Factors Influencing Sexual Satisfaction in Men and Women: A Study in Japan

Aguru Ishibashi[a]

Abstract

Sexual satisfaction is one of the key drivers of human well-being as it enhances good relations to others. Factors influencing sexual satisfaction, however, may be different between men and women due to possibly different purposes of sexual intercourse. The literature reveals that the Japanese people have a lower level of happiness, frequency of intercourse, and sexual satisfaction than the other countries. Thus, we analyzed the data from "Survey on Work and Sex, 2005," an online survey in Japan with 324 male and 286 female respondents. We conducted OLS regressions of sexual satisfaction for both sexes. Though frequency of intercourse had a positive effect on sexual satisfaction in both sexes, other results indicated that the drivers of sexual satisfaction are different between men and women. For males, younger sexual debut and present partner being the only sexual partner increased sexual satisfaction. For females on the other hand, duration of conversation with the partner increased sexual satisfaction only for women. These results indicate that sexual intercourse means self-satisfaction for men, whereas communication with the partner for women. This collision of different expectations might spoil good relation between partners. Trying to communicate with the partner in sexual intercourse and daily conversations would promote satisfaction and well-being for both sexes.

Keywords

This study aims to examine the differences between men and women in terms of factors that determine sexual satisfaction. Intercourse is important because it expresses the quality of a relationship (Laumann et al. 2006) with a partner; therefore, it is fair to say that examining sexual satisfaction with a partner involves examining relationship satisfaction. Moreover, Jex (2020) said that the intent of intercourse with a partner differs between men and women. In men, getting sexual pleasure, which was the most common choice of answer, was approximately 69.8% as opposed to 24.4% for women. The second most common answer was expressing affection, which was 56.5%. However, in

women, the most frequent choice of answer was expressing affection, which was 56.1% and the second most common answer was communication, which was 45.1% as opposed to 37.1% for men. Furthermore, in females, partners requesting them to have intercourse was 27.8%, whereas in males it was 7.0%.

Many studies have reported that sexual

[a] Senshu University

Corresponding Author:
Aguru Ishibashi, Graduate School of Humanities, Senshu University, 2-1-1 Higashi-mita, Tama-ku, Kawasaki-shi, Kanagawa-ken 214-8580, Japan.
Email: ishi14.a@gmail.com

satisfaction is proportional to relationship satisfaction (Byers 2005; Cruz and Caringal-Go 2021; Heiman et al. 2011; Sprecher 2002; Ziaee et al. 2014), which is important in happiness studies. Yeh et al. (2006) stated that sexual satisfaction affects marital satisfaction; furthermore, Schmiedeberg et al. (2017) analyzed panel data and came to the same conclusion. In addition, Meltzer et al. (2017) confirmed that sexual satisfaction increased in newlyweds after intercourse, followed by increased relationship satisfaction. This suggests that intercourse determines the quality of a relationship with a spouse.

Many surveys reveal that Japanese sexual satisfaction is lower than that in other countries. According to Durex (2005), Japanese sexual satisfaction is the second lowest among 41 countries. Another survey conducted by TENGA (2018) revealed that Japanese sexual satisfaction is the lowest among 18 countries. Laumann et al. (2006) found that compared to 29 countries, Japan belongs to the lowest sexual satisfaction group. However, Heiman et al. (2011) found that compared with Japan, Brazil, Germany, Spain, and the United States (hereinafter the U.S.), Japanese men have higher sexual satisfaction, 2.62 times more than U.S. men, and Japanese women have higher sexual satisfaction, 4.32 times more than Japanese women in the U.S. However, Heiman et al. (2011), with contrary results as compared to another study and survey, might have bias caused by advanced age, because the subjects in his study were men and women aged between 40–70 years.

Examining the factors of sexual satisfaction is important due to the ripple effect on relationship satisfaction and happiness studies, and the concern that Japanese sexual satisfaction is lower than that in other countries. The Japanese happiness ranking is lower than that in other developed countries (Helliwell et al. 2021). To increase well-being and satisfaction with intercourse, which is one form of communication with the partner, it might be important to examine the effect of this factor on sexual satisfaction. Moreover, as mentioned, there is a different purpose for

intercourse between men and women.

To sum up, this paper answers the following questions.

Research Question: Which factors increase sexual satisfaction? Moreover, are the factors affecting sexual satisfaction different between men and women?

PREVIOUS STUDY AND HYPOTHESIS

Previous studies have reported that high frequency of intercourse increases sexual satisfaction (Heiman et al. 2011; Schmiedeberg et al. 2017). Moreover, the frequency of intercourse increases familial satisfaction (Yamamura 2014). However, whether the frequency of intercourse is linear or not leaves room for discussion because as per the result, there is no linear association (Muise, Schimmack and Impett 2015). Furthermore, regarding time spent on intercourse, although the subjects were only Japanese women, when comparing the actual intromission time to desired intromission time, desiring more time was 43.0%, desiring the same amount of time was 38.7%, and desiring less time was 18.3% (Nakajima et al. 2010). This result shows that spending more time on intercourse is fine.

