Chapter 7

Births, Deaths, and Marriages

1. Accuracy

The population registers of Nishijo-mura are, as has been stated repeatedly, an abundant and highly reliable historical source. We can highlight three main points. First, they are continuous, without even a single missing year. Second, there are few cases of individual men and women entered in the sources appearing and disappearing for unclear reasons. Third, there are hardly any erroneous entries concerning age.

For example, during the period for which the SACs survive, people initially resident in the village in 1773 number 373, increasing thereafter. There were 992 births, 704 immigrants from outside of the village, and 26 additional people whose appearance was unaccounted for. Of the people who disappeared from the records, 724 died, 976 migrated from the village, and 17 were unaccounted for, so that, finally, in 1869, there were 388 people remaining. Even if all of the people whose disappearance is unaccounted for actually died, the number of deaths increases by no more than 2%, so that the actual effect upon the calculation of the population indices is extremely small.

In this chapter, I would like to extract as detailed indices as possible concerning births, marriages, and deaths from Nishijo-mura's SACs and to offer some explanation of them. Indices derived from the sources used in this chapter can be said to be the most reliable for rural societies in the latter half of the Tokugawa period.

In general, births and deaths can be accurately extrapolated from the SAC entries, but with some reservations. Counting births and deaths recorded in the registers provide explanation for the individuals who entered and exited the data for these reasons, but we must remember that many births and deaths in the village were not recorded in the sources. That is to say, only the births of infants who survived until the time of the annual compilation of the SACs are entered, while those who died before the annual compilation do not appear. The number of such infants who died before their births could be registered evidently reached considerably high levels before the advent of the modern era. Consequently, when using the SACs as source material, some adjustment is essential to produce fertility and mortality rates that can be compared with modern population statistics. In other words, one must estimate the infant mortality hidden in this shadowy region.

Although infant mortality cannot be determined directly from the Nishijo-mura

Table 7-1 Population Changes by Reasons

Years	Increase																	
	Births			Marriages/ Adoptions			Divorces			Other			Uncertain			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1773	6	6	12		2	2								1	1	6	9	15
1774	1	2	3	1	1	2							3	1	4	5	4	9
1775	7	13	20		2	2	1		1					1	1	8	16	24
1776	4	3	7	2	3	5								1	1	6	7	13
1777	4	2	6		3	3										4	5	9
1778	5	2	7													5	2	7
1779	5	4	9		1	1										5	5	10
1780	2	6	8										1		1	3	6	9
1781	4	4	8		1	1		1	1					1	1	4	7	11
1782	5	4	9		2	2					2	2				5	8	13
1783	5	3	8		1	1							1		1	6	4	10
1784	4	4	8	1	2	3								1	1	5	7	12
1785	1	6	7	1	3	4		1	1							2	10	12
1786	10	10	20		1	1										10	11	21
1787	1	0	1													1	0	1
1788	9	3	12		2	2										9	5	14
1789	4	2	6		1	1		1	1							4	4	8
1790	4	5	9	1	3	4										5	8	13
1791	6	8	14													6	8	14
1792	2	7	9	1	3	4							1		1	4	10	14
1793	6	8	14		5	5										6	13	19
1794	5	4	9		5	5										5	9	14
1795	8	5	13	1	4	5										9	9	18
1796	4	7	11		4	4										4	11	15
1797	5	5	10		3	3										5	8	13
1798	4	11	15													4	11	15
1799	5	3	8	1	1	2										6	4	10
1800	8	9	17													8	9	17
1801	3	5	8		5	5										3	10	13
1802	5	5	10		1	1										5	6	11
1803	11	7	18		1	1										11	8	19
1804	1	5	6		1	1										1	6	7
1805	4	7	11	1	2	3				1		1				6	9	15
1806	4	7	11		2	2		1	1							4	10	14
1807	3	8	11					1	1							3	9	12
1808	3	6	9		2	2		1	1	1		1				4	9	13
1809	3	5	8		1	1										3	6	9
1810	6	9	15		5	5		1	1							6	15	21
1811	1	4	5		2	2										1	6	7
1812	5	4	9		1	1										5	5	10
1813	7	9	16		4	4										7	13	20
1814	7	5	12		1	1										7	6	13
1815	5	5	10		1	1										5	6	11
1816	4	2	6					1	1				1		1	5	3	8
1817	3	5	8		2	2							1		1	4	7	11
1818	9	5	14							1		1		1	1	10	6	16
1819	4	1	5		4	4										4	5	9
1820	2	3	5													2	3	5

Decrease																		Difference		
Deaths			Marriages/ Adoptions			Divorces			Other			Uncertain			Total			Male	Female	Total
Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total			
1	2	3		1	1								1	1	1	4	5	5	5	10
6	5	11	1	1	2				2		2				9	6	15	-4	-2	-6
4	3	7		3	3										4	6	10	4	10	14
6	5	11		1	1										6	6	12	0	1	1
3	4	7		1	1										3	5	8	1	0	1
3	1	4											1	1	3	2	5	2	0	2
4	4	8		1	1										4	5	9	1	0	1
6	5	11											2	2	6	7	13	-3	-1	-4
8	5	13	1	2	3							1	1	2	10	8	18	-6	-1	-7
4	2	6							1		1				5	2	7	0	6	6
1	4	5		2	2										1	6	7	5	-2	3
4	5	9							1		1				5	5	10	0	2	2
7	9	16	1	2	3				2		2				10	11	21	-8	-1	-9
4	6	10		1	1										4	7	11	6	4	10
6	4	10													6	4	10	-5	-4	-9
11	3	14		1	1							3	2	5	14	6	20	-5	-1	-6
6	5	11		1	1		1	1	1		1				7	7	14	-3	-3	-6
3	4	7					1	1							3	5	8	2	3	5
1	3	4							1		1				2	3	5	4	5	9
4	6	10													4	6	10	0	4	4
3	3	6	1		1										4	3	7	2	10	12
1	1	2					1	1							1	2	3	4	7	11
8	4	12		2	2										8	6	14	1	3	4
3	3	6				1		1		2	2				4	5	9	0	6	6
5	1	6		1	1		1	1	1		1				6	3	9	-1	5	4
1	2	3		2	2										1	4	5	3	7	10
2		2	1		1					1	1				3	1	4	3	3	6
6	15	21							1		1				7	15	22	1	-6	-5
	3	3													0	3	3	3	7	10
6	11	17													6	11	17	-1	-5	-6
1	6	7					2	2							1	8	9	10	0	10
3	2	5		3	3	1		1					1	1	4	6	10	-3	0	-3
8	4	12				1		1							9	4	13	-3	5	2
3	1	4		2	2		1	1							3	4	7	1	6	7
3	6	9		3	3										3	9	12	0	0	0
2	4	6		2	2		1	1		1	1				2	8	10	2	1	3
5	3	8		4	4		1	1							5	8	13	-2	-2	-4
3	2	5													3	2	5	3	13	16
6	5	11		1	1		1	1	1		1				7	7	14	-6	-1	-7
2	4	6													2	4	6	3	1	4
7		7		1	1										7	1	8	0	12	12
4		4					1	1							4	1	5	3	5	8
	5	5		1	1		1	1		1	1				0	8	8	5	-2	3
7	4	11		1	1							1		1	8	5	13	-3	-2	-5
4	4	8													4	4	8	0	3	3
4	4	8		1	1		1	1							4	6	10	6	0	6
4	3	7													4	3	7	0	2	2
1	3	4					1	1	1		1				2	4	6	0	-1	-1

Years	Increase																	
	Births			Marriages/ Adoptions			Divorces			Other			Uncertain			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1821	7	3	10	1		1										8	3	11
1822	2	1	3		4	4										2	5	7
1823	6	8	14		2	2				1		1				7	10	17
1824	8	3	11		4	4					1	1				8	8	16
1825	11	2	13		1	1										11	3	14
1826	4	8	12													4	8	12
1827	6	1	7		3	3										6	4	10
1828	5	4	9		1	1										5	5	10
1829	7	6	13		1	1										7	7	14
1830	8	5	13		2	2					1	1				8	8	16
1831	11	6	17		1	1		1	1							11	8	19
1832	4	3	7	1	3	4		1	1							5	7	12
1833	8	12	20													8	12	20
1834	4	6	10		4	4										4	10	14
1835	2	2	4	1	2	3					1	1				3	5	8
1836	2	2	4		2	2										2	4	6
1837	4	6	10	2	2	4										6	8	14
1838	5	3	8	1	3	4					1	1				6	7	13
1839	5	7	12		3	3										5	10	15
1840	5	6	11		1	1										5	7	12
1841	4	5	9	2	1	3										6	6	12
1842	6	5	11							1		1				7	5	12
1843	7	3	10	1	2	3							5	5	10	13	10	23
1844	5	3	8		3	3										5	6	11
1845	5	5	10	1	3	4					1	1				6	9	15
1846	6	6	12		1	1										6	7	13
1847	5	5	10		1	1										5	6	11
1848	6	1	7		1	1										6	2	8
1849	11	7	18		1	1					1	1				11	9	20
1850	7	2	9	1		1		1	1							8	3	11
1851	4	3	7		3	3										4	6	10
1852	8	0	8		5	5										8	5	13
1853	8	6	14	1	1	2										9	7	16
1854	7	5	12	1	7	8				1	1	2				9	13	22
1855	7	10	17		1	1										7	11	18
1856	3	3	6	1	2	3										4	5	9
1857	6	7	13		1	1										6	8	14
1858	4	7	11		1	1							1		1	5	8	13
1859	6	2	8	1	1	2		1	1	1		1				8	4	12
1860	3	9	12		2	2										3	11	14
1861	3	5	8	1	3	4										4	8	12
1862	5	6	11													5	6	11
1863	6	7	13		3	3										6	10	16
1864	6	6	12		1	1										6	7	13
1865	8	1	9		2	2										8	3	11
1866	7	9	16		1	1										7	10	17
1867	5	4	9		1	1										5	5	10
1868	7	10	17		2	2										7	12	19
Total	503	489	992	26	177	203	1	12	13	7	9	16	14	12	26	551	699	1250

Decrease																		Difference		
Deaths			Marriages/ Adoptions			Divorces			Other			Uncertain			Total			Male	Female	Total
Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total			
4	4	8		1	1										4	5	9	4	-2	2
1	2	3		2	2										1	4	5	1	1	2
3	3	6		1	1										3	4	7	4	6	10
2		2													2	0	2	6	8	14
	5	5													0	5	5	11	-2	9
3	3	6					1	1							3	4	7	1	4	5
4	1	5		3	3				1		1				5	4	9	1	0	1
4	4	8		2	2										4	6	10	1	-1	0
8	5	13		1	1				2		2		1	1	10	7	17	-3	0	-3
3	3	6													3	3	6	5	5	10
3	3	6		1	1										3	4	7	8	4	12
6	8	14													6	8	14	-1	-1	-2
4	3	7													4	3	7	4	9	13
5	8	13	1	1	2	1		1	2	5	7				9	14	23	-5	-4	-9
2	4	6		2	2		1	1	1		1				3	7	10	0	-2	-2
5	6	11													5	6	11	-3	-2	-5
15	13	28		1	1		1	1	1		1				16	15	31	-10	-7	-17
5	9	14		1	1				4	6	10				9	16	25	-3	-9	-12
2	1	3		4	4				1	2	3				3	7	10	2	3	5
3	6	9													3	6	9	2	1	3
6	3	9													6	3	9	0	3	3
7	7	14							1		1				8	7	15	-1	-2	-3
4	3	7													4	3	7	9	7	16
1	4	5		2	2										1	6	7	4	0	4
6	3	9	1		1										7	3	10	-1	6	5
															0	0	0	6	7	13
	2	2		1	1										0	3	3	5	3	8
2	2	4		1	1										2	3	5	4	-1	3
1	3	4		2	2					1	1				1	6	7	10	3	13
3	3	6					1	1							3	4	7	5	-1	4
4	1	5					1	1							4	2	6	0	4	4
2	4	6		2	2				2	2	4				4	8	12	4	-3	1
5	2	7		1	1				2	1	3	1		1	8	4	12	1	3	4
2	4	6		2	2		1	1	2		2				4	7	11	5	6	11
2	1	3		3	3										2	4	6	5	7	12
1	1	2	1	2	3				1		1		1	1	3	4	7	1	1	2
4	4	8		2	2							1		1	5	6	11	1	2	3
1	2	3													1	2	3	4	6	10
7	4	11	1	2	3				2	2	4				10	8	18	-2	-4	-6
3	3	6	1		1	1		1		1	1				5	4	9	-2	7	5
3	5	8				1		1		1	1				4	6	10	0	2	2
	5	5				1		1	1		1				2	5	7	3	1	4
3	1	4		1	1										3	2	5	3	8	11
2	1	3	2		2										4	1	5	2	6	8
4	3	7	2		2										6	3	9	2	0	2
2	3	5	1	1	2										3	4	7	4	6	10
	6	6		2	2										0	8	8	5	-3	2
4	10	14		1	1										4	11	15	3	1	4
355	369	724	15	86	101	7	20	27	35	26	61	7	10	17	419	511	930	132	188	320

sources, there is research based upon sources from two regions in northeastern Japan, Northern Kantō and Tōhoku. This research is based on the pregnancy investigations carried out by domain lords, who were concerned over the fall in population in these regions during the late Tokugawa period, with the aim of paying support money to households with a pregnant woman.[1] According to this research, between 20 and 25% of infants died between birth and the compilation of the first SAC after the birth. There may be some problem in applying these rates to villages in the Nōbi region, where other demographic characteristics were quite different, but because these rates are currently the only ones calculated for infant mortality directly from primary documents, it is the only basis on which adjustments can be made.

The numbers and the birth rate determined from the SACs can therefore be used for the first time for comparison with modern population statistics, when increased by 20 to 25% in annual basis. Irene Taeuber, in her major comprehensive work on Japanese demographic history, considered the fertility and mortality rates for Tokugawa Japan available at the time to be "so low as to be improbable,"[2] and believed that this was because reported cases were used without any form of adjustment.

Consequently, "fertility rates" obtained directly from the SACs are, strictly speaking, the proportion of the entire population of people who survived from between birth to the first SAC compiled thereafter. Here I have decided to use the expressions, "fertility rate" and "mortality rate" as a convenient shorthand for figures before adjustment. That is to say, even supposing that a limit must be placed on the birth and death statistics determined from the SACs, comparison between them is still possible, and furthermore, they are adequate for determining the trends within one and the same village.

In addition, when fluctuations in the population of Nishijo-mura are examined by cause, both increases and decreases for an undetermined cause are extremely few in number. Consequently, the number of births and deaths entered in the sources are sufficient for recounting trends, even supposing the limitations stated previously.

Since the causes of nearly all appearances and disappearances in the recorded population of Nishijo-mura can be seen at a glance, these have been indicated in Table 7-1 and form the statistical base for this chapter. Observations pertaining to population migration are handled in Chapter 8.

