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THE INFLUENCE OF MIGRATION, EDUCATION, AND PARENTS ON THE FERTILITY OF FIRST-GENERATION JAPANESE WOMEN IN THE U.S.

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Abstract:

This study examines fertility of Japanese women who migrated to the United States (U.S.) in the early 1900s. It uses data originally collected from 98 first-generation Japanese immigrants, addressed as Issei, living in Seattle, Washington in the mid 1970s. Main questions are 1) how Issei women's fertility differed based on their levels of educational attainment, and 2) how the natal family fertility influence differed according to their levels of education. The study findings indicate that highly educated women (more than high-school level) had significantly fewer children than other women with lower educational attainment. This finding may relate in part to the levels of education that they had their children obtain. Interestingly, there is no indication that the fertility of these Issei women was positively influenced by the number of children that their natal parents had regardless of their educational levels; on the contrary, the fertility of women who had a high-school level of education was negatively related to their natal family fertility. Several possible factors may be responsible for these patterns, including experience with child-death, reaction to the realities of their immigrant parents, assimilation into society in the U.S., and occupational and regional backgrounds of their natal family.

Keywords:

Fertility; International Migration; Education; Family Structure; Sociodemographic; Japanese Immigrants, Family background; The U.S.; Early 20th century

JEL Classification: J11, J12, J13

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1 Introduction

Reproduction is a human universal, but how individuals and groups of people go about doing so varies tremendously. This variation exists because of a range of factors that can influence fertility, and how individuals are affected by a mixture of factors depends on their cultural and familial orientation, socio-political status, and access to economic resources. This study examines the variation in fertility among first-generation Japanese immigrants who migrated to the United States (U.S.) in the early 1900s; it focuses on three often interrelated factors – migration to a more industrial society, one's level of education, and the influence of one's parents. The goal of this study is to reveal how those factors appear to have influenced their fertility behavior, not only using quantitative methods, but also by looking at individual life histories.

1.1 Theoretical Framework

It is widely accepted that fertility patterns change when a society modernizes from an agrarian system to a capitalistic-industrial structure (see Caldwell, 1982; 1997). From the perspective of the individual, the experience of modernization may take place while living in a given location, but it can also happen because of migration, especially when someone moves to an area more modernized than where they were before. In a capitalistic-industrial structure, there is less of a need for child labor to do demanding agricultural work, and at the same time, children no longer function as such a vital source of old age security for their parents because they are likely to leave home for job opportunities elsewhere (Cain, 1985; 1986). In order to be attractive to employers, as nonagricultural economic opportunities spread and become more competitive, individuals often seek additional education. This shift in behavior is also emphasized and valued in the new social setting, and therefore having advanced education becomes a barometer for success (Handwerker, 1986). As children become more educated, having many children becomes economically burdensome because of the costs associated with extended schooling. Moreover, when adult children leave their natal homes for schooling or jobs, they are likely to form their own nuclear family households and become relatively independent of their parents. In nuclear family settings, the lack of extended family aid substantially increases the psychological and economic burdens associated with parenting. There is both an ideological change in people's attitudes towards parenting and a behavioral inclination to limit the overall family size (Cleland, 2001; Szreter, 1996).

Higher educational achievements for young women in particular appear to be a decisive factor affecting low fertility (Cochrane, 1983). First of all, seeking additional education is likely to delay the age when a woman marries and begins reproducing (Goldscheider and Waite, 1986). Also, because of the knowledge and skills that women gain in school, they are more likely to take on new economic roles and look for jobs outside the home, which may represent aspirations incompatible with having many children (Notestein, 1953). Moreover, education and workforce participation are likely to expose women to wider social networks and alternative ideas. These influences may also tend to reduce a young woman's motivation to have children (Caldwell, Reddy and Caldwell, 1985; Kasarda, Billy and West, 1986; Kirk, 1996). It should be noted that although modernization in general provides women with greater access to education, it rarely results in a uniform level of educational attainment, leading to the development of different

mind-sets and life strategies, and ultimately to intra-generational variation in fertility (see Nosaka, 2012).

