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The Reliability of the Pre-modern Korean Household Register Data for an Historical Demography Analysis**

I. Introduction

In a paper read before a group of sinologists in the 1985 Qing population history workshop at California Institute of Technology, Arthur P. Wolf[1] advanced an "antithesis" that the myth of Chinese family size is not a myth at all, at least not for all Chinese. Wolf drew his evidence from the household register data from nine districts or *li*'s in northern Taiwan for the years 1905–45. Obviously, he must have checked the possible sources of errors in register data, including under-reporting, a large-scale omissions of young children under the age of five and those who died unmarried, and a large chunk of female population aged less that ten years, not to speak of the slave population that contributed little to the maintenance of the household as

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1) Wolf, Arthur P., "Chinese Family Size : A Myth Revitalized", a paper presented at the Workshop on Qing Population History, California Institute of Technology, Pasedena, Aug. 1985, pp.26~31.

a socio-economic unit.

For instance, in the circumstances where a sizable portion of those in the 0–9 age category remains under-reported, there are chances that many of the multiple family households could inadvertently have been categorized as extended and even as simple family households, thus grossly distorting the household patterns that in fact prevailed. A case in point would be a three-year-old boy living with his mother and with his married brother's family. Suppose a household register scribe decides to omit the three-year-old boy from the register, the multiple family household gets transformed into an extended family household, and a similar situation will also obtain if a new-born infant of a mother living with her married children's family goes unregistered.

That is, the under-reporting of those household members aged less than 10 to 15 years poses a serious problem to the historical demographers engaged in analyzing the pre-modern household pattern on the basis of the register data. Many a time, historical demographers working on the register data find their feet on the beaten track to a mare's nest, simply because of the unreliability of the register data analyzed.

II. Data Source

The source of the register data subject to a reliability test in this study is the Household Register of Danseong-Hyon, Kyongsang Province. The data utilized here cover 390 households in the 16 villages constituting the Hyonnae-Myon sub-county in Danseong-Hyon for the year 1720 or the 46th regnal year of King Sugjong. The Danseong-Hyon household register data, probably one of the few surviving household register materials, contain information on the household patterns for the 14 separate periods starting from 1606 through 1789. During the periods, the household register data were collected every three years for taxation and corvee purposes, and hence some of the data relating to the female and the slave population who were not liable to taxation and corvee suffer from gross under-reporting. However, the deficiencies in the household register data do not seem to be so serious as is the case for the genealogy data where, except for the genealogies compiled since the 1950's,

information on daughters and sons who died young is all but lost. At least in a few limited instances in the household register data, the data on the famale population are as good, if not better, in quality as those on the male population. Nevertheless, care should be taken in analyzing the register data lest one should accept whatever is recorded in the register at its face value, in particular, for the population aged less than 15 years.

III. Age Structure Based on the Register Data

Table 1 sets out the population age structure of Hyonnae-Myon as it appears in the 1720 household register data.

Perhaps the most striking feature of the data in Table 1 is the demographic anomalies arising from the under-count of the population that fall within the 0−24 age category and the 25−34 age category for female as well as for male. This age structure reminds one of a population subject to high rate of contraception that gets translated into a rapid fertility fall, a least likely happenstance one would expect to come across in the early eighteenth-century Korean society that we are dealing with here.

Another noteworthy point in Table 1 is the increase in the number of those whose ages are registered as falling within the 60−64 age group, perhaps due to the sexagenarian cycle. The age sixty marks a turning-point in that it had been used as the watershed between the old age and the non-old age, and chances are that some of those who fall within the 55−59 age category could have exaggerated their age. The age-heaping in the 65−69 age group for female population appears to be a spill-over effect from the sexagenarian cyclical age heaping in the 60−64 age category.

The so-called *classe creuse* (concave age group) centering around the 20−24 age bracket, however, does not seem to have to do with under-reporting or with errors occasioned while drawing up a household register. A check with historical records shows that a large scale famine swept the Korean peninsula during the 1696−97, some 20 years before the 1720 register was drawn up.

