 20-29 period, the effect again disappears when we apply the hourly income rate in the estimation.

The results suggest that one possible reason for income divergence between men and women can be found in the total amount of working hours, which addresses the significance of analysis on time allocation across 24 hours (Goldin 2014; Goldin and Katz 2016; Azmat and Ferrer 2017; Cortés and Pan 2019; Kleven, Landais, and Søgaard 2019). Both unmarried and employed men and women are free from time restrictions caused by family business. They can voluntarily allocate their time to either work or leisure and social activities. In this sense, the difference in time allocation possibly results from the fact that men commonly tend to spend more time on work in the non-working hours instead of other activities.

(2) Effect on Time Management

In the graphical analysis (see Figure 4 and Figure 6), we observe that time use allocations and patterns across 24 hours are markedly disparate after marriage and childbearing, despite both husband and wife being employed. In particular, the stark divergence appears more drastically during non-working hours. Based on these observations, we investigate empirically how marital status and gender affect time management in the non-working hours. To estimate the different effects of marriage according to gender precisely, we combine these two terms in the estimation.

Table 4 shows the results. When women are married at age 25-34, they spend 46.26 minutes less on work, 53.76 minutes more on household chores, 41.74 minutes more on family care, and 16.60 minutes less on social and leisure activities during non-working hours. When it comes to household chores and family care, the effect is strengthened as the respondents age, by 1.42 minutes and 1.10 minutes, respectively. Despite the Kim Ji-young

Table 4
Regression Result on Time Use in Non-Working Hours

	Age of 25-34				Age of 30-39			
	Work	Household Chores	Family Care	Social & Leisure	Work	Household Chores	Family Care	Social & Leisure
Female	-12.86	15.37**	0.38	-21.84**	-31.02**	22.40**	-2.04*	-6.17
	(7.95)	(2.20)	(0.98)	(6.46)	(8.65)	(3.16)	(0.92)	(6.76)
Married	13.36	-2.76	17.78**	-30.38**	10.38	-1.81	25.80**	-30.97**
	(8.39)	(1.74)	(1.80)	(6.27)	(6.83)	(1.54)	(1.46)	(4.62)
Female x Married	-46.26**	53.76**	41.74**	-16.60+	-37.03**	49.46**	40.60**	-25.56**
	(10.48)	(3.77)	(3.94)	(8.60)	(9.75)	(3.86)	(2.88)	(7.40)
Age	-1.84	1.42**	1.10**	-1.27	-0.17	1.14**	-0.50	0.61
	(1.14)	(0.33)	(0.35)	(0.84)	(0.81)	(0.28)	(0.32)	(0.54)
Seoul	5.40	-4.97*	-1.85	-17.46**	8.35	-4.04+	-4.58+	-16.60**
	(6.76)	(2.25)	(2.12)	(5.92)	(6.10)	(2.36)	(2.40)	(4.46)
4-year college and above	-5.68	0.09	1.73	1.76	-8.51+	-0.81	2.09	0.93
	(5.63)	(1.86)	(1.87)	(4.70)	(4.46)	(1.65)	(2.04)	(3.30)
Other Covariates	Y	Y	Y	Y	Y	Y	Y	Y
R^2	0.123	0.441	0.362	0.103	0.151	0.452	0.252	0.098
N	1492	1492	1492	1492	2330	2330	2330	2330

Standard errors in parentheses + p<0.10, * p<0.05, ** p<0.01.

Note: In other covariates, I control seven types of industry (Agroforestry, Manufacturing, Construction, Wholesale & Retail, Accommodation, Real Estate & Leasing Service, Educational Service & Others), eight types of job task (Manager, Engineer, Office Clerk, Sales, Agroforestry Specialty, Technical Post, Assembler, and Simple Labor), and four types of job position (salary worker, employee, self-employed, and unpaid family business worker).

generation having been educated and encouraged to adopt egalitarian attitudes toward gender roles and the division of labor within the household, it turns out that actual daytime management still corresponds with the traditional Confucian norm of "men for work and women for home." Considering that we control for a battery of observable covariates such as age, residence, education level, and job characteristics that affect time allocation, the change makes us suspect the existence of a glass ceiling looming over women's lives.

When the generation reaches ages 30-39, women assume more household chores and family care by 49.46 minutes and 40.60 minutes during the non-working hours after they get married. Also, they consider the division of housework to be unfair. This shows the persistence of traditional gender norms within the household of the Kim Ji-young generation. As a limited resource, the allocation of time across 24 hours plays a significant role in both the present and future, as well as one's personal and social life. The observations of divergences in time allocation among married and working men and women, more specifically, more time spent on mundane family work and less time on work and leisure and social activities by women, raise concerns about the qualitative aspects of the lives of married women.

Comprehensive Remarks

Results of the graphical and regression analyses suggest that time is a significant indicator when we consider the gender differences in the labor market. The hourly income rate is not vastly different between men and women throughout the life course. However, we notice the emergence of a substantial divergence in time use between men and women following marriage and childbirth.[16] Moreover, we observe a "bottleneck" regarding household chores and family care in that time for these activities, which is concentrated between 6 am and 9 am and 6 pm and 10 pm even when both husband and wife are employed. This is because business hours are ordinarily from 9 am to 6 pm. In these circumstances, it appears that time spent on household chores and family care is passed to women, while men replace this accountability by spending more time at work (Joo and Choi 2019).

It is beyond the scope of the study to conclude whether the differences in time use among dual-earner couples originated mainly from the social norm

[16] See recent studies that obtain similar results in western societies: Kleven, Landais, and Søgaard (2019), Kleven, Landais, Posch, Steinhauer, and Zweimuller (2019).

that dictates that a mother needs to take care of her child (nurture), or from a natural disposition that maternal instinct compels a woman take care of a child (nature). However, if we admit that the former is a crucial aspect of gender discrimination and has an enormous effect on our lives in areas such as subsequent career success (Frederiksen, Kato, and Smith 2018), the government's affirmative action can be justified to achieve gender equality in the labor market. For example, the South Korean government recently adopted the 52-hour maximum working week, coupled with a flexible working schedule.[17] It is anticipated that these measures will help allocate the burden of family affairs more equally between husbands and wives (Craig, Brown, Strazdins, and Jun 2017).