Finally, besides modernization/migration and education, parents can also exert an influence on their children's fertility. In part this may be a predisposition passed on biologically/genetically, but parents also can exert significant influence familially/environmentally (Kohler, 2006). In general, a child's family experience growing up is so profound that it can affect one's family life later on (Duncan et al, 1965). Indeed, a child may develop attitudes and behaviors correlated with those of their parents regarding the ideal number of children they want to have, when to begin reproducing, and/or a desired fertility outcome (see Anderton et al, 1987; Axinn, Clarkberg and Thornton, 1994; Barber, 2000; 2001; Blau et al, 2013; Booth and Kee, 2009; Johnson and Stokes, 1976; Kotte and Ludwig, 2011; Murphy and Knudsen, 2002; Thornton, 1980).

Parental influence on fertility, however, may be suppressed under certain conditions. For example, parental influence may be especially minimized for individuals experiencing rapid modernization and/or international migration. Again, such experiences can be associated with rapid social changes that lead some children to adopt attitudes or behaviors distinct from those of their parents. In the new or changing environment, they may have to adjust their fertility strategies to fit new contextual challenges, resulting in a decline of parental influence on their family lives (see Nosaka and Chasiotis, 2010). Also, particularly with regard to migration, children may adopt behaviors that are reactive to what they see their parents experiencing. Some children find it difficult to see their migrant parents working hard in an unfamiliar environment, struggling to be accepted by the host country's majority; consequently, they are likely to try and adopt life strategies distinct from those of their parents (see Hansen, 1938; Koenig, 1952).

Another condition that can diminish the parental influence on one's fertility is the acquisition of a different, or more advanced, education compared to that of one's parents. As discussed above, similar to modernization/migration, education can provide individuals with new knowledge, attitudes, and advanced skills/training; as such, they can develop values and aspirations that are distinct from those of their parents. For such cases, one's fertility behavior may be informed by what they learned and experienced when going to school, rather than what they learned or experienced while they were growing up.

1.2 Study Focus and Scope

This study examines how migration, a woman's education, and a woman's parents influenced the fertility of first-generation Japanese immigrant women who came to the U.S. in the early 1900s. It uses first-hand data collected from first-generation immigrants who provided socio-demographic information not only on themselves, but also on their parents and children. This study is distinct from many previous studies that have focused on quantitative analyses, treating groups of immigrants as aggregated clusters, and/or comparing the behavior of immigrants to that of their descendants (see Blau et al, 2013; Carter, 2000; Foner, 1997; Thornton, 1980). First of all, this study uses both quantitative and qualitative analyses, which can be applied because of the nature of the dataset. Also, it examines the fertility of a group of immigrants not

as an aggregate, but as individuals according to their respective levels of educational attainment. Moreover, it investigates the parental influence on the fertility of first-generation immigrants, rather than how the behavior of an immigrant generation differs from that of their descendants.

The following discussion initially presents quantitative analyses of how the fertility outcomes of migrant women differed according to their levels of education. It then quantitatively examines the parental influence on the fertility of those women by comparing their respective fertilities to those of their mothers. Finally, it interprets those quantitative findings by qualitatively analyzing individual life-history data, including experiences with child death, the education of their children, and their natal family background.

2 Background: Japanese Immigrants in Seattle from the late 1890s to the 1900s

Modernization in Japan began in the second half of 1800s. Being unable to resist foreign pressure, Japan abolished the country's feudal system and opened a number of ports to foreign countries. Under the feudal system, foreign contacts and travels had been extremely limited and restricted, and over 80 percent of the people were peasants. A new government was formally established in 1868 that invested tremendous effort in transforming the country into an industrial-capitalist nation (see Schirokauer and Clark, 2004). Such a transformation was perceived as a means of protecting Japan from foreign intervention (Yanagisako, 1985, p. 18). In order to rapidly modernize, following a Western model the government also set up a new, three-tiered system of education consisting of primary school, middle/high school, and university. Primary school became compulsory for both boys and girls. As industrialization and modernization advanced, the government also set up schools particularly for women's education and vocational pursuits.

The migration of Japanese people to the U.S. began during this period of industrialization and modernization. "The vast majority of Japanese immigrants to the mainland settled in the three Western states of California, Oregon and Washington" (Fugita and O'Brien, 1991, p. 7). In Washington, Seattle was the most popular destination for Japanese immigrants. In the late 1890s and the early 1900s, Seattle was growing as a frontier community with an increasing demand for a wide variety of small-scale services; therefore, Japanese immigrants opened various businesses including restaurants, barber shops, and hotels to serve the expanding needs of working-class whites (Miyamoto, 1984, pp. 10-11; Yanagisako, 1985, p. 3).