The population age structure of Hyonnae-Myon as it stands in the 1720 household register data very much represents the bowl-shaped demographic pattern, primarily

Table 1. The Population of Hyonnae-Myon, 1720

Age Group	Male(%)		Female(%)		Both Sexes(%)	
0~4	28(2.55)		35(3.00)		63(2.78)	
5~9	76(6.92)	18.49%	62(5.31)	14.39%	138(6.09)	16.37%
10~14	99(9.02)		71(6.08)		170(7.50)	
15~19	97(8.83)		99(8.48)		196(8.65)	
20~24	64(5.83)		66(5.65)		130(5.74)	
25~29	81(7.38)		100(8.56)		181(7.99)	
30~34	115(10.47)		114(9.76)		229(10.10)	
35~39	128(11.66)		153(13.10)		281(12.40)	
40~44	100(9.11)		115(9.85)		215(9.49)	
45~49	83(7.56)		73(6.25)		156(6.88)	
50~54	61(5.56)		65(5.57)		126(5.56)	
55~59	35(3.19)		44(3.77)		79(3.49)	
60~64	44(4.01)		49(4.20)		93(4.10)	
65~69	32(2.91)		48(4.11)		80(3.53)	
70~74	17(1.55)		30(2.57)		47(2.07)	
75+	38(3.46)		44(3.77)		82(3.62)	
All Age Groups	1,098(100.00)		1,168(100.00)		2,266(100.00)	

due to the omission of those less than 25 years in age. The substantial under-reporting of those males within the 25-34 age category is all the more remarkable in that the household register data were collected mainly for the purpose of ascertaining the number of male population mobilizable for corvee. Apparently, the male population falling within this age category were the prime targets for corvee, both military and para-military in nature, nonetheless, a sizable portion of them seem to have been omitted from the household register. This bowl-shaped age structure of the de-facto population of Hyonnae-Myon in 1720 cannot, by any stretch of the imagination, repre-

sent the then-existent actual population age structure of the area. Then how much would the Hyonnae-Myon population age structure based on the 1720 register data deviate from the actual age structure of the population as it in fact existed in the year 1720?

Ⅳ. Reconstruction of Age Structure

As is set out in Table 1, the observed age structure of Hyonnae-Myon based on the household register data provides a distorted picture of the actual age structure. That is, some sort of readjustment (including the differential weighting to the individual age groups depending on the extent of under-reporting) has to be made before an attempt is made to analyze the register data.

The quality of the household register data we are analyzing here compares unfavorably with that of the *baojia* household registration records of the Qing dynasty in China for 1774−1798[2]. According to the baojia records, of the total 2,965 population of Daoyi, a village in the northern suburbs of Fengtian, 25.26 percent were accounted for by those under the age of 15 in comparison with the only 16.37 percent accounted for by those aged less than 15 years in the 1720 household register of the Hyonnae-Myon sub-county. The Qing dynasty household register data was designed for the exactly same purpose as that for the Hyonnae-Myon household register data, manely for taxation and for military and corvee selective services, and hence the types of data listed in the baojia could not have differed from those of the Hyonnae-Myon register data, and yet one finds such a difference in the proportion of the population under the age of 15 between the two. Table 2 presents the age structure of the village Daoyi, Manchuria, in 1792, calculated on the basis of the 1792 baojia register records.

In Table 2, one finds that the female population up to the age 29 is under-reported

2) Lee, James and Robert Y. Eng, "Population and Family History in Eighteenth Century Manchuria ; Preliminary Results from Daoyi, 1774−1798", *Ch'sing-shih Wen-t'i*(no date, xerox copy at the Cambridge Group Library), p.47, Table A+1.

to a far greater extent than is the case for the male population within the same age group. However, in Table 1, at least for the female population aged 0–4 years the under-reporting does not seem to be so great as for the male population of the same age category, however small the difference may be.

What is of more importance from a demographic point of view is that in the Daoyi data of Table 2, 28.83 percent of the male population is aged 0–14 years, whereas in the Hyonnae-Myon data of Table 1 only 18.49 percent of the total male population of the sub-county falls within the same age group. But if we compare the percentage

Table 2. The Population of Daoyi, 1792

Age Group	Male(%)		Female(%)		Both Sexes(%)	
0~4	165(9.75)		83(6.53)		248(8.36)	
5~9	162(9.57)	28.83%	90(7.08)	20.53%	252(8.50)	25.26%
10~14	161(9.51)		88(6.92)		249(8.40)	
15~19	162(9.57)		91(7.15)		253(8.53)	
20~24	171(10.10)		147(11.56)		318(10.73)	
25~29	145(8.56)		115(9.04)		260(8.77)	
30~34	133(7.86)		125(9.83)		258(8.70)	
35~39	117(6.91)		93(7.31)		210(7.08)	
40~44	105(6.20)		82(6.45)		187(6.31)	
45~49	91(5.38)		78(6.13)		169(5.70)	
50~54	67(3.96)		52(4.09)		119(4.01)	
55~59	81(4.78)		86(6.76)		167(5.63)	
60~64	70(4.14)		50(3.93)		120(4.05)	
65~69	31(1.83)		38(2.99)		69(2.33)	
70~74	14(0.83)		28(2.20)		42(1.42)	
75+	18(1.07)		26(2.04)		44(1.48)	
All Age Groups	1,693(100.00)		1,272(100.00)		2,965(100.00)	