Discussion

In the graphical and regression analyses, we found evidence that some of the principal reasons for the gender differences in daily time use are marriage and childbearing. While time use of the single samples diverges little between men and women, this is not the case when we examine time allocation of married couples with jobs. In particular, the difference is more noteworthy during non-business hours on a weekday. While dual-earners are both at the workplace during business hours, mundane family tasks such as household chores and childcare are mainly the responsibility of women. Therefore, we expect that time use of husbands can play a significant role in sharing and lessening the burden of housework for working wives in households. To examine the issue, we select only married couples in which both husband and wife are simultaneously identified and employed. In the 2009 dataset, when the samples are 25-34, we obtain 144 couples (total 288 people). Similarly, we use data from 347 couples (a total of 694 people) from the 2014 dataset when the samples are 30-39.

Table 5 shows the regression result on wives' time use in non-working hours. There are several interesting findings. First, time spent working by husbands in non-working hours is positively associated with time spent working by wives in the same period; a one-minute increase in husbands' paid working time is positively related to a 0.14 and 0.11 minutes increase per

[17] For a brief introduction, refer to the following articles:
1) https://hsfnotes.com/employment/2017/06/29/south-korea-new-government-announces-proposals-to-increase-support-for-work-life-balance/
2) https://www.cnn.com/2018/07/02/health/south-korea-work-hours/index.html

Table 5
Regression Result on Wife's Time Use in Non-Working Hours

	Age of 25-34				Age of 30-39			
	Work	Household Chores	Family Care	Social & Leisure	Work	Household Chores	Family Care	Social & Leisure
Work by husband	0.14+	0.01	-0.01	0.02	0.11**	-0.03	0.02	0.00
	(0.09)	(0.04)	(0.04)	(0.05)	(0.04)	(0.03)	(0.04)	(0.02)
Household Chores (by husband)	0.46	0.37	-0.48*	0.07	0.24	0.12	-0.31+	-0.22*
	(0.28)	(0.23)	(0.19)	(0.29)	(0.15)	(0.13)	(0.16)	(0.09)
Family Care (by husband)	0.30	-0.11	0.37*	-0.40*	0.17	0.00	0.23*	-0.22**
	(0.19)	(0.11)	(0.18)	(0.17)	(0.11)	(0.08)	(0.10)	(0.07)
Leisure & Social Activities (by husband)	0.03	0.05	-0.06	0.19**	0.10+	0.01	-0.14*	0.17**
	(0.06)	(0.05)	(0.66)	(0.07)	(0.06)	(0.05)	(0.06)	(0.05)
Age	-0.83	4.11*	0.75	0.05	-0.41	0.77	3.53**	-2.17+
	(2.67)	(1.63)	(2.05)	(2.39)	(1.16)	(1.17)	(1.27)	(1.16)
Seoul	10.89	-11.48	-6.30	-0.80	6.30	-14.99+	-12.99	-2.92
	(15.99)	(14.22)	(14.36)	(20.36)	(9.66)	(8.75)	(9.52)	(7.83)
4-year college and above	8.17	-2.30	10.98	16.76	-5.73	-4.16	-0.40	3.05
	(14.54)	(7.92)	(11.62)	(13.51)	(6.80)	(5.90)	(7.86)	(6.25)
100-199 (10-thousand KRW)	14.10	-18.86+	-34.35*	4.36	4.94	-17.24*	-22.59*	-13.76+
	(14.99)	(10.74)	(14.43)	(14.34)	(7.96)	(7.63)	(9.31)	(7.77)
200-299 (10-thousand KRW)	49.74*	-29.84*	-44.82**	-17.94	18.83+	-27.40**	-28.43*	-11.52
	(20.46)	(14.25)	(16.33)	(18.54)	(9.81)	(8.48)	(11.03)	(8.78)
300- (10-thousand KRW)	83.96*	-38.89*	-4.70	-26.32	40.83**	-45.69**	-39.43**	-7.83
	(38.74)	(15.79)	(37.32)	(35.44)	(12.88)	(9.54)	(14.14)	(10.62)
Other Covariates	Y	Y	Y	Y	Y	Y	Y	Y
R^2	0.187	0.157	0.215	0.177	0.087	0.115	0.125	0.135
N	144	144	144	144	347	347	347	347

Standard errors in parentheses + p<0.10, * p<0.05, ** p<0.01.

Note 1: The unit of work. Household chores, family care, and social & leisure activities is a minute per day.
Note 2: In other covariates, I control seven types of industry (Agroforestry, Manufacturing, Construction, Wholesale & Retail, Accommodation, Real Estate & Leasing Service, Educational Service & Others), eight types of job task (Manager, Engineer, Office Clerk, Sales, Agroforestry Specialty, Technical Post, Assembler, and Simple Labor), and four types of job position (salary worker, employee, self-employed, and unpaid family business worker).

day on wives' work during non-working hours in the year of 2009 and 2014. Second, when a husband spends one minute more per day on household chores, the wife's time on family care decreases significantly by 0.48 and 0.31 minutes both in the 25-34 and 30-39 samples. This suggests the possibility that husbands' help with household chores can help reduce wives' family care tasks, which underscores the role of the husband in sharing "mundane" housework. Third, husbands' time spent on family care and leisure and social activities is positively related to time spent by wives on the same activities. To be specific, when it comes to family care, the coefficient is 0.37 in the 25-34 samples and 0.23 in the 30-39 samples. The coefficient is 0.19 and 0.17 for social and leisure activities, respectively. This implies that time spent on family care and leisure and social activities has complementary characteristics for husbands and wives. This is plausible considering that both spend time on family care and leisure together within the household.

Conclusion and Policy Implications

Rapid social and economic change requires people to relinquish the lingering tradition of Confucian gender norms, which constrain the role of women in society. In reality, a growing number of highly educated women are now entering the labor market. Treated on a par with men, women not only make up a considerable proportion of the workforce but also form an important component of the family, which is the basic unit of economic production. However, they still suffer from persistent gender discrimination in their lives, and the book *Kim Ji-young, Born 1982* depicts these grim circumstances. Married women disproportionately shoulder the burden of housework and childcare tasks within the household, and they are forced to discontinue their careers. To prevent this outcome, many young women are opting to forgo marriage and having children. The South Korean government is concerned with the low marriage and birth rates, which can negatively affect the nation's prosperity. Therefore, it seeks to establish policies to simultaneously attract women into the labor force and to also start families. The Kim Ji-young generation, which was born in the 1970s and 1980s, is the main target for these plans. In this sense, understanding the generation's daily time use across the 24-hour day is crucial to constructing well-targeted policies and improving policy effectiveness.

