

Materials on Korean Studies

Volume 13 Number 3

September 2010

The Review of Korean Studies

www.kci.go.kr

Materials

Sources for an Historical Demography of Korea: An Introduction

Park Heejin and Kim Duol

Introduction

Demographic trends are one type of social phenomena which can be used to reveal the characteristics of a society. In this regard, while overpopulation was one of the main concerns in Korea a few decades ago, the current situation characterized by the lowest birthrate in the world has resulted in the pendulum swinging in the other direction as concerns arise about the sharp drop in the population. More to the point, this decrease in the population has led to worries about a potential decline in the quality of life and potential growth occasioned by accompanying factors such as the advent of an aging society, labor shortages, and increased pressure on the National Pension Scheme. This decrease in the birthrate, which is expected to continue for some time, will have a profound impact on the labor supply, investment rate, and the securing of the financial resources needed to fund the national pension system. The phenomenon of families having few children (*sojabwa*), which has been referred to as a “time bomb,” has become a socioeconomic issue of vital importance.

Demographic studies conducted in Europe, Japan, and China have shown that the issue of population was more closely intertwined with people’s everyday lives in premodern societies where artificial population control methods such as contraception did not exist. While it was commonplace for social matters such as poverty to become more problematic in traditional societies whenever the population exceeded the capacity of the social support system, sudden decreases in populations as a result of such phenomena as disease, natural disasters, or war led to changes in the production system and social structure. Therefore, the collection and study of materials which can be used to estimate population indicators, such as birth and mortality rates, can be regarded as one of the fundamental tasks associated with the analysis of traditional societies.

Ample individual information published prior to the advent of a reliable modern census is available to conduct population analyses in premodern

Park Heejin(heejinp@ynu.ac.kr) is a visiting professor at the School of Economics and Trade, Kyungpook National University.

Kim Duol(duolkim@kdi.re.kr) is a research fellow at the Korea Development Institute and an adjunct professor at the KDI School of Public Policy and Management.

society.¹ More to the point, information about population and family-related phenomena in premodern society can be gleaned by effectively using in a statistical manner the vast amounts of individual information produced at that time that remains extant today. The restoration of such individual information and processing thereof in a statistical manner makes it possible to grasp a better understanding of the link between population-related matters, and the social changes that occur in a traditional society.

Historical demography refers to an academic field which seeks to not only restore massive amounts of personal information related to demographic events that occurred in periods prior to the establishment of reliable demographic information such as the modern census, but also to statistically process these massive amounts of personal information in order to facilitate the study of demographic transitions and changes in population sizes during specific periods. By focusing on micro-level data such as people's birth, death, marriage records, and population movements, historical demography initially created the possibility of establishing clear links between population and socioeconomic life. However, historical demography has since emerged as an important field with which to explain the socioeconomic phenomena that emerged within societies of the past. More to the point, the upgrading of the standing of the field of historical demography can be explained by the fact that it has made it possible to use various demographic phenomena to explain socioeconomic trends that occurred in the past. While historical methodology first appeared in Europe and Japan in the 1960s, it took off as an individual discipline in China in the 1980s.

A wide range of studies that have been based on historical demography-related materials have been carried out in Europe, Japan, and China since the 1960s.² While Europe and Japan have already established factors such

1. Such demographical methods should be applied in Korea prior to 1925, or when the first modern census was implemented.

2. As part of a national project to conduct a salient demographic analysis carried out in England, the parish registers of 535 parishes were collected. All in all, information relating to in excess of 500,000 people from 404 parishes was used as part of the ensuing demographic analysis (Wrigley and Schofield 1981). Meanwhile, the main sources of the materials employed in Japan have been the 宗門改帳 (*Shūman aratame cho*) or 人別改帳 (*Ninbechu aratame cho*) compiled by the Tokugawa Bakufu (徳川幕府) (Hayami 2001). These demographic materials are related to

as birth, marital status, and mortality as the basic indicators with which to analyze their traditional societies, new themes such as those of family, social mobility, and inequality have increasingly been emphasized.

The studies involving historical demography began in earnest during the 2000s in Korea. However, no detailed information on demographic phenomena such as the birth and death of those who lived through the Joseon and early Japanese colonial eras has to date been compiled. The fundamental reason for this situation has been a basic lack of materials. Although researchers in Korea have in fact attempted to analyze the Danseong Household Register from the standpoint of historical demography (Lee 1990), or matters such as population growth, birth, and death during the Joseon era based on the use of family genealogical records (Lee 1996, 2001; Lee 1997), they have been unable to overcome the inherent limitations associated with household register and family genealogy-related data.