of the female population aged 0−14 years among the total female population between the two areas, the difference is not so striking, indicating that for the female population aged 0−14 years in Table 1, the under-reporting is as serious a problem as is the case in Table 2. One may raise here an objection that it is less than ideal to compare the age structure of a rural village with that of a sub-county. But as far as the population age structure is concerned, it would not make much difference whether a population is concentrated on one single spot or dispersed on a wider area.

The under-registration of those aged less than 15 years in Table 1 is again evident when compared with the register data of an eighth-century Japanese province[3]. In a study of 105 households in the Mino area, Japan, for the year 702, it has been found that 41.3 percent of the total 2,127 population belonged to the 0−14 age category. The data for the isolated farming communities in the Mino area come from the household register data very much similar to those of Hyonnae-Myon. Though one may assume that in the eighth-century Japan the population in the 0−14 age category could have accounted for a greater proportion of the total population due to the shorter life-span of the Japanese people during that period, one nevertheless has an impression that the registration of the 0−14 age population was more accurate than was the case in the 1720 Hyonnae-Myon register data.

Again, in Table 1, the largest proportion of the population, both male and female, is found to be concentrated within the 35−39 age category, whereas in Table 2, a disproportionate number of people are within the 20−24 age bracket, which indicates a greater accuracy in age reporting in the Daoyi data of Table 2.

To ascertain the extent to which the age structure based on the household register data of Hyonnae-Myon deviates from the age structure that could have in fact obtained in Hyonnae-Myon in 1720, the data in Table 1 have been matched with a number of theoretical age structures in the regional model life tables in particular, those in the West model[4]. The reasons for having chosen the West model will become clear

3) Farris, William Wayne, *Population, Disease and Land in Early Japan, 645−900,* Harvard University Press, Cambridge, 1985, p.35.

4) The stable population models are from Ansley J. Coale, Paul Demeny, Barbara Vaughan, *Regional Model Life Tables and Stable Populations,* Academic Press, Now York, 1983.

in the later section of the paper. Before going into the matching-work, one is tempted to start smoothing the jagged age structure displayed in Table 1. However, this attempt at smoothng the data has been abandoned since the age structure of the data in Table 1 appears to be of such a nature that virtually defies any attempt at smoothing.

Therefore, instead of analyzing all age groups in a uniform fashion, only the 35−64 age categories that at least do not seem to suffer from too great a deviation, compared to other age groups, have been subject to a detailed analysis. The structures of other age groups are then "extrapolated" from what obtained for this 35−64 age group.

Having chosen the 35−64 age group as a linchpin for the matching operation with model stable populations, one can then select as a reference point one particular 5-year age group from among the six 5-year age groups constituting the 35−64 age bracket. In this study of the register data for Hyonnae-Myon in Table 1, the 45−49 age category has been selected as the reference point, as it stands at about the mid-point in the 35−64 age bracket and serves as a good point of comparison with the other five remaining 5-year age groups. Theoretically, any one of the six 5-year age categories could have been selected as a reference point for the purpose of comparison.

Once the reference 5-year age category has been decided on, one can calculate the ratio of the percentage distribution of each of the five 5-year age groups to that of the 45-49 reference age group. A similar calculation can be made of the corresponding six 5-year age groups of the individual populations in the regional model populations, and the model population that most closely follows the age structure as represented in Table 1 can be found through the least squared difference method[5].

Table 3 presents the age structure and the ratio of the age structure percentage distribution for the male population of Hyonnae-Myon in Table 1 and for the male

5) Namely,

$$\delta = \sqrt{\frac{\sum_{n} \left\{ \left(\begin{matrix} \text{Hyonnae-Myon} \\ \text{data set ratio} \end{matrix} \right) - \left(\begin{matrix} \text{Regional model} \\ \text{population ratio} \end{matrix} \right) \right\}^2}{n}}$$

where, n is the number of age groups involved ; the value of n is 6 in the present instance.

Table 3. Comparison of Hyonnae-Myon Data Set with that of the Regional Model Population, West Level 7.