Although both Japanese men and women came to the Seattle area, at first most of them were young, unmarried men (Leonetti and Newell-Morris, 1982a). As those men stayed longer, they began marrying and having families, but the number of Japanese women was still very limited at that time. In 1907, the Japanese and the U.S. governments instituted the Gentlemen's Agreement, which terminated Japanese labor migration to the U.S. This agreement ironically invigorated the Japanese community in Seattle because it still permitted the spouses and children of those already living in the U.S. to enter the country (Miyamoto, 1984, p. 11; Yanagisako, 1985, p. 3). Those who were already married summoned their wives and children, and those who were single had marriages arranged with women in Japan, resulting in the immigration of a significant number of Japanese wives.

The Japanese community in Seattle began to expand, associated in large part with the U.S. entry to World War I in 1917, which led to an increase in ship-building activities and a large influx of white workers. These changes created a demand for retail businesses and services, needs that were quickly met by the Japanese community residents (Yanagisako, 1985, p. 3; Schmid, 1944, p. 136). Meanwhile, there were growing anti-Japanese immigrant movements, and Japanese migration to the U.S. was finally halted by the Immigration Act of 1924. For the next 40 years, until the Immigration Act of 1965, few new Japanese people moved to the U.S.

Although the Great Depression damaged their businesses and anti-Japanese sentiment and discrimination continued, the Japanese community generally experienced a respectable level of upward mobility. By the mid 1930's, more than 70 per cent of Japanese immigrants in Seattle had either established independent small businesses (e.g., hotels, restaurants, barber shops, and laundries) or had non-working-class occupations (e.g., clerks, teachers, salesmen, and public officials) (Miyamoto, 1984, p. 13). In the early 1940s, however, they had to relinquish those businesses and occupations, and leave their homes because of the "evacuation" of Japanese Americans during WWII (Yanagisako, 1985, p. 4). By the time war broke out, few immigrant women were still of reproductive age, and they finished having children during the war or shortly thereafter. Subsequently, many families moved back to Seattle. It is estimated that 60 to 70 percent, close to 4,700 individuals, returned to Seattle by 1946. The community soon regained a demographic structure similar to what it had during the prewar period (Leonetti, 1976, p. 61).

3 Methods

This study uses data originally collected by a project that investigated the social and demographic characteristics of multiple generations of Seattle's Japanese American population in the mid 1970s. In order to trace changes in fertility and socio-economic status over their life histories, they were interviewed face-to-face. All methods used to collect the data presented in this paper were approved by the Human Subjects Review Committee, University of Washington, Seattle, WA, and the Human Participants Review Board at Pacific Lutheran University, Tacoma, WA gave additional approval. Details regarding the sampling procedures and data collection strategies can be found elsewhere (see Nosaka and Leonetti, 2018, p. 155; Yanagisako, 1985, p. 265; Leonetti and Newell-Morris, 1982b). First-generation Japanese immigrants are referred to as the *Issei*. The study uses the data on 98 Issei women in the original sample who came to the U.S. before 1925, lived in Seattle prior to World War II, were interned in concentration camps during World War II, and resettled in Seattle before 1950. All those women were married at least once. Seven of them divorced or lost their husbands to death, but did not remarry before the age 45, which is defined as the time when a woman's reproductive life typically ends.

Those 98 women were born between 1881 and 1912 (see Table 1). The mean age at first marriage for these women was 20.95 years. Here, fertility is defined as the number of live-births that a woman has during her reproductive life. All Issei women in the sample had completed their reproduction when the data for this study were collected. The average number of live-births for these women was 4.13. For the present study, Issei women with high fertility are

defined as those with five or more live-births; low fertility women are defined as those with three or less.

These women were divided into three groups according to their levels of education. Group A women had zero to eight years of education; Group B women had nine to 12 years of education (high-school level). Group C women had more than a high-school education, which includes those who had post-high-school technical training, went to college but did not graduate, attained a four-year degree, and/or attained a graduate-level degree. The vast majority of women received and completed their education in Japan before migrating to the U.S., but there were some who were also partially educated in the U.S. There were 38, 47, and 13 women in Groups A, B, and C, respectively. In order to examine parental influence on fertility, this study compared the number of live-births by Issei women to those of their mothers.¹ Some of the Issei women had step-mothers or adopted mothers, and in such cases, half-, step- and adopted-siblings were included. The mothers of Issei women averaged 5.72 live-births (see Table 1); high fertility is defined as those with seven or more and low fertility is defined as those with four or less.

