



Who Works When? The Case of South Korea

Yoo-Jean Song¹ and Yun-Suk Lee²

1. Corresponding author: Dong-A University, Korea. yjsong28@dau.ac.kr

2. University of Seoul, Korea

<https://doi.org/10.32797/jtur-2021-5>

Research Report

Abstract

Although Korea's long working hours are well-known, the work schedules of individuals with different socioeconomic characteristics have not been studied. This paper examines the timing of paid work and socioeconomic characteristics associated with work schedules in Korea. Using data from the Korean Time Use Survey (KTUS) 2014 and based on the analysis of employed people aged from 19 to 64, we found that a higher proportion of men work every hour of the day as compared to women. Women tend to start work late in the day, but a similar proportion of women and men work in the afternoon and evening. About 5 % work during non-standard hours, such as in the evening, at night, and in the early morning, and this percentage increases on the weekends. As in previous literature, divorced men and women or single women tend to work more during non-standard hours during weekdays and weekends. Both occupation and employment status are related to working non-standard hours, showing that women in service sectors and working as an unpaid employee at the family business, and men working in manual labor are more likely than people in other occupations to work during non-standard hours or weekends.

Keywords: Korean Time Use Survey, work schedules, non-standard work hours, socioeconomic characteristics

1. Introduction

Korea has consistently ranked among the top 3 OECD countries for working long hours over the past several decades (OECD, 2018). As social concerns regarding possible adverse effects of long working hours on individuals' health and work-family balance have increased, the Korean government implemented a shorter workweek policy in 2018. Unlike public attention to long working hours, the specific hours during which people work has attracted less scholarly and social attention. Many scholars have noted this lack of attention in other countries, such as the US and European countries (Hamermesh, 1995; Presser, 1999; Presser, Gornick, and Parashar, 2008).

With the expansion of the 24/7 economy in many developed countries, work schedules have diversified in addition to an increased number of daily work hours. As working during non-standard hours (e.g., evening work, night work, rotating shift, and weekend work) has become common, more consideration has been given to the timing of paid work (Hamermesh, 1995, 1998; Glorieux, Mestdag, and Minnen, 2008; Minnen, Glorieux, and van Tienoven, 2016; Presser, Gornick, and Parashar, 2008). However, this topic is still under-studied, and previous studies on work schedules or non-standard work hours have been conducted mostly in western countries. Particularly in Korea, studies on non-standard work hours or of factors associated with different work schedules have not been conducted, which can be attributed to the lack of available data.

To fill the gap in our knowledge of work schedules and working circumstances in Asian countries, we focus on the case of Korea. Using data from the 2014 Korea Time Use Survey (KTUS hereafter), we examined the timing of paid work and analyzed characteristics associated with work schedules in Korea. Based on the analysis of individual level of data, we attempted to answer the following research questions. First, what proportion of employed people in Korea spend time in paid work during each hour of the day? We aimed to identify an overall pattern of working hours and proportions of people working at non-standard hours, such as late night or early morning or during weekends. Second, do individuals' work schedules differ by their socioeconomic characteristics? This would allow us to examine who works when in Korea.

Given that individuals' daily lives and well-being can be different depending on their working circumstances, such as when they work and how long, our study of the timing of paid work and factors associated with this may help us understand possible effects of individuals' work schedules on their health, family life, and social life. In addition, if previous findings (i.e., a general tendency of people with low human capital to work non-standard schedules) from Western countries, such as the US and Germany, are consistently observed in Korea, potential discrepancies between socioeconomic status and harmful effects of work schedules can be highlighted.

In this paper, we first briefly review the previous literature on work schedules and non-standard work hours and present information about working circumstances in Korea. We then describe the KTUS data and the socioeconomic characteristics of our sample. Given that work schedules differ by gender, we provide information for women and men separately. Additionally, we conducted separate analyses by gender and by weekdays versus weekends to offer a full picture of Korean workers' lives in terms of work schedules and its association with individuals' socioeconomic characteristics. Further, we discuss the implications of the study and address the importance of paying attention to work schedules.

2. Previous Literature on Working Schedules

Work is an important part of individuals' life in terms of providing financial resources as well as social identity. While scholars have paid attention mostly to the duration of work hours in the past, research on different work schedules has been limited. Hamermesh (1995, 1998) pointed out the disparity in scholars' attention to the total amount of time worked. He urged the importance of understanding "instantaneous" time use (i.e., what people are doing at different times of the day). Minnen et al. (2015) also highlighted that specific work times should be studied more thoroughly.

Presser (1999) reported on the prevalence of non-standard work hours in the US and discussed factors that contributed to the emergence of non-standard work hours. She argued that the expansion of the service sector and the global 24/7 economy, due to technological development, are the main reasons for the rise in non-standard work hours. In another article, Presser (2004) found that proportions of working in non-standard hours varied by individuals' socioeconomic characteristics (e.g., men, ethnic minority, and single mothers tended to work more non-standard hours than other groups) and discussed the effects of working non-standard hours on marital relationships, family life, and health.