In this study, we employ data from the Korean Time Use Survey to focus on the Kim Ji-young generation. We examine graphically and analytically

whether there are gender differences in time use when samples are in the age groups of 20-29, 25-34, and 30-39. In the age group 20-29, when the generation is younger and have not yet married or begun families, there is not significant difference between the time management of men and women across 24 hours. Working men are paid more, but they also work longer; thus, the hourly income rate is balanced. In the age group 25-34, when major life events such as marriage and childbearing happen, we find clear divergences of time allocation between the two groups. A larger proportion of women report taking care of household chores and family care tasks during non-working hours after marriage and childbearing, and they enjoy less leisure time and social activities. Similar patterns also occur when the generation is in the age range 30-39. This implies that the Confucian traditional convention of "men for work and women for home," is still prevalent in the actual distribution of time use. We anticipate that the wife's burden of family care will diminish when her husband is willing to help with household chores, which reveals that a spouse's role is significant with regard to sharing taxing and time-consuming housework.

The current study has several limitations. The regression model is not free from self-selection bias in the matters of marriage and childbearing. Since getting married and having a child are choice variables, comparing the two sexes and interpreting it as evidence of causal relations should be avoided. Moreover, time allocation across 24 hours within the household is also determined simultaneously by husbands and wives; therefore, it may be misleading to dismiss endogeneity when understanding the results.

However, our study is meaningful in that it is the first attempt to visualize the Kim Ji-young generation's time use distribution across 24 hours. Furthermore, by offering empirical evidence, it can help future research attempting to pave the way to eliminate barriers that consolidate unreasonable gender discrimination in time management. Based on the research, we address the necessary effort to reduce the time constraints faced by women. As seminal works such as Goldin (2014), Goldin and Katz (2016), and Cortés and Pan (2019) demonstrate, one reason why women are underperforming in a few higher-paying occupations can be traced to greater pressures on their time management, as they have difficulties balancing market and home commitments because of lack of flexibility at the workplace and their disproportionate responsibility within the family. The findings also highlight that the tradeoff between work and family can be relevant to the time use disparity between married men and women, and it may persist as a factor of today's glass ceiling phenomenon. In this regard, the government should step

forward to incorporate family-friendly and gender-neutral concepts into public policies. Encouraging husbands to take up a more supportive role in the family or improving the flexibility of work schedules in the society would both be a good start (Craig, Brown, Strazdins, and Jun 2017).[18] For example, a movement from maternity to paternity leave via "daddy months" in Scandinavian countries has been an effective way of achieving gender equality in a genuine sense (Bertrand 2018). Earmarked paternity leave for fathers can also increase women's earnings, and transform gender roles to be more equitable (Andersen 2018; Druedahl, Ejrnæs, and Jørgensen 2019). Doing so can soften traditional norms that define mothers as dedicated providers of housework, overcome uneven distribution of time allocation at work and at home, and relieve the concerns of gender discrimination in the second shift world.

(*Submitted*: July 26, 2020; *Revised*: January 4, 2021; *Accepted*: January 4, 2021)

References

Ahmed Lahsen, Amina, Alan T. Piper, and Ida-Anna Thiele. 2020. "Kim Jiyoung, born 1982, and the labour market: Overeducation, gender, income and life satisfaction. Panel evidence from Korea." Discussion Papers 2020/10, Free University Berlin, School of Business & Economics.

Andersen, Signe Hald. 2018. "Paternity leave and the motherhood penalty: New causal evidence." *Journal of Marriage and Family* 80(5): 1125-1143.

Albrecht, James, Anders Björklund, and Susan Vroman. 2003. "Is there a glass ceiling in Sweden?." *Journal of Labor Economics* 21(1): 145-177.

Álvarez, Begoña, and Daniel Miles-Touya. 2019. "Gender imbalance in housework allocation: a question of time?." *Review of Economics of the Household* 17(4): 1257-1287.

An, Mi Young. 2017. (In Korean) "Jawonui sangdaeseonggwa gajong nae nodong bunbaeui jendeo bulpyeongdeung: Hangung yugeumnodongja bubureul jungsimeuro [Relative Resources and Gender Stratification within Family in South Korea]." *Yeoseonggyeongjeyeongu* [*Journal of Women and Economics*] 14(1): 83-102.

Azmat, Ghazala, and Rosa Ferrer. 2017. "Gender gaps in performance: Evidence from young lawyers." *Journal of Political Economy* 125(5): 1306-1355.

[18] In recent times, a few news articles have pointed out a positive movement. For example, please refer to the following article (in Korean):
http://news.chosun.com/site/data/html_dir/2019/07/29/2019072900165.html

Bae, Eun-Kyung. 2009. "Gyeongje wigitwa hangung yeoseong: Yeoseongui saengaejeonmanggwa jendeo/gyegeubui gyocha [Economic Crisis and Korean Women: Womens Vision-of-Life and Intersection of Class and Gender]." *Peminijeum yeongu* [*Issues in Feminism*] 9(2): 39-82.

Bae, Ho Joong. 2015. "Matbeori gagu nampyeonui gasanodongsigan: Hotbeori gagu nampyeongwa bigyoreul jungsimeuro [Time use for housework of husband: Comparing dual-earner couples with one-earner couples]." *Sahoegwahagyeongu* [*Social Science Research Review*] 31(4): 151-181.

Becker, Gary S. 1965. "A Theory of the Allocation of Time." *The Economic Journal* 493-517.

Bertrand, Marianne. 2018. "Coase lecture-the glass ceiling." *Economica* 85(338): 205-231.

Bianchi, Suzanne M., Mellissa A. Milkie, Liana C. Sayer, and John P. Robinson. 2000. "Is anyone doing the housework? Trends in the gender division of household labor." *Social Forces* 79(1): 191-228.

Blair, Sampson Lee, and Daniel T. Lichter. 1991. "Measuring the division of household labor: Gender segregation of housework among American couples." *Journal of Family Issues* 12(1): 91-113.

Blau, Francine D., and Lawrence M. Kahn. 2017. "The gender wage gap: Extent, trends, and explanations." *Journal of Economic Literature* 55(3): 789-865.