Age Group	Hyonnae-Myon Male Population		Model Population, Male	
	Percentage*	Ratio	Percentage	Ratio
35~39	11.66	1.542	6.71	1.295
40~44	9.11	1.205	5.95	1.149
45~49	7.56	1.000	5.18	1.000
50~54	5.56	0.735	4.39	0.847
55~59	3.19	0.422	3.59	0.693
60~64	4.01	0.530	2.77	0.535

*Percentage here refers to the percentage of the population in the individual age group to the total population as is shown in Table 1, column 2.

population of the regional model population (West, level 7, with 0.5 percent growth rate) that seems to provide a close approximation to the Hyonnae-Myon data.

The value δ in Table 4 that is derived from the subtraction of the ratios of model population from those of the Hyonnae-Myon data and through additional three steps of operations given in the formula in the footnote (5) indicates the extent to which the model population approximates the Hyonnae-Myon data set and vice versa. Understandably, the smaller the value of δ, the closer is the approximation. A series of δ values are given in Table 4. These values are generated by the application of a number of different model populations of varying mortality levels.

The δ values in Table 4 are too large to provide a reasonably good, if not an accurate, approximation to the age structure that we are looking for, and apparently this large "deviation" arises from the age structure distortion from the age-heaping for males in the 60−64 age bracket. A similar age structure distortion is observed for females in the 55−59 age bracket. However, a closer look at Table 1 indicates that the age structure distortions for male and female population have as much to do with the high mortality rate that resulted from a nationwide pandemic for the

Table 4. δ Values Based on Hyonnae-Myon Male Population Data Set in Table 3

0.260	---	West, level 6 at 0.5% growth rate
0.283	---	West, level 7 at 0.5% growth rate
0.314	---	West, level 8 at 0.5% growth rate
0.300	---	North, level 6 at 0.5% growth rate
0.332	---	North, level 7 at 0.5% growth rate
0.360	---	West, level 7 at 0.0% growth rate
0.263	---	Far eastern pattern at $^{\circ}e_{\circ}=35.00$[6]

years 1663-1668 as with the age heaping for those in the 60-64 age category. That is, those male and female population aged 55-59 years in 1720 are the cohorts born during the 1661-65 period and could have suffered most severely from the pandemic.

Though large the δ value are, by applying one of the seven δ values listed in Table 4 to the age structure pattern of the 1720 Hyonnae-Myon population in Table 1, at least one can have a better understanding of the extent to which the Hyonnae-Myon population as recorded in the 1720 household register suffers from under-registration, and if not, from other factors like pandemic visitations and famine.

Table 5 lists another six δ values generated by the application of regional model populations for female to the 1720 female data set.

As can be surmised from Table 5, δ values are again large, primarily due to the various factors that have been pointed out in the preceding paragraphs, but also due to the fact that a series of δ values in Tables 4 and 5 have been computed on the assumption that the household registration data for the population (both male and female) aged 35-64 years are complete, an assumption that flies in the face of our reasoning.

6) *Models Life Table for Developing Countries,* U. N. Dept. of International Economic and Social Affairs Population Studies, No. 77, New York, 1982, p.160.

Table 5. δ Values Based on Hyonnae-Myon Female Population Data Set in Table 3

0.626	---	West, level 7 at 0.5% growth rate
0.634	---	West, level 8 at 0.5% growth rate
0.639	---	West, level 9 at 0.5% growth rate
0.627	---	North, level 7 at 0.5% growth rate
0.634	---	North, level 8 at 0.5% growth rate
0.643	---	North, level 9 at 0.5% growth rate

Moreover, one does not have an accurate estimation as to whether the growth rate of the 1720 population stood at zero percent or at 0.5 percent. We simply selected the 0.5 percent growth rate on the basis of a scattered evidence that the annual population growth rate for the 1714–1726 period could have hovered between 0.4 and 0.5 percent.

The δ values presented in Tables 4 and 5 indicate that both for male and female population the regional model population West, level 7 is, among the possible alternatives presented in the tables, is a good fit obtained by the least squared difference method. If one accepts the model population West, level 7 as an approximation to the actual age structure for the 1720 Hyonnae-Myon population, then one may hazard here an assumption that the birth rate for the 1720 Hyonnae-Myon population stood at 35.5 for male and 33.0 for female, and the death rate at 30.5 and 28.1 for male and female respectively, with the value of the gross reproduction rate roughly at 2.2.