---

1 Kitō 1972.

2 Taeuber 1958, p. 29.

2. Births

Number of Births and the Crude Birth Rate

The crude birth rate (CBR), that is, the figure obtained by dividing the number of births in a year by the population, is used as the most basic index for births. Although it is the most easily obtainable index, it is by no means the most accurate. Nevertheless, let us examine this year by year.

The CBR based upon the number of births per year is shown in Figure 7-1. However, the population is small, so annual rates fluctuate severely. For example, there are twenty births in each of the years 1775, 1786, and 1833, and, just when one would expect the crude birth rate to reach 60‰ (60 births per thousand populations), in 1787 the figure is only one birth. It is meaningless to take birth rates for each single year in isolation in a population as small as this one.

Fig. 7-1 Trends in Crude Birth Rate

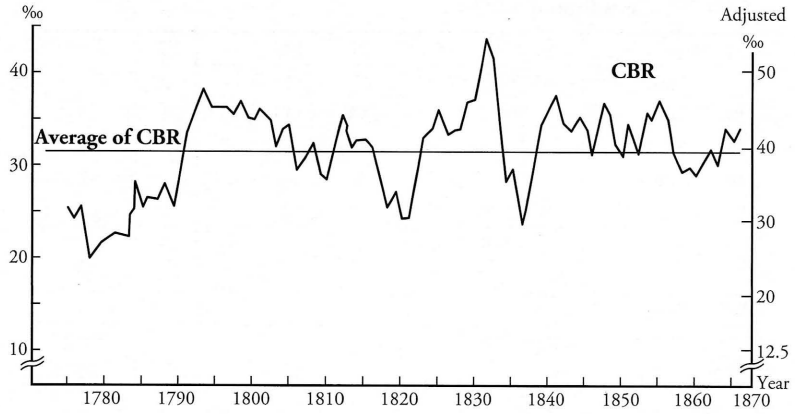


Figure 7-1 shows the mean number of births as a five-year moving average. The right-hand side indicates the figures adjusted by plus 25%. Whichever CBRs are examined, they appear low at first, but rise over the next twenty years and, after stabilizing around 34‰ for the next twenty years, fall temporarily. However, they quickly begin to rise again and reach their highest peak at 44‰ in 1826. Thereafter, the figure passes through a short-term drop, before stabilizing again from 1840 onwards at around 34‰. It appears that the normal CBR for this village, when adjusted upward by 25%, is 42‰. This level is not at all low, and, although only impressionistic, it can be assumed to represent the CBR for rural societies in early modern years when there were no limitations over birth.

Family Reconstitution and Age-specific Marital Fertility

As we have already seen, an accurate index of fertility can be obtained from family

reconstitution. In the case of Nishijo-mura, given that there is not a single missing year out of the ninety-seven years for which the sources can be used, that these were compiled using the resident population, and that the entries are copious, with hardly any errors, we may say that, excluding the problem of the size of the population at risk, the reliability of the indices derived from family reconstitution is extremely high.

The number of couples appearing in the Nishijo-mura SACs totals 321. Of these, sixty-three or approximately 20%, are completed families (husbands and wives whose marriages continue until the end of the wife's child-bearing age, taken to be fifty *sai*), as can be seen at a glance in the FRF classification in Table 7-2. Completed families provide the most accurate information for measuring fertility, but because marriages are cut short for various reasons, and the period of the usable sources only spans ninety-seven years, there are inevitably many cases in which it is not possible to pursue the fertility of the couples from start to finish.

Table 7-2 Classification of FRFs

Marriage cohorts	A	XA	CF	U	XU	Z	XZ	Total
1773–1800			27	47	1		2	77
1801–1825			18	38	1		3	60
1826–1850			18	30		7	3	58
1851–1869				8		40	4	52
Uncertain	52	18			3		1	74
Total	52	18	63	123	5	47	13	321
Wife's birth cohorts								
1701–1725	2	18						20
1726–1750	45		2	2				49
1751–1775	5		20	41	1		3	70
1776–1800			23	38	3		2	66
1801–1825			18	28	1	5	6	58
1826–1850				14		40	2	56
After 1851						2		2
Total	52	18	63	123	5	47	13	321

A=Existed in the first register (1773)
XA=A (wives are already over 51 *sai*)
CF=Completed families
U=Uncompleted families
XU=U but the year of marriage is uncertain
Z=Wives are under 50 *sai* in the last register (1869)
XZ=Z but the year of marriage is uncertain

The sample of the completed families alone is too small, so at times it is necessary to include incomplete families. Figure 7-2 and Table 7-3 thus show the age-specific fertility for both completed and uncompleted families, respectively. The two lines in these figures

overlap almost perfectly, although that for the uncompleted families is slightly lower. Consequently, as regards age-specific marital fertility alone, there is probably no need to distinguish between completed and uncompleted families.

In order to increase the sample size, it was decided to include both completed and uncompleted families, with the exception of special entries. The age-specific marital fertility level for Nishijo-mura is high compared with the fertility levels that have been obtained thus far for other villages. It is as high as that for Kando-shinden, which was discussed in Chapter 4. Can we assume from this fact that there was no birth control in Nishijo-mura?

Fig. 7-2 Age-specific Fertility Rates

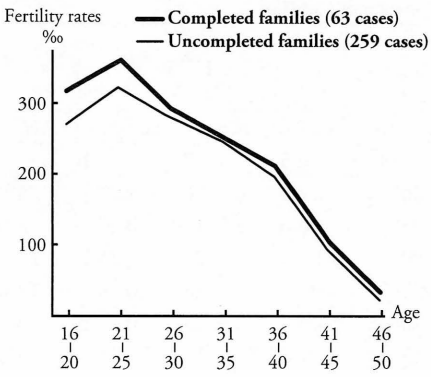


Fig. 7-3 ASFR by Wife's Birth Cohort

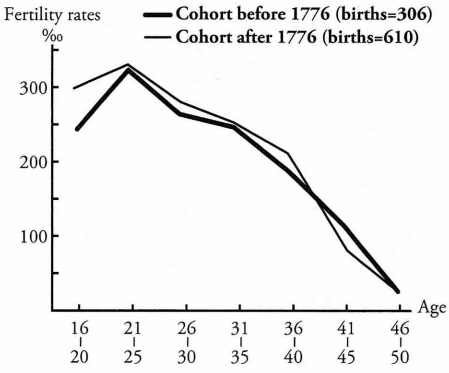


Figure 7-3 shows the age-specific marital fertility according to the woman's birth and marriage cohort, either before 1800 or from 1801 onwards. From this figure, a comparative difference in the level of fertility can be discerned between the former and latter cohorts. Among women in their twenties, for whom fertility was at its highest, the difference cannot be ignored. Fertility for this age group is quite high for the latter period. Almost the same level prevails for women in their thirties onwards also. There are three possible explanations for this difference.

1. There may have been a difference in fertility related behavior between the former and latter periods. If we take the figures as they are, in the latter period, the wife bore as many children as possible until thirty *sai*.
2. The fertility rate for the latter period shows the normal fertility standard. Some sort of population limitation was therefore in force during the former period.
3. There was a difference in natural fertility between the two periods that requires some sort of demographic explanation.

Table 7-3 Age-specific Fertility Rates (‰)

1. Completed Families

Wife's birth cohort	Before 1775			After 1776			Total		
Age	Years	Births	Fertility	Years	Births	Fertility	Years	Births	Fertility
Under 15	0.5	0	0				0.5	0	0
16–20	22.0	6	0.273	19.0	7	0.368	41.0	13	0.317
21–25	46.0	17	0.370	87.0	31	0.356	133.0	48	0.361
26–30	71.0	25	0.352	151.5	40	0.264	222.5	65	0.292
31–35	92.5	28	0.303	193.5	45	0.233	286.0	73	0.255
36–40	103.5	25	0.242	200.5	39	0.195	304.0	64	0.211
41–45	105.0	16	0.152	205.0	17	0.083	310.0	33	0.106
46–50	109.5	3	0.027	205.0	7	0.034	314.5	10	0.032
Total	549.5	120	0.218	1061.5	186	0.175	1611.0	306	0.190
Over 51	221.5	0	0	324.0	0	0	545.5	0	0

2. Uncompleted Families

Under 15	3.0	0	0	4.5	0	0	7.5	0	0.000
16–20	55.0	13	0.236	110.5	32	0.290	165.5	45	0.272
21–25	133.5	41	0.307	348.0	113	0.325	481.5	154	0.320
26–30	168.5	38	0.226	405.0	123	0.304	573.5	161	0.281
31–35	178.0	39	0.219	344.0	91	0.265	522.0	130	0.249
36–40	189.5	29	0.153	237.0	54	0.228	426.5	83	0.195
41–45	218.0	21	0.096	139.5	11	0.081	357.5	32	0.090
46–50	208.5	5	0.024	54.0	0	0	262.5	5	0.019
Total	1151.0	186	0.162	1638.0	424	0.259	2789.0	610	0.219
Over 51	623.5	2	0.003	12.5	0	0	636.0	2	0.003

3. Total

Under 15	3.5	0	0.000	4.5	0	0.000	8.0	0	0.000
16–20	77.0	19	0.247	129.5	39	0.301	206.5	58	0.281
21–25	179.5	58	0.323	435.0	144	0.331	614.5	202	0.329
26–30	239.5	63	0.263	556.5	163	0.293	796.0	226	0.284
31–35	270.5	67	0.248	537.5	136	0.253	808.0	203	0.251
36–40	293.0	54	0.184	437.5	93	0.213	730.5	147	0.201
41–45	323.0	37	0.115	344.5	28	0.081	667.5	65	0.097
46–50	318.0	8	0.025	259.0	7	0.027	577.0	15	0.026
Total	1700.5	306	0.180	2699.5	610	0.226	4400.0	916	0.208
Over 51	845.0	2	0.002	336.5	0	0.000	1181.5	2	0.002

The first idea would be acceptable if the motive for such behavior were clear. In reality, however, no motive has been found. On closer inspection, fertility in the latter half of the period proves to be extremely high in the age group sixteen to thirty, which corresponds to the birth cohort of 1826 to 1850. This cohort was giving birth in the post 1844 period, so that the Tokugawa era was already drawing to an end. What conditions caused an increase in births at this time? As will be shown in Chapter 8, out-migration to towns in the Nōbi region increased rapidly toward the end of Tokugawa era. There was a definite expansion of the handicraft and service industries in these towns. However, this is merely circumstantial evidence and therefore difficult to consider decisive. Because there was a decline in labor migration from villages, the total volume of out-migration actually fell instead, thus making it almost impossible to support this hypothesis.

As for the second notion, it likewise requires assembling proof regarding motives and so has the same weak points as the first theory. Nevertheless, when the age-specific marital fertility for the early period is considered, it is clearly lower than that of Kando-shinden in Owari province, in which no birth limitation is evident, thereby strongly suggesting that the earlier generalization that there was no population limitation in this village be reappraised.

The third explanation is the most likely. As seen in section 4 of this chapter, there was a sharp fall in child mortality during the end of Tokugawa period (after 1846). Although there is no written evidence regarding the causes of this fall, one doctor may have studied medicine in Kyoto and returned to Nishijo-mura with the knowledge of small-pox vaccination. The sharp fall in child mortality may well be linked to a decline in the infant mortality rate, which cannot be discerned from the sources. In other words, the increase in fertility during the late Tokugawa period is merely a superficial increase, while, in reality, the decrease in deaths for young children and infants, who have been hitherto invisible, appears as an increase in fertility.

Support for this interpretation can be found in the fact that the decline in child mortality begins immediately after the aforementioned doctor returned to the village and began practicing,[3] while, at the same time, fertility appears to rise. In addition, as seen earlier, the population in this village during the late Tokugawa period increased rapidly, concomitant with a fall in the overall volume of labor migration. Even if there is no positive proof in support of an improvement in the economic environment, this interpretation seems plausible. However, not even this theory escapes from being more than circumstantial evidence. In the end, all three theories lack a deciding factor.

The author has accepted the third explanation as a temporary hypothesis until direct evidence can be found, but, in reality, this may prove complex and, in the final analysis, it will probably be necessary to observe cases from other villages as well.

---

3 For a history of the doctor's life, see Hayami 1988, pp. 160–163.

Fig. 7-4 Age-specific Fertility Rates

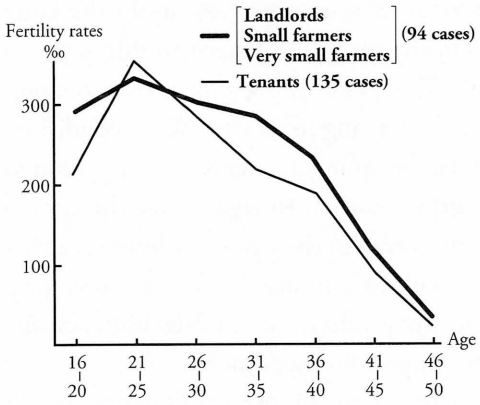


Table 7-4 Number of Births by Age at Marriage in Completed Families

Age at marriage	Births
Under 15	7.185
16	6.928
17	6.671
18	6.414
19	6.157
20	5.900
21	5.581
22	5.262
23	4.943
24	4.624
25	4.305
26	4.020
27	3.735
28	3.450
29	3.165
30	2.880

Next, let us see if there is a difference in fertility according to social class defined by landholding. Given the size of the sample, for statistical processing to be meaningful we must be content with a simple division into two classes based upon the landholdings of the family. Figure 7-4 shows this division into households with holdings up to two *koku* (tenants) and those worth more (very small farmers, small farmers, and landlords), and the figures for births to couples in each class.

This excludes households which experienced inter-class mobility during the period of the marriage. Looking at Figure 7-4, with the exception of one age group, tenant-farmer fertility was lower than that of the small farmer class and above, but it is unclear if this represented a difference in the natural birth rate, in the infant mortality rate, or merely a cosmetic difference in fertility.

According to the age-specific fertility rate, it is possible to calculate the number of births—the total marital fertility rate—throughout the period of a woman's life (assuming the marriage to have continued from her age at marriage until the end of her child-bearing years). Table 7-4 shows these results. These are calculated rates, however, so, in actuality, the distribution is more random.

Table 7-4 shows the number of births by age at marriage for sixty completed families where the wife was married by thirty-five *sai*. Where the age at marriage was twenty or under, all had a minimum of five children, while three was the maximum number of children among those married at thirty *sai* or over. Whereas the five, six, or seven births range constitutes 60% of the total, on the other hand there are also several couples with ten children and four couples with no children at all. The difference in the classes by landholding as shown in Figure 7-4 is, as expected, reflected here, and among the tenants, the mean number of births is somewhat low. The popular tradition saying that, "the poor have more children" (*binbōnin*

Table 7-5 Age Group Fertility by Class

1. Fertility

Age groups	Tenants	Very small farmers	Small farmers	Landlords	Births
16–20	0.182	0.284	0.247	0.257	56
21–25	0.376	0.300	0.313	0.319	201
26–30	0.251	0.292	0.299	0.285	225
31–35	0.231	0.252	0.285	0.252	203
36–40	0.196	0.193	0.232	0.201	147
41–45	0.103	0.082	0.133	0.097	65
46–50	0.034	0.020	0.030	0.026	15
2. Births					
Age at marriage					
15	6.865	7.115	7.695	7.185	
20	5.955	5.695	6.460	5.900	
25	4.075	4.195	4.895	4.305	
30	2.820	2.735	3.400	2.880	

no kodakusan) is clearly not true here.