Bloemen, Hans G., Silvia Pasqua, and Elena GF Stancanelli. 2010. "An empirical analysis of the time allocation of Italian couples: are they responsive?" *Review of Economics of the Household* 8(3): 345-369.

Burda, Michael, Daniel S. Hamermesh, and Philippe Weil. 2013. "Total work and gender: facts and possible explanations." *Journal of Population Economics* 26(1): 239-261.

Campaña, Juan Carlos, Jose Ignacio Giménez-Nadal, and José Alberto Molina. 2018. "Gender norms and the gendered distribution of total work in Latin American households." *Feminist Economics* 24(1): 35-62.

Carlson, Daniel L., and Jamie L. Lynch. 2013. "Housework: Cause and consequence of gender ideology?." *Social Science Research* 42(6): 1505-1518.

Chiappori, Pierre-André, and Arthur Lewbel. 2015. "Gary Becker's a theory of the allocation of time." *The Economic Journal* 125(583): 410-442.

Cho, Nam-joo. 2016. *82nyeonsaeng gimjiyeong* [*Kim Ji-young, Born 1982*]. Minumsa Publishing Group.

Cho, Sungho. 2016. "Bubuui siganbaebun gyeoljeongyoin: Matbeori bubureul jungsimeuro [Determinant Factors of Time Allocation within Married Couple]." *Nodonggyeongjenonjip* [*Korean Journal of Labor Economics]* 39(1): 57-79.

Choi, Youseok. 2014. "Sedaegan yeondaeuisigui giban: Gajokjuui yeondae [Foundations of Intergenerational Solidarity in Korea]." *Hanguginguhak* [*Korea Journal of Population Studies*] 37(4): 61-87.

Cortés, Patricia, and Jessica Pan. 2019. "When time binds: substitutes for household

production, returns to working long hours, and the skilled gender wage gap." *Journal of Labor Economics* 37(2): 351-398.

Craig, Lyn, Judith E. Brown, Lyndall Strazdins, and Jiweon Jun. 2017. "Is It Just Too Hard? Gender Time Symmetry in Market and Nonmarket Work and Subjective Time Pressure in Australia, Finland, and Korea." In Gender and Time Use in a Global Context, Pp. 465-494. Palgrave Macmillan, New York.

Craig, Lyn, and Killian Mullan. 2011. "How mothers and fathers share childcare: A cross-national time-use comparison." *American Sociological Review* 76(6): 834-861.

Davis, Shannon N., and Theodore N. Greenstein. 2004. "Cross-national variations in the division of household labor." *Journal of Marriage and Family* 66(5): 1260-1271.

Deaton, Angus. 1985. "Panel data from time series of cross-sections." *Journal of Econometrics* 30(1-2): 109-126.

DeSerpa, Allan C. 1971. "A theory of the economics of time." *The Economic Journal* 81(324): 828-846.

Druedahl, Jeppe, Mette Ejrnæs, and Thomas H. Jørgensen. 2019. "Earmarked paternity leave and the relative income within couples." *Economics Letters* 180: 85-88.

Eun, Ki-Soo. 2009. "Hangung gihonbubuui gasanodongbuneop [Household Division of Labor for Married Men and Women in Korea]." *Hanguginguhak* [*Korea Journal of Population Studies*] 32(3): 145-171.

Frederiksen, Anders, Takao Kato, and Nina Smith. 2018. "Working Hours and Top Management Appointments: Evidence from Linked Employer-Employee Data." IZA Discussion Paper, No. 11675.

Gimenez-Nadal, Jose Ignacio, and Almudena Sevilla. 2012. "Trends in time allocation: A cross-country analysis." *European Economic Review* 56(6): 1338-1359.

Goldin, Claudia, and Lawrence F. Katz. 2016. "A most egalitarian profession: pharmacy and the evolution of a family-friendly occupation." *Journal of Labor Economics* 34(3): 705-746.

Goldin, Claudia. 2014. "A grand gender convergence: Its last chapter." *American Economic Review* 104(4): 1091-1119.

Hardesty, Constance, and Janet Bokemeier. 1989. "Finding time and making do: Distribution of household labor in nonmetropolitan marriages." *Journal of Marriage and the Family* 51(1): 253-267.

Heo, Su-Yeon. 2008. "Matbeorigagu yeoseonggwa namseongui gasanodongsigane gwanhan yeongu [Research on Time Use for Housework of Women and Men in Double Income Households]." *Hangugyeoseonghak* [*Journal of Korean Women's Studies*] 24(3): 177-210.

Hochschild, Arlie, and Anne Machung. 2012. *The second shift: Working families and the revolution at home*. Penguin.

Hwang, Jisoo, Chulhee Lee, and Esther Lee. 2019. "Gender norms and housework time allocation among dual-earner couples." *Labour Economics* 57: 102-116.

Hwang, Jisoo. 2016. "The second shift: Assimilation in housework time among immigrants." *Review of Economics of the Household* 14(4): 941-959.

Joo, Ikhyun, and Seongsoo Choi. 2019. "Namjaga yeojareul dowajul ttae: Bubu gan gasanodong buneobeseo sigandae donggihwaui jungyoseong [When a Man Helps a Woman: The Importance of Time Overlap in the Division of Housework within Married Couples]." Hanguksahoehak [*Korean Journal of Sociology*] 53(2): 213-248.

Kamo, Yoshinori. 1988. "Determinants of household division of labor: Resources, power, and ideology." *Journal of Family Issues* 9(2): 177-200.

Kim, Sujeong, and Eunji Kim. 2007. "Hangung matbeori gagueseo gasanodonggwa gyeongjejeong uijonui gwangye: Gyohwan hogeun jendeobosang? [Housework and Economic Dependency among Dual-Earner Couples in Korea: Economic Exchange or Gender Compensation?]." *Hanguksahoehak* [*Korean Journal of Sociology*] 41(2): 147-174.

Kimmel, Jean, and Rachel Connelly. 2007. "Mothers' time choices caregiving, leisure, home production, and paid work." *Journal of Human Resources* 42(3): 643-681.

Kleven, Henrik, Camille Landais, and Jakob Egholt Søgaard. 2019. "Children and gender inequality: Evidence from Denmark." *American Economic Journal: Applied Economics* 11(4): 181-209.

Kleven, Henrik, Camille Landais, Johanna Posch, Andreas Steinhauer, and Josef Zweimüller. 2019. "Child penalties across countries: Evidence and explanations." *AEA Papers and Proceedings* 109: 122-126.