Thus, the proper use of materials related to historical demography requires that a preceding study of the relevant materials be carried out. More to the point, there is a need, based on an identification of those materials, to analyze the miss rate,³ type of materials employed, and causes for the omission of data, prior to the estimation of population indicators. Thereafter, one should determine what methods should be employed to establish the desired database based on the existing limitations identified during the previous step. Just as the demographic data of countries around the world can exist in various forms, depending on such factors as whether it can be analyzed in a quantitative manner, the data available for analysis in Korea from the standpoint of historical demography can also have different characteristics. To this end, it is necessary to establish a database and to employ research methodologies that reflect the inherent nature of the materials.

600 villages of 300-1,000 people. For its part, China has used household register and genealogy materials to compile data on demographic matters related to millions of people (Lee and Wang 1999).

3. In Europe, baptism, marriage, and funeral services were performed by churches, which preserved the relevant records in what came to be known as parish registers. Conversely, Japan's 宗門改帳 (*Shuman artame cho*) was a byproduct of the policy of suppressing Christianity put in place by the Tokugawa Bakufu. More precisely, the people had to report to a Buddhist temple and receive a certificate that they were Buddhists and not Christians. The representatives from each village were then expected to preserve these certificates in document form and submit them to their lords. These documents became the backbone of the 宗門改帳 (*Shuman artame cho*).

Representative examples of potential demographic materials in Korea include the household registers (*hojeok*) and genealogies (*jokbo*). After having taken into consideration the potential problems and limits of these household registers and genealogies based on an analysis of their contents and characteristics, this study seeks to identify the methods available to restore these materials as population indicators. Based on the above, an attempt will then be made to identify the best methods of representing the population-related phenomena that occurred during the Joseon era.

Korea's Population Materials: Household Registers and Genealogies

The ability to obtain information related to population phenomena does not revolve around the securing of macro-level statistical materials, but rather of large amounts of micro-level data such as that related to individual's birth, marriage, and death. Population indicators such as fertility, mortality, and nuptiality should be quantitatively expressed based on detailed figures such as year of birth and death and age at marriage. The materials used to conduct the analysis from the standpoint of historical demography can be divided into household registers, genealogies, and related supplementary materials.⁴

Household registers can be identified as the main materials used by scholars in the field of historical demography to conduct population-related studies of a traditional society. Household registers provide the information needed to analyze population-related phenomena in a particular area. Such household registers were compiled in Joseon. The ones which remain extant today were drafted as part of the recompilation of the household registers that occurred during the reorganization of the national system that inevitably

4. Household registers include the Parish Registers and Civil Registers of Europe, Japan's 宗門改帳 (*Shuman artame cho*) and 人別改帳 (*Ninbechu aratame cho*), and the household registers in the case of China and Korea (Lee and Wang 1999). Meanwhile, genealogies consist of the royal genealogies and pedigree charts in the cases of Europe and Japan, and genealogies where China and Korea are concerned. In addition, although not included in household registers and genealogies, other materials, such as the Health Visitors Registers in the case of Europe, and marriage letters and collections of essays in Korea, also contain information that can be used to analyze the population and families.

followed the Japanese invasion of Korea in 1592 (*Imjin waeran*). Household registers were prepared on a tri-annual basis until the collapse of the Joseon dynasty. The household registers prepared during the Joseon era that remain extant to this day all emanate from the southeastern part of the Korean peninsula; more specifically, the cities of Daegu, Ulsan, Danseong, and Eonyang.

Table 1. Population records observable from Korean population materials

	Household Registers	Genealogy	Chronological Records	Marriage Letter	Diary
Data					
Number of Observations	Over 1 million	Over 10 million	Unknown	Unknown	Unknown
Period	1680-1900	1600-	1150-1910	1400-1945	1500-1900
Region	Parts of Gyeongsang Province	Nationwide	Nationwide	Nationwide	Nationwide
Class	Entire classes	Upper middle class	Upper class	Upper middle class	Upper middle class
Time Series	O	O	O	O	X
Fertility					
Year of Birth	O	O	O	O	O
Month of Birth	X	O	O	O	O
Birth Order	O	O	O	O	O
Mortality					
Year of Death	O	O	O	O	O
Month of Death	X	O	O	O	O
Infanticide	X	X	O	X	O
Nuptiality					
Age at Marriage	O	X	O	O	O
Month of Marriage	X	X	X	O	O
Family					
Size of Family	O	O	O	X	O
Relationship to Head	O	O	X	X	X
Social Mobility	O	X	X	X	X

Note: Chronological Records include personal chronicles, bibliographies of the deceased, epitaphs, lamentations, and burial records. Continuous time-series data are denoted by O and non-continuous time-series data are denoted by X.