Moreover, previous studies related to happiness and intercourse state that the frequency of intercourse and fewer sexual partners increase happiness. Several prior studies have reported that a higher frequency of intercourse increases happiness (Blanchflower and Oswald 2004; Laumann et al. 2006; Wadsworth 2013). Blanchflower and Oswald (2004) and Cheng and Smyth (2015) state that happiness is maximized if the number of sexual partners in the previous year is one. Moreover, in the case of males, subjects with a sexual debut after marriage reveal that their marital relationship is more solid than that of subjects having a sexual debut before marriage (Sandfort et al. 2008).

Moreover, previous studies found that a later sexual debut age increased satisfaction with a partner. Harden (2012) divided sexual

debut age into three categories: before 14 years, 14–19 years, and after 20 years of age. She revealed that cases with a later sexual debut showed higher relationship satisfaction with their partner compared to an early sexual debut. Wagner et al. (2015) also mentioned that cases with later sexual debut had better relationships with partners than others.

Hence, we derived the following four hypotheses.

Hypothesis 1: Higher frequency of intercourse increases sexual satisfaction.
Hypothesis 2: Spending more time on intercourse increases sexual satisfaction.
Hypothesis 3: If the present partner is the only sexual partner, sexual satisfaction will increase.
Hypothesis 4: Later sexual debut increases sexual satisfaction.

There may be different factors affecting sexual satisfaction between men and women. Previous studies have mentioned that open conversation on sex with a partner positively affects males and females (Barrientos and Páez 2006) and open conversation on sex with a partner positively affects only females (Yela 2012). Incidentally, the dataset we use does not have an open conversation on sex but has a duration of conversation per day. As far as we can hear and see, previous studies do not mention the effects of daily conversation on sexual satisfaction. However, conversation does affect relationship satisfaction (Busby, Carroll and Willoughby 2010; Lyubomirsky, King, and Diener 2005) which is related to sexual satisfaction. Furthermore, as mentioned above, we can see that men and women have different needs because the male purpose of intercourse is sexual pleasure and affection, whereas the female purpose of intercourse is affection, communication, and their partner requesting them to have intercourse. It is worth noting that only women want communication for the purpose of intercourse. Hence, we propose the following hypothesis:

Hypothesis 5: In the case of females, longer conversation with a partner increases sexual satisfaction.

DATA AND METHODS

Our dataset came from "Survey on Work and Sex, 2005." The study subjects were males and females between 20–59 years of age, who had a spouse or partner cohabiting, and were part-time or contract workers, or self-employed. The male and female sample size was 400 each. The AERA, Asahi Shimbun Company, surveyed the subjects between December 30, 2005, and January 4, 2006. The survey was conducted online.

After omitting the missing variables, we used the male (324), and female (284) analytical samples. The participants reported sexual satisfaction while having sex in the past 12 months.

Methods

We conducted ordinary least squares (OLS) regressions with sexual satisfaction as the dependent variable in the male and female models to test the hypotheses. The independent variables were duration of conversation with partner per day[1], age at sexual debut, whether the subject's partner was the only sexual partner, duration of intercourse, and frequency of intercourse. The control variables were the subject's age, educational background, annual income, number of children, employment status, holidays taken, year of cohabitation, partner's age, and partner's employment status. The analysis was standardized for comparison. This study investigated how the factors affecting sexual satisfaction were strongly related to relationship satisfaction. Moreover, as mentioned above, there was a different purpose for intercourse between men and women. Therefore, we used R software 4.0.5 for the analysis between the two models: males and females.

Dependent Variable

To test this hypothesis, we examined sexual

satisfaction. The survey on work and sex asks, "about contentment of intercourse with a partner." Scores assigned were, one (1) "not satisfied at all" and four (4) "very satisfied."

Independent Variables

To test our hypotheses, we used independent variables for daily life and intercourse. First, we used the duration of conversation with a partner per day about daily life. The options were "less than 1 hour," "1–2 hours," "2–4 hours," "4–6 hours," "6–8 hours," and "over 8 hours." These options were converted into minutes using the median.

Second, regarding intercourse, we used sexual debut age, whether the subject's partner was the only sexual partner, duration of intercourse, and the frequency of intercourse. The options of frequency of intercourse were "3 times per week," "1–2 times per weeks," "2–3 times per month," "1 time per month," "1 time per 2 months," "1 time per 6 months," "1 time per year," "having physical intimacy, but not having intercourse," and "not having physical intimacy and intercourse." Because the cases answering "having physical intimacy, but not having intercourse," and "not having physical intimacy and intercourse" did not answer sexual satisfaction, due to survey design, we omitted the cases. The options of the rest of the cases were converted into days with the median. The options of duration of intercourse were "2 hours or more," "1–2 hours," "30 minutes–1 hour," "10–30 minutes," and "10 minutes or less," which were converted into minutes with the median. The options of sexual debut age were "before 14 years of age," "15–19 years," "20–24 years," "25–29 years," "over 30 years of age," and "the others." We treated "the others" as having a sexual debut at over 40 years of age because the subject's age was 50–59 years. We handled "before 14 years of age," "15–19," and "after 20 years of age" according to a previous study (Harden 2012). We created a dummy variable for whether the subject's partner was his or her only sexual partner, with a score of "having" and "having

done before" as "0" and "not having" as "1."