However, it is possible that the difference in the age at marriage may affect the difference in the mean number of births. Among the very small farmers and above, the mean age at marriage is 21.9, a difference of five years from the 26.9 *sai* of the tenants, which clearly causes a difference in the level of the mean number of births. If we limit our target group by excluding those people who married at age 29 or over, which is most of the tenant class, the number of cases in the very small farmers and above group falls to twenty-four, and the mean age at marriage to 21.8, which is almost equal to the twenty-one cases in the tenant group, with their mean age at marriage now 22.3.

Even with such controlled data, the mean number of births still shows a difference, at 6.1 for the very small farmer class and above, and 5.3 among the tenant class. As expected, there is a difference in fertility between classes. However, one must bear in mind that these observations are based on an extremely small sample.

This difference in fertility between the classes may be considered a result of a low natural birth rate among the tenant farmers, or else of the living standards, but there are few sources to indicate which case is, so a conclusion cannot be drawn here.

Examination of Sex-selective Infanticide

It is common knowledge that infanticide following birth, that is, "culling," was practiced during the Tokugawa period. Infanticide is mentioned in documents dating from the period, and many shrines were erected to appease the souls of these unfortunate children. This custom was most widely practiced in the Northeastern part of Japan, from Ōshū

down through the North Kantō region, but also seems to have been practiced elsewhere. The low fertility rate derived from the SACs and other sources is generally understood to be the result of artificial adjustment to the number of births through such methods as abortion and culling. In addition, culling was said to have been executed exclusively against girls.

As stated above, there was no population limitation in Nishijo-mura or, if there were, it cannot be ascertained in the early period. However, Thomas C. Smith, who examined SACs from rural villages adjoining Nishijo-mura, asserts that, by a new method using the birth records in the SACs as well as family reconstitution, he found evidence of culling which was not sex-specific.[4] Nakahara, which Smith took as his case study, is a farming village less than five kilometers from Nishijo-mura, which fulfills almost identical geographical conditions. First, however, I should describe the method Smith employed.

Smith started out by thinking that, since the sex ratio at birth is naturally almost even (generally 105: 100), whenever there is a conspicuous deviation from this, there must be deliberate infanticide; in other words, culling. The births in Nakahara show a "sex ratio of 114 males per 100 females in 652 recorded births, which could not be called abnormally high" during the period of the surviving sources, 1717 to 1830. Nevertheless, "Married couples had a marked tendency to have a next child of the same sex underrepresented in their present family."

Smith arrived at this conclusion by observing births to couples with at least three children. Having first selected completed families for whom the marriage was the first for both partners and continued until the wife was forty-five *sai*, he then extracted those couples who had given birth to three or more children and divided them according to the sex composition of the surviving children at the time of the birth of the third or subsequent child as follows: where there were more boys than girls (PM), where there were the same number of boys and girls (M=F), and where there were more girls than boys (PF), and then determined the difference in the births by sex as follows. PM: 67 (n=75), M=F: 148 (n=52), and PF: 200 (n=57).

Smith then made two further subdivisions, HPF, when girls outnumbered boys by at least three, and HPM, for vice versa,[5] and obtained even more skewed sex ratios, namely, HPM: 68 (n=32), PM: 74 (n=80), M=F: 168 (n=67), PF: 160 (n=78), and HPF: 350 (n=9), thereby strengthening his conviction. In addition, he suggested that sex-selective limitation was carried out (in this case, of course boys were much preferred) from the fact that the sex bias at birth was great, even in the cases where M=F.

Smith's analytical methods deserve high appraisal as a means of unearthing birth limitations that had not occurred to us. The results of observations in Nakahara were, in

4 Smith 1977, Chapter 5 (co-authored with Robert Y. Eng), pp. 59–85.

5 An HPM or HPF family is when the combination of male and female children currently alive is 3–0, 4–0, 4–1, 5–0, 5–1, 6–0, 6–1, 7–0, 7–1, 8–0, 8–1, and 9–0. Ibid., p. 67, footnoted.

this sense, the first such "discovery" in Japan.

Here, employing the same methods with the sources from Nishijo-mura, let us examine the existence, and the extent, of sex-selective limitations. The sex ratio at birth in Nishijo-mura is 503: 489 for the whole period of the surviving sources (1773–1869); in other words, close to the norm of 102.9, as has already been shown. Using the methods developed by Smith, classification according to the sex composition for the already-existing children at the time of the birth is as follows: PM: 98 (n=79), M=F: 64 (n=54), PF: 122 (n=71).

Smith's classification pertains to the completed families for whom the marriage was the first for both partners and continued until the wife was forty-five. Because there are many cases in which it is impossible to confirm the marriage history of a person from another village's SACs, marriages that can be proven to be the first for both partners are limited to those within the village. According to such data control, since the number of cases is clearly fewer than the scale required for statistical processing, here only those cases were taken in which the wife married at age twenty-five or under, and the marriage continued until she was forty-five *sai* (Smith does not explain how he handled this problem).

If these are then broken down further into five categories, they read as follows: HPM: 69 (n=27), PM: 113 (n=85), M=F: 83 (n=75), PF: 129 (n=78), and HPF: 63 (n=13). These results differ strikingly from those for Nakahara, and there is no correlation whatsoever between the classification and sex ratio, so it is difficult to establish any proof that sex-selective limitations were in force. Rather, we ought probably to declare the contrary. This difference requires explanation, if we consider that Nakahara was a neighbor to Nishijo-mura, and was a dike-surrounded (*wajū*) village with identical geographic conditions.

If we suppose that each village had independent circumstances, some difference is certainly possible. Even so, it seems strange that such a marked difference really existed in villages separated by a mere five kilometers. As the next step, let us reexamine the case of Nakahara.

The first problem with Smith's discovery is that the number of cases is exceptionally small. The "n=" rates given in brackets above show the total number of births, both male and female. On a scale of this kind, there are problems in determining the sex ratio at birth. The method itself developed by Smith has been refined beyond the point of criticism, but, as might be expected, it ought to be applied to a population at risk large enough to yield statistically significant results. Results which are only in double figures or, in the extreme, single figures, can hardly be called "proof," even supposing that they show a trend. If the results observed in Nakahara are statistical accidents arising from the small number of cases, it is not possible to prove sex-selective limitations using them.

Next, there is the question of the sources used. There are two problems here, the first being that Nakahara sources are not suitable for family reconstitution, as they have many missing years. I myself did not include Nakahara in the analysis of 4,600 reconstituted

families from seventeen villages in the Nōbi region undertaken in Chapter 2 of this book. Nakahara SACs sources are missing for 51 of the 114 years between 1717 and 1830, so that their survival rate is only 55%.[6]

There are indeed registers of population increase and decrease in addition to the SACs, so that, even for years in which the SACs are missing, it is still possible to know in outline the increases and decreases in the population. Since there are only thirteen years for which neither such source is available, information on births may not be so incomplete as to prevent estimates from being made, but in my experience, entries in the registers of population increase and decrease cannot be considered complete, so information on births in Nakahara can in no way be called sufficient. The birth rate by age in Nakahara is, according to Smith's estimates, low compared with Nishijo-mura, at approximately 80% that of its counterpart.[7] Although it is possible that the birth rate may actually have been that low, the possibility also exists that these figures have arisen from incomplete sources.

Finally, there was one important difference in status between Nakahara and Nishijo-mura. This is the difference of territorial administration: whereas Nakahara was included in the Ōgaki domain, Nishijo-mura was under the domain of the Tokugawa government, although its administration was entrusted to the Ōgaki domain. As has been stated already, this led to a difference in the principles followed by the head of the territory when compiling SACs, namely, the registered population was used in the case of Ōgaki domain territory, and the resident population was used for the Tokugawa domain. As a result, entries on labor migration, and so on, do not appear in Ōgaki domain SACs.

When married couples appearing in the above sources left the village to live elsewhere, there is a strong possibility that their birth activities simply appear to have stopped there without their disappearance being recorded. Consequently, age-specific marital fertility may appear lower than it really was. It is also possible that this very problem in the data was what first led Smith to conclude that age-specific marital fertility was low in Nakahara.

When all this is taken into account, Smith's "discovery" can be seen to contain several reservations. This does not, however, in any way invalidate the significance of the methods for determining sex-selective limitation in births that he developed. In the first half of the 1970s, when he worked with the SACs for Nakahara, probably no one in Japan, myself included, had demonstrated sufficient understanding of the principles on which SACs were compiled. Moreover, the main problem with the sex ratio is that significant results can only be obtained once a far greater number of cases are gathered, and, although that

6 The missing years for the SACs, ZGCs (annual register of vital population statistics), and the register of servants for Nakahara are shown in the table. Ibid., p. 24, Table 2.1.

7 Ibid., p. 60. Table 5.1 is a table of the marriage and birth rates by both age and class obtained through the reconstitution of both Western European and Japanese families in the pre-industrialization era as it was clearly understood at the time of the author's writing. However, in a comparison between Nishijo and Nakahara villages, the birth rate in Nishijo is greater for all age groups up the age of 39, and there is thus a difference in the lifelong fertility (TMFR) of 7.4 to 6.5.

was not possible for this book, I would certainly not deny the possibility that, in the future, the results of research into a large number of cases may prove Smith's "discovery" to be true.

Birth Intervals

Table 7-6 shows the mean birth interval according to birth order, and Table 7-7 shows the distribution of the birth intervals. The interval between marriage and the birth of the first child is comparatively short, but thereafter, continues to be 3.1 to 3.2 years until the birth of the fourth or fifth child, after which it lengthens considerably. After the sixth and seventh child onwards, of which there are only a few cases, the rates become unstable, but, even so, there was no interval of fewer than three years or more than four.

Table 7-6 Average Birth Intervals by Birth Order

Periods	M–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10
1. Completed Families										
I	1.9	2.8	3.2	3.0	3.8	3.5	3.3	4.0	3.0	3.7
II	1.9	3.1	3.7	4.4	4.0	5.7	4.0			
Total	1.9	2.9	3.3	3.3	3.9	3.7	3.4	4.0	3.0	3.7
2. Uncompleted Families										
I	2.6	2.8	3.2	3.1	4.4	4.0	2.7	3.0	2.0	4.0
II	1.6	3.0	3.1	3.2	2.1	2.0	3.3	2.0	4.0	
Total	2.3	2.8	3.2	3.2	3.7	3.2	3.0	2.7	3.0	4.0
3. Total										
I	2.4	2.8	3.2	3.0	4.0	3.6	3.2	3.8	2.9	3.8
II	1.7	3.0	3.3	3.7	3.1	3.4	3.4	2.0	4.0	
Total	2.2	2.9	3.2	3.2	3.8	3.6	3.3	3.6	3.0	3.8

Period I=wife's birth cohort is before 1800
Period II=wife's birth cohort is after 1801

There was no widening in the birth interval for higher order births, rather, the interval was concentrated around three to four years, no matter the birth order of the child. In Yokouchi-mura in Shinano province, the figures resemble those of Nishijo-mura for women in the birth cohort of the latter half of the seventeenth century.[8] The birth interval did not lengthen as the mother's age increased, rather, births continued to be approximately evenly spaced, and, when births finally stopped, they did so suddenly at a certain age. In light of this, it could be said that family limitation was in force.

8 For Yokouchi-mura, see Table 12-17 in Hayami 1973, p. 221.

Table 7-7 Spacing of Births by Birth Order

A. First Period (wife's birth cohort is before 1800)

Spacing of births (years)	M–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	Total
0	4			1							5
1	44	9	3	8	2	2			1		69
2	29	34	26	11	7	6	7	1	3		124
3	14	18	25	20	14	12	7	4	1	1	116
4	8	18	8	14	14	6	1	2	1	3	75
5	3	5	6	5	4	1	2	1			27
6	2	1	5	1	4	3	1		1		18
7	1	2	1	1	4	2		1			12
8					1	1					2
9			1								1
10	2										2
13	1				1						2
Total	108	87	75	61	51	33	18	9	7	4	453
Average	2.3	2.9	3.2	3.0	4.1	3.6	3.1	3.8	2.9	3.8	3.0

B. Second Period (wife's birth cohort is after 1801)

0	7										7
1	22	5	2	3	1						33
2	14	12	8	4	5	2	1	1			47
3	4	12	12	3	4	3	2				40
4	4	8	4	6	2	1	1		1		27
5	1	3	7	2	2		1				16
6		3		4	1	1					9
7	1		1	1		1					4
Total	53	43	34	23	15	8	5	1	1		183
Average	1.7	3.0	3.3	3.7	3.1	3.8	3.4	2.0	4.0		2.8
C. Total for both periods	2.1	2.9	3.2	3.2	3.8	3.6	3.1	3.6	3.0	3.8	3.0

Age at Last Birth

In order to determine age at last birth, it is essential that our observations be limited to completed families. Table 7-8 shows the age distribution of mothers at the time of last birth divided by the number of births. Uncompleted families are excluded from the observations, because, since the marriage often ended for whatever reason before the wife reached the end of her fertile period, and therefore before her potential last birth, these are not useful cases for examining fertility.

On examining the fifty-eight completed families that bore children, the ages of the mothers are widely spread out from 27 to 49. However, when these are divided into five-year intervals, the most common age at last birth is the 41 to 45 range, which accounts for twenty-three cases or approximately 40% of the whole. All cases in which four or more children were born fall into this age bracket, excepting families of ten or more children,

Table 7-8 Age at Birth (completed families)

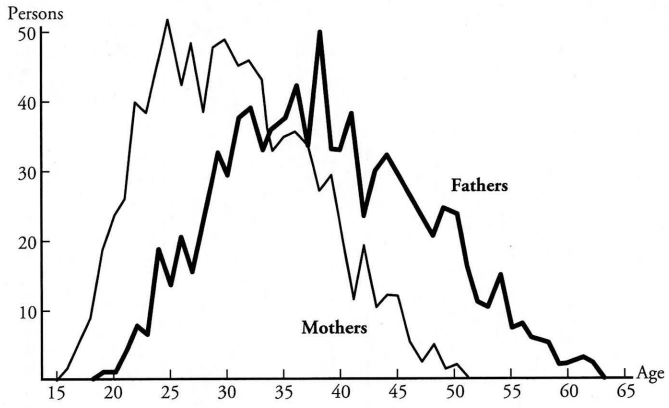
No. of births / Age at last birth	1	2	3	4	5	6	7	8	9	10	Total
26			1								1
29	1										1
30			1								1
31					1						1
32						1					1
33	1		1		1						3
34			1								1
36		1				1					2
37					3	2					5
38	1	1			1						3
39		1					2				3
40		1				1	1				3
41	1					1					2
42				1	2	1	2		1		7
43			1				1			1	3
44					1	1	1	1			4
45				1	3	1			1	1	7
46					1	2					3
47							1		1		2
48					1		1			1	3
49						1					1
50	1										1
Total	5	4	5	2	14	12	9	1	3	3	58
Average	38.2	38.2	33.2	43.5	40.7	41.2	42.6	44.0	44.6	45.3	40.7

for whom the age of the mother at last birth is 45. The next most common age range is the 36 to 40 group, with sixteen cases, which, when added to the 41 to 45 *sai* group, gives thirty-nine cases, or 70% of the whole. The mean age at last birth is 40.7, with most ages concentrated in a five-year range on either side. These figures also accord to a surprising degree with those for Yokouchi-mura, Shinano province, for the latter half of the seventeenth century. When the mean age at last birth is younger than this, it may well constitute proof of family limitation being practiced.