Household registers recorded such information as the members of the immediate family, which consisted of the head of the household, wife, parents, children, and grandchildren. In some instances, collateral family members were also included. In addition to family members, household registers also recorded information about slaves. They also recorded the names and occupations of ancestors of up to four prior generations in the case of the paternal line, and two generations where the maternal line was concerned. The entries that can be used to analyze population phenomena include the names, ages, and occupations of the members of the household, relationship to the head of the household, and any population movement. It is not possible to directly ascertain an individual's year of birth or death because the household registers do not include such information. However, as the year in which the household register was published and the ages of family members at that time are included in these documents, the year in which an individual died can be estimated as long as the materials are complete. In addition, as some of the entries for women on the on the population movement column of the household register include the term "marriage," the age at marriage of some women can in fact be estimated.

Figure 1. Household register and genealogy



While household registers were records of local villagers, genealogies are a record of those who shared common ancestors and bloodlines. These genealogies were prepared as a means to show respect for one's ancestors and to promote unity amongst kinship. As such, genealogies can be regarded as records used to express blood relationships. Although there are some genealogies produced during the fifteenth through the seventeenth centuries amongst the Korean genealogies extant to the present day, including the Genealogy of the Andong Kwon Clan produced in 1476, the majority of genealogies that remain today were prepared after the eighteenth century, and revolved around the paternal line.

Although genealogies suffer from the fundamental limitation that they were materials associated solely with the upper and middle classes such as the *yangban*, the extensiveness of such genealogies is evidenced by the fact that not only are in excess of 70 percent of Koreans today registered in their family genealogies, but these records can be found nationwide.⁵ In addition, while the collection of micro-level materials detailing social and population changes that occurred from premodern to modern society was for all intent and purpose discontinued in China because genealogies ceased to be compiled after the rise to power of the Communist Party in 1949 (Lee, Campbell and Wang 1993), Korean genealogies continue to be produced. Thus, Korean genealogies have been used to provide insight into the transition from traditional to modern society that took place during the late nineteenth to early twentieth centuries, and to shed light on such factors as changes in the population and social mobility.

In general, while genealogies included such information as the name, date of birth, year of death, government post, main biographical information, and location of the grave, in the case of male members of the clan, the information compiled about their wives mostly consisted of their

5. The National Library of Korea houses some 4,393 different genealogies published after 1910. When combined with the genealogies housed in universities, it is estimated that over 6,000 unique genealogies were in fact published during this period. In terms of the genealogies made prior to 1910, some 612 clan genealogies are housed in institutions such as the National Library of Korea, Academy of Korean Studies, Seongkyunkwan University, Keimyung University, and the National Institute of Korean History. This number rises to some 1,000 clan genealogies when combined with the genealogies housed in universities nationwide.

names, date of birth, year of death, and location of the grave. In the case of a female child, it was common practice for the name of her husband to be recorded rather than hers. Based on the information related to birthdays and year of death found in genealogies, one can establish indicators for such factors as the size of the population during specific periods, as well as fertility and mortality. Furthermore, the birthrate, number of children, and family relationship can be ascertained based on the sequential numbers assigned to fathers, mothers, and their children. Meanwhile, the information about the location of graves can be employed to conduct examinations of ancestral burial grounds and residential areas.

If we assume that the materials gleaned from household registers and genealogies do in fact reflect reality, then the conclusion can be reached that such information constitutes long-term time series data from which various population and family indicators pertaining to fertility and mortality across various periods and regions can be extracted.

Problems Associated with Household Registers and Genealogies

There are many difficulties associated with recreating the population phenomena of a traditional society using micro-level population materials. The following three conditions have to be met in order for demographic materials to be regarded as relevant in the field of historical demography.

First, as demographic materials are used in the field of historical demography as sample data, it is essential that they clearly represent population-related circumstances across all regions and social classes. Second, the quality of data is dependent on the extent to which the population numbers recorded in the data are a reflection of the actual situation, as well as on the accuracy of the birth and death-related records. As such, population data should have integrity and be accurate. In this regard, while the integrity of records refers to the extent to which they reflect the actual population, the accuracy of records such as those related to a person's birth and death is determined by how precise these are. Third, long-term records are needed to analyze any increase or decrease in the population, or social changes. In short, in order to properly analyze the population phenomena of a traditional society, it is essential that long time-series data of a high

integrity, and which includes all regions and classes, be available.⁶

This does not mean that the records pertaining to births and deaths compiled by a traditional society must be 100 percent accurate. There are practically no materials which perfectly meet the above three conditions. However, for the materials that can be used in the study of historical demography to be deemed of value, the characteristics and limitations of such materials must be evident, and complementary methods must be available to overcome these shortcomings.