Control Variables

The control variables used in the analysis were: demographic characteristics, work, and partner variables. First, demographic characteristics included the subject's age, educational background, annual income, and number of children. The subject's age groups were "20–29," "30–39," "40–49," and "50–59," and were calculated based on the median. The educational background was estimated by years of schooling. Specifically, we defined "graduating from university / graduated university" as 16, "graduating from junior college / vocational school" as 14, "graduating from upper secondary school" as 12, and "graduating from lower secondary school" as 9. The annual income groups were "1,000,000 yen or less," "1,000,000–2,999,999 yen," "3,000,000–4,999,999 yen," "5,000,000–6,999,999 yen," 7,000,000–8,999,999 yen," "9,000,000–10,999,999 yen," "11,000,000–12,999,999 yen," "13,000,000–14,999,999 yen," and "15,000,000 yen or more" and was calculated based on the median. Number of children were "0," "1," "2," "3," "4 or more." We defined "4 or more" as 4. We used the number of children as the numeric variable.

Second, the work variables were: worktime per week, employment status, and number of holidays. The grouping for worktime per week was "20 hours or less," "21–34 hours," "35–40 hours," "41–50 hours," "51–60 hours," and "61 hours or more," and these were converted into minutes with the median. The grouping for subject's employment status was "full-time with private companies/ organizations," "part-time," "self-employed," "family employee," "public worker," and "the others." We put "full-timer with private companies/organizations," and "public worker," together as "full time." We put "self-employed," and "family employee," together as "self-employed." Since "the others" was 1 case in each of male and female, we omitted "the others." The grouping for number of holidays was "1 or less per week," "1 per

Table 1: Descriptive Statistics

	Male N = 324			Female N =286		
	Mean	S.D.	Range	Mean	S.D.	Range
Sexual satisfaction	2.88	0.71	1–4	2.72	0.72	1–4
Year of schooling	14.54	1.87	9–16	14.07	1.68	9–16
Duration of conversation per day	124.63	100.21	30–540	135.21	98.52	0–540
Worktime per week	49.11	10.70	10–65.5	30.30	14.42	10–65.5
Number of children	1.38	0.99	0–4	1.23	1.14	0–4
Age	38.27	11.02	24.5–54.5	36.18	10.43	24.5–54.5
Annual income	586.57	255.49	50–1600	232.52	211.78	50–1600
Duration of intercourse	41.77	25.40	10–120	37.34	24.19	10–120
Frequency of intercourse	32.49	36.07	1–156	32.55	34.54	1–156
Partner's age	36.94	9.67	24.5–64.5	38.00	10.17	24.5–64.5
Holidays	1.67	0.60	0–3	2.02	0.72	0–3
Year of cohabitation	10.35	7.54	1–22.5	9.55	7.13	0–22.5
Only intercourse partner	38.0%			53.1%		
Intercourse debut age (ref: before 14 years of age)	1.9%			1.4%		
15–19	46.9%			53.1%		
after 20 years of age	51.2%			45.5%		
Employment status (ref: full-time)	81.5%			31.5%		
Part-time	3.4%			57.7%		
Self-employed	15.1%			10.8%		
Partner's employment status (ref: full-time)	18.8%			77.3%		
Part-time	28.1%			4.9%		
Self-employed	8.6%			16.4%		
Non-employment	44.4%			1.4%		

week," "2 per week," and "3 or more per week." We defined "1 or less per week," as 0, "1 per week," as 1, "2 per week," as 2, and "3 or more per week," as 3.

Finally, the variables related to the partner were: age, employment status, and year of cohabitation. The grouping for partner's age was "20–29," "30–39," "40–49," "50–59, and "60 or more" and was calculated based on the median. The grouping for the partner's employment status was "full-time with private companies/organizations," "part-time," "self-employed," "family employee," "public worker," "not employed," and "the others." We put "full-timer with private companies/organizations" and "public worker" together as "full time." We put "self-employed" and "family employee" together as "self-employed." Because "the others" were 3 cases in male and 4 cases in female, we omitted "the others." Previous studies (Yela 2012; Barrientos and Páez 2006; Heiman et al. 2011) mentioned that the duration of

a relationship affected sexual satisfaction. However, because the dataset we used does not have the duration of a relationship, we used years of cohabitation. The grouping for years of cohabitation was "1 year or less," "1–5 years," "5–10 years," "10–15 years," "15–20 years," "20 years or more," and "not living together." We defined "not living together" as 0 and the other options were calculated based on the median.