Age Distribution of the Parents at Time of Birth

The age distribution of mothers and fathers when their children are born is an important index for estimating family cycles and the interval between generations. Figure 7-5 shows the graph of the distribution. Although there is some unevenness due to the sample size,

Fig. 7-5 Distribution of Age at Birth



the fathers' ages are evenly distributed around a peak at 38, with 90% between the ages of 24 to 54, whereas the mothers' ages show a flatter distribution, with ages 24 to 33 accounting for 50% of the total, and 90% of these concentrated between the ages of 20 and 40. The most fecund age was 25.

Sex Ratio by Birth Order

The sex ratio by birth order is sometimes used as a method of proving birth limitation. As is often the case, if girls are targeted for "culling," the later the birth order, the higher the likely sex ratio. However, the results obtained from Nishijo-mura SACs show no connection whatsoever between birth order and sex ratio. Table 7-9 shows the sex ratio for each position in the birth order, using couples with three or more children. With births five and six in the ranking, a major deviation from one hundred opens up, but these head in different directions, and are thought to be due to the small number of sample cases.

Table 7-9 Sex Ratio of Births by Birth Order

Birth order	Births	Sex ratio
1	215	110.8
2	174	120.3
3	143	110.3
4	109	109.6
5	84	90.9
6	51	131.8
7	28	86.7
8	12	140.0
9	8	33.3
10	4	33.3
Total	828	109.1

From birth seven onwards, the sample numbers for statistical observations are too few. These facts do not prove that there was absolutely no birth limitation whatsoever practiced in Nishijo-mura, but, at the very least, none could be detected using this method.

Illegitimate Children

Illegitimate children here are defined as those whose parents cannot be identified through the SACs. Consequently, because this also includes cases where the birth preceded the marriage, they are not illegitimate children in the modern sense of the word. However, if their numbers are large, the birth statistics determined by family reconstitution will lose all sense of reality. Only marital fertility is determined from family reconstitution, because birth outside of marriage is not considered.

It is not possible to determine illegitimacy according to the modern definition from Tokugawa period farming village sources. Since, however, there are births in the SACs where the parents are uncertain, these are assumed to be illegitimate. In the ninety-seven years between 1773 and 1869, the total number of births was 992, and, of these, a total of 66, thirty boys and thirty-six girls, were births to unidentified parents. This is 6.6% of the total. Although the majority of these fall into the latter half of the period, there is, again, the problem of the sample size, so I shall reserve judgment on whether these changes are significant.

This proportion is not unusual when compared with the proportions of "illegitimate" births that appear in the national statistics for the Meiji era, and are within the acceptable range.[9]

3. Marriage

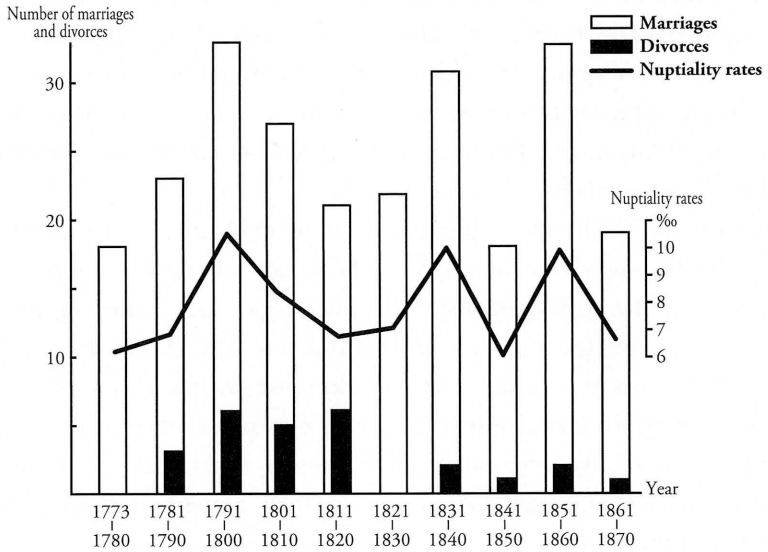
Nuptiality

Nuptiality, which is obtained by dividing the number of marriages by the total population, is a commonly used index of marriage since it is easy to determine, like the crude birth rate and the mortality rate. Nuptiality trends are shown in Figure 7-6. Since annual totals fluctuate dramatically, rates are shown for ten-year intervals. Here, all marriages have been included, regardless of whether they are first or subsequent marriages. As Figure 7-6 makes clear, there are three peaks exceeding 10‰. Of these, the first peak is during the Kansei era (1789–1801) and the second peak corresponds to the Tenpo era (1830–1844), both periods of population reduction, when the people of Nishijo-mura may have hurried to wed. The remaining period shows a trend of 7 to 8‰. This percentage is quite low when compared with other cases such as Yokouchi-mura in Shinano province.[10] That

9 See Hayami 1980, pp. 397–402.

10 The marriage rate for Yokouchi is a mean of 8.9 ‰ and, when taken for ten-year intervals, does not go below 7.4 ‰. Ibid., p. 187, Table 11-1. However, the marriage rate that can be determined from the SACs has problems arising from limitations in the sources, in the same way as for the crude birth and death rates. If a marriage which took place after the compilation of the SAC ends for whatever reason before the compilation of the next SAC, and the surviving partner had returned to her or his original home, there is no way of apprehending the existence of the marriage. Where we find a large number of cases of a marriage lasting for a year, undoubtedly there will be a considerable number of such problem cases. The nuptiality rate therefore ends up being measured on the low side.

Fig. 7-6 Number of Marriages, Divorces, and the Nuptiality Rates



nuptiality is low is either a result of many people not marrying, or the age at marriage being late, or a combination of the two. These possibilities are examined below. In the case of Nishijo-mura, while nuptiality is low, fertility is high, as seen in the preceding section.

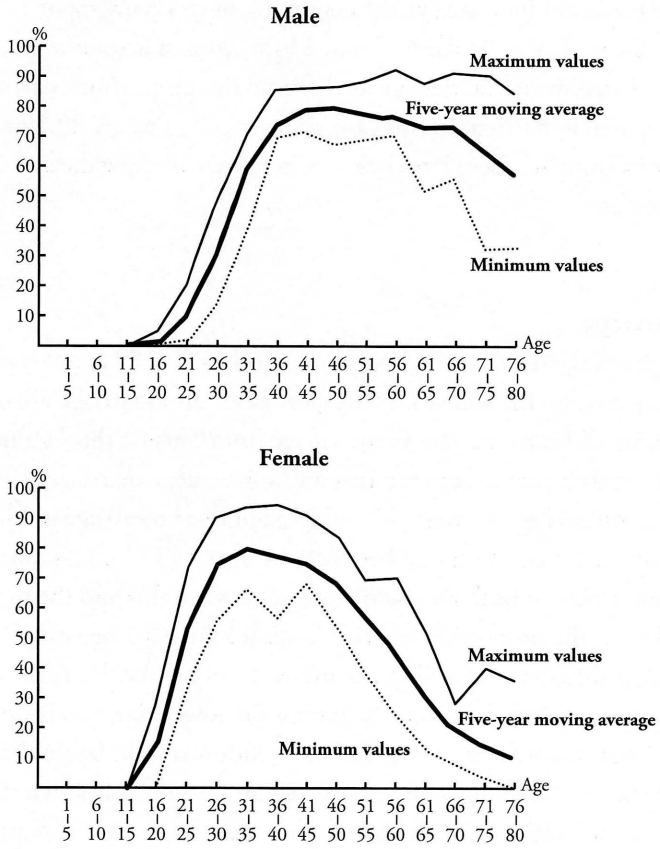
Proportions Married

Nuptiality is the rate obtained by dividing the number of marriages in a given year or period by the population, but is only one index for marriage. The proportion married is determined by calculating how many people out of a given population have spouses. It can also be called an accumulation of marriage activity over a long period of years.

In villages with populations of a mere three hundred or so, such as Nishijo-mura, if the proportion marrying is calculated annually, the trend fluctuates more and it becomes difficult to spot any problems therein. Figure 7-7 therefore shows the proportion marrying by age for the entire period, as a five-year moving average. This figure shows the marriage situation for the people of Nishijo-mura, ignoring fluctuations within the period. Among the men, the proportion married increases sharply after the age of 28, exceeds 50% at 33, and increases until 49, after which it declines gradually. The peak rate in this figure is 80.6% at 49 *sai*, while, for rates broken down by age, the peak rate is 82.4%.

For women, the striking increase starts from after the age of 19, exceeds the 50% line at 23, and continues to increase till 34. The rate at this point in time is 82.8%. Broken

Fig. 7-7 Proportion Married by Age-group



down by age, the peak rate is 84%, for those of 33 *sai*.

Attention must be paid to the fact that these rates show the proportion actually married at the time, as opposed to the proportion ever married. In the light of the general supposition that early and universal marriage are characteristics of Japanese society, the results from Nishijo-mura show comparatively late marriage, and are a far cry from the total population being married.

Hitherto, the author has assumed that when the mean age at marriage cannot be calculated, it is possible to estimate the mean age at marriage using the age at the point where the proportion married exceeds 50%.[11] When the proportion of the population which is married peaks at nearly 100%, in other words, a full marriage society, the Singulate Mean Age at Marriage (SMAM) method can be applied. However, for a society where the peak of the proportion who married is only 80%, as was in the case with Nishijo-mura,

11 Hayami 1986.

this method may not apply. Alternatively, in this case, it may be possible to estimate it through the method I indicated at the beginning of this paragraph.

Taking the peak ages 33 for men and 23 for women is somewhat on the high side. A closely related rate would be the age at the time the proportion married reaches 50% of the peak proportion married. In this case, the ages obtained are 29.5 for men and 21.3 for women. Let us compare these rates below, where we will draw the age at marriage directly from the sources.

Age at Marriage

Table 7-10 shows the distribution by age in each class for 153 couples who married during the period covered by the sources. Here, clear cases of remarriage are omitted, except for men and women who have come to the village from outside through marriage, for whom no distinction can be made between first and subsequent marriages. Two-thirds of all the men are concentrated age between 22 and 31, and their mean age is 28.2. Seventy percent of all the women are concentrated between the ages of 17 and 24, and their mean age is 22.1. The difference for both men and women between this and the mean age at marriage determined from the proportion married is approximately one year.

A striking difference is visible according to class. As the table shows, marriage is early among the upper classes and late among the lower classes. This phenomenon could be predicted but, for women in particular, attention should be paid to the difference of four years between the landowners and the tenant farmers. Although this age group is the most fertile in each class, the difference of four years in the age at marriage still leads to a difference of 1.4 in the average number of births to women in each class.

The key to explaining this difference in the age at marriage between classes is labor migration, which is discussed in the next chapter. Over half the young men and women of this village went to work outside the village, primarily to the big cities. They left the village at a mean age of thirteen or fourteen, and, excluding those who lived in their migration destination for the rest of their lives, or who died away from home, returned after a mean of thirteen or fourteen years. Because it was extremely rare for any of them to marry at their migration destination, the mean age at marriage is late, for both men and women. Consequently, if there is a difference between the classes in the percentage of out-migrant workers, this causes a considerable difference in the age at marriage.

In order to prove this point, Table 7-11 derives the mean (female) age at marriage by class of birth according to whether or not they have experienced labor migration (*dekasegi*). The mean age at marriage between the classes is clearly decided by whether or not they have experienced labor migration. Among those who have not, there is almost no difference between the classes in the mean age at marriage. As is clear from the number of people in each column of the table, labor migration is more prevalent the further down

Table 7-10 Distribution of Age at Marriage

Age	Male					Female				
	LL	SF + VSF	T	O	Total	LL	SF + VSF	T	O	Total
14			1		1					
15						2	2	2		6
16			1		1	2	2	1		5
17			1		1	6	4	2		12
18	1		2		3	5	3	5	1	14
19	2	2	1		5	1	5	3		9
20		1			1	2	4	10		16
21		1	5		6		6	9		15
22	4	1	4		9	3	2	10		15
23		2	4		6		1	9		10
24	2	1	6		9	3	1	12		16
25	2		7	2	11			4		4
26	2	1	3		6			3		3
27	1	5	7		13		2	4		6
28	3	7	11		21		1	2		3
29		1	6		7		1	6	1	8
30	1	3	5		9		1	1		2
31	1	2	5		8		1	4		5
32		2	1		3			1		1
33	1	1	4		6		1			1
34		1	3		4	1				1
35	1		2		3					
36	1	2	1		4			1		1
37		1	3		4					
38	1	1	1		3					
39		1			1					
43	1	1	2		4					
46			1		1					
47			1		1					
56			1		1					
Persons	24	37	89	2	152	25	37	89	2	153
Average	27.4	28.9	28.3	25.0	28.2	19.4	21.1	23.2	23.5	22.1

LL=landlords, SF=small farmers, VSF=very small farmers, T=tenants, O=other

Table 7-11 Average Age at Marriage of Females according to *Dekasegi* Experience

Origins	Experienced *dekasegi*	Did not experience *dekasegi*
Landlords	24.3 (4)	21.2 (26)
Small farmers	27.1 (24)	21.0 (20)
Tenants	25.6 (62)	22.3 (22)
Total	25.9 (90)	21.5 (68)

Numbers within parentheses are the number of persons.

we move in the social structure.

In the lower classes, labor migration delayed marriage with an added result of fewer births to the extent that this can be viewed as a "preventive check" on the population. In fact, the effect of out-migration was far from being just a preventive check, to the extent that some individuals had to confront the problem of being without an heir, an issue which will be addressed in Chapter 9. Since this table shows 158 women born in the village between 1773 and 1835, it is therefore different from Table 7-8, which examines age at marriage of couples who have come to live in the village.

Duration of Marriage

There are 133 couples married between 1773 and 1825, for whom it is possible to calculate the duration of marriage. Table 7-12 shows the distribution across the periods. The mean duration of marriage is 20.1 years. There is one case of a marriage lasting sixty-five years but, to use a modern term, couples who managed to celebrate their golden wedding anniversary, that is, couples who remained married for fifty years, only number 4, or a little over 3%, while 52 couples, or 39% reached their silver wedding anniversary. While on the one hand, quite a few couples were in marriages of comparatively long duration, as can be seen in the table, the most common cases (10 couples) are those where the duration was merely one year, while the marriages of 28 couples, or 21%, ended within five years, and those of another 47 couples, or 35%, within ten years.