Table 1: Characteristics of Women

	N	Mean	St. Deviation	Range
All	98			
Birth Year		1898.16	5.6069	1881-1912
Age at Marriage		20.949	2.8768	16-28
Live-births		4.133	2.2089	0-13
Parent Live-births ^a		5.722	2.5073	1-12
All ^b	96			
Birth Year		1898.09	5.6440	1881-1912
Age at Marriage		20.917	2.8531	16-28
Live-births		3.969	1.9054	0-8
Parent Live-births ^a		5.779	2.4976	1-12
Group A: 0 to 8 years of education	38			
Birth Year		1897.32	5.5658	1881-1910
Age at Marriage		20.711	2.7004	17-28
Live-births		4.658	2.5918	0-13
Parent Live-births		5.553	2.3561	1-11
Group A ^b	36			
Birth Year		1897.08	5.6284	1881-1910
Age at Marriage		20.611	2.6107	17-28
Live-births		4.250	1.9475	0-8
Parent Live-births		5.694	2.3277	1-11
Group B: 9 to 12 years of education	47			
Birth Year		1899.15	5.2460	1889-1911
Age at Marriage		20.894	2.9506	16-27

¹ The number of live-births by women's mothers does not necessarily reflect the actual, exact family structure that those women experienced before marriage; it should be regarded as a proxy for their natal family structure.

Live-births		4.064	1.9270	0-8
Parent Live-births ^a		5.761	2.7663	1-12
Group C: More than 12 years of education	13			
Birth Year		1897.08	6.7634	1888-1912
Age at Marriage		21.840	3.1582	18-28
Number of Live-births		2.846	1.3445	0-5
Parent Live-births		6.079	2.0600	4-11

^a 1 missing (unknown) case

^b Excluding 2 outlier cases with respect to woman's number of live-births.

Table 1 shows the characteristics of the women in the sample as a whole, and in each educational group. It should be noted that there were two outlier cases in Group A; one woman had 11 births and the other 13. The remaining 96 women had live-births ranging from 0 to eight. Because of the relatively small sample size, the effect of such outliers on the statistical results is unproportionally large, especially when the analyses are run on individual educational groups. Consequently, the two outlier cases have been excluded from the following statistical analyses.

The quantitative analyses were conducted using SPSS software (statistic 24). To examine the educational influence on fertility, t-tests were run to see if the average number of live-births differed between groups A, B, and C. To examine parental influence, paired sample t-tests were run for each group to examine the significance of mean differences by generation and simple correlations were run between the total number of live-births by women and those of their mothers. In order to interpret the statistical results, careful qualitative analyses of the life-history data were conducted, especially with regard to any additional information possibly relevant to a woman's fertility.

4 Results and Interpretation

Regarding the influence of education on fertility, the quantitative results show that there is no significant difference between Groups A and B, but there are differences between Groups A and C, and between Groups B and C (see Table 2). These patterns indicate that women who obtained higher levels of education (more than high-school level) had fewer children. Also, with respect to parental influence, the results show women overall had significantly fewer children than their mothers (see Table 3). This was the case for each educational group, but the mean difference in fertility between Issei women and their mothers is more pronounced for Group C (3.23) than it is for Group A (1.44, excluding the two outliers) or B (1.76).

Moreover, the fertility of Group B women is significantly correlated with that of their mothers, but this correlation is unexpectedly negative. This means that when the mothers of Group B women had many children, their immigrant daughters were likely to have fewer children; likewise, if those mothers had few children, their immigrant daughters were likely to have more children. Furthermore, there is no correlation, either positive or negative, between the fertility of women and their mothers in Groups A and C. It should be noted that there is no statistical difference in the mean year that the women in these three educational groups were born (not displayed in table format). Therefore, overall there is no significant variation in the period of time during

which the three groups of women lived, so this is unlikely to be a factor underlying the differences in group fertility behavior.

Table 2: Significance Value for Difference in the Mean Number of Live-births between Educational Groups

	Group B	Group C
Group A*	n.s.	p=.008
Group B	-----	p=.015

*Excluding 2 outlier cases with respect to woman's number of live-births.