The descriptive statistics are presented in Table 1. The number of male and female cases were 324 and 284, respectively. Each variable, work time per week, annual income, subject's employment status, a partner's employment status, and whether a present partner was the only sexual partner was significantly different between males and females. However, sexual debut age and frequency of intercourse should be handled with caution because sexual debut at before 14 years of age was a minor case, and in the frequency of intercourse, a floor effect might

Table 2: Results of OLS

	Male		Female	
	β	(SE)	β	(SE)
(Intercept)	.614	(.395)	.384	(.496)
Years of schooling	.124 *	(.054)	.135 *	(.059)
Duration of conversation per day	.090	(.055)	.129 *	(.060)
Worktime per week	− .009	(.055)	− .124	(.083)
Number of children	− .103	(.067)	− .102	(.079)
Age	− .050	(.111)	.023	(.126)
Annual income	.037	(.066)	.037	(.072)
Duration of intercourse	.123 *	(.054)	.146 *	(.059)
Partner's age	.039	(.106)	− .106	(.119)
Frequency of intercourse	.297 ***	(.055)	.215 ***	(.058)
Only intercourse partner	.219 ***	(.053)	− .026	(.060)
Intercourse debut age (ref: before 14 years of age)				
15-19	− .741 †	(.380)	− .527	(.489)
after 20 years of age	− .763 *	(.384)	− .340	(.491)
Year of cohabitation	.128	(.117)	.074	(.112)
Holidays	.045	(.060)	− .035	(.073)
Employment status (ref: full-time)				
Part-time	.274	(.304)	.072	(.160)
Self-employed	− .277	(.172)	− .040	(.238)
Partner's employment status (ref: full-time)				
Part-time	.146	(.157)	− .303	(.270)
Self-employed	.323	(.235)	.168	(.179)
Non-employment	.198	(.143)	.069	(.490)
Adjusted R-squared	.196		.113	
Num. obs.	324		286	

*** p < 0.001; ** p < 0.01; * p < 0.05; † p<0.1

arise because the standard deviation was larger than its means.

RESULTS

The analysis revealed that the same and different factors affect sexual satisfaction in men and women (Table2).[2] The frequency and duration of intercourse affects sexual satisfaction in both men and women. Hence, Hypotheses 1 and 2 were supported. A higher frequency of intercourse increased sexual satisfaction, which was significant at 0.001 for both men and women. A longer duration of intercourse increased sexual satisfaction, which was significant at the level of 0.05, in both males and females. In addition, more years of education increased sexual satisfaction, which was significant at 0.05 in

both males and females.

In males, if the present partner was the only sexual partner, it increased sexual satisfaction and sexual debut at lower age showed higher sexual satisfaction. Hence, Hypothesis 3 was partially supported, although Hypothesis 4 was not supported. If the present partner was the only sexual partner, sexual satisfaction was increased, which was significant at 0.001. On sexual debut age, using reference category like "before 14 years of age," and "15–19 years of age," harmed sexual satisfaction, which was significant at 0.05, and "after 20 years of age" harmed sexual satisfaction, which was significant at 0.1. In other words, sexual debut before 14 years of age had higher sexual satisfaction than other age groups. However, based on the descriptive statistics, sexual debut before 14

years of age was less, and hence the results might be biased.

For only females, the duration of conversation per day was related to sexual satisfaction. A longer duration of conversation per day increased sexual satisfaction, which was significant at 0.05. Hence, Hypothesis 5 was supported. However, whether the present partner was the only sexual partner and sexual debut age were not related to sexual satisfaction in females. Hence, in females, Hypotheses 3 and 4 were not supported.

Robustness Check

As the frequency of intercourse might not be linear, we conducted a reanalysis using the frequency of intercourse as a categorical variable. In the frequency of intercourse, "6 times," "12 times," "30 times," "78 times," and "156 times" increased sexual satisfaction in males (Robustness check 1 in Table 3), using the reference category of "1 time." "6 times" and "12 times" were significant at 0.1. "30 times" was significant at 0.01. "78 times" and "156 times" were significant at 0.001. Checking each standardized partial regression coefficient showed that the frequency of intercourse in males was almost a curvilinear because "156 times" coefficient was lower than "30 times" and "78 times." The frequency of intercourse, "30 times" and "156 times" increased sexual satisfaction in females (Robustness check 1 in Table 4). "30 times" was significant at 0.1, using the reference category that was "1 time." "156 times" was significant at 0.01. Checking each standardized partial regression coefficient, the frequency of intercourse in females was not linear because "2 times" harms satisfaction, "30 times" coefficient is higher than "78 times" and "156 times," and "78 times" is lower than "156 times." To sum up, if we change numeric variables into a category, in males, the result of the frequency of intercourse affecting sexual satisfaction does not change, although it was curvilinear. In females, if we change numeric variables into a category, although it was not linear,

some categories of frequency of intercourse affect sexual satisfaction.