Table 7-12 Duration of Marriages (years)

Duration	Couples	Duration	Couples
1	10	25	2
2	6	26	1
3	4	27	4
4	5	28	4
5	3	29	2
6	3	30	5
7	6	31	2
8	1	32	3
9	6	33	3
10	3	35	2
11	5	36	3
12	4	37	3
14	4	38	1
15	1	39	4
16	5	40	2
17	1	42	2
18	1	46	1
19	1	48	3
20	1	49	1
21	2	50	1
22	2	55	1
23	4	58	1
24	3	65	1
		Total	133
		Average	20.1

In this way, among the peasants of Nishijo-mura, approximately one in three marriages ended in a short space of time, within ten years. The percentage lasting a long period of time, twenty-five years or more, is a little under 40%, with the remainder being somewhere in between. Since this does not differ substantially from the overall figures for the seventeen villages in the Nōbi region seen in Chapter 4, the duration of marriage in this village can be thought of as the typical shape of marriages in rural societies in the Nōbi region.

Was there a difference across classes in

the duration of marriage? As can be seen in Table 7-13, when the 168 couples for whom the duration of marriage is known are divided into three classes, the mean rates are as follows: very small farmer: 18.1 years (n=96), small farmer class: 20.7 years (n=36), and landlord class: 15.3 years (n=36), so class seems to have no bearing on the duration of marriage. Contrary to expectation, the duration of landlord class marriages was short. Although the sample size is small, when the composition is examined, the duration of marriage for twelve couples, equivalent to one in three of the landlord class marriages, is five years or less. Amidst the small farmer classes, whose marriages last the longest, a mere six couples' marriages ended within the same duration (there are nineteen such cases among the very small farmer class, or 20%).

The fact that in the landlord class, there are many more cases where the marriage is of short duration is because there are relatively more instances of break-up through the death of the wife or divorce. In a sample of this size, however, full analysis is impossible.

There is, of course, a direct correlation between the duration of a marriage and the number of births. The mean number of births among marriages lasting five years or less is 0.7, 2.3 among marriages lasting 6 to 10 years, 3.2 among marriages lasting 11 to 15 years, 3.4 among marriages lasting 16 to 20 years, 4.2 among marriages lasting 21 to 25 years, and 5.9 among marriages lasting 26 years or more. Unless a marriage continued for at least 20 years, the couples were unable to have the number of children required for

Table 7-13 Duration of Marriages by Class

Duration (years)	Landlords	Small farmers	Very small farmers	Total
1	4	2	9	15
2	4		5	9
3	2	1	1	4
4	1	2	5	8
5	1	1	3	5
6		1	2	3
7	2	1	6	9
8		1	2	3
9	1	1	5	7
10	2	1	1	4
11	3		4	7
12	2	3		5
13			1	1
14	1	2	5	8
15			2	2
16	1	1	3	5
17			2	2
18			1	1
19		1	1	2
20			1	1
21		1	1	2
22			1	1
23		2	2	4
24		1	3	4
25	1	1	2	4
26			1	1
27	2	1	1	4
28		3	4	7
29	1		1	2
30	1	1	2	4
31	1			1
32	2		1	3
33	1		2	3
35			2	2
36			3	3
37	1		2	3
38		1	1	2
39		4		4
40			2	2
42	1	1		2
46		1		1
48			3	3
49	1			1
50		1		1
55			1	1
58			1	1
65			1	1
Total	36	36	96	168
Average duration	15.3	20.7	18.1	18.0

Table 7-14 Duration of Marriages and Number of Births

Duration (years)	0	1	2	3	4	5	6	7	8	9	10	Total	Average
1–5	17	22	2	2								43	0.74
6–10	3	3	9	6	2	2						25	2.28
11–15	2	1	2	9	8	3						25	3.16
16–20		2	5	2	4	2	3					18	3.44
21–25	3	3	1	3	2	7	3	4			1	27	4.19
Over 26	1	1	1	4	3	11	12	9	2	4	3	51	5.86
Total	26	32	20	26	19	25	18	13	2	4	4	189	3.40

regeneration. The details are shown in Table 7-14.

Termination of Marriage

When the reasons for termination of marriage are divided into death of the husband, death of the wife, death of either the husband or wife,[12] and divorce, death of the husband is the most common, comprising 112 cases out of the 189 for which the reason why the marriage ended is known, or 59%. Death of the wife accounts for 56 cases, or 29% of the total. There are 22 cases, or 12%, of divorce. Divorce is, however, the most common reason for ending marriages of only one, two, or three-year duration. All divorces are concentrated in marriages of nine years duration or less. Separation by death is spread evenly across the span of marriage duration. In the case of the death of the wife, the mean duration of marriage is 21.0 years; in the case of the death of the husband, the mean duration is 29.2 years.

In addition, Table 7-15 shows the age distribution at the end of marriage. The ratio of women dying in the under-35 bracket is considerably higher than that for men. This, of course, is due to deaths concomitant with pregnancy and birth. Women are more highly represented in the age 41 and over group. This is because they have reached the age at which the number of marriages that end due to the death of the husband increases. Taking the couples for whom ages at the end of their marriage are clearly known and analyzing the classification of ages at death yields the following results. Among men, up to the 41 to 45 *sai* bracket, the number of husbands who die is surpassed by the number of wives who die, but, in the 46 to 50 *sai* bracket and above, this trend is reversed and the number of husbands who die surpasses the number of wives who die. Although the pattern is not as clear as for men, for women in the 41 to 45 *sai* bracket and above, the number of husbands who die surpasses the number of wives who die.

12 When the husband and wife both die in the same SAC year, according to the sources.

Table 7-15 Age Distribution when Marriages Were Terminated

1. Male

Age	MD	FD	MFD	DV	Total	Age	MD	FD	MFD	DV	Total	Age	MD	FD	MFD	DV	Total
19				1	1	45	2	1		1	4	68	3	1			4
20				1	1	46	3	1			4	69	3	1			4
22	1				1	47	2	4			6	70	2	1			3
25				1	1	49		1			1	71	8	1			9
26			1	1	2	50	4	2			6	72	3	1			4
27	1		1	1	3	51	4	2		1	7	73	5	1			6
28	1			1	2	52	1	2			3	74	3	2	1		6
29	1	2		2	5	53	2	1			3	75	5	1			6
30		1			1	54	1				1	76	3	1			4
32		4		2	6	55	2	1			3	77	2				2
33		1		3	4	56	3	2			5	78	4	1			5
34	2	2		1	5	57	6				6	79	3	1			4
35	3	1		2	6	58	2	4	1	1	8	80	1	1			2
36	2			1	3	59	3		1		4	82	2				2
37	1	3		1	5	60	3	1			4	83	1				1
38	3	2		2	7	61	4	2			6	84	5	1			6
39	2	2		1	5	62	3				3	85		1			1
40	2				2	63	5				5	87	1				1
41		1		1	2	64	3				3	90	1				1
42	1	2			3	65	2	2			4	92		1			1
43		3			3	66	3	1			4	Total	142	70	6	25	243
44	3	2	1		6	67	6	1			7	Average	62.8	53.0	48.0	34.1	56.6

2. Female

Age	MD	FD	MFD	DV	Total	Age	MD	FD	MFD	DV	Total	Age	MD	FD	MFD	DV	Total
16				1	1	38	1	3		1	5	59	5	3			8
17		1		1	2	39	1	1			2	60	4	1			5
18				1	1	40		3			3	61	6	2			8
20		1	1	3	5	41	2				2	62	4				4
21	1	1		4	6	42	3	4			7	63	3	1			4
22		1		2	3	43	2	1	1	1	5	64	3	2			5
23				3	3	44	4				4	65	2				2
24		2			2	45	3	2			5	66	2				2
25	1	1		2	4	46	1	2			3	67	4	1			5
26	1	1	1	1	4	47	4				4	68	2				2
27	3	3		1	7	48	5	1			6	69	2				2
28		2		1	3	49	6	1			7	70	1	1			2
29	4	1			5	50	3		1		4	71	1				1
30	2	2			4	51	3	3			6	72	2	2	1		5
31	3	1		1	5	52	5	1			6	73	1				1
32	1	1			2	53	7				7	75	3				3
33	4	3		1	8	54	5		1		6	78	1				1
34	2	2			4	55	2				2	79	3				3
35	2	2			4	56	6	2			8	80		1			1
36	1	1		1	3	57	3				3	81		2			2
37	1	1			2	58	1	3			4	Total	142	70	6	25	243
												Average	51.5	44.4	44.5	24.8	46.5

MD: husband died FD: wife died MFD: husband and wife died in same year DV: divorced

Difference in Age between Husband and Wife at Time of Marriage

Table 7-16 shows the difference in age between husband and wife at the time of marriage broken down by class. One hundred and ninety-one couples that were married during the period for which SACs still exist were examined, excluding couples for which the alliance was clearly a remarriage. When divided into the period before 1825 and the period after, the mean for the former period is 8.8 years, and for the latter is 5.7 years, revealing that the difference shrinks with time. Whereas, in the former period, there is only a single case of the wife being older, in the latter period, there are fourteen such cases, or 15% of the total.

The mean age difference among sixty-seven couples entered in the first SACs, dating from 1773, is 9.5 years, and the age difference can be seen to shrink across the era.

Furthermore, as shown in Table 7-16, the age difference clearly opens the higher up the social ladder one climbs. Upon reaching the upper classes, it is clear that men married younger women. Among the poor peasant classes, in the latter half of the period, the difference shrinks to 3.1 years, and one-third of the marriages are to an older woman.

So how should these changes be interpreted? One answer might be to match them with trends in the age at marriage, but, as seen previously, the mean age at marriage by class was later for the lower classes, corresponding with the proportions with a history of labor migration work. In spite of this, from the men's point of view, in the lower classes the fact that men married women of around the same ages, or in some cases older, was probably because the number of women away for labor migration increased, making it difficult to find a younger companion. Consequently,

Table 7-16 Age Difference between Husbands and Wives at Time of Marriage

Age difference*	Landlords	Small farmers	Very small farmers	Total
–10			1	1
–9			1	1
–7			1	1
–3		1	4	5
–2			4	4
–1		1	2	3
0			3	3
+1	1	2	9	12
+2	3	2	7	12
+3	1		6	7
+4	4	2	11	17
+5	1	1	9	11
+6	1	3	11	15
+7	1	7	9	17
+8	3	6	7	16
+9	3	6	5	14
+10	1	1		2
+11	2	2	4	8
+12	1	3	3	7
+13	2	1	4	7
+14	3	1	7	11
+15	1	1	1	3
+17	1		1	2
+18		1	1	2
+19	2	1		3
+20			2	2
+22			2	2
+26			1	1
+27			1	1
+28			1	1
Total	31	42	118	191
Average	8.9	7.9	6.4	7.1

*Subtracting wife's age from husband's age

the age at which marriage began was delayed, thereby reducing the number of children it was possible to have, and resulting in a lack of heirs as well.

Sphere of Marriages

The geographical sphere of marriage is an index showing the spatial extent of people's daily lives at the time. In-laws through marriage shape a person's living environment by providing the opportunities through which people meet, for example on ceremonial occasions. However, when we examine the geographical sphere of marriage among the men and women of Nishijo-mura, the most prevalent are marriages between people living within the village. When we examine the 399 women born between 1773 and 1840, 200 of them, or exactly half, are identified as married, and a composition of the remaining 199 reveals that 115 of them died unmarried under thirty *sai*, 68 left the village and all news of them ceased, and 16 of them clearly did not marry. Excluding the ones who died, approximately 30% remained unmarried by thirty *sai*. In the end, of the 200 who married, 46 found partners from within the village, and 154 left to become brides elsewhere.

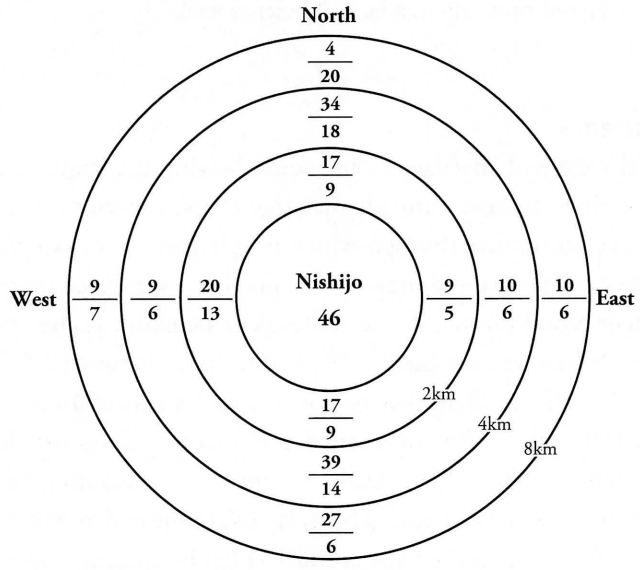
On the other hand, during the same period, 214 women immigrated from other villages in order to marry, though, when we examine their place of birth, we find, as is only natural, that the majority were from neighboring villages, although this pattern is not biased in favor of a small number of villages. Instead, it extends over a wide area, regardless of domain boundaries. The villages that were birthplace to most were Naka-mura, the neighbor to the north, Ōyabu-mura, the neighbor to the south, from which eight people each came, followed by Nakagō-shinden, some considerable distance to the south, with seven people, and then the mother village of Niremata-mura, Katsu-mura, which lies south of Ōyabu-mura, Hirakata-mura in Haguri-gun, on the opposite bank of the Nagara river, and Higashikata-mura in Nakashima-gun, all with six people each.

The drain caused by marriage was much wider than in the case of immigration, and the drain to the cities is particularly conspicuous. Inflow from the cities is almost nil, although the drain spreads not only to Ōgaki, but also the distant cities of Nagoya and Kyoto.

Figure 7-8 shows this geographical sphere of marriage according to distance and direction of migration. In the case of Nishijo-mura, exchange with other villages within the same *wajū* dike fortifications sited to the south was considerable given their position in the northern tip of the Fukuzuka *wajū*. It is also noteworthy that there was a considerable amount of exchange with the villages in the north of Anpachi-gun, and those on the opposite, eastern bank of the Nagara river.

There are a total of twelve villages within a 2 kilometer radius of Nishijo-mura, and intermarriage took place between residents of Nishijo-mura and all of them. At a distance of 2 to 4 kilometers, there was intermarriage with 24, approximately 70%, of the 34 villages within this radius, and at 4 to 6 kilometers, intermarriage with 29, or 43%, of

Fig. 7-8 Geographical Sphere of Marriages



	within 2km	within 4km	within 8km	over 8km
In-migrations to Nishijo	63	92	50	9
Out-migrations from Nishijo	36	44	39	30

the 68 villages. At 6 kilometers distance or greater, the number of villages with which there was intermarriage falls sharply. The distance seen by the people of Nishijo-mura at the time as the geographical extent of their daily lives is clearly a radius of about 6 kilometers—a distance that would take approximately two hours to cover on foot along the winding paths of the day.