Lee, Changsoon. 2014. "Matbeori bubuui gasanodongsigane daehan yeongu [The Gendered Division of Housework in Dual-Earner Households in Korea]." *Sahoegwahagyeongu* [*Journal of Social Science*] 40(2): 29-54.

Lee, Jin-Sook, and Yun-Suk Lee. 2018. "Seonginihaenggi namnyeoui gasanodong sigane daehan tamsaekjeong yeongu [Housework time during Transition into Adulthood: A Gender Comparison]." *Yeoseongyeongu* [*The Women's Studies*] 98(3): 65-95.

Lundberg, Shelly, and Robert A. Pollak. "Bargaining and distribution in marriage." *Journal of Economic Perspectives* 10(4): 139-158.

Michelson, William H. 2015. *Time use: Expanding explanation in the social sciences*. Routledge.

Neilson, Jeffrey, and Maria Stanfors. 2018. "Time alone or together? Trends and trade-offs among dual-earner couples, Sweden 1990-2010." *Journal of Marriage and Family* 80(1): 80-98.

Offer, Shira, and Barbara Schneider. 2011. "Revisiting the gender gap in time-use patterns: Multitasking and well-being among mothers and fathers in dual-earner families." *American Sociological Review* 76(6): 809-833.

Park, Jae-heung. 2003. "Sedae gaenyeome gwanhan yeongu: Kohoteujeong sigageseo

[A Study on the Concept of Generation: Cohort Perspective]." *Hanguksahoehak* [*Korean Journal of Sociology*] 37(3): 1-23.

Park, Jae-heung. 2009. "Sedaemyeongchinggwa sedaegaldeung damnone daehan bipanjeong geomto [Discourse on the Generational Labels and Generational Conflicts in Korea]." *Gyeongjewa sahoe* [*Economy and Society*] 10-34.

Phipps, Shelley, Peter Burton, and Lars Osberg. 2001. "Time as a source of inequality within marriage: are husbands more satisfied with time for themselves than wives?." *Feminist Economics* 7(2): 1-21.

Pollak, Robert A. 2003. "Gary Becker's contributions to family and household economics." *Review of Economics of the Household* 1(1-2): 111-141.

Pollak, Robert A., and Michael L. 1975. Wachter. "The relevance of the household production function and its implications for the allocation of time." *Journal of Political Economy* 83(2): 255-278.

Presser, Harriet B. 1994. "Employment schedules among dual-earner spouses and the division of household labor by gender." *American Sociological Review* 59(3): 348-364.

Robinson, John, and Geoffrey Godbey. 2010. *Time for life: The surprising ways Americans use their time*. Penn State Press.

Sasser, Alicia C. 2005. "Gender differences in physician pay tradeoffs between career and family." *Journal of Human Resources* 40(2): 477-504.

Seok, Byoung Hoon, and Hye Mi You. 2019. "Matbeori gaguui siganbaebune gwanhan bunseok [An Analysis of Dual-Earner Couples' Time Choices in Korea]." *Yeoseonggyeongjeyeongu* [*Journal of Women and Economics*] 15(4): 1-23.

South, Scott and Glenna Spitze. 1994. "Housework in marital and nonmarital households." *American Sociological Review* 59(3): 327-347.

Statistics Korea. 2005. *1970nyeon ihu honintpsihon juyoteukseong byeondongchui* [*Variation of major characteristics of marriage and divorce since 1970*]. Press Report.

Sung, Jaimie. 2006. "Time Allocation of Married Working Women." *Quarterly Journal of Labor Policy* 6(4): 1-29.

Thompson, Linda, and Alexis J. Walker. 1989. "Gender in families: Women and men in marriage, work, and parenthood." *Journal of Marriage and the Family* 51(4): 845-871.

Woo, Seok-hun, and Park, Kwon-il. 2007. *88manwon sedae* [*880,000 Won Generation*]. Redian.

Yoon, Jayoung. (2010a). "Moui sigan baebun gyeoljeongyoin bunseok [An Analysis of Determinants of Maternal Time Allocation]." *Nodonggyeongjenonjip* [*Korean Journal of Labor Economics*] 33(2): 27-52.

Yoon, Jayoung. (2010b). "Gender norms housework and class: A study of Korean Time Use Survey." *Asian Journal of Women's Studies* 16(3): 112-138.

HOYONG JUNG is an assistant professor in the department of economics at Kookmin University, South Korea. He worked as a deputy director of the Ministry of Economy and Finance of South Korea from 2010 to 2019, and an assistant professor in the department of economics at Chonnam National University, South Korea. He holds a Ph.D. in economics from the University of Wisconsin-Madison. His recent works were published or forthcoming at Asian Studies Review, Asian Survey, Educational Studies, Asia Pacific Education Review, Korean Journal of Policy Studies, and OMNES: The Journal of Multicultural Society. [email: ghdydwjd1@gmail.com]