Comparing the US and Germany, Hamermesh (1995) found that mostly people with low human capital or minority worked non-standard hours and self-employed people were more likely to work on weekends compared to others. Presser et al. (2005) focused on gender differences in working non-standard hours by analyzing labor force surveys from 12 European countries. Despite noted variances by countries, they found gender differences. For example, men were more likely than women to work in non-standard hours, but women were more likely to work on the weekends.

Analyzing Belgian data, Minnen et al. (2016) described 10 different types of weekly work patterns. They revealed that only 40% of employed people in Belgium had a true standard full-time workweek and that diverse work patterns existed even in a standard workweek. Differences in work schedules by gender and socioeconomic characteristics were also noted. For example, blue-collar workers were more likely than white-collar workers to work during non-standard hours. Job characteristics influenced men's likelihood of working during standard or non-standard hours. In contrast, for women, family characteristics (e.g., having a child or spouse's work schedules) played a great role.

Glorieux et al. (2008) examined changing work schedules in Belgium by analyzing Belgian Time Use Survey data in 1966 and 1999. Contrary to the common belief and the evidence from the US, they found that work performed during non-standard hours decreased in 1999 compared to 1966 in Belgium. They also identified 12 types of work schedules and suggested that men and semi-skilled or manual workers tended to work more during non-standard hours.

Although previous studies on work schedules have often differentiated standard work hours from non-standard work hours, the consensus on the definition of non-standard work hours has not been reached. In the US, standard work hours are generally considered between 8 am and 4 pm. Evening work is often considered from 4 pm until midnight, and night work is considered between midnight and 8 am (Hook and Wolfe, 2013; Presser, 2000; Wight et al., 2008). However, in other countries, such as Australia and Belgium, non-standard work hours are defined as either between 7 pm and 8 am or between 7 pm and 5 am (Craig and Brown, 2017; Minnen et al., 2016), which may be attributed to the working circumstances in each country. Despite the different definitions of non-standard work hours and disparity in the prevalence of working during non-standard hours by country, the findings consistently show that people with low human capital are more likely to work during non-standard hours.

2.1 Working Circumstances in Korea

As is well known, the average annual hours worked per worker in Korea was 1,967 hours in 2019, with Korea ranked third among OECD countries for hours worked (OECD, 2020). Based on a

national survey of 50,000 employed people aged 15 and over in Korea, Han (2015) reported that 8.2% were part-time workers and the rest were full-time workers. Among full-time workers, 67.4% worked between 36 and 52 hours weekly, and 24.4% worked longer than 52 hours per week. Among those who worked longer hours, 6.6% worked longer than 69 hours per week.

With respect to the timing of paid work, 30.9% worked at least 2 hours between 6 pm and 10 pm (evening work), and 5.1% worked at least 2 hours between 10 pm and 5 am (night work). In terms of long work hours in Korea, evening work encompasses extended work hours in addition to standard work hours. Regarding working on weekends, 61.7% reported working at least twice per month on Saturday, and 24.7% worked at least twice per month on Sunday (Han, 2015). Weekend work, therefore, is more prevalent than evening or night work.

The abovementioned information provides a glimpse of the working circumstances in Korea, such as long working hours and proportion of working nonstandard hours. However, they do not offer detailed information about a specific work time frame when work started and ended, nor about which individual characteristics are related to work schedules. Addressing these limitations, the present study draws on individual level data from a nationally representative time use survey to examine the work schedules of employed people in Korea and associations between individuals' socioeconomic characteristics and their work schedules.

3. Methods

3.1 Data and Sample Descriptions

We used data from the 2014 Korean Time Use Survey (KTUS). The data contains a nationally representative sample of about 12,000 households comprising approximately 27,000 respondents. All household members over 9 years of age responded to questionnaires about socio-demographic information and completed time diaries for two consecutive days reporting activities in 10-minute intervals. Because separate analyses for the first and second days produced similar results, we provide the results from the first day of the survey. As in time use survey data in other countries, KTUS has information about the beginning and ending time of every activity. Therefore, we can calculate the total amount of time for a specific activity as well as when it started and ended.

Among total respondents, we limited our sample to 10,033 currently employed people aged 19-64 years who reported paid work during the selected diary day. Our sample comprised 5,802 males and 4,231 females. Table 1 provides descriptive statistics of our sample. Most respondents were married, but a higher proportion of men were married (77%) compared with women (65%). A slightly higher proportion of females were single than males (22% and 19% respectively). About 61% of respondents reported their health status as fair or bad, with a higher proportion of females reporting relatively poor health than males (64.6% and 58.7% respectively).