The reasons why household registers and genealogies, which on the surface would appear to be appropriate for use as materials in the field of historical demography, have not been used as demographic materials can be traced back to the lack of development of the methods needed to overcome the limitations of such data. Studies which attempted to analyze fertility and mortality based on household registers began in earnest in the 1980s. There were also efforts in the 1990s to use genealogies to forge population indicators for the period prior to the twentieth century (Lee 1997). Nevertheless, the questions surrounding the reliability of the results of these studies occasioned by the lack of a proper review of the demographic materials have resulted in these studies being relatively ignored.

Korea's household registers and genealogies are not recognized for their high level of integrity and accuracy, but rather regarded as biased demographic materials. Unlike the Parish Registers and 宗門改帳 (*Shuman artame cho*), Korea's household registers are plagued by a high miss rate when it comes to children under the age of 15 and women. This is because these records were not designed to render exact readings of the population. Rather, Korea's household registers were used by the state as a means to garner the basic information needed to collect taxes and mobilize labor (Kim 2006:161-173). These household registers designed to investigate the state of households and individuals were prepared on a triennial basis so as to facilitate the government of Joseon's task of levying the proper amount of

6. Materials such as Europe's Parish Register and Japan's 宗門改帳 (*Shuman artame cho*) and 人別改帳 (*Ninbechu aratame cho*) are regarded as accurately reflecting the actual population. Their accuracy in terms of birth and death related records have also been recognized. Nevertheless, even these materials are not perfect.

state *corvée* service, consisting of tributes and labor, on each household and individual. Such a measure was needed to deliver the resources and labor needed to ensure the continued governance of the nation. The state *corvée* service refers to the duties imposed by the state on the people, in the form of the provision of the goods, labor, and military service needed for the continued operation of the state, in exchange for the latter's provision of the right to farm and rent land.

The types of *corvée* service levied upon each household and person consisted of personal *corvée*, of which military *corvée* service was the most common, and the provision of labor *corvée* service to the local and central governments. While the government stressed in its laws that all people should be included in the household register, the fact that these registers were in reality prepared for the purpose of levying state *corvée* service upon the public resulted in the scale of the population included in the household registers in fact being determined by the amount of state *corvée* service that was required. Once the central government had established its budget, the task of determining the scale of the state *corvée* service required was then passed on to individual provinces. The provincial governors in turn determined the extent of the resources and labor that should be provided at the prefecture-county level. As individual household registers in effect only had to include the amount of people needed to provide the required state *corvée* service at the prefecture-county level, there was no need to register all the members of the households that resided in the relevant area.

Although the laws and regulations of Joseon stated that population census were to be thoroughly carried out, it became common practice for only the scale of the population needed to cover the necessary taxes to be included. As long as the amount of taxes imposed by the state could be collected, the government did not take issue with the general population's attempts to avoid being included in the household register (Kim 2006:159-163). That being said, anyone who desired to pursue a government post had to be recorded in the household register. In this regard, the majority of the members of the ruling class who intended to take the state examination, as well as of senior citizens over the age of 60, who were as such exempt from military *corvée* service, were in fact recorded in the household registers (Jung 2007:393).

A recent study has argued that only 30-50 percent of the actual population was in fact included in these household registers (Jung 2007:384-387).

It is in fact impossible based on a perusal of these household registers to ascertain how many people were omitted during a particular period, and what the actual miss rate was. In addition, it remains unclear whether the households included in the registers were actual ones or simply provisional entities constituted based on the needs of the government. As a result, no clear identification of the rate of missed households and individuals has ever been achieved. Given this reality, household registers cannot be viewed as an efficient tool with which to calculate population indicators such as fertility, mortality, and population scale. To this end, recent studies have also supported the claim that the calculation of reliable population indicators based on household registers remains highly problematic.

Genealogies also face inherent limitations occasioned by the fact that they revolve around adult males from the *yangban* class.⁷ Above all, genealogies are regarded as materials with an obvious status bias. This can be construed as the fundamental shortcoming of genealogies. The fertility and mortality data contained in genealogies is based on a *yangban* class who enjoyed relatively higher living standards. As such, there is a high likelihood that fertility and mortality indicators arrived at based on genealogies in fact under evaluate the actual fertility and mortality rates.