Appendix. Supplementary Figures

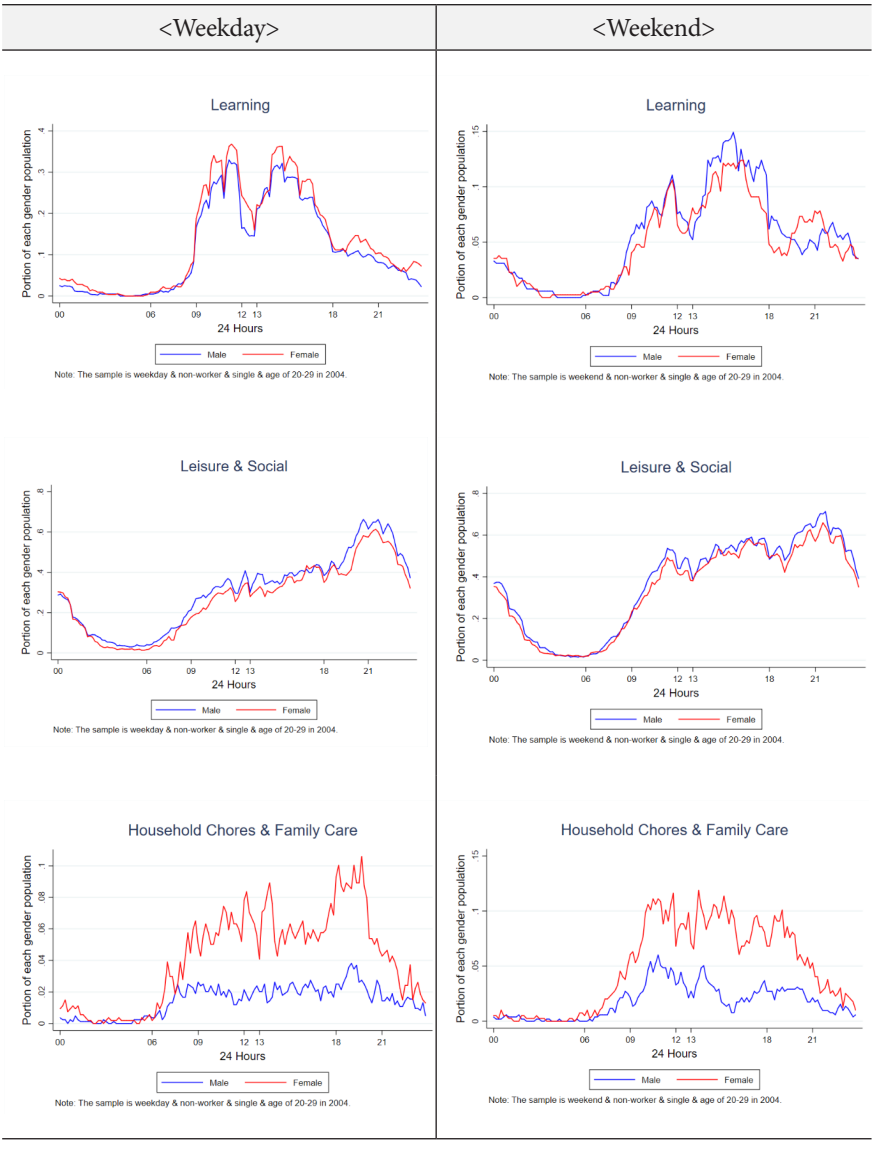

Fig. A1.—Non-Worker & Single, Age of 2

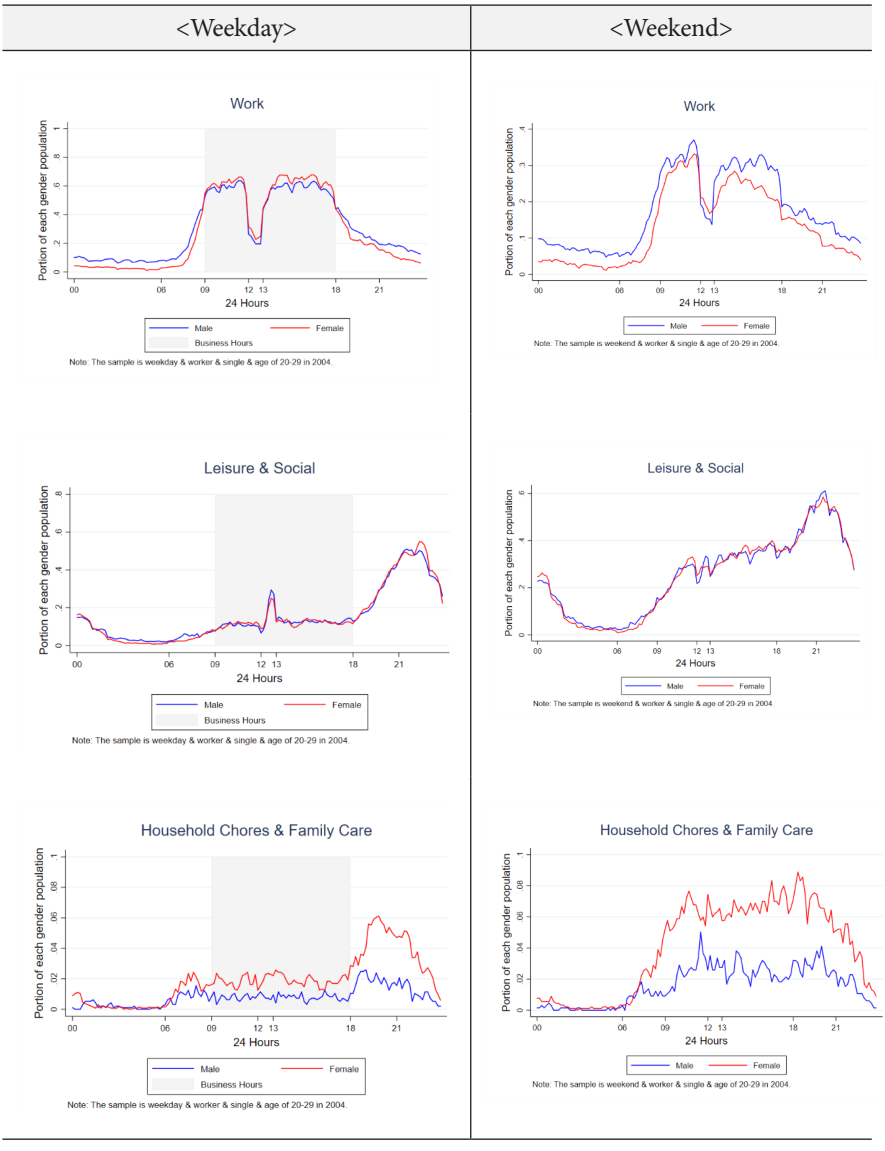

FIG. A2.—WORKER & SINGLE, AGE OF 20-29