With respect to educational attainment, 36.4% finished high school, and 19.6% attained two-year college education with similar proportions by gender. However, middle school or lower education, and four-year college and higher categories showed different proportions by gender. For example, 14% completed middle school or lower education, with a higher proportion of females compared to males. About one-third of respondents attained four-year college and higher

education, with a higher proportion of males than females, 34% and 25% respectively. Despite an overall high educational achievement in Korea, a slight gender disparity was still noted.

Table 1: Descriptive Statistics for Adult Workers by Gender

		Total	Women	Men
Number of observations		10,033	4,231	5,802
Marital status	Single	20.2	22.3	18.7
	Married	71.9	65.5	76.7
	Divorced	5.2	6.9	3.9
	Widowed	2.7	5.3	0.8
Self-reported health	Fair or bad	61.2	64.6	58.7
	Very good/good	38.8	35.4	41.4
Education	Middle school or lower	13.6	17.8	10.7
	High school	36.4	37.7	35.4
	Two-year college	19.6	19.5	19.7
	Four-year college	25.0	20.9	28.0
	Graduate school	5.4	4.2	6.3
Occupation	Managerial/professional	19.3	21.8	17.4
	Office	17.9	16.6	18.8
	Service	26.1	34.4	20.0
	Manual labor	31.5	22.3	38.2
	Agriculture	5.3	4.9	5.6
Employment status	Employer/self-employed	23.8	16.1	29.4
	Regular	51.5	45.6	55.8
	Temporary/daily	19.4	26.9	13.8
	Unpaid employee at family business	5.4	11.4	1.0
Individual monthly income	Up to \$2,000	49.4	74.8	30.8
	More than \$2,000	50.6	25.2	69.2
Gender role attitudes	Conservative	36.4	23.4	45.9
	Liberal	63.6	76.6	54.1
Area	Rural	7.4	7.6	7.2
	Urban	92.7	92.4	92.9
Day type	Weekdays	75.4	75.9	75.0
	Weekends	24.6	24.1	25.0
Average age (years)	-	43.5	42.9	44.0
Average weekly work hours	-	48.2	44.7	50.8
Average number of children	-	0.35	0.35	0.35

Regarding occupation, most participants worked in manual labor jobs, followed by service work, managerial/professional, office worker, and agriculture. Both manual labor and service work showed a big difference in distribution by gender. For example, 38% of male respondents worked as manual laborers, while 22% of females worked in manual labor jobs. In contrast, 34% of female

respondents worked as service workers, while 20% of males worked in service sectors. Both office work and agriculture showed similar distributions by gender. The reason why the proportion of managerial/professional work was higher for women (21.82%) compared to men (17.41%) is that KTUS includes teacher and nurse as a professional occupation.

Turning to employment status, about half of the respondents were regular/permanent workers, with 10% more males than females. Although employers and self-employed are different in terms of size of business or number of employees, they are combined here because both are owners and have autonomy over how long and when to work. Overall, 24% were employers/self-employed, with a higher proportion of males (29%) compared to females (16%). Both temporary/daily workers and unpaid employees in family businesses are the most unstable employment status, and are over-represented by women. For example, about 19% of all respondents were temporary/daily workers, with the proportion of women being almost twice as high as that of men, 27% and 14% respectively. Unpaid employees in family businesses were mostly women.

Consequently, individual monthly income, which is based on 12-point scale from no income to \$5,000 or more, varied by gender. Overall, an average of respondents' monthly income was 6 on a 1 to 12 scale, which was between \$2,000 and \$2,500. Then, we categorized those whose monthly income was \$2,000 and lower as "low" and those whose monthly income was higher than \$2,000 as "high."

Gender Role Attitudes were measured with the following question, "What do you think about the following statement, 'man as a breadwinner woman as a housewife'?" The response categories were "1= very agree," "2= somewhat agree," "3= somewhat disagree," "4= very disagree." Those who agree are grouped as 'conservative' and those who disagree are grouped as 'liberal'. Overall, a higher proportion of men are in the 'conservative' grouping (45.9%) compared to females (23.4%). Roughly 7% of respondents lived in rural areas and about 24% of respondents completed the survey and worked on weekends.

The mean age of respondents was about 43 years old with little difference between men and women. An average weekly work hour was about 48 hours, with males working 6 hours longer on average than females. The average number of children who are 18 years old and younger and currently living in the same household was 0.35. This reflects the wide age range and various marital status of respondents.

3.2 Analysis plan

The analysis of data is presented as follows. First, Figure 1 and Figure 2 show the proportions of workers reporting that they work for pay during each hour of the day on weekdays (Figure 1) and weekends (Figure 2). These figures will describe the general pattern of participation in paid work over the day. Then we look at the average time female and male Korean workers spend on paid work during weekdays and weekends. After examining average minutes of working time per day, we divide one day into two-time segments: from 6 am to 6 pm (standard work hours) and from 6 pm to 6 am (nonstandard work hours). We examine the averages minutes on these standard and nonstandard work hours. This descriptive analysis will show the overall snapshot of work hours for Korean workers. Finally, we estimate OLS regression models of time on paid work on

weekdays and weekends separately for women and men. These regression results suggest how Korean employees' work times vary with social, economic, and demographic characteristics.