In Table 6 is presented an approximation to the 1720 Hyonnae-Myon population age structure as reconstructed on the basis of the regional model population West, level 7. The individual 5-year population size in the fourth column of Table 6(a) and 6(b) is obtained by multiplying the population size of the reference age category (45–49) of Hyonnae-Myon by the ratios of each age group from the regional model population West, level 7 in column three.

In the reconstructed population in Table 6, 33.3 percent of the male population

is in the 0−14 age category, in constrast to only 18.5 percent in Table 1, and 32.4 percent of the female population is found in the same age bracket, as opposed to a meagre 14.4 percent in the household register data of Table 1. For both sexes,

Table 6. The Estimated or Reconstructed Age Structure and Household Register Age Structure of Hyonnae-Myon, 1720

(a) Male

Age Group	Model Population		Reconstructed Population		Population in 1720 Household	
	Age Structure Distribution(%)	Ratio	Age Distribution(%)		Register(%)	
0~4	12.43%	2.400	199(12.43)		28(2.55)	
5~9	10.72	2.069	172(10.74)	33.29%	76(6.92)	18.49%
10~14	10.13	1.956	162(10.12)		99(9.02)	
15~19	9.55	1.844	153(9.56)		97(8.83)	
20~24	8.88	1.714	142(8.87)		64(5.83)	
25~29	8.16	1.575	131(8.18)		81(7.38)	
30~34	7.44	1.436	119(7.43)		115(10.47)	
35~39	6.71	1.295	107(6.68)		128(11.66)	
40~44	5.95	1.149	95(5.93)		100(9.11)	
45~49*	5.18	1.000	83(5.18)		83(7.56)	
50~54	4.39	0.847	70(4.37)		61(5.56)	
55~59	3.59	0.693	58(3.62)		35(3.19)	
60~64	2.77	0.535	44(2.75)		44(4.01)	
65~69	1.96	0.378	31(1.94)		32(2.91)	
70~74	1.23	0.237	20(1.25)		17(1.55)	
75+	0.91	0.176	15(0.94)		38(3.46)	
All Age Group	100.00		1,601(100.00)		1,098(100.00)	

*Reference age category

(b) **Female**

Age Group	Model Population Age Structure Distribution(%)	Ratio	Reconstructed Population Age Distribution(%)		Population in 1720 Household Register(%)	
0~4	12.10	2.300	168(12.10)	32.40%	35(3.00)	14.39%
5~9	10.45	1.987	145(10.44)		62(5.31)	
10~14	9.84	1.871	137(9.86)		71(6.08)	
15~19	9.24	1.757	128(9.22)		99(8.48)	
20~24	8.58	1.631	119(8.57)		66(5.65)	
25~29	7.90	1.502	110(7.92)		100(8.56)	
30~34	7.22	1.373	100(7.20)		114(9.76)	
35~39	6.54	1.243	91(6.55)		153(13.10)	
40~44	5.89	1.120	82(5.90)		115(9.86)	
45~49*	5.26	1.000	73(5.26)		73(6.25)	
50~54	4.62	0.878	64(4.61)		65(5.57)	
55~59	3.93	0.747	55(3.96)		44(3.77)	
60~64	3.18	0.605	44(3.17)		49(4.20)	
65~69	2.37	0.451	33(2.38)		48(4.11)	
70~74	1.57	0.298	22(1.58)		30(2.57)	
75+	1.31	0.249	18(1.30)		44(3.77)	
All Age groups	100.00		1,389(100.00)		1,168(100.00)	

*Reference age category

it is clear that the under-registration is substantial.

The reconstructed population of Hyonnae-Myon based on the regional model population of West, mortality level 7 for male and female as set out in Table 6 (a) and Table 6(b) is given in Fig. 1. In the figure, one immediately notices that the segment of the population aged 35-39 years in the 1720 household register, regardless of

sex, far outshoots the boundary as defined by the regional model population. This "excessively" large number of population within this age category seems to result from the meticulous care with which the scribes and the sub-county clerks enumerated the population segment liable to taxation and corvee. And yet one still has to find an answer as to the large number of female population aged 30-34 years and 40-44 years. Could it be because of the haphazard manner in which the sub-county clerks handled the female population in entering the household register data, or could it be because of the nature of the regional model population employed here to estimate the age structure contour of Hyonnae-Myon ?

Understandably, a far greater number of female population are observed in the age category 65 years and over due to the sex differentials in mortality, provided that each of the household registrants entered her age accurately in the register ledger.