Table 3: Comparison of Fertility between Women and Their Parents -- Paired Sample Correlations and T-tests

Group	N	Correlation	Correlation Sig.	Mean Difference	Std. Dev.	t	df	Mean Difference Sig.
All ^{ab}	95	-.217	.035	-1.8421	3.4435	-5.214	94	.000
A ^b	36	-.134	n.s.	-1.4444	3.2288	-2.684	35	.011
B ^a	46	-.326	.027	-1.7609	3.8308	-3.118	45	.003
C	13	.215	n.s.	-3.2308	2.2043	-5.285	12	.000

^a 1 missing case

^b Excluding 2 outlier cases with respect to woman's number of live-births.

4.1 Educational Influence and Generational Comparison

It is not surprising that the highly educated Group C women had fewer children than their Group A and B counterparts. However, their average number of live-births was quite a bit lower (2.8 versus more than 4, see Table 1). Interestingly, further statistical analyses indicate that there is no significant difference in the mean age at marriage among the three groups, and no statistical relation between their education and employment status (not displayed in the table format).² Contrary to the widely argued effects of a women's education on her fertility (see Goldscheider and Waite, 1986; Kasarda, Billy and West, 1986; Notestein, 1953; Omariba, 2005), the education of Issei women in this study did not appear to delay their age at marriage, nor promote their participation in the workforce. These findings then beg the question: in what way might education be related to such a low number of children for the Group C women?

A close examination of the life-history data shows one noteworthy feature: overall, the children of Group C women were well-educated like their mothers. There were 13 women in Group C, and with the exception of one, at least half of their children acquired a post-high-school education. The single exception was a woman with three children; two of them had high-school degrees and one had a Bachelor of Arts (B.A.). Her husband was a gambler and drinker, wasting all his earnings on his bad habits, so she had to work full-time to take care of the family.

² Cross-tab analyses were conducted to determine a women's educational attainment (Group A, B, and C) and her employment status (not employed, partially employed, or more fully employed) for each age period: 20-24, 25-29, 30-34, 35-39, and 40-44.

Despite this exception, many children of Group C women obtained B.A. degrees, and some even attained advanced degrees, including a Master of Arts and a Law School degree. It has been argued that the education of parent immigrants can affect their children's educational aspirations (see Bauer and Riphahn, 2007; Van Ours and Veenman, 2003), and that parents who wish to have highly educated children will tend to limit their fertility (see Axinn, 1993). It is possible that the highly educated women, in particular, were more likely to want their children to be similarly educated, an aspiration that ultimately resulted in them having significantly fewer children.

Regarding the comparison of fertility between Issei women and their mothers, the immigrants overall had significantly fewer children than their mothers, this being the case for each educational group. Around the time that many Issei were migrating to the U.S. in the early 1900s, Japan was rapidly transforming into a modern, industrialized society, although many families were still engaged in farming. Compared to their mothers, regardless of their education, Issei women were more exposed to modernization when they were young and after they migrated to the U.S.; such an exposure may have resulted having fewer children than their mothers.³ At the same time, the mean difference between the fertility of Issei women and their mothers is most pronounced for Group C. This is reflected by the exceptionally low fertility and relatively high level of education for Group C women compared to those in Groups A and B.

4.2 Parental Influence in Group B

What is most surprising among the quantitative findings is the negative correlation between the fertility of Group B women and that of their mothers. In one way, it would have been understandable if there had been no correlation. When children grow up in a society that differs considerably from that of their parents, they may have to make profound adjustments to the norms and values associated with their new setting (Foner, 1997). Therefore, it would not be surprising to find little to no parental influence on Issei women who migrated to the U.S., where the dominant values and norms, and their socio-familial, and socio-economic environments were considerably different from those in Japan. This, however, was not the case for the Group B women.

Why were Group B women with low fertility mothers likely to have high fertility, and those with high fertility mothers likely to have low fertility? This pattern may relate to one's experience with child-death since it has been argued that child-death experience is likely to promote fertility (see Hashimoto and Hongladarom, 1981; Knodel, 1982; Lindstrom and Kiros, 2007). Chi-square cross-tab analyses between child-death (death before age 5) and number of live-births show statistical association for Group B, but not for Groups A or C (not displayed in table format).⁴ Of

³ The Total Fertility Rate (TFR) in Japan was 5.35 in 1920 when the country conducted the first official census (Cabinet Office, Japan 2006). The TFR is defined as the expected number of births a woman will give according to age-specific fertility rates.