4. Results

4.1 When People Work: Weekdays vs. Weekends

Figure 1 presents the average percentage of people working each hour from midnight until 11 pm during weekdays by gender. Overall, higher percentages of males worked at every hour of the day, reflecting men's longer average daily working hours, except for lunch break between noon and 1pm. However, the gender gap in the percentages diminished between 5pm and 11pm. When we compared differences by gender, about 3-5% of males but only 1-3% of females worked between midnight and 6am. At 7am, 14% of men were working, and the percentage went up to 32% at 8am. From 9am to 11am, more than 60% of males were working, which increased to 70% at 11am. At noon, the percentage went down to 24% at a lunch break. In the case of working women, only 6% of women were working at 7am, and the percentage increased to 16% at 8am, about half of the proportion of men working during the same hours. Women seemed to start working later than men did maybe due to caring for children in the morning.

Similarly, between 9am and 11am, a slightly lower percentage of women were working compared to men. About half were working at 9am, 60% at 10am, and 65% at 11am. It might reflect the fact that women are more likely than men to take care of children in the morning (Song and Lee, 2021). However, at noon, higher proportions of women compared to men were working, 34% and 24% respectively. Women might be compensating for their late start of the day by working on their lunch break.

In the afternoon, differences by gender became less distinct compared to those in the morning. At 1pm, half of the men and women were working. Between 2pm and 5pm, about 60-65% of men and 55-63% of women were working. At 6pm, one-third of employed people were working regardless of gender. From 7pm until 11pm, the percentages continuously decreased from 25% to 7% for men. For women, the percentages decreased from 22% to 5%. As noted above, early in the morning, the proportion of women working was half of that for men. However, the proportions were quite similar late at night.

Figure 2 depicts the average percentage of people working at each hour of the day during weekends. Although fewer people responded on weekends compared to weekdays, we could see a similar pattern. As on weekdays, on average, higher percentages of males were working at each hour of the day compared to females except at lunchtime. Between 6pm and 9pm, however, slightly higher percentages of women worked than men. Compared to weekdays, in general, lower percentages of people worked from 9am until 6pm, but higher percentages of people worked between 7pm and 7am on weekends. It appears that the working hours of those who worked on weekends might be different from that of those who worked on weekdays.

Figure 1 and Figure 2 describes an overall working pattern of employed people at each hour of the day. We could see that most respondents worked standard hours from 9am to 6pm. After 6pm until 10pm, about 10-30% of people were working. A relatively small percentage of people

worked between 10pm and 6am, although the percentage was a little higher on weekends than on weekdays.

Figure 1: Percentages of Adult Workers Engaging in Paid Work by Hours on Weekdays