However, the much narrower base (compared to that of the reconstructed male population) of the reconstructed female population leads one to suspect that the

Figure 1. Estimated Model Population Superimposed on Observed Household Register Population (Hyonnae-Myon, Danseong-Hyon, 1720)

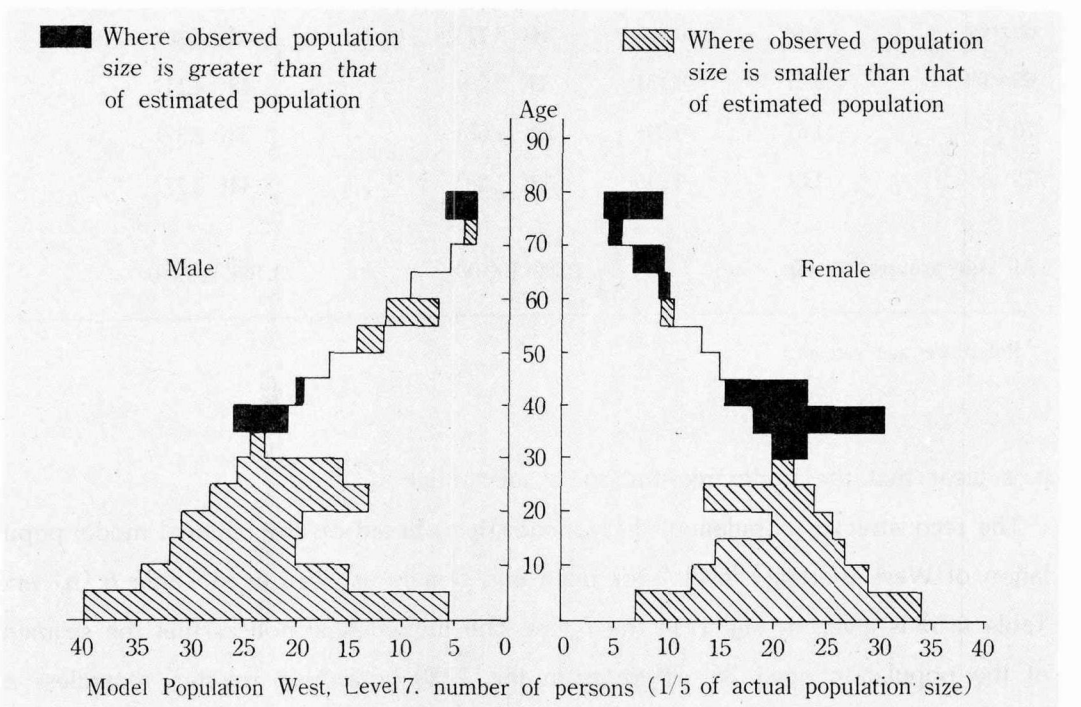


Table 7. The Reconstructed Female Population Age Structure of Hyonnae-Myon with Model Female Population West, Level 6 and Level 5

a) West, Level 5

{Birth Rate ------ 38.3
Death Rate ------ 33.3}

Age Group	Model Population		Reconstructed Population Age Distribution(%)
	Age Structure Distribution(%)	Ratio	
0~4	13.11	2.617	191(13.12)
5~9	10.98	2.192	160(10.99)
10~14	10.26	2.048	150(10.30)
15~19	9.56	1.908	139(9.55)
20~24	8.79	1.754	128(8.79)
25~29	7.99	1.595	116(7.97)
30~34	7.20	1.437	105(7.21)
35~39	6.43	1.283	94(6.46)
40~44	5.70	1.138	83(5.70)
45~49	5.01	1.000	73(5.01)
50~54	4.32	0.862	63(4.33)
55~59	3.60	0.719	52(3.57)
60~64	2.82	0.563	41(2.82)
65~69	2.02	0.403	29(2.00)
70~74	1.72	0.253	18(1.24)
75+	0.96	0.192	14(0.96)
All Age Groups	100.00		1,456(100.00)