Moreover, because the duration of intercourse may not be linear, we conducted a reanalysis using the duration of intercourse as a categorical variable. As a result, in both males and females, all categories were not significant, using the reference category of "10 minutes" (Robustness check 2 in Table 3 and 4). The duration of intercourse in both males and females was non-linear. In both males and females, "20 minutes" was a negative coefficient, "45 minutes" or more was a positive coefficient, and "120 minutes" coefficient was lower than "90 minutes." In males, "45 minutes" and "90 minutes" had nearly the same coefficient. To sum up, if we change numeric variables into a category, the result that the duration of intercourse does not affect sexual satisfaction change. Hence, Hypothesis 2 was not supported.

Furthermore, because this variable as a numeric variable was significant in females, we conducted a reanalysis using the duration of conversation per day as a categorical variable. In females, "90 minutes," "180 minutes," "300 minutes," "420 minutes," and "540 minutes" increased sexual satisfaction, using the reference category that was "0 minutes"[3] (Robustness check 3 in Table 4). "90 minutes," "420 minutes," and "540 minutes" were significant at 0.05. "180 minutes" and "300 minutes" were significant at 0.1. All the categories had a positive effect on sexual satisfaction. Incidentally, in males, because there was no 0-minute case, "540 minutes" were only significant at 0.01 using the reference category of "30 minutes" (Robustness check 3 in Table 3). However, this result was not robust because "540 minutes" was extremely higher than the other four categories, and the duration of conversation per day as a numeric variable was not significant in males. To sum up, if we changed numeric variables into a category, in the results for females, the duration of conversation per day affecting sexual satisfaction did not change.

Table 3: Robustness Check for Males

	Robustness Check 1		Robustness Check 2		Robustness Check 3	
	β	(SE)	β	(SE)	β	(SE)
Year of schooling	.119 *	(.054)	.122 *	(.054)	.093 †	(.055)
Duration of conversation per day	.077	(.055)	.085	(.055)		
Duration of conversation per day (ref: 30 min)						
90 min					.006	(.066)
180 min					.022	(.068)
300 min					−.052	(.058)
420 min					.014	(.054)
540 min					.160 **	(.054)
Worktime per week	.003	(.055)	−.013	(.055)	−.023	(.055)
Number of children	−.114 †	(.067)	−.111	(.068)	−.118 †	(.068)
Age	−.100	(.111)	−.048	(.111)	−.050	(.112)
Annual income	.045	(.066)	.037	(.066)	.039	(.066)
Duration of intercourse	.134 *	(.054)			.118 *	(.054)
Duration of intercourse (ref: 10 min)						
20 min			−.002	(.096)		
45 min			.114	(.101)		
90 min			.125	(.083)		
120 min			.029	(.056)		
Partner's age	.071	(.106)	.033	(.107)	.048	(.106)
Frequency of intercourse			.297 ***	(.055)	.314 ***	(.055)
Frequency of intercourse (ref: 1 time)						
2 times	.020	(.084)				
6 times	.165 †	(.091)				
12 times	.183 †	(.103)				
30 times	.355 **	(.114)				
78 times	.393 ***	(.100)				
156 times	.263 ***	(.069)				
Only intercourse partner	.209 ***	(.054)	.213 ***	(.054)	.231 ***	(.053)
Intercourse debut age (ref: before 14 years of age)						
15-19	−.405 *	(.190)	−.397 *	(.196)	−.273	(.193)
after 20 years of age	−.397 *	(.191)	−.405 *	(.198)	−.296	(.194)
Year of cohabitation	.145	(.117)	.136	(.118)	.123	(.117)
Holidays	.050	(.060)	.045	(.060)	.072	(.061)
Employment status (ref: full-time)						
Part-time	.059	(.055)	.048	(.055)	.045	(.055)
Self-employed	−.108 †	(.062)	−.098	(.062)	−.097	(.061)
Partner's employment status (ref: full-time)						
Part-time	.071	(.070)	.066	(.071)	.091	(.071)
Self-employed	.114 †	(.066)	.091	(.067)	.101	(.066)
Non-employment	.093	(.071)	.100	(.071)	.126 †	(.071)
Adjusted R-squared	.212		.192		.206	
Num. obs.	324		324		324	