Nevertheless, it is necessary to recognize an important exception. That is the presence of towns. There was a considerable connection through marriage to the comparatively close towns of Ōgaki, Imao, and Takasu. It is true that this kind of migration through marriage between farming village and town was exclusively in the direction from Nishijo-mura to the cities and towns, with almost no cases of migration from the cities, with the exception of one person from Nagoya and one from Ōgaki and, moreover, in the former, the marriage ended in divorce two years later.

When the destination of those leaving to marry in cities and towns even further away is examined, in Mino province, there are Kanō, Kasamatsu, and Takada (Tagi-gun), in Owari province, Nagoya, Tsushima, Odai (Kasugai-gun), and Maibara in Ōmi province, and then there are Kyoto and Osaka. In addition, some people also left to marry in the villages in the vicinity of the towns of Yokkaichi and Tsu in Ise province.

Compared with those leaving, the geographical scope of the immigrants was concentrated on the nearby farming villages. As exceptional examples of brides who came

from further away, there are only these: in Mino, Tarui-shuku (Fuwa-gun), Nagoya in Owari, and, surprisingly far from Nōmi-gun, Kaga province (two people) more than 100 kilometers north across the mountains. The final case can safely be called exceptional for the marriages of the time. That such cases did arise can be seen from one example, that of a person called "Yae," who worked as a servant in a warrior's home in Hikone, a castle town 50 kilometers west from Nishijo after 1803, and, having returned to the village in the SAC of 1843, re-established his family's house, which had died out. Three years later, in the SAC for 1846, he welcomed "Chūzō," brother of Sakuemon of Ate-mura in Nōmi-gun, Kaga province, and his aunt "Suyo," into his home and took a bride in 1860. Considering the location of Hikone, as an intersection of the Hokuriku and Nakasendō highways, we can imagine that their opportunity to meet was there. In addition, in 1861, "Sōkichi" of this village remarried taking a wife from Ōsugi-mura in the same Nōmi-gun, Kaga province, perhaps through the same connection. Incidentally, both villages are situated in the mountains of Nōmi-gun, and are close to each other.

Remarriage

Table 7-17 shows the extent of remarriage by sex depending on age at divorce or death of the spouse. Nearly all men up to the 36 to 40 *sai* group remarried. In other words, out of thirty-seven cases, only a mere five never remarried. In the 41 to 45 *sai* group and above, this ratio reverses itself, and in the 51 to 55 *sai* group and above in particular, out of thirty-eight cases, a mere two remarried.

On the other hand, the majority of the women were born outside of the village, and, following divorce or the death of their husbands, they often would return to their original homes, so that what happened to many of them is unknown. As far as it is possible to ascertain, however, the majority in the 26 to 30 *sai* group and below remarried, but few who were any older did. In addition, in

Table 7-17 Remarriages

1. Male

Age groups*	Remarried	Not remarried	Uncertain	Total
Under 20	2			2
21–25	2	1		3
26–30	6	1	3	10
31–35	15	1	3	19
36–40	7	2	3	12
41–45	3	7	1	11
46–50	3	5	1	9
Over 51	2	36		38
Total	40	53	11	104
2. Female				
Under 20	1	1	5	7
21–25	4	1	9	14
26–30	4	2	8	14
31–35	3	5	6	14
36–40	0	5	1	6
41–45	0	13	1	14
46–50	0	17	2	19
Over 51	0	76	3	79
Total	12	120	35	167

* Age at the time previous marriage ended

the 36 to 40 *sai* bracket and above, not a single case of remarriage is to be found. Although the number of cases is small, this is considerably different from the cases for the men.

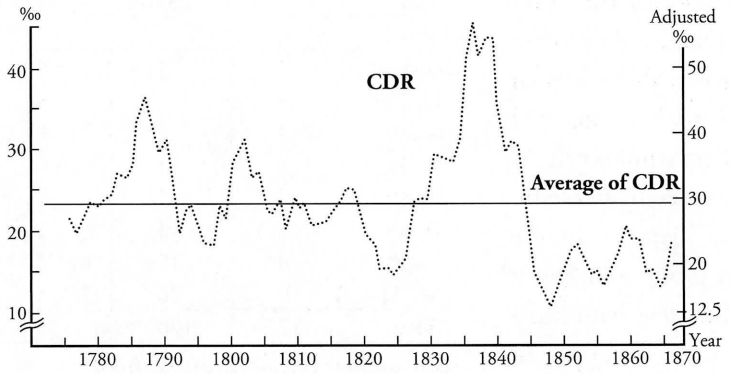
4. Death

Mortality and Crude Death Rate

The number of deaths among the occupants of Nishijo-mura can be calculated simply by counting up entries marked "*ai hate mōshi sōrō,*" the phrase meaning "perished," followed by the disappearance of the individual from the records. Individuals who died before their first SAC was compiled cannot be counted. However, we shall not address this problem here. When we take the number of deaths per annum in the same way as the number of births, and calculate the crude death rate (CDR) by dividing the number of deaths by the population, there is wide fluctuation due to the scale of the population. For example, twenty-eight people died in 1837, so that the CDR reached 91‰, but in 1846, the number of deaths was zero.

Figure 7-9 shows the mean fluctuations of CDR in five-year intervals, in the same way as for the CBR. The right-hand side shows a scale for the rates adjusted by 25%. Mortality rates fluctuate more fiercely than fertility rates. The highest peak is between 1836 and 1839, exceeding forty per thousand, and contrasts well with the drop in the fertility rate. There is also another peak exceeding thirty-five per thousand in 1786, so that it is evident that the mortality rate was also high in this village during the Tenmei Famine of the 1780s and Tenpo Crisis years of the late 1830s. The cause of death, however, is unknown. In particular, during the Tenpo era (1830–1844), the high mortality rate was probably due to epidemic disease rather than . This is evidenced by the fact that recovery thereafter was comparatively rapid. There was also a small peak in the mortality rate in 1802, but,

Fig. 7-9 Crude Death Rates



what should be carefully scrutinized is that, from 1845 onwards to the final year under consideration, the mortality rates were literally "unbelievably low." Even after adjustment, they are still only approximately twenty per thousand.

When these CDR fluctuations are combined with the CBR fluctuations, it becomes possible to explain to a certain extent the population fluctuations for the village. The fall in the population for 1790 was brought about by the high mortality rate, as was the reduction during the mid-Tenpo era. Furthermore, the rapid population growth experienced after the 1840s was the result of the major change in the CBR brought about by the fall in the CDR. However, as a general rule the CBR exceeded the CDR in other periods. In spite of this, the fact that there was no population explosion can only be because natural growth was countervailed by the drain of large-scale migration for *dekasegi* as servants, as will be seen in the next chapter.

Age at Death

The total number of deaths verified by the village SACs is 356 men and 367 women. Table 7-18 and Figure 7-10 show the distribution of people for whom the age at death is known. It is evident from the table and graph that there were many deaths among infants aged five or under, reaching 22% of the total number of deaths among men and 23% among women. In reality, because we have to add those who died prior to being entered in the sources, the deaths among nursing infants grow even more numerous.

The distribution by age at death falls off for people over ten, and continues to be the smallest age group until we reach people in their fifties. Once the dangerous age of infancy is passed, there is a brief respite for a while, until mortality rises again for people in the late fifties onwards. In addition, mortality gains pace among men towards a peak from their late sixties through to their early seventies, and among women, from their seventies onwards. If we examine vertical distribution by age at death for men and women separately, aside from the broad base, there is a cluster between the ages of fifty-five and seventy-five, creating a mushroom cloud shape.

When this is compared with the distribution graph for age at death among city dwellers during the same period, there is clearly a difference in the pattern of death between the city and the rural village.[13] Figure 7-11 superimposes the distribution by age at death for Nishijo-mura on that for Higashimukai Kita-machi, in the city of Nara. In the case of Higashimukai Kita-machi, however, the comparison is in five-year intervals because the sample size is small.

Death in the city is different from that in the rural villages, and attacks people of all ages indiscriminately. In the villages, conversely, as in Nishijo-mura, people who live beyond

13 Hayami 1990.

Table 7-18 Age Distribution at Death

Age at death	Male	Female	Total	Age at death	Male	Female	Total
2	22	32	54	49	1	2	3
3	17	26	43	50	5		5
4	23	15	38	51	3	3	6
5	15	10	25	52	2	4	6
6	7	14	21	53	3	2	5
7	3	6	9	54	2		2
8	5	1	6	55	3	5	8
9	7	1	8	56	5	3	8
10	3	1	4	57	7	2	9
11	4		4	58	4	5	9
12		1	1	59	5	4	9
13	1	1	2	60	4	3	7
14	2		2	61	4	4	8
15	1		1	62	6	2	8
16		2	2	63	9	5	14
17	2	3	5	64	4	7	11
18	2		2	65	3	3	6
19	2		2	66	3	2	5
20	4	4	8	67	9	3	12
21		1	1	68	6	4	10
22	1	1	2	69	7	8	15
23	1	2	3	70	5	8	13
24		2	2	71	9	7	16
25		1	1	72	3	6	9
26	2	4	6	73	7	4	11
27	2	2	4	74	4	5	9
28	3	3	6	75	6	7	13
29	1	1	2	76	9	8	17
30	1	1	2	77	6	9	15
31		2	2	78	6	6	12
32		1	1	79	4	4	8
33	2	4	6	80	2	5	7
34	4	2	6	81	3	6	9
35	1	3	4	82	3	6	9
36	3	1	4	83	3	7	10
37	2		2	84	8		8
38	5	4	9	85	1	3	4
39	3	2	5	86		3	3
40	2	4	6	87	3	2	5
41		1	1	88	1	3	4
42	1	3	4	89	1	4	5
43		1	1	90	1		1
44	4	2	6	91		1	1
45	1	1	2	92		1	1
46	3	3	6	93		1	1
47	1		1	94	1		1
48		2	2	101		1	1
				Total	344	349	693

Fig. 7-10 Distribution of Age at Death

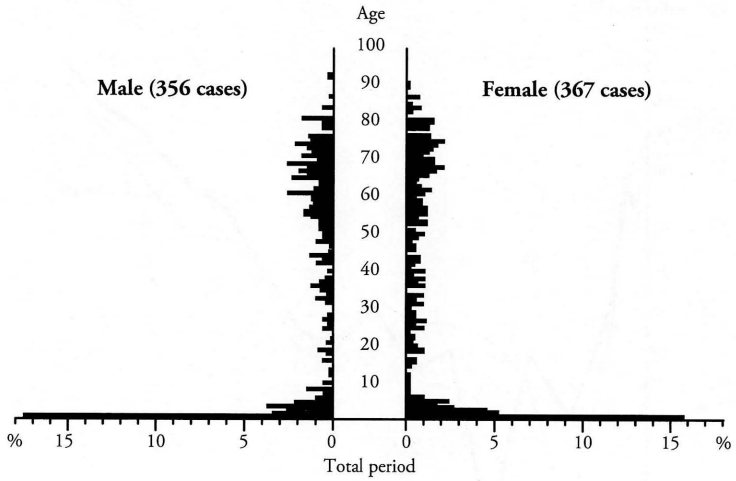
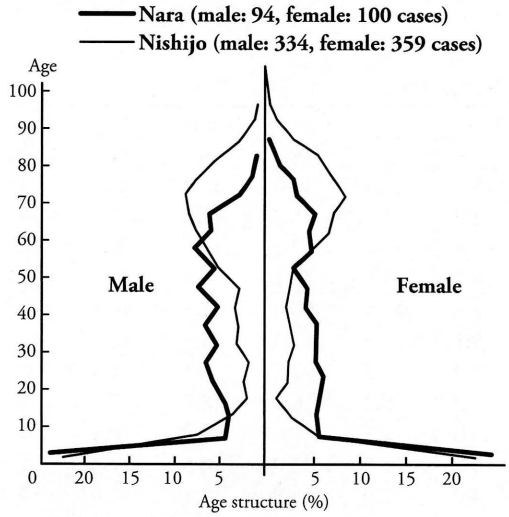


Fig. 7-11 Age at Death in Nishijo and Nara



being a nursing infant are at comparatively less risk to die until the age of about sixty. I plan to study the historical demography of urban dwellers in later research. This kind of difference in death patterns must certainly have influenced views of life and death.

Age-specific Mortality

The distribution of age at death given above is influenced by the age composition of the population. If the population in a given age bracket is large, so will be the number

Fig. 7-12 Age-specific Mortality Rates

Table 7-19 Mortality by Age (‰)

Age	Male			Female			Total		
	Earlier	Later	Total	Earlier	Later	Total	Earlier	Later	Total
2	48.4	46.7	47.5	59.0	68.2	63.1	53.9	56.6	55.2
3	46.4	24.3	35.1	65.9	45.5	57.0	56.6	33.7	45.7
4	57.3	42.4	49.7	37.2	41.7	39.2	46.9	42.1	44.6
5	32.4	36.5	34.5	38.1	5.6	24.1	35.4	22.6	29.4
2–5	46.3	37.5	41.9	50.6	41.8	46.8	48.6	39.5	44.3
6–10	20.6	8.1	14.3	11.3	12.3	11.7	15.6	10.0	13.0
11–15	2.7	7.3	5.2	2.1	1.5	1.9	2.4	4.8	3.5
16–20	5.2	12.9	9.2	6.1	8.7	7.1	5.7	11.1	8.2
20–25	3.3	0	1.7	7.0	14.9	10.5	5.1	6.9	5.9
26–30	9.8	9.2	9.5	13.0	10.5	11.9	11.3	9.8	10.6
31–35	11.7	4.0	7.9	15.9	8.1	12.0	13.8	6.1	10.0
36–40	14.8	14.4	14.6	17.3	15.3	16.3	16.0	14.8	15.4
41–45	6.2	12.6	9.1	6.3	15.3	10.3	6.2	14.0	9.7
46–50	6.1	19.3	11.7	4.0	16.7	9.4	5.1	18.0	10.5
51–55	23.3	19.3	21.7	12.5	30.3	19.8	17.8	25.0	20.7
56–60	26.1	48.1	34.7	24.2	29.0	26.1	25.1	37.9	30.2
61–65	45.7	42.7	44.6	22.4	33.7	26.9	33.6	37.9	35.3
66–70	73.8	65.2	70.5	23.7	80.4	46.3	47.3	73.5	57.5
71–75	93.9	80.6	89.0	61.2	113.5	78.2	75.0	98.1	82.9
76–80	134.5	160.0	144.3	108.0	115.8	110.7	118.6	135.3	124.7
81–85	184.6	88.2	151.5	170.5	214.3	184.6	176.5	157.9	170.3
86–90	444.4	100.0	206.9	153.8	625.0	234.0	208.3	250.0	223.7

of deaths. Consequently, in order to determine accurately the pattern of death by age, we have to examine age-specific mortality. Here, supposing a possible shift over time, the period has been divided into two: before 1825 and 1826 onwards. The age-specific mortality for each age in each of these two periods is shown in Table 7-19, and at five- year intervals in Figure 7-12. It goes without saying that the hollowing out in the age structure between the ages of sixteen and forty can only be because so many people in this age bracket were away for labor migration.