b) West, Level 6

{Birth Rate ------- 35.5}
{Death Rate ------- 30.5}

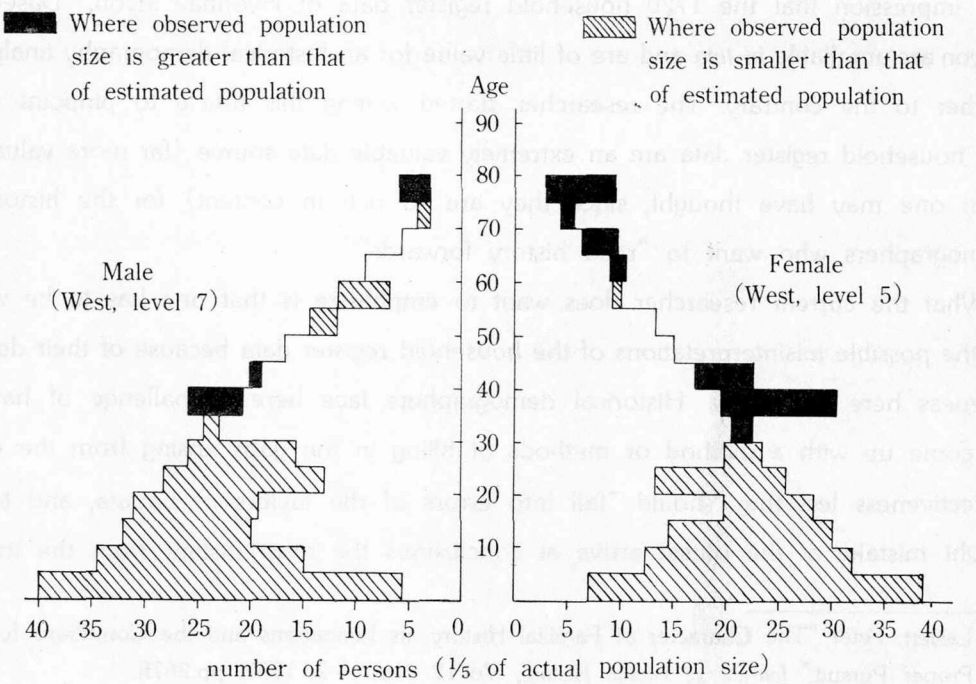
Age Group	Model Population		Reconstructed Population Age Distribution(%)
	Age Structure Distribution(%)	Ratio	
0~ 4	12.57%	2.446	179(12.60)
5~ 9	10.70	2.082	152(10.70)
10~14	10.04	1.953	143(10.06)
15~19	9.40	1.829	134(9.43)
20~24	8.69	1.691	123(8.66)
25~29	7.95	1.547	113(7.95)
30~34	7.21	1.403	102(7.18)
35~39	6.49	1.263	92(6.47)
40~44	5.80	1.128	82(5.77)
45~49	5.14	1.000	73(5.14)
50~54	4.48	0.872	64(4.50)
55~59	3.77	0.733	54(3.80)
60~64	3.00	0.584	43(3.03)
65~69	2.19	0.426	31(2.18)
70~74	1.42	0.276	20(1.41)
75+	1.12	0.218	16(1.13)
All Age Groups	100.00		1,421(100.00)

regional populaton West, level 7 does not serve a good fit to the 1720 Hyonnae-Myon population age structure. An attempt has been made to reconstruct the age structure for the Hyonnae-Myon female population on the basis of the two regional model population for female: West, level 6 and West, level 5 with a growth rate of 0.5%.

The model population with mortality level 6 has δ value of 0.620 and the other population with mortality level 5 has 0.614, both of which provide a slightly better fit than the models in Table 5 as far as the δ values are concerned.

Comparing the data in the last column of Table 7(a) with their counterparts in Table 7(b), one finds that the only difference between the two is the larger number of population within the 0−19 age category for the population reconstructed on the basis of the model population West, level 5. If one accepts the West level 5 as an appropriate model for reconstructing the 1720 Hyonnae-Myon register population for female, one has to perforce assume that the birth and the death rates for female was higher than those for male in 1720, an assumption hardly viable. But even if one does accept as valid this higher birth and death rates for female population as opposed to male population for Hyonnae-Myon, the reconstructed female age structure (see Fig. 2) does not differ greatly from the age structure based on female

Figure 2. Estimated Model Population (West, levels 5 and 7) Superimposed on Observed Household Register Population (Hyonnae-Myon, Danseong-Hyon, 1720)



model population West, level 7 (see Fig.1). One has here a suspicion that the household register data for female population are grossly indequate, much more so than those for male population, for an age structure reconstruction, a prerequisite preliminary work for an historical demographic analysis of the household register data.

The unreliability of the female household register data may have to do with the fact that the register data were collected primarily for taxation and corvee purposes, and the female population were less subject to the forced labor, except of course during the times of exigencies. One other factor that may have been related to the defectiveness of the register data could be the particular locality that we are dealing with here. That is, the Hyonnae-Myon sub-county was populated by a large number of commoners and slaves whose accurate ages could not be entered in the household register ledger.