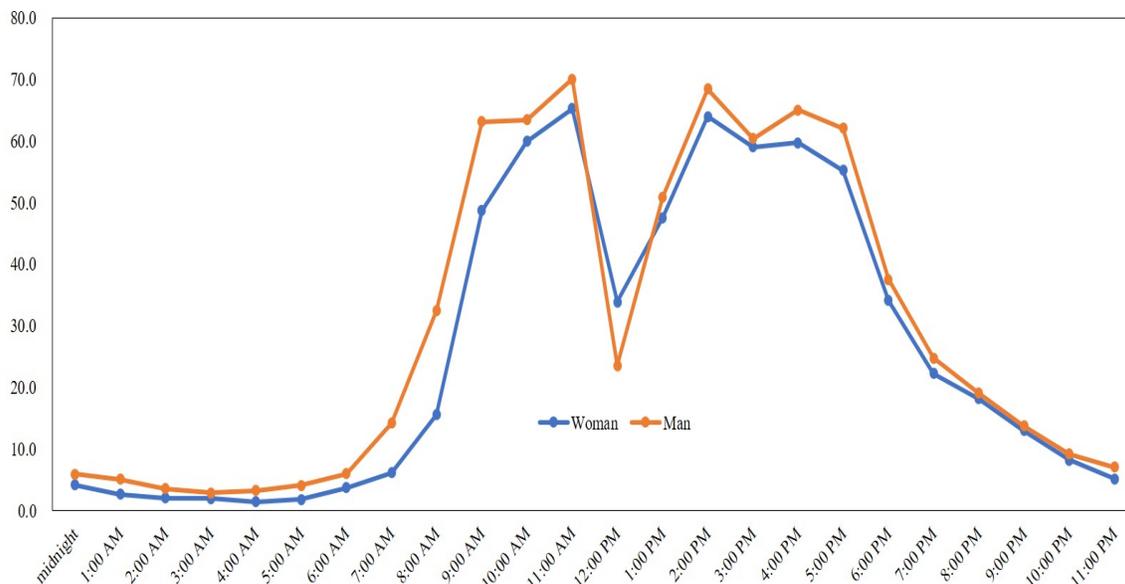
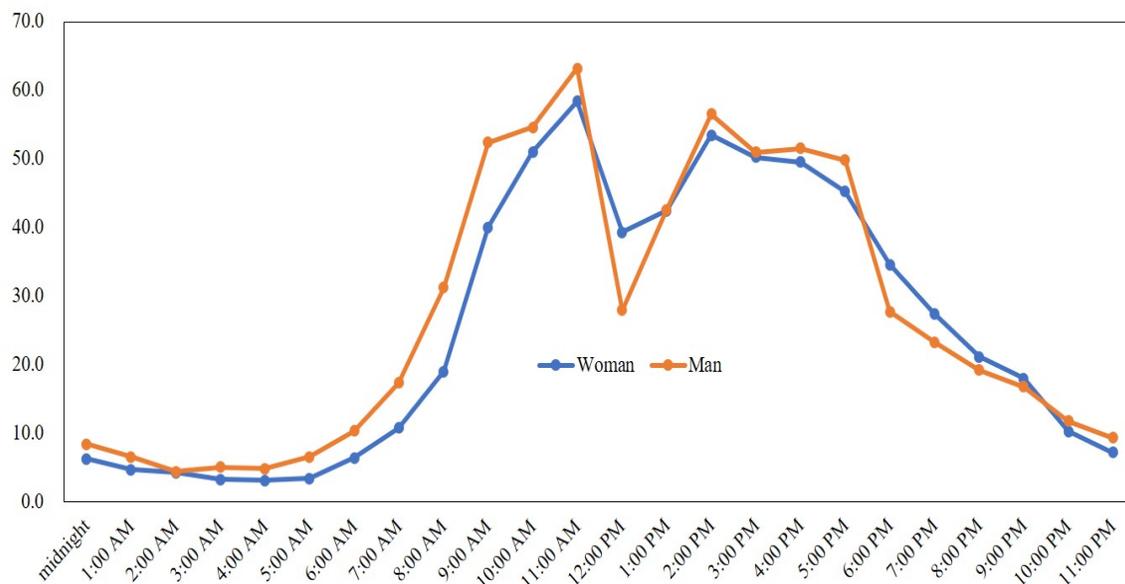


Figure 2: Percentages of Adult Workers Engaging in Paid Work by Hours on Weekends



4.2 How Long People Work across Time Segments

As mentioned above, the definitions of standard hours vs. non-standard hours vary by country, and there is no consensus on the definition of work schedules in Korea. Therefore, we simply divided

the 24 hours of the day into two segments: 1) 6am to 6pm (standard hours) and 2) 6pm to 6am (non-standard hours). Table 2 provides average working minutes for specific time segments during weekdays and weekends. During weekdays, the daily average working time for females was 403 minutes, while for males, it was 456 minutes. Average working time differed across time segments. For example, during weekdays, between 6am and 6pm, the mean working time for women was 337 minutes and for men it was 378 minutes. It dramatically decreased to 65.5 minutes for women and 78 minutes for men between 6pm and 6am.

Compared to weekdays, average daily working time on weekends was slightly lower but was not much different by gender: 389 minutes for females and 420 minutes for males. Between 6am and 6pm, average working time was 302.8 minutes for females and 333 minutes for males. Between 6pm until midnight, working time was similar for males and females at around 86 minutes.

Contrary to our expectation of long working hours in Korea, average working hours in Korea do not appear to be excessively long, but some extreme cases who work long hours magnify the tendency. The relatively small percentage of people working between 10pm and 6am (about 5%) and those working only about 1 hour on average between 6pm and 6am implies that only a few people work during non-standard hours.

Table 2: Daily Average Minutes Spent on Paid Work across Time Segments (Weekdays and Weekends)

Weekdays	Total	6 am ~ 6 pm	6 pm ~ 6 am
Women	403.1	337.6	65.5
Men	456.4	378.1	78.4
Weekends	Total	6 am ~ 6 pm	6 pm ~ 6 am
Women	388.8	302.8	86.0
Men	419.6	333.3	86.2

4.3. Associated Factors of Daily Working Minutes across Time Segments by Gender: Weekdays vs. Weekends

Tables 3 and 4 show the results of the OLS regression analysis of the association between the individuals' characteristics and daily minutes spent in paid work. Models were estimated separately for men and women and for each time segment. Table 3 reports the results from models estimated on weekdays, and Table 4 reports the results from models for weekends.

According to Table 3, the results were different by gender and hours worked. Focusing on women, age and the number of children were not significant regardless of time segments. Marital status was significantly related to the daily working minutes between 6pm and 6am only (that is, non-standard hours). Compared to married women, both single and divorced women tended to work longer minutes between 6pm and 6am. Negative effects of health status and education were consistently maintained. Compared to those who were working in agriculture, individuals in all other occupations tended to work more hours between 6am and 6pm.