⁴ In the cross-tab analysis for each educational group, child-death was coded binary (experienced child-death or not), and a woman's number of live-births was coded according to three categories: 3 or less, 4, and 5 or more. Also, there is no statistical difference in one's experience with child-death among the three educational groups.

particular note are the six Group B women who had low fertility mothers (4 or less live-births) and had experienced early child-death; five had more live-births than their mothers. This pattern suggests that child-death experience had a strong effect on a woman's fertility, and it contrasts with the overall quantitative finding that Issei women had fewer live-births than their mothers (see Table 3).

Moreover, an interesting pattern is evident for the eight Group B women with high fertility (more than 4 live-births), but low fertility mothers (less than 5 live-births). Of these women, five experienced child-death, and all of them had at least one additional birth after losing a child. Such an experience may have triggered some women to have additional births to compensate for their losses, resulting in high fertility. It may be that had those women not experienced child-death, they might have had lower fertility, similar to their mothers.

Addressing this correlation from another angle, further analyses of the life-history data were conducted on ten low fertility Group B women (3 live-births or less) with high fertility mothers (7 live-births or more). It should be noted that none of these women experienced child-death, which provides some further support for the potential effect of such an event. Qualitative analyses have found a few noteworthy characteristics for this subset of Group B women. One is a very wealthy Japanese family background. This applied to two women; one came from a landed family with several servants, and the other from a *Samurai* family background, whose father was a senator.⁵ Although both women had nine or more siblings, they only had two and three children, respectively, and those children were all well educated. Perhaps, those women had small families themselves, either intentionally or unintentionally, so that in the U.S. they could more easily attain a standard of living similar to what their parents had provided them in Japan.

Another noteworthy characteristic of these ten Group B women is the fact that they had immigrant parents living in the U.S. Four women immigrated to the U.S. after their parents did, and lived with them before marriage. Although these women all had large sibling-ships of 10 or more, none of them had more than three live-births. They not only had significantly fewer children than their mothers, but also in general their children were highly educated. It may be that these cases reflect behavioral reactions of children, who experienced seeing their immigrant parents marginalized and not fully incorporated into the host society (see Hansen, 1938; Koenig, 1952). The small family size of these four Group B women might also represent a reaction to the large size of their natal families, and they might have desired that their children be educated to more effectively integrate into the mainstream society.

It is also possible that the low fertility of these women might be merely a part of assimilation process (see Feagin and Fujitaki, 1972; Montero, 1981). During the 1920s when they were living with their parents and siblings in the U.S., the country's Total Fertility Rate (TFR) was

⁵ Samurai were the military nobility and a part of the ruling class under the Japanese feudal system, which was abolished in 1868.

around 2.5 (Population Reference Bureau, 2012). Therefore, the small sized families of these women might more accurately reflect assimilation into the host culture, rather than a reaction to the large size of their natal families. Relating to this argument, the relatively low fertility of these women may reflect an immigrant strategy of assimilation to industrialized countries, where more women are involved in a joint commitment to reproduction and employment (see Leonetti and Newell-Morris, 1982b, p. 94). Having fewer children is an effective way to have children and be economically productive.

Finally, among these low fertility Group B women with high fertility mothers, one of them seems to have been particularly determined to immigrate to the U.S. Despite the fact that her family disapproved of her ambitions, she met her husband when he temporarily returned to Japan from Seattle because of illness, and then married and went back with him to Seattle. She said she was so anxious to come to the U.S. that she would have married any man to do so. Her mother had seven live-births in Japan, but she only had three in the U.S. The adventurous attitude of this woman may have contributed to her desire for a life-style and family size different from that of her natal background.

4.3 Parental Influence on Group A

Compared to Group B, there was no significant correlation, either positive or negative, between the number of live-births by Issei women and their mothers in Groups A and C. As discussed above, the fertility of Group C women seems to have been affected most by their education; regardless of their mothers' fertility, these women only had between 0 and five live-births (see Table 1). In contrast, Group A women had a significantly higher average fertility, ranging from 0 to 13 live-births (or 0 to 8 if the two outlier cases are excluded). Why does it seem that there was little to no parental influence on the fertility of those women? One possible explanation is that similar to Group B women, the large number of live-births by some Group A women may have been triggered by child-death experience. There were 38 women in Group A, 15 of them with high fertility (more than 4 live-births). Among those 15 women, seven experienced the loss of a child before it reached 10 years of age. Although there is no statistical association between child-death and the number of live-births for Group A women, experiences with child-death may have affected their fertility, thereby masking any evidence of parental influence.