When the whole population is examined, the age-specific mortality rate, high at the nursing infant stage, is at its lowest among the 11 *sai* to 15 *sai* bracket and, after tending to stabilize at a comparatively low level until the 21 to 25 age bracket, rises once again. There is a considerable difference between men and women, with men experiencing their lowest mortality in the 21 to 25 *sai* group and mortality continuing to be comparatively low until the 31 to 35 *sai* group. Among women, the lowest level is among the 11 to 15 age group, and surpasses men from the age of 21 until the 41 to 45 group. This is because of the risk of death during pregnancy and childbirth. Thereafter, the mortality among men increases sharply, and continues to be greater than that among women until 80 *sai*. Generally, women live longer, but the size of the sample is too small to be able to advocate anything regarding figures for age 80 or above.

The mortality rate among the ten *sai* and under groups drops conspicuously in the latter period. As stated earlier, since it is known that a doctor who had studied in Kyoto began practicing in the village and may have introduced vaccination methods, it is possible that smallpox had been eradicated, or that the number of people with immunity increased and the number of sick people therefore declined. This doctor, Shūan, was a student of the Kyoto doctor Koyama Keisuke, a doctor of Chinese medicine who had translated the Chinese edition of E. Jenner's "An Inquiry into the Causes and Effects of the Variolae Vaccinae" (1798) into Japanese and undoubtedly treated smallpox.[14]

In Tokugawa Japan, smallpox was so rife that it could almost be called an endemic disease. Since immunity is restricted to those who have contracted the disease and cannot be passed on genetically to children, the number of infant patients and their mortality rate were always high. This was the era in which vaccination came to be used as a means of preventing smallpox. There were two vaccination methods: Jenner's cowpox vaccine, which was introduced from the Netherlands to Nagasaki in 1849, and a human vaccine

14 According to *Heian jinbutsushi* (Sakaiya, 1852), p. 35, Koyama Keisuke was born in Kumano, Kii province, was also called Rissei, and lived in the Tōfūkan, also known as Shijō Kita, Karasuma, Kyoto. In the *Nihon yōgaku hennenshi* (original author: Ōtsuki Nyoden, revised by Satō Eishichi, 1965, pp. 494–95), the entry for 1842 is taken to be the *Intō shinpō zensho* (Complete Book of Smallpox), 2 volumes, ed. Koyama Hōshū, and by way of explanation is written: "This book is the translation of the 'Concise Smallpox Book,' with Western explanations, translated from Chinese to contemporary Japanese and published in 1847. Its appendix (one volume) was published in 1849." From this we know that Koyama was the person who translated Jenner's smallpox vaccination method from the Chinese translation, and introduced it to Japan. Hayami 1988.

invented in China, but even supposing Shūan brought vaccines to Nishijo-mura, it is unclear as to which method he used.

Shūan returned from Kyoto in 1842 and lived in his family's main house for a while, but broke away to establish a branch family in 1845 at the age of twenty-eight, opening a clinic and marrying a daughter of Kutōta of Mikkaichi-mura, approximately fifteen kilometers to the north. Occupation is not normally entered in the SACs, but in Shūan's case, his title of "doctor" is appended. It is unclear exactly what kind of activities Shūan undertook, but following the opening of his practice, child mortality fell sharply.

Child Mortality

Let us examine child mortality among the under-fives. Between 1773 and 1800, the births to child deaths was 280: 61, 248: 43 between 1801 and 1825, 261: 52 between 1826 and 1850, and 203: 17 between 1851 and 1869. Although there is a mismatch between the year of birth and the year of death for a particular birth cohort, taking this as the rough child mortality rate for each period results in rates of 218, 173, 199, and 83 per thousand. In the final era, it is clear that there was a sharp drop. Because the number of births did not fall, the population of the village rose suddenly during this period, increasing from a low of 277 people in 1843 and continuing to grow with a more than 1% annual growth rate until the Meiji era.

This is clearly due to a dramatic fall in child mortality, and coincides nicely with the period when Shūan, who had studied vaccination, returned to the village and began his practice as a doctor. Although this is only circumstantial evidence, Nishijo-mura also experienced a rapid decline in child mortality for approximately thirty years, when vaccinations might be given before the Meiji government made it compulsory.

As seen above, this village, during the twilight of the Tokugawa period, experienced a drop in child mortality that can only be called unique, leading to population increase. Even supposing that this were the result of smallpox immunizations introduced by a single doctor, we are still left with the question of whether or not, in the end, this phenomenon spread to the entire region. However, since it is known that the populations of premodern society fluctuated wildly as a result of infant deaths, Nishijo-mura at the end of the Tokugawa period can therefore be viewed in one sense as having sloughed off the character of premodern societies as regards its population.

Let us take several indices pertaining to child mortality. Table 7-20 shows the contrast between the number of live births and the number of deaths among those up to five *sai* for approximate ten-year intervals. People who left for other villages before the age of five as adopted children or for other reasons are included under "gone elsewhere," and, when calculating the mortality rates, are subtracted from the denominator. This table emphasizes just how much child mortality fell during the period in which the doctor

Shūan was practicing. In addition, in the ten years after Shūan died and no doctor was available, child mortality rose once again, and the population composition of the village returned to its "premodern pattern."

Table 7-21 shows the relationship between the mother's age at the time of birth and child death. In general, the lower the mother's age, the higher the child mortality rate. This is the opposite of what is seen in other villages. However, we must keep in mind that infant mortality is not included.

Table 7-22 expresses in tabular form the child mortality by order of birth per number of births. Mortality among first and second order births is high compared with subsequent births. This tallies with the results in Table 7-21. The mortality rates for the later born decline, but it is essential to bear in mind that the number of cases also falls. When the relationship with the number of births is examined, it is clear that, no matter what the case, about 25% of the children were lost by the age of five. For couples that had five or fewer children, there are more couples that did not lose any children in infancy, but this trend is reversed among couples with five or more children. Here too, however, as the number of births increases, the number of couples decreases to the point of losing statistical relevance.

Life Table

If the age-specific mortality can be determined, it is possible to calculate life expectancy and compile life tables, and to determine the survival ratio by age. The problem is, of course, the sample size. The total number of deaths in Nishijo-mura is 727, which is approximately even, half and half, for both men and women. Since there are also ages at which the number of deaths is zero, these must either be adjusted in some way, or the mortality rates determined in five-year intervals. Furthermore, unless we can include deaths that ocurred prior to the compilation of the first SAC, it is not possible to determine life expectancy. Despite this problem, cases where it is possible to apprehend all the deaths without any missing years using SACs compiled from the resident population, as in Nishijo-mura, are still extremely valuable.

When, as with the Nishijo-mura SACs, a person's movements continued to be recorded for several years even if they left the village, it is partially possible to determine to what age they lived by pursuing them throughout their life. While it is possible with this method to attain an accurate rate for the life expectancy of a given cohort, the sample size becomes limited. For example, because some people born after 1801 continued to live beyond the last year of the sources, 1869, it is not possible to trace the lives of them all.

On the other hand, the second method, which is still in use today, takes the mortality rates by age for a given year as standard and presumes a stable population, that is, assumes that there is no fluctuation in the composition by age. To this extent, the

Table 7-20 Child Mortality (Age under 5)

Birth cohorts	Male				Female				Total			
	Births	Moved out	Deaths	Mortality	Births	Moved out	Deaths	Mortality	Births	Moved out	Deaths	Mortality
1773–1780	33		5	0.152	38		7	0.184	71		12	0.169
1781–1790	48		9	0.188	41	1	7	0.175	89	1	16	0.182
1791–1800	53	1	5	0.096	67		16	0.239	120	1	21	0.176
1801–1810	43	1	12	0.286	64		9	0.141	107	1	21	0.198
1811–1820	49	1	8	0.167	41		9	0.220	90	1	17	0.191
1821–1830	64	2	13	0.210	41		9	0.220	105	2	22	0.214
1831–1840	51	2	12	0.245	52	3	10	0.204	103	5	22	0.224
1841–1850	62	1	7	0.115	43	1	5	0.119	105	2	12	0.117
1851–1860	56	1	1	0.018	51		3	0.059	107	1	4	0.038
1861–1864	20		3	0.150	24		3	0.125	44		6	0.136
Total	479	9	75	0.160	462	5	78	0.171	941	14	153	0.165

Moved out: moved to another place before the age of 5. This is not included in the calculation of mortality.

Table 7-21 Mother's Age at Giving Birth and Child Mortality

Age	Births	Child deaths	Mortality (‰)
16–20	54	14	259.3
21–25	194	37	190.7
26–30	210	34	161.9
31–35	187	30	160.4
36–40	136	23	169.1
41–45	63	9	142.9
46–50	15	2	133.3
Total	859	149	173.5

Table 7-22 Child Mortality by Birth Order

Number of births \ Birth order	1	2	3	4	5	6	7	8	9	10	Total deaths	Total births	Mortality	Couples	Couples without child deaths (%)
1	8										8	32	0.250	32	24 (75.0)
2	7	6									13	44	0.295	22	11 (50.0)
3	4	5	5								14	57	0.246	19	12 (63.2)
4	2	6	4								12	52	0.231	13	8 (61.5)
5	4	6	6	2	4						22	90	0.244	18	12 (66.7)
6	4	4	2	1	3	4					18	114	0.158	19	7 (36.8)
7	4	3	8	2	4	1	2				24	105	0.229	15	5 (33.3)
8		1		1		2		1			5	24	0.208	3	1 (33.3)
9	1	1			3	1					6	36	0.167	4	1 (25.0)
10	1	2					3		2	1	9	40	0.225	4	
Total	35	34	25	6	14	8	5	1	2	1	131	594	0.221	149	81 (54.4)

second method cannot be called as "realistic" as the first, because it unavoidably has a hypothetical character.[15] However, it has wide-ranging application, and the sample size is also large. Here, I have taken advantage of the fact that the sources permit both methods of measurement.

Table 7-23 determines the life expectancy and the survival rate for 241 people (122 men, 119 women) whose age at death is clearly known, out of a total of 280 men and women born between 1773 and 1800. Because the sample size is small and starts from two *sai* in the Japanese reckoning to seventy *sai*, these are strictly no more than rough figures. However, they tell the truth to some extent. The life expectancy at two *sai* for both men and women was thirty-four, and the life expectancy at birth, the mean life expectancy, was probably lower than thirty. In the case of Nishijo-mura, many men and women migrated to the cities to work, and died at a comparatively young age. This is lower than the cases from Iinuma-mura described in Chapter 5.

Table 7-23 Life Expectancy of Residents (1)*

Age	Life expectancy (years)		Survival ratio	
	Male	Female	Male	Female
2	34.6	34.4	100%	100%
5	37.8	39.9	84.4	79.8
10	37.5	40.6	74.6	69.7
15	34.2	35.6	71.3	69.7
20	31.1	31.8	67.2	64.7
30	23.7	27.4	61.5	56.3
40	19.1	23.8	47.5	47.1
50	14.0	18.5	35.2	37.8
60	8.3	14.2	23.0	26.9
70	5.0	9.6	8.2	16.8

* Not including death under age 2 (2 *sai*)

Next, using the second method, let us attempt a measurement assuming the mortality rate for the first year of life as 200‰, based on the age composition and the number of deaths across the ninety-seven years from the surviving sources. Table 7-24 is the life table for the residents of Nishijo-mura compiled on the above premise.

There are several assumptions included in this table. First of all, age is shown in round numbers of years. Although it is impossible to meld age zero with the age of two according to Japanese reckoning, two *sai* in the SACs is taken to be one full year of age, the mortality rate for age zero is taken to be 200‰ as stated above, and death from the age of one onwards is shown as the age according to Japanese reckoning in the SACs, minus one. The number of years lived (*nlx*) should strictly be survival for one full year from one birthday to the next, but of course, there is no such information pertaining to individuals. Normally, deaths are taken to be evenly distributed across the year, and the rate of *nlx* is obtained by subtracting half of the number of deaths (*ndx*) from the number of survivors of that age (*lx*). In this table, people past the age of one are represented in this way. The problem is when they are age zero, given that the post natal mortality rate is the highest experienced, since the midpoint cannot be calculated. With infant deaths, it is essential to have statistics per day, week, and month, but these cannot be determined from the