Table 3: OLS Regression Analysis of Time on Paid Work across Time Segments by Gender: Weekdays

	Women				Men			
	6 am ~ 6 pm		6 pm ~ 6 am		6 am ~ 6 pm		6 pm ~ 6 am	
	Coef.	S. E.						
Age	1.5	1.8	1.3	1.4	10.6***	1.6	-4.7***	1.4
Age ²	-1.3	2.1	-1.4	1.6	-12.2***	1.8	3.9**	1.6
Marital Status (ref. Married)								
Single	4.5	8.0	36.3***	6.2	-4.7	6.6	-1.6	5.8
Divorced	0.4	9.0	24.7***	7.0	-1.0	10.3	1.7	9.0
Widowed	-3.7	10.7	-1.7	8.3	16.3	23.4	10.1	20.5
Number of Children	0.0	3.6	-3.8	2.8	-6.9*	3.1	1.7	2.7
Health (ref. Good)								
Fair or bad	-14.0**	4.5	-8.3*	3.5	-1.6	3.9	-16.9***	3.4
Education (ref. Middle school or lower)								
High school	-12.3	7.8	7.5	6.0	-19.9**	7.5	0.9	6.6
Two-year college	-29.8**	9.7	-3.1	7.5	-21.9**	8.7	-13.5	7.6
Four-year college or above	-41.3***	9.8	-5.2	7.6	-30.0***	8.5	-16.3*	7.4
Occupation (ref: Agriculture)								
Managerial/professional	37.9*	17.9	3.3	13.8	16.5	15.9	15.5	13.9
Office	67.3***	18.0	-24.5	13.9	35.9*	15.9	5.3	14.0
Service	27.3	17.1	39.7**	13.2	-10.3	15.6	50.5***	13.7
Manual labor	45.6**	17.2	15.3	13.3	34.5*	15.3	28.3*	13.4
Employment Status (ref: Regular)								
Owner	101.5***	5.3	-12.6**	4.1	54.9***	5.3	-8.3	4.6
Temporary/daily	6.7	8.9	-17.4**	6.9	63.9***	9.2	-56.0***	8.0
Unpaid family business	21.0	11.8	26.4**	9.1	-2.3	7.5	13.6*	6.6
Individual Monthly Income (ref: Low)								
High	18.4**	5.5	17.8***	4.2	31.4***	4.9	-1.1	4.3
Gender Role Attitudes (ref: Conservative)								
Liberal	20.2***	5.2	-6.0	4.0	4.3	3.8	3.1	3.4
Living in Rural Areas (ref: Urban)								
Rural	31.9*	12.9	-25.7**	10.0	5.1	12.8	-18.3	11.2
R ²	0.177		0.102		0.118		0.066	
Number of observations	3,213		3,213		4,352		4,352	

Notes: * $p < .05$; ** $p < .01$; *** $p < .001$

However, only office workers and people in manual labor were significantly related to work more hours during standard hours. In terms of the number of working minutes between 6pm and 6am, service workers were working longer than those who were in agriculture. Compared to regular workers, the owner category and the number of working minutes in standard hours were statistically significantly related. In contrast, both owners and temporary workers tended to work less than regular workers, and unpaid employees working in the family business tended to work more non-standard hours. A positive effect of monthly income was observed. That is, higher income was associated with increased daily working minutes regardless of a time frame. Gender role attitudes were only related to working between 6am and 6pm, which means that those who had liberal gender role attitudes spent longer hours in paid work during standard hours compared to those who had traditional gender role attitudes. An opposite direction of the association between

living in rural areas and working minutes during a specific time segment was noted. Those who lived in rural areas reported working more minutes during standard hours but less during non-standard hours.

Unlike the results for women, age variables were significantly associated with men's working minutes both in standard and non-standard hours while the marital status was insignificant. The number of children was associated only with the decreased working time between 6 am and 6 pm. Those with good health status spent less time in paid work during non-standard hours compared to their counterparts. As in the case of women, educational attainment consistently showed a negative relationship working time both in standard and non-standard hours, and both office workers and manual laborers seemed to work longer hours during standard hours compared to people who work in agriculture. During non-standard hours between 6 pm and 6 am, both service workers and manual laborers tended to work longer than those working in agriculture.

In terms of employment status, both owners and temporary workers worked longer than regular workers between 6 am and 6 pm. However, the effect was reversed during non-standard hours; that is, these two types of workers spent less time in paid work compared to regular workers. Positive effects of monthly income and liberal gender role attitudes were only found working time between 6 am and 6 pm.