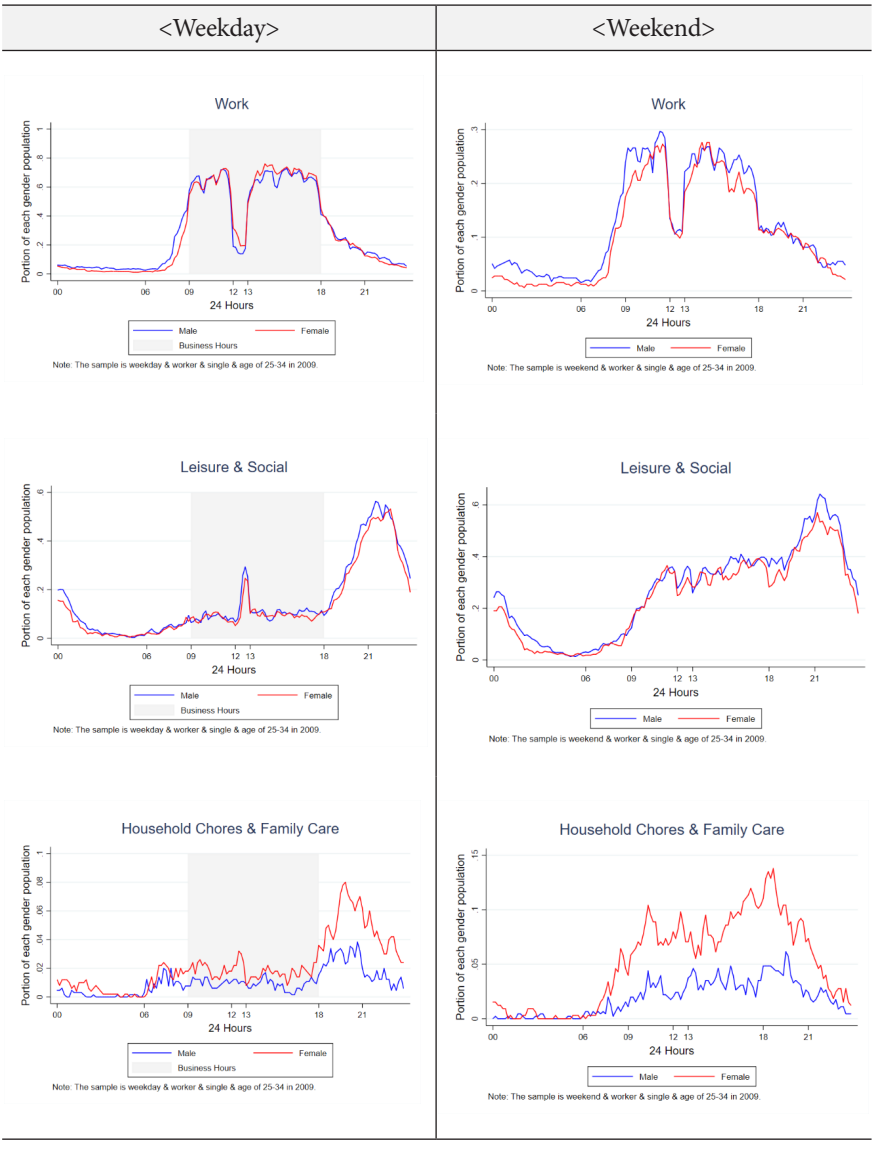

FIG. A3.—WORKER & SINGLE, AGE OF 25-34

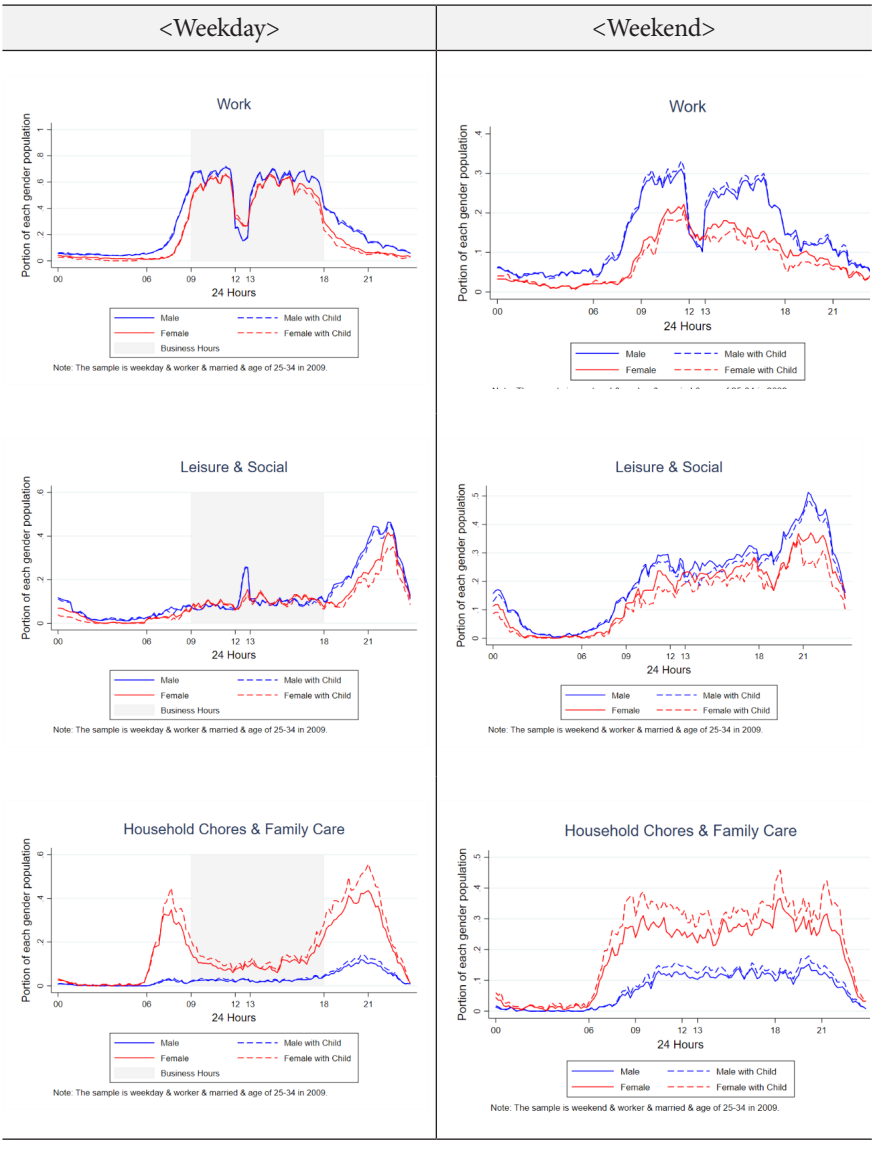

Fig. A4.—Worker & Married (& with Child), Age of 25-34