Table 4a: Fathers' Occupation

	Group A	Group B	Group C	All
Farmer (%)	17 (44.7)	11 (23.4)	6 (46.2)	34 (34.7)
Family business/ Self-employed (%)	9 (23.7)	23 (48.9)	5 (38.5)	37 (37.8)
Other* (%)	12 (31.6)	13 (27.7)	2 (15.4)	27 (27.6)
Total	38	47	13	98

*Including unknown, unemployed, unskilled labor, service worker, operative (driver, machine operator), skilled worker, clerical, and professional.

Table 4b: Birth/Place Where One Grew Up

	Group A	Group B	Group C	All
Town (%)	15 (39.5)	23 (48.9)	4 (30.8)	42 (42.9)
Village (%)	16 (42.1)	18 (38.3)	7 (53.8)	41 (41.8)
No information (%)	7 (18.4)	6 (12.8)	2 (15.4)	15 (15.3)
Total	38	47	13	98

It is also possible that Group A women were likely to have encountered more hardship or a drastically different socio-familial environment in the U.S., which might have weakened the influence from their natal family backgrounds (see Nisén et al, 2014; Rijken and Liefbroer, 2009). The life-history data indicate that many fathers of Group A women were farmers in Japan, especially compared to fathers of Group B (see Table 4a). Seventeen fathers of Group A women were farmers (44.7%), the next most common occupation being family business/self-employment (23.7%). (Among those 17 Group A women, only three had husbands who were farmers in the U.S.) Similarly, Group A women were more likely to have come from a rural background based on where they were born and grew up in Japan (see Table 4b). Seattle was an urban environment where most first-generation Japanese immigrants worked in small businesses and the service industry. It is possible that many Group A women, especially those from a farming family and/or rural background, underwent a variety of drastic modifications to adjust to the industrial/capitalistic life-style in the U.S., and these challenges may have largely muted any influence from their natal family backgrounds.

5 Conclusion

The process of modernization and the experience of migration influenced the fertility of the Issei women who migrated to Seattle in the early 1900s. Their fertility was significantly lower than that of their mothers, and there is no evidence suggesting their fertility was positively correlated with that of their mothers. In particular, those women who were relatively well educated had relatively few children; such low fertility may relate to their elevated levels of education, which in turn promoted an aspiration that their children be educated as well. In comparison, the fertility of women with less education appeared to be influenced, at least to some degree, by their experience with child-death, and such an experience was likely to inflate their overall fertility. Aspiring for a higher standard of living, more effectively assimilating, and/or the necessities involved with adjusting to their new industrial/capitalistic environment in the U.S. may have resulted in a majority of Japanese immigrant families with relatively few children.

Using both quantitative and qualitative methods of analysis, this study has revealed not only patterns of fertility behavior, but also provided a richer, more meaningful understanding of those patterns. In particular, the examination of qualitative data has revealed how the different aspects and features of individual immigrant women's lives resulted in those patterns, and it has highlighted what the quantitative findings did not suggest. Close examination of the life-histories of Issei women has revealed, for example, how the relatively low fertility of Group C women relates to the importance they placed on their children's education; moreover, it revealed how the negative correlation between the fertility of Group B women and their mothers can be explained in relation to either their wealthy Japanese family backgrounds or having had

immigrant parents in the U.S. This analysis has also led to the recognition that the fertility of Group A women probably relates, in part, to experience with child-death. In addition, it has shown how the fertility of some women can be understood with reference to their natal family conditions (i.e., fathers' occupation and rural/urban background), as well as their lower educational backgrounds.

This study analytically focused on the fertility of Issei women with respect to their personal life experiences, but it has not focused heavily on how their fertility may have related to the wider, mainstream cultural orientations, social conditions, and political events. Therefore, a future study could examine the influence of factors such as Japanese cultural norms and values, the socio-environmental conditions of the Seattle Japanese Community, and the policies on migration mandated by the state and national government. Examination of how those factors affected Issei fertility and how individuals went about and reacted to various cultural orientations and circumstances would contribute to enhancing our holistic understandings of immigrant fertility.

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