*** p < 0.001; ** p < 0.01; * p < 0.05; † p<0.1

Table 4: Robustness Check for Females

	Robustness Check 1		Robustness Check 2		Robustness Check 3	
	β	(SE)	β	(SE)	β	(SE)
Year of schooling	.147 *	.059	.136 *	.060	.126 *	.059
Duration of conversation per day	.110 †	.060	.129 *	.061		
Duration of conversation per day (ref: 0 min)						
30 min					.424	.290
90 min					.655 *	.331
180 min					.628 †	.325
300 min					.394 †	.215
420 min					.276 *	.107
540 min					.178 *	.090
Worktime per week	−.102	.083	−.123	.084	−.112	.083
Number of children	−.104	.079	−.103	.080	−.064	.081
Age	.056	.126	.027	.128	.040	.127
Annual income	.019	.072	.038	.073	.013	.073
Duration of intercourse	.148 *	.058			.141 *	.059
Duration of intercourse (ref: 10 min)						
20 min			−.008	.123		
45 min			.068	.121		
90 min			.137	.087		
120 min			.060	.066		
Partner's age	−.112	.118	−.105	.120	−.105	.119
Frequency of intercourse			.216 ***	.059	.210 ***	.058
Frequency of intercourse (ref: 1 time)						
2 times	−.077	.092				
6 times	.068	.102				
12 times	.072	.113				
30 times	.249 †	.128				
78 times	.180	.115				
156 times	.210 **	.072				
Only intercourse partner	−.020	.060	−.024	.060	−.011	.060
Intercourse debut age (ref: before 14 years of age)						
15-19	−.202	.247	−.283	.251	−.256	.244
after 20 years of age	−.127	.246	−.192	.252	−.174	.245
Year of cohabitation	.050	.111	.070	.113	.021	.114
Holidays	−.009	.073	−.036	.074	−.035	.074
Employment status (ref: full-time)						
Part-time	.033	.079	0.037	.080	.032	.080
Self-employed	.008	.074	−.013	.075	−.031	.074
Partner's employment status (ref: full-time)						
Part-time	−.056	.058	−.068	.059	−.055	.058
Self-employed	.059	.066	.061	.068	.075	.067
Non-employment	.006	.057	.008	.058	.002	.058
Adjusted R-squared	.138		.107		.127	
Num. obs.	286		286		286	

*** p < 0.001; ** p < 0.01; * p < 0.05; † p<0.1

Table 5: Results of Hypothesis Tests

Hypotheses	Results	Hypothesis Tests
Hypothesis 1: Frequency of or time spent on intercourse increases sexual satisfaction.	If we use numeric and categorical variable, controlling demographic, working, and partner's characteristic have a positive effect.	Supported.
Hypothesis 2: Spending more time on intercourse increases sexual satisfaction.	If we use numeric variable, there is an effect, but, if we use categorical variable, there is no effect.	Not supported.
Hypothesis 3: If the present partner is the only sexual partner, sexual satisfaction is increased.	In males, there is positive effect.	Only male supported.
Hypothesis 4: Later sexual debut increases sexual satisfaction.	In males, younger age has an effect, but, in females, there is no effect.	Not supported.
Hypothesis 5: In case of a female, longer conversation with a partner increases sexual satisfaction.	In females, there is positive effect.	Supported.

DISCUSSION

Table 5 presents the results of the test hypotheses. Thus, Hypotheses 1 and 5 were supported. Hypothesis 3 was partially supported because males had a significant effect on sexual satisfaction only. Hypothesis 4 was not supported. Moreover, Hypothesis 2 was also not supported because we conducted a robustness check and the duration of intercourse did not affect sexual intercourse.

Answering the research question: Factors affecting sexual satisfaction are different between males and females. In men and women, a higher frequency and duration of intercourse increases sexual satisfaction. In women, the duration of conversation per day increases sexual satisfaction. However, in males, whether the present partner is the only sexual partner increases sexual intercourse.

This study suggests that the difference between men and women is a factor affecting sexual satisfaction. Although more frequency and duration of intercourse increases sexual satisfaction in both males and females, in males, whether the present partner is the only sexual partner increases sexual

intercourse and sexual debut age-related sexual satisfaction; in females, the duration of conversation per day is related to sexual satisfaction. However, because cases of sexual debut at before 14 years of age are less than 2%, we need to be cautious while interpreting sexual debut. Moreover, we did not clearly judge the causal relationship between sexual satisfaction and the duration of conversation per day.

These results suggest that the meaning of intercourse differs between males and females. As mentioned above, in males, the meaning of intercourse is getting sexual pleasure and affection. In men, their sexual background affects sexual satisfaction. In short, the male's intention for intercourse is self-satisfaction. However, as mentioned above, in females, the meaning of intercourse is affection, communication, and their partners requesting them to have intercourse. For females, conversation with a partner is related to sexual satisfaction. Previous research has shown that sexual satisfaction is strongly related to relationship satisfaction (Byers 2005; Heiman et al. 2011; Sprecher 2002; Cruz and Caringal-Go 2021; Ziaee et al. 2014). In short, a female's intercourse may involve communication with a partner. Perhaps mismatches in the purpose of

intercourse between males and females might affect sexual and relationship satisfaction.