V. Conclusion

What the current researcher least expects the readers to have of this article is the impression that the 1720 household register data of Hyonnae-Myon, Daseong-Hyon are unreliable *in toto* and are of little value for an historical demography analysis. Rather to the contrary. The researcher started writing this article to pinpoint that the household register data are an extremely valuable data source (far more valuable than one may have thought, since they are so rich in content) for the historical demographers who want to "read history forwards"[7].

What the current researcher does want to emphasize is that one has to be wary of the possible misinterpretations of the household register data because of their defectiveness here and there. Historical demographers face here a challenge of having to come up with a method or methods of filling in the gaps arising from the data defectiveness lest they should "fall into errors of the taylors of Laputa, and by a silight mistake at the outset arrive at conclusions the most distant from the truth"

7) Laslett, Peter "The Character of Familial History, its Limitations and the Conditions for its Proper Pursuit," *Journal of Family History,* Vol.12, Nos.1-2, 1987, pp.267ff.

as Robert Malthus wrote to Ricardo in his letter of Jan. 26th, 1817[8].

After all, the Hyonnae-Myon register data may not be so unreliable as is shown in Fig. 1 and Fig. 2, since only those whose ages are specified in the household register of the sub-county have been made use of in drawing the observed household register population. A large portion of the peopie whose ages cannot be identified have been omitted from the current analysis. Again, not all the register data of Danseong-Hyon are as unreliable as those of the Hyonnae-Myon sub-county, and one has to remember that the size of the sub-county population we have analyzed constitutes less than one percent of the population within the 41,000 households that are covered by the Danseong-Hyon register.

One cannot expect all such historical demography materials as the household register data to be free from defects and to be as reliable as the modern-day census and the survey data. Even the parish records claimed to be the best historical materials so far uncovered in Europe suffer from defects and unreliability, as there have been found problems resulting from under-registration in Church of England registers due to the growth of non-conformity in the eighteenth century[9]. What one can best hope for is to search out a variety of methods to supplement and improve the existing historical demography data that are found to be less than ideal and yet essential for a research work on hand.

8) Von Tunzelmann, G. N., "Malthus's 'Total Population System': A Dynamic Reinterpretation", in David Coleman, Roger Schofield(ed.), *The State of Population Theory: Forward from Malthus,* Basil Blackwell, Oxford, 1986, p.66.

9) Flinn, Michael W., *The European Demographic System, 1500-1820,* Johns Hopkins University Press, Baltimore, 1981, p.8.

〈國文抄錄〉

歷史人口學研究와 戶籍資料의 信憑性

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한국의 歷史人口學研究에서 戶籍資料(household register data)가 차지하는 비중은 유럽地域의 歷史人口學研究에서 教会의 教區台帳資料(parish register data)가 차지하는 비중 못지않게 그 중요성이 크다고 하겠다.

그러나 이들 戶籍資料의 歷史人口學資料로서의 信憑性에 대한 구체적인 調査나 研究가 국내에서는 이제까지 이루어지지 못하였다.

本 研究에서는 信憑性을 저울질하기 위해 현존 戶籍資料로서는 비교적 온전하게 보존되어 있는 慶尚道 舟城縣 縣內面의 1720년도 資料를 分析하였다. 戶籍資料에 의한 당시 이 地域의 5歲 年齡別 人口構造를 살펴보기 위해 Coale, Demeny 등의 regional model population을 적용하여 본 결과 本文의 Fig. 1 과 Fig. 2에서 제시된 바와 같이 男性과 女性人口에서 다같이 35-39세층에서 "過多集計"된 반면에, 예상하였던 것과 같이 0-15세 人口의 상당부분이 戶籍台帳에 아예 등재되지 않았거나, 등재되어 있더라도 이들의 年齡이 명시되어 있지 않아 戶籍資料의 歷史人口學研究資料로서의 補完作業이 필수적으로 이루어져야 함을 지적해 주고 있다.

특히 男性보다 女性人口의 年齡構造에 補完되어야 할점이 많이 나타나고 있어, 租稅와 負役을 위한 人口파악을 위해 작성된 戶籍資料를 歷史人口學研究에 사용하기 위해서는 15세 이하의 누락된 人口뿐 아니라 女性人口構造에 대한 補整方法이 개발되어야 함을 말해주고 있다. 이와같은 補整作業은 1720년 당시 支配的이었던 家口形態(household pattern)의 分析을 위해서도 반드시 이루어져야 할 것이다.

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