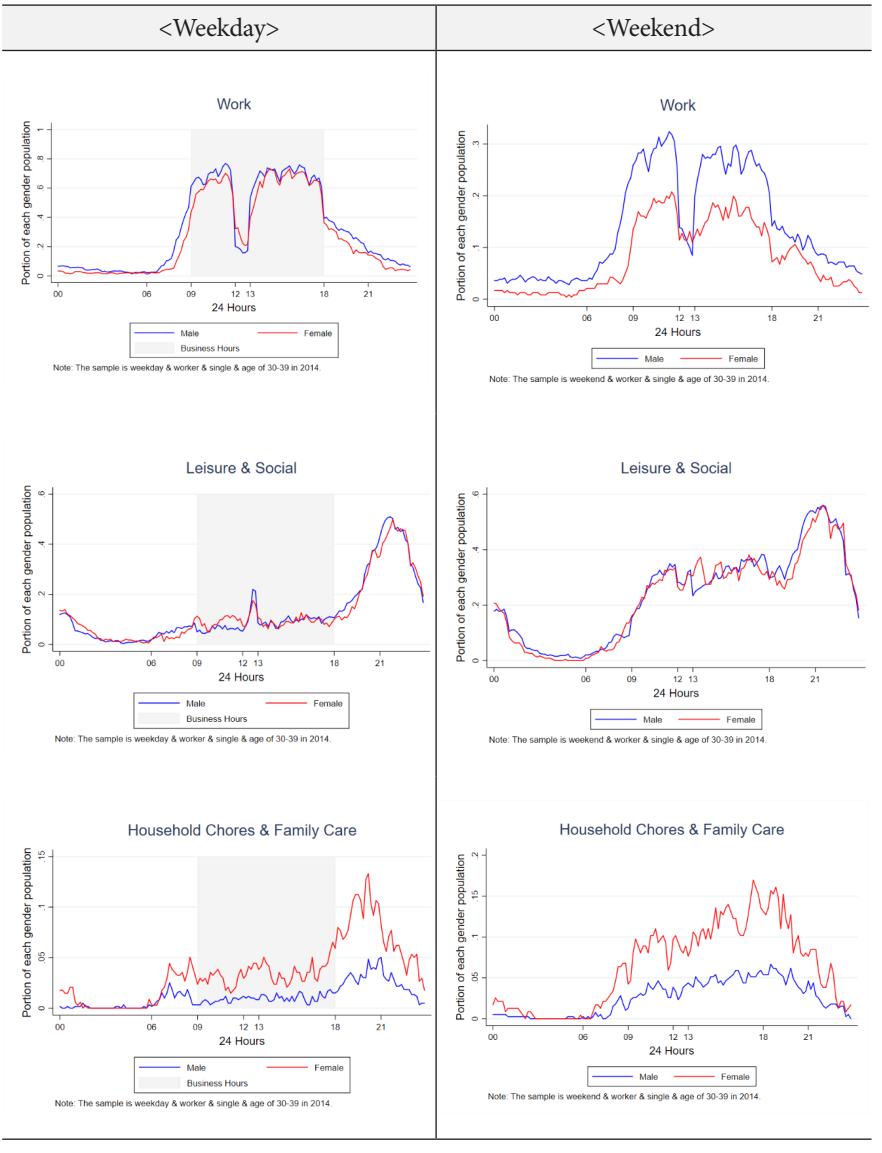

FIG. A5.—WORKER & SINGLE, AGE OF 30-39

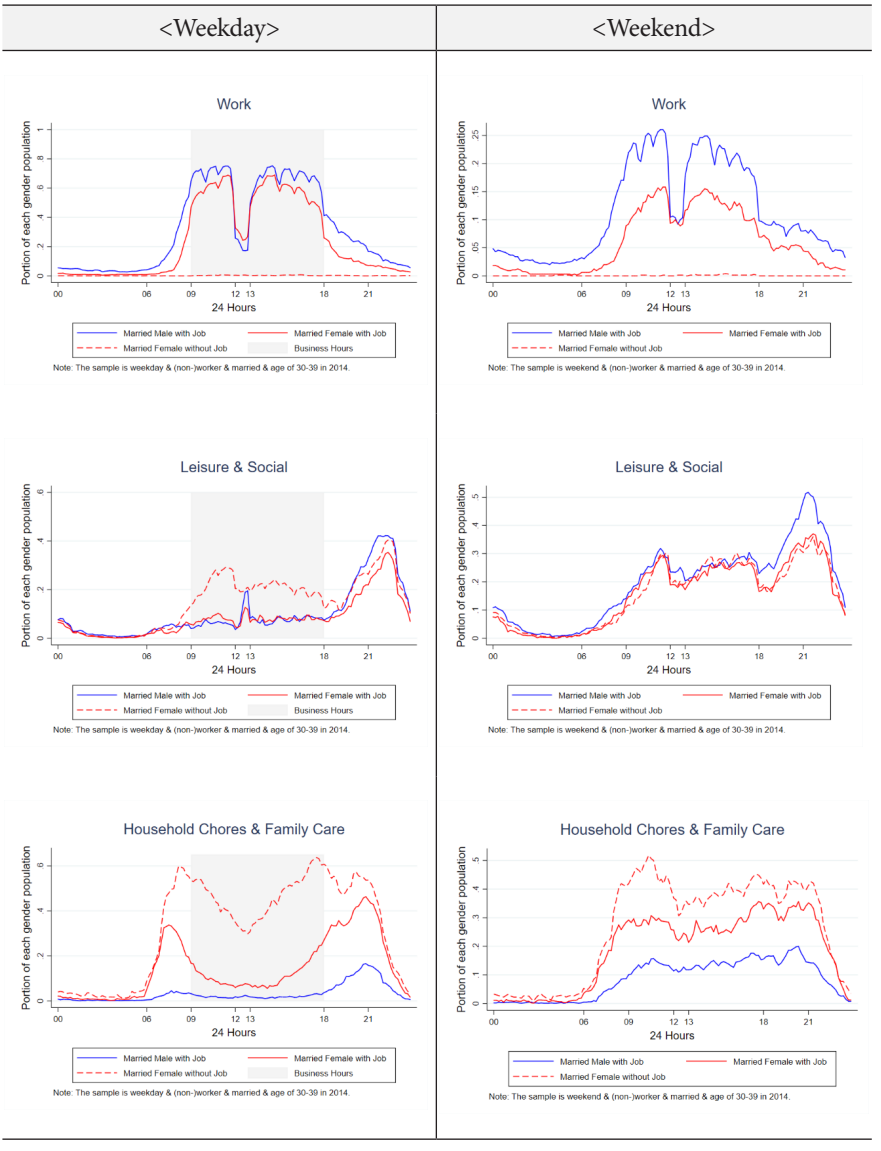

FIG. A6.—WORKER & MARRIED, AGE OF 30-39