Future research should focus on sexual satisfaction of the partner and the treatment of physical intimacy. First, it is important to determine whether sexual satisfaction of the partner corresponds with the sexual satisfaction of the subject. This study interpreted the effects of different factors on sexual satisfaction, and stated that the purpose of intercourse between males and females are different. To accurately reveal this interpretation, it is important to analyze the partner's sexual satisfaction. Second, previous research has mentioned that physical intimacy increases sexual satisfaction (Heiman et al. 2011). However, we did not confirm this because the dataset we used did not ask for sexual satisfaction for cases that did not have intercourse with a partner in the past 12 months. Because Japanese intercourse frequency is lower than that in other countries (Durex 2005), knowing whether there is physical intimacy in Japan might be important.

Moreover, because we targeted only Japanese participants, we did not reveal a cultural gap from country to country. Using only Japanese subjects, we found that in males, sexual background affects sexual satisfaction, and in females, communication affects sexual satisfaction. Because we formulated hypotheses referencing previous research studying various country's subjects, this difference between males and females might be universal rather than considering a particular country.

Finally, to increase sexual satisfaction, more communication is important. In both males and females, the frequency of intercourse affects sexual satisfaction; they must increase the frequency of intercourse with a partner. Moreover, because in females, a longer duration of conversation per day increases sexual satisfaction, to obtain a good relationship with a partner, males must increase conversation with their partner and have intercourse. In short, they must communicate with their partners.

Notes

1. Previous studies that used this dataset mentioned that the duration of conversation with a partner does not affect whether respondents cheat or not (Igarashi 2018) but affect the frequency of intercourse in the two-sex models (Igusa 2020).
2. When we conducted analysis using ordered logit, we got the approximate results.
3. We merged "0 minute" and "30 minute" on duration of conversation per day. We conducted reanalysis using reference category "0-30 minute." "90 minute," "180 minutes," and "420 minutes" were significant at 0.05.

References

Barrientos, Jaime and Darío Páez. 2006. "Psychosocial Variables of Sexual Satisfaction in Chile." *Journal of Sex & Marital Therapy* 32:351-68. doi: 10.1080/00926230600834695.

Blanchflower, David G. and Andrew J. Oswald. 2004. "Money, Sex and Happiness: An Empirical Study." *The Scandinavian Journal of Economics* 106(3):393-415. doi: 10.1111/j.1467-9442.2004.00369.x.

Busby, Dean, Jason Carroll and Brian Willoughby. 2010. "Compatibility or Restraint? The Effects of Sexual Timing on Marriage Relationships." *Journal of Family Psychology* 24:766-74. doi: 10.1037/a0021690.

Byers, E. Sandra. 2005. "Relationship Satisfaction and Sexual Satisfaction: A Longitudinal Study of Individuals in Long-Term Relationships." *The Journal of Sex Research* 42(2):113-18.

Cheng, Zhiming and Russell Smyth. 2015. "Sex and Happiness." *Journal of Economic Behavior & Organization* 112:26-32. doi: https://doi.org/10.1016/j.jebo.2014.12.030.

Cruz, Rica Vina and Jaimee Felice Caringal-Go. 2021. "Filipinos Behind Closed Doors: Nonsexual and Sexual Constructs as Predictors of Sexual and Relationship Satisfaction in Filipino Individuals." *Sexuality & Culture* 25(3):807-34. doi: 10.1007/s12119-020-09795-5.

Durex. 2005. "Give and Receive 2005 Global Sex Survey Results."

Harden, K. 2012. "True Love Waits? A Sibling-Comparison Study of Age at First Sexual Intercourse and Romantic Relationships in Young Adulthood." *Psychological Science* 23. doi: 10.1177/0956797612442550.

Heiman, J. R., J. S. Long, S. N. Smith, W. A. Fisher, M. S. Sand and R. C. Rosen. 2011. "Sexual Satisfaction and Relationship Happiness in Midlife and Older Couples in Five Countries." *Archives of Sex Behavior* 40(4):741-53. doi: 10.1007/s10508-010-9703-3.

Helliwell, John F., Richard Layard, Jeffrey Sachs, Jan-Emmanuel

De Neve, Lara Aknin and Shun Wang, eds. 2021. *World Happiness Report 2021*. New York: Sustainable Development Solutions Network.

Igarashi, Akira. 2018. "Who Cheats?". *Kazoku Syakaigaku Kenkyu* 30(2):185-96. doi: 10.4234/jjoffamilysociology.30.185.

Igusa, Go. 2020. "Data Analysis of Sexless Relationships to Determine the Effects of Factors Like Relationship Quality and Number of Vacation Days : How to Restore Japan's Declining Birth Rate, Which Has Been Worsened by the Coronavirus." *Matsuyama University Review* 32(3):25 - 37.

Jex. 2020. *Jex Japan Sex Survey 2020*.