15 Kobayashi 1979, pp. 3–61.

Table 7-24 Life Table (2)*

	Male						Female					
Age	Mortality	Survivors	Deaths	Survival years	Total survival years	Life expectancy	Mortality	Survivors	Deaths	Survival years	Total survival years	Life expectancy
x	${}_nQ_x$	l_x	${}_nd_x$	${}_nL_x$	T_x	$\hat{e}_x$	${}_nQ_x$	l_x	${}_nd_x$	${}_nL_x$	T_x	$\hat{e}_x$
0	0.2000	100000	20000	83000	3675449	36.75	0.2000	100000	20000	83000	3667562	36.68
1	0.0475	80000	3800	78100	3592449	44.91	0.0631	80000	5048	77476	3584562	44.81
2	0.0351	76200	2675	74863	3514349	46.12	0.0570	74952	4272	72816	3507086	46.79
3	0.0497	73525	3654	71698	3439486	46.78	0.0392	70680	2771	69295	3434270	48.59
4	0.0345	69871	2410	68666	3367788	48.20	0.0241	67909	1637	67091	3364975	49.55
5	0.0194	67461	1309	66807	3299122	48.90	0.0317	66272	2100	65222	3297884	49.76
6	0.0074	66152	490	65907	3232315	48.86	0.0178	64172	1143	63601	3232662	50.37
7	0.0126	65662	827	65249	3166408	48.22	0.0026	63029	163	62948	3169061	50.28
8	0.0236	64835	1530	64070	3101159	47.83	0.0026	62866	164	62784	3106113	49.41
9	0.0820	63305	519	63046	3037089	47.98	0.0026	62702	1 63	62621	3043329	48.54
10	0.0116	62789	728	62422	2974043	47.37	0.0027	62539	169	62455	2980708	47.66
11	0.0000	62058	0	62058	2911621	46.92	0.0028	62370	174	62283	2918253	46.79
12	0.0032	62058	199	61959	2849563	45.92	0.0000	62196	193	62100	2855970	45.92
13	0.0070	61859	433	61643	2787604	45.06	0.0000	62003	0	62003	2793870	45.06
14	0.0037	61426	227	61313	2725961	44.38	0.0081	62003	0	62003	2731867	44.06
15	0.0000	61199	0	61199	2664648	43.54	0.0137	62003	502	61752	2669864	43.06
16	0.0121	61199	740	60829	2603449	42.54	0.0000	61501	843	61080	2608112	42.41
17	0.0085	60459	514	60202	2542620	42.06	0.0000	60658	0	60658	2547032	41.99
18	0.0086	59945	516	59687	2482418	41.41	0.0133	60658	0	60658	2486374	40.99
19	0.0171	59429	1016	58921	2422731	40.77	0.0142	60658	807	60255	2425716	39.99
20	0.0000	58413	0	58413	2363810	40.47	0.0049	59851	850	59426	2365461	39.52
21	0.0044	58413	257	58285	2305397	39.47	0.0095	59001	289	58857	2306035	39.08
22	0.0044	58155	255	58028	2247112	38.64	0.0149	58712	558	58433	2247178	38.27
23	0.0000	57900	0	57900	2189084	37.81	0.0093	58154	866	57721	2188745	37.64
24	0.0000	57900	0	57900	2131184	36.81	0.0146	57288	533	27022	2131024	37.20
25	0.0083	57900	481	57660	2073284	35.81	0.3015	56755	828	56341	2074002	36.54
26	0.0083	57419	476	57181	2015624	35.10	0.0150	55927	851	55502	2017661	36.08
27	0.0085	56943	484	56701	1958443	34.39	0.0050	55076	826	54663	1962159	35.63
28	0.0090	56459	508	56205	1901742	33.68	0.0096	54250	271	54115	1907496	35.16
29	0.0390	55951	778	55562	1845537	32.98	0.0049	53979	518	53720	1853381	34.34
30	0.0000	55173	0	55173	1789975	32.44	0.0050	53461	262	53330	1799661	33.66
31	0.0049	55173	270	55038	1734802	31.44	0.0150	53199	266	53066	1746331	32.83
32	0.0099	54903	544	54631	1679764	30.60	0.0150	52933	794	52536	1693265	31.99
33	0.0152	54359	826	53946	1625133	29.90	0.0202	52139	1053	51613	1640729	31.47
34	0.0100	53533	535	53266	1571187	29.35	0.0155	51086	792	50690	1589116	31.11
35	0.0099	52998	525	52736	1517921	28.64	0.0160	50294	805	49892	1538426	30.59
36	0.0152	52473	798	52074	1465185	27.92	0.0109	49489	539	49220	1488534	30.08
37	0.2550	51675	1317	51017	1413111	27.35	0.0160	48950	784	48558	1439314	29.40
38	0.0105	50358	529	50094	1262094	27.05	0.0109	48166	525	47904	1390756	28.87
39	0.0115	49829	573	49543	1312000	26.33	0.0278	47641	1324	46979	1342852	28.19
40	0.0000	49256	0	49256	1262457	25.63	0.0056	46317	259	46188	1295873	27.98
41	0.0057	49256	281	49116	1213201	24.63	0.0167	46058	769	45674	1249685	27.13
42	0.0000	48975	0	48975	1164085	23.77	0.0057	45289	259	45160	1204011	26.59

	Male						Female					
Age	Mortality	Survivors	Deaths	Survival years	Total survival years	Life expectancy	Mortality	Survivors	Deaths	Survival years	Total survival years	Life expectancy
x	${}_nQ_x$	l_x	${}_nd_x$	${}_nL_x$	T_x	$\hat{e}_x$	${}_nQ_x$	l_x	${}_nd_x$	${}_nL_x$	T_x	$\hat{e}_x$
43	0.0225	48975	1102	48424	115110	22.77	0.0116	45030	522	44769	1158851	25.74
44	0.0690	47873	809	47469	1066686	22.28	0.0120	44508	534	44241	1114082	25.03
45	0.0225	47064	1059	46535	1019217	21.66	0.0118	43974	519	43715	1069841	24.33
46	0.0059	46005	271	45870	972682	21.14	0.0000	43455	0	43455	1026126	23.61
47	0.0000	45734	0	45734	926812	20.27	0.0175	43455	760	43705	982671	22.61
48	0.0176	45734	805	45332	881078	19.27	0.0117	42695	500	42445	939596	22.01
49	0.0119	44929	535	44662	835746	18.60	0.0059	42195	249	42071	897151	21.26
50	0.0307	44394	1363	43713	791084	17.82	0.0180	41946	755	41569	855080	20.39
51	0.0063	43031	271	42893	747371	17.37	0.0242	41191	997	40693	813511	19.75
52	0.0258	42760	1104	42208	704475	16.48	0.0185	40194	743	39823	772818	19.23
53	0.0263	41656	1095	41109	662267	15.90	0.0190	39451	750	39076	732995	18.58
54	0.0196	40561	791	40166	621158	15.31	0.0190	38701	735	38334	693919	17.93
55	0.0327	39770	1300	39120	580992	14.61	0.0255	37966	968	37482	655585	17.27
56	0.0476	38470	1831	37555	541872	14.09	0.0127	36998	470	36763	618103	16.71
57	0.0294	36639	1077	36101	504317	13.76	0.0382	36528	1395	35831	581340	15.91
58	0.0391	35562	1390	34867	468216	13.17	0.0268	35132	941	34662	545509	15.53
59	0.0234	34171	799	33772	433349	12.68	0.0276	34191	944	33719	510847	14.94
60	0.0462	33372	1542	32601	399577	11.97	0.0208	33247	692	32901	477128	14.35
61	0.0625	31830	1990	30835	366976	11.53	0.0214	32556	697	32208	444227	13.65
62	0.0407	29840	1214	29233	336141	11.26	0.0222	31859	707	31506	412019	12.93
63	0.0531	28626	1520	27866	306918	10.72	0.0543	31152	1692	30306	380513	12.21
64	0.0179	27106	486	26863	279052	10.29	0.0165	29460	486	29217	350207	11.89
65	0.0636	26620	1692	25774	252189	9.47	0.0256	28974	742	28603	320990	11.08
66	0.0660	24928	1646	24105	226415	9.08	0.0431	28232	1217	27624	292387	10.36
67	0.0632	23282	1471	22547	202310	8.69	0.0354	27015	956	26537	264763	9.80
68	0.0795	21811	1734	20944	179763	8.24	0.0901	26059	2348	24885	238226	9.14
69	0.0843	20077	1693	19231	158819	7.91	0.0381	23711	903	23260	213341	9.00
70	0.0779	18384	1432	17688	139588	7.59	0.0808	22808	1843	21887	190081	8.33
71	0.0571	16952	968	16468	121900	7.19	0.0851	20965	1784	20073	168194	8.02
72	0.1324	15984	2116	14926	105432	6.60	0.0471	19180	903	18729	148121	7.72
73	0.0781	13868	1083	13327	90506	6.53	0.0494	18277	903	17826	129392	7.08
74	0.1034	12785	1322	12124	77179	6.04	0.1316	17374	2286	16231	111566	6.42
75	0.2075	11463	2379	10274	65055	5.68	0.1014	15088	1530	14323	95335	6.32
76	0.1163	9084	1056	8556	54781	6.03	0.1639	13558	2222	12447	81012	5.98
77	0.1892	8028	1519	7269	46225	5.76	0.0755	11336	856	10908	68565	6.05
78	0.0938	6509	611	6204	38959	5.98	0.1087	10480	1139	9911	57657	5.50
79	0.0690	5898	407	5695	32752	5.55	0.0952	9341	889	8897	47746	5.11
80	0.1481	5491	813	5085	27057	4.93	0.1351	8452	1142	7881	38849	4.60
81	0.0435	4678	4678	21972	21972	4.70	0.1613	7310	7310	30968	30968	4.24

* Based on the deaths between 1773 and 1869: male 360 female: 367. With assumption of the mortality at age 0=200‰.

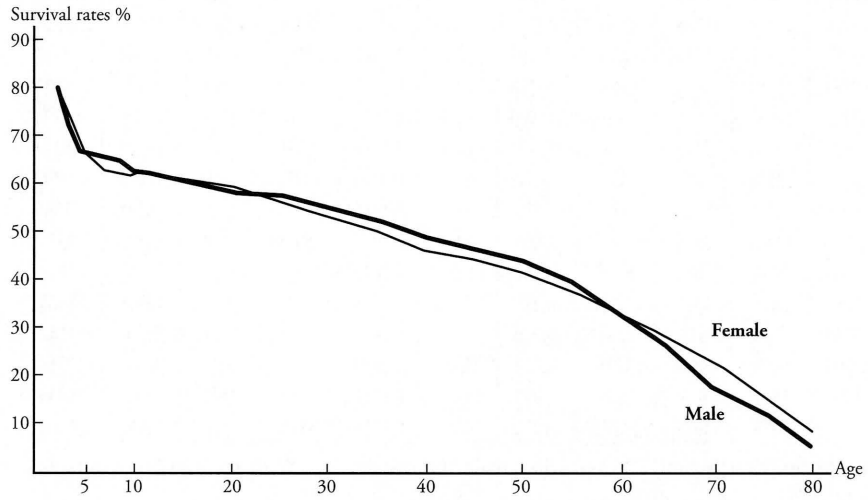
Nishijo-mura SACs. Unavoidably, the midpoint is taken to be 70%. In other words, 70% of children who die before their first birthday are taken to have died before they are six months old. This is based upon modern figures.[16]

Moreover, with a population of this scale, there are also ages at which the number of deaths is zero. This does not prevent us from compiling a life table, but neither is it to be desired. Furthermore, the fact that the total figures for ninety-seven years are used presumes a stable population during that period, but, in reality, the child mortality rate fell towards the end of Tokugawa period. Analysis is problematic if such fluctuations are not built in to the statistics.

This table is therefore an attempt at compiling a life table for a small population involving several assumptions, as a pilot study for handling larger groups in the future, so the resulting figures are only rough. The compilation of a life table from the SACs requires a population of a certain size, data drawn from excellent entries, and hypotheses that are acceptable. With all the life tables compiled to date, there have been many occasions when no foundation or method has been described, so comparison of results is impossible. As a critical reflection on my own past work as well, I would like to urge that future calculations be presented in a form that can be integrated with the results of other research.

Examining the table with these cautions in mind, we find a life expectancy at birth of approximately 36.7 for both men and women. Among rates for the mean life expectancy of Tokugawa period peasants reported to date on the basis of SACs, including those reported by this author, this is somewhat low. Mean life expectancy for Tokugawa period peasants, then, was probably in this vicinity.

Fig. 7-13 Survival Rates



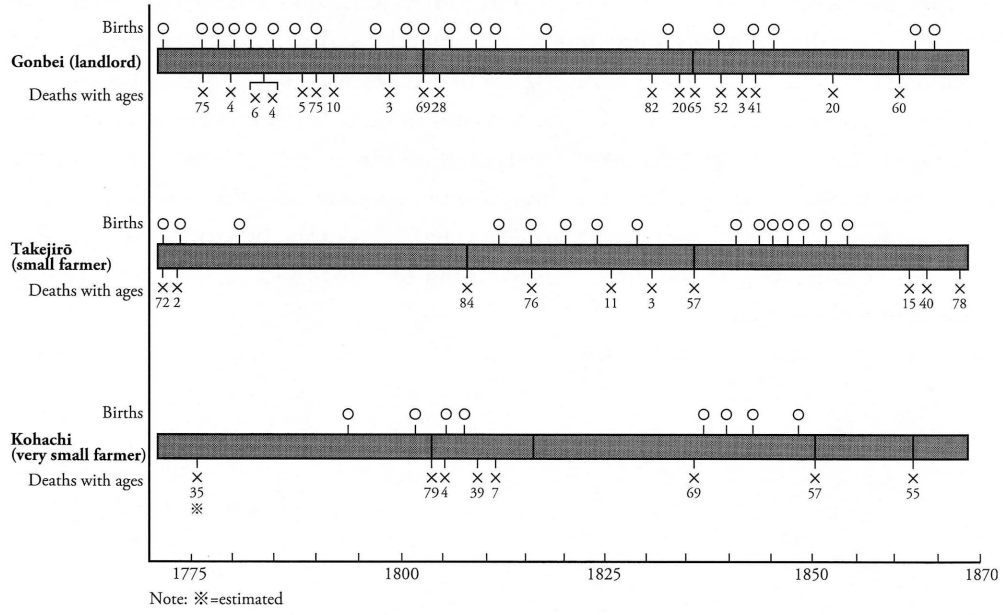
16 Ibid., pp. 25–28, "Table 2, Japanese Life Tables (nationally, 1977)."

Subsequently, the mean life expectancy rises and, after reaching a peak at five to six *sai* for boys and six to seven *sai* for girls, begins to decline thereafter. The difference between men and women is not as big as originally forecast, but does reflect the fact that women live longer and once the age of thirty-five is passed, a gap of two years opens up, which continues until around the age of sixty. Rates for age seventy and over are not sufficient in number to be statistically significant.

One other fascinating phenomenon that can be determined from this table is the age at which the survival rate for newborns reaches the 50% mark. This is equivalent to thirty-nine *sai* for men and thirty-six *sai* for women. However, this is affected heavily by the hypothesis that the mortality rate at age zero is 200‰. If taken from age one (at the point of their debut in the SACs), this figure becomes fifty-four *sai* for men and fifty-two *sai* for women, giving people a life-span of "fifty years."

Figure 7-13 is the survival curve based on Table 7-24. Naturally, it reflects trends in the age-specific mortality, so, after falling dramatically during the nursing infant period, a brief respite continues, before the fall once again accelerates once the age of fifty has been passed.

Fig. 7-14 Births and Deaths within Three Families



Note: ※=estimated

5. Life History from Three Types of Households[17]

Here, let us cite specific cases of the frequency of life and death in a single household. Selecting three households to represent the landlords ("Gonbei," head of a house in 1773), the small farmers ("Takejirō," also head of a house in 1773), and the very small farmers ("Kohachi," the same), Figure 7-14 shows the frequency of both birth and death in each of these households during the period for which there are surviving sources. In Gonbei's house, because of the early marriages and vast number of children born, there were twenty-one births and eighteen funerals. In Takejirō's house, there were fifteen births and ten funerals (of which, one person died at a *dekasegi* destination), and in Kohachi's house, there were eight births and eight funerals, fewer than half those of Gonbei's house.

This figure does not record entry into the house by marriage for either brides or grooms, but there are five entries of wedding celebrations in Gonbei's house and, including births, there are forty-four ceremonial occasions in total, amounting to a frequency of one every 2.2 years.

In addition, there is the ceremony held on the anniversary of a death in Buddhist society. Assuming that all of the Buddhist ceremonies were observed on the first, third, seventh, thirteenth, seventeenth, twenty-third, thirty-third, and fiftieth anniversaries of each and every death, the resulting number is tremendous. Assuming hypothetically that ceremonies were held on death anniversaries five times for each person, this makes a total of ninety such ceremonies in Gonbei's house, so that, nearly every year, ceremonies to console the dead were held apart from the traditional ones at *obon*[18] and on the equinoxes in every year. The fact that these ceremonies were more numerous the richer the household is extremely interesting from the viewpoint of the history of everyday life. This also explains why, in the rural villages during the Tokugawa period, there were so many Buddhist temples.

17 From Hayami 1988, p. 107.

18 Buddhist All Souls' Day (15th day, seventh month).