Table 4 provides the results of OLS regression analysis, showing the relationships between the various factors and working time on the weekends during specific time segments. Similar to the results for weekdays, age-related variables were only significant for men. The effect of marital status on working during non-standard hours was somewhat different on weekends compared to weekdays. For example, only divorced women working longer time in non-standard hours on weekends than married women. The same tendency was observed for men, which was different from the results observed for weekdays, as shown in Table 3. Health status was negatively related to working time during weekends with a slight difference by gender. Contrary to the results for weekdays, the effects of education became either insignificant or weak.

The effects of the occupation were non-existent for the working time between 6 am and 6 pm regardless of gender, which was different from the results of weekdays. Only service workers, both men and women, were working a longer time during non-standard hours than farmers. Compared to regular workers, owners tended to work longer hours during standard hours, both males and females. In contrast, only unpaid female employees working in the family business tended to work a shorter time. Regarding men, both owners and temporary workers worked more during standard hours, while temporary workers worked less in non-standard hours. Gender role attitudes and living in rural areas did not show any significant relationships with working time during weekends.

In sum, divorced men and women, along with single women, tended to work more during non-standard hours on weekdays and weekends. Additionally, service workers tended to work longer during non-standard hours, both on weekdays and weekends, regardless of gender, which seemed to reflect the 24/7 economy that characterizes particularly in-service sectors. For men, manual laborers seemed to work longer hours than people who are in agriculture, regardless of time segments. Female unpaid employees in the family business worked longer hours between 6 pm and 6 am on weekdays. All these findings were consistent with the results of previous studies,

which documented that people with relatively few resources or human capital tend to work in non-standard hours.

Table 4: OLS Regression Analysis of Time on Paid Work across Time Segments by Gender: Weekends

	Women				Men			
	6 am ~ 6 pm		6 pm ~ 6 am		6 am ~ 6 pm		6 pm ~ 6 am	
	Coef.	S. E.						
Age	4.1	3.4	1.5	2.6	7.2**	3.0	-8.1***	2.4
Age ²	-4.2	3.9	-1.7	3.0	-6.5	3.4	8.3**	2.7
Marital Status (ref. Married)								
Single	27.4	18.5	19.8	14.2	11.9	13.7	-5.3	10.9
Divorced	-14.9	16.2	37.4**	12.4	-12.9	19.7	36.0*	15.6
Widowed	13.5	17.9	17.9	13.7	-51.0	37.0	11.9	29.3
Number of Children	1.1	8.3	-7.2	6.4	-13.3*	6.8	3.2	5.4
Health (ref. Good)								
Fair or bad	-34.4***	9.4	-26.1***	7.2	-10.1	8.1	-16.7*	6.4
Education (ref. Middle school or lower)								
High school	13.2	13.3	-3.1	10.2	-28.3*	13.7	10.9	10.8
Two-year college	-8.8	18.6	-3.7	14.3	-35.4*	17.0	11.1	13.5
Four-year college or above	-16.0	19.3	-9.1	14.8	-59.7***	16.7	17.9	13.2
Occupation (ref: Agriculture)								
Managerial/professional	-16.1	35.5	-18.4	27.2	-10.5	33.7	-0.1	26.7
Office	-30.5	36.1	-29.0	27.6	-16.1	33.8	-6.0	26.8
Service	7.0	32.8	56.3	25.1	1.1	32.6	59.3*	25.8
Manual labor	31.6	32.9	5.2	25.2	24.0	31.9	29.8	25.3
Employment Status (ref: Regular)								
Owner	57.8***	10.7	-8.2	8.2	30.5**	10.6	6.9	8.4
Temporary/daily	-10.6	16.0	15.6	12.2	50.8***	15.9	-38.5**	12.6
Unpaid family business	-33.8	20.4	28.5	15.6	4.0	13.9	12.6	11.0
Individual Monthly Income (ref: Low)								
High	-3.1	12.4	32.9**	9.5	11.0	9.6	-7.1	7.6
Gender Role Attitudes (ref: Conservative)								
Liberal	-6.5	10.4	6.0	7.9	-13.5	8.0	-5.2	6.3
Living in Rural Areas (ref: Urban)								
Rural	31.1	28.1	-26.5	21.5	-4.0	29.8	-13.3	23.7
R ²	0.079		0.156		0.072		0.080	
Number of observations	1,018		1,018		1,450		1,450	

Notes: * $p < .05$; ** $p < .01$; *** $p < .001$

5. Conclusions

Because of increased scholarly attention to work schedules in addition to the total amount of work, this paper focused on the case of South Korea, as a limited empirical analysis of working circumstances has been conducted in eastern compared to western countries. Starting with the description of the proportions of employed people working at each hour of the day, we examined the associations between the various demographic characteristics of employed people in Korea and

working during specific time segments on weekdays versus weekends. Recognizing the importance of a thorough analysis of work timing, we used the 2014 KTUS data to explore in detail the working schedules of people.