Laumann, E. O., A. Paik, D. B. Glasser, J. H. Kang, T. Wang, B. Levinson, E. D. Moreira, Jr., A. Nicolosi and C. Gingell. 2006. "A Cross-National Study of Subjective Sexual Well-Being among Older Women and Men: Findings from the Global Study of Sexual Attitudes and Behaviors." *Archives of Sex Behavior* 35(2):145-61. doi: 10.1007/s10508-005-9005-3.

Lyubomirsky, S., L. King and E. Diener. 2005. "The Benefits of Frequent Positive Affect: Does Happiness Lead to Success?". *Psychological Bulletin* 131(6):803-55. doi: 10.1037/0033-2909.131.6.803.

Meltzer, A. L., A. Makhanova, L. L. Hicks, J. E. French, J. K. McNulty and T. N. Bradbury. 2017. "Quantifying the Sexual Afterglow: The Lingering Benefits of Sex and Their Implications for Pair-Bonded Relationships." *Psychological Science* 28(5):587-98. doi: 10.1177/0956797617691361.

Muise, Amy, Ulrich Schimmack and Emily A. Impett. 2015. "Sexual Frequency Predicts Greater Well-Being, but More Is Not Always Better." *Social Psychological and Personality Science* 7(4):295-302. doi: 10.1177/1948550615616462.

Nakajima, Koichi, Koichi Nagao, Toshihiro Tai, Hideyuki Kobayashi, Hiroshi Hara, Kazukiyo Miura and Nobuhisa Ishii. 2010. "Duration of Sexual Intercourse Related to Satisfaction: Survey of Japanese Married Couples." *Reproductive Medicine and Biology* 9(3):139-44. doi: 10.1007/s12522-010-0049-2.

Sandfort, Theo G. M., Mark Orr, Jennifer S. Hirsch and John Santelli. 2008. "Long-Term Health Correlates of Timing of Sexual Debut: Results from a National Us Study." *American Journal of Public Health* 98(1):155-61. doi: 10.2105/AJPH.2006.097444.

Schmiedeberg, Claudia, Bernadette Huyer-May, Laura Castiglioni and Matthew D. Johnson. 2017. "The More or the Better? How Sex Contributes to Life Satisfaction." *Archives of Sexual Behavior* 46(2):465-73. doi: 10.1007/s10508-016-0843-y.

Sprecher, Susan. 2002. "Sexual Satisfaction in Premarital Relationships: Associations with Satisfaction, Love, Commitment, and Stability." *The Journal of Sex Research* 37(3):190-96.

TENGA. 2018. *Gekkan TENGA Vol.1_1 Masturbation Sekai chosa Kekka happyo: Nihon No Seiseikatsu manzokudo, Sekaisaikai* (Monthly TENGA Vol.1_1 TENGA Global Self-Pleasure Report: Results Japan's Sexual Satisfaction Ranked Lowest in the World). Tokyo: TENGA. Retrieved December 30, 2021 (https://www.tenga.co.jp/topics-archives/2018/05/28/6295/).

Wadsworth, Tim. 2013. "Sex and the Pursuit of Happiness: How Other People's Sex Lives Are Related to Our Sense of Well-Being." *Social Indicators Research* 116(1):115-35. doi: 10.1007/s11205-013-0267-1.

Wagner, Jenny, Michael Becker, Oliver Lüdtke and Ulrich Trautwein. 2015. "The First Partnership Experience and Personality Development: A Propensity Score Matching Study in Young Adulthood." *Social Psychological and Personality Science* 6(4):455-63. doi: 10.1177/1948550614566092.

Yamamura, Eiji. 2014. "Smokers' Sexual Behavior and Their Satisfaction with Family Life." *Social Indicators Research* 118(3):1229-47. doi: 10.1007/s11205-013-0466-9.

Yeh, Hsiu-Chen, Frederick Lorenz, Kandauda Wickrama, Rand Conger and Glen Elder. 2006. "Relationships among Sexual Satisfaction, Marital Quality, and Marital Instability at Midlife." *Journal of Family Psychology* 20:339-43. doi: 10.1037/0893-3200.20.2.339.

Yela, Carlos. 2012. "Predictors of and Factors Related to Loving and Sexual Satisfaction for Men and Women." *European Review of Applied Psychology* 50:235-43.

Ziaee, Tayebe, Yadollah Jannati, Elham Mobasheri, Taraneh Taghavi, Habib Abdollahi, Mahnaz Modanloo and Naser Behnampour. 2014. "The Relationship between Marital and Sexual Satisfaction among Married Women Employees at Golestan University of Medical Sciences, Iran." *Iranian Journal of Psychiatry and Behavioral Sciences* 8(2):44-51.

Aguru Ishibashi is a Ph.D. student in sociology at Graduate School of Humanities, Senshu University. His scholarly interests are in intergenerational mobility, multigenerational mobility, and well-being. In his Ph.D. dissertation, he analyzes the differential effects of paternal/maternal grandparents on grandchildren's educational attainment and discusses the role of cultural capital in their causal mechanism.