Based on the analysis of employed people aged 19-64 years, our findings showed that a larger proportion of men than women work during each time segment on weekdays while a slightly higher proportion of women than men work on weekend evenings between 5pm and 10pm. The average daily working minutes were also longer for men than women. Women tend to start work late in the morning, but the proportions of women working in the afternoon approach those of men in the afternoon until evening.

Concerning factors influencing people's work schedules, health status was consistently related to working less both on weekdays and weekends regardless of gender. The effect of marital status was different by gender and by weekdays versus weekends. During weekdays, only single and divorced women worked longer non-standard hours compared to married women. However, during weekends, divorced men also worked longer non-standard hours. Workers in service sectors consistently worked longer time in non-standard hours, both on weekdays and weekends, regardless of gender. Those who worked in manual jobs worked longer than those who worked in agriculture on weekdays. Female unpaid employees working in the family business seemed to work longer non-standard hours compared to regular workers on weekdays.

As mentioned earlier, these results are consistent with those from previous studies conducted in Western countries, suggesting that people with low human capital tend to work longer non-standard hours than their counterparts. Given that working non-standard hours disturbs not only biological rhythm but also coordination with others (Fenwick and Tausig, 2001; Harrington, 2001; Totterdell, 2004), working in non-standard hours may have negative outcomes for individuals in terms of health and well-being, depending on their socioeconomic status. Although this study did not investigate the plausible effects of working hours on family life, individuals' life satisfaction, or health, it is the first step to document Korean people's working hours and related factors. We hope that this study sheds light on the relatively less studied topic on the types of people working during specific hours and broadens our understanding of the working life of employed people in Korea.

Acknowledgement

This research was supported by National Research Foundation of Korea (NRF-2020S1A3A2A03096777).

References

- Craig, L and Brown, J. E. (2017) 'Feeling rushed: Gendered time quality, work hours, non-standard work schedules, and spousal crossover.' *Journal of Marriage and Family*, 79(1): 225-242. <https://doi.org/10.1111/jomf.12320>

- Fenwick, R and Tausig, M. (2001) 'Scheduling stress: Family and health outcomes of shift work and schedule control.' *American Behavioral Scientist*, 44(7): 1179-1198.
<https://doi.org/10.1177/00027640121956719>
- Glorieux, I, Inge, M. and Minnen, J. (2008). 'The coming of the 24-hour economy?' *Time and Society*, 17(1): 63-83. <https://doi.org/10.1177/0961463X07086310>
- Han, S.H. (2015). 'An analysis of work hours.' *2015 Research Report* Korean Statistics Research Institute.
- Hamermesh, D.S. (1995). 'Who Works When? Evidence from the US and Germany.' *Working paper of National Bureau of Economic Research*.
- Hamermesh, D.S. (1998). 'When We Work.' *The American Economy Review*, 88(2): 321-325.
- Harrington, J. M (2001) 'Health effects of shift work and extended hours of work.' *Occupational and Environmental Medicine*, 58: 68-72. <http://dx.doi.org/10.1136/oem.58.1.68>
- Hook, J. L and Wolfe, C. M (2011) 'Parental involvement and work schedules: Time with children in the United States, Germany, Norway and the United Kingdom.' *European Sociological Review*, 29(3): 411-425. <https://doi.org/10.1093/esr/jcr081>
- Minnen, J, Glorieux, I., and van Tienoven T.P. (2016). 'Who Works When? Towards a Typology of Weekly Work Patterns in Belgium.' *Time and Society*, 25(3): 652-675.
<https://doi.org/10.1177/0961463X15590918>
- OECD (2018). <https://data.oecd.org/emp/hours-worked.htm>
- OECD (2020). <https://data.oecd.org/emp/hours-worked.htm>
- Presser, H.P. (1999). 'Toward a 24-hour Economy.' *Science*, 284(5421): 1778-1779.
<https://doi.org/10.1126/science.284.5421.1778>
- Presser, H.P. (2004). 'The Economy that Never Sleeps.' *Contexts*, 3(2): 42-49.
<https://doi.org/10.1525/ctx.2004.3.2.42>
- Presser, H.P., Gornick, J.C., and Parashar, S. (2008). 'Gender and Non-standard Workhours in 12 European Countries.' *Monthly Labor Review* February 83-103.
- Song, Y. J. and Lee, Y. S (2021). 'Work Hours, Work Schedules, and Subjective Well-Being in Korea.' *International Sociology*, 36(1): 25-48.
<https://doi.org/10.1177/0268580920949724>
- Totterdell, P. (2004) 'Work Schedule.' Edited by Barling, J., Kelloway, E. K., and Frone M. R. *Handbook of Work Stress* 35-62. Sage Publication.
- Wight, V.R., Raley, S.B. and Bianchi, S.M (2008) 'Time for children, one's spouse and oneself among parents who work non-standard hours.' *Social Forces* 87(1): 243-271.
<https://doi.org/10.1353/sof.0.0092>