Second, genealogies are considered to be truncated samples. More to the point, genealogies are regarded as demographic materials that revolve around married males; a situation that results in an obvious lack of records pertaining to female children. There is also no information about the birth and death of those who passed away prior to marriage. In this regard, the fact that the average age at marriage was 16-17 (Kim 2009:327-333; 2005:203-206; Park 2006:9-10) makes amply evident the limitations associated with the task of estimating population indicators such as those related to fertility and mortality using genealogies. Of course, as is evident in Chinese studies on genealogies and Cha Myung Soo's own study (Cha 2009:122-

7. There were two types of entries in genealogies, one that included the spouse's family lineage and one that did not. However, even in cases where the spouse's lineage was included, no information was recorded about the birth and death of individuals from the spouse's family. As a result, the only population statistic for which such data can be used is the marriage relationship. In this regard, the present study only analyzed those genealogies which did not include the spouse's lineage.

129), it is possible to estimate the amount of people who passed away prior to marriage using a model life table. However, the fact that the periods on which the estimations are based involve 15-20 year intervals raises questions regarding the reliability of such results. In the end, the simple fact remains that the problems of status bias and exclusion of females inherently associated with the use of genealogies has as yet failed to be overcome. That being the case, indicators prepared based on genealogies should be perceived as boundary measures. For example, while the crude death rate estimated based on genealogies can be identified as the lower bound of the actual death rate, the crude birthrate can be labeled as the upper bound of the actual birthrate.

The third problem that can be identified is that of inserting data. Originally patterned on its equivalent in China, genealogies in essence became records of the ancestors of those who belonged to the ruling class from the fifteenth century onwards. As the figures registered in the genealogies were treated as *yangban*, many people who desired to climb the social ladder either fabricated their genealogies, or secretly recorded their names in existing genealogies of families to which they had no blood relationship. As a result, many genealogies include significant numbers of people who in actuality had no blood relationship with one another. To this end, the calculation of population indicators such as population growth and birthrate based on the entries found in existing genealogies tend to yield exaggerated results.

The fourth issue that plagues genealogies is that of missing data. As mentioned above, genealogies were as a rule generally prepared every couple of decades. In most cases, members of the family who could not be reached or who were too poor to pay the associated fees were simply not registered in the family genealogy. It was particularly commonplace for illegitimate descendants to be omitted from genealogies. Moreover, some individuals were omitted because of family disputes (Park and Cha 2003:6-7; Son 2004:87-89). Furthermore, as Korean genealogies did not include one's age at marriage, it becomes impossible to ascertain the actual age at which individuals married.⁸ The miss rate of the records related to the years in

8. As household registers and genealogies contained only limited descriptions of women and those who were not married, they are regarded as being of little value as historical demographic

which people were born and passed away differs across genealogies and periods. Moreover, the further back one goes, the more common it becomes to find instances in which records of the year of birth or of the year of death, or even of both, are missing for all members of a clan (Cha 2009:120-121).

As such, the representative materials of historical demography in Korea, namely, the household registers and genealogies, represent a relatively less complete source of data for the analysis of population phenomena than the materials employed to this end in Europe and Japan. The first step that must be taken to rectify the above-mentioned problems is that of reprocessing these household registers and genealogies. In cases where a lack of materials related to such factors as age at marriage and infant mortality exists, methods of supplementing such shortcomings must be drawn up using other materials. Fortunately, the documentation compiled during the Joseon era contains materials which can be used to overcome the weaknesses of household registers and genealogies.

Therefore, it is necessary to establish a database of demographic materials that takes the above-mentioned points into consideration. More to the point, it is essential that documents such as chronological records (*haengjangnyu*), diaries (*ilgi*), and marriage letters (*honseo*) be compiled as part of a database that can be used to supplement the data contained in household registers and genealogies.

Calculation of Population Indicators: The Case of Genealogies

The extraction of reliable population indicators requires a fundamental reprocessing of the materials found in household registers and genealogies. To attain this, one should establish assumptions which can be used to supplement the bias contained in materials, and then follow through with

materials. What's more, these records in general did not contain any information related to marriage. Some women are referred to as '*chulga*' (出嫁) in the household registers. However, it is not clear whether the inscription 'chulga' actually meant marriage in general, or was in fact a reference to a first or second marriage (Park 2006:12). In this regard, information related to marriage can be obtained from such sources as marriage letters (*honseo*), bibliographies of the deceased (*haengjang*), personal chronicles (*jeonbo*), and burial records (*jimyeong*).

the processing of the materials based on these assumptions. As it is difficult to make assumptions about population indicators such as the birth and death rates from household registers, this study will use genealogies to explain the process of adjusting data.

Data Organization

The problems associated with the use of genealogies as demographic materials mentioned above means that there are limitations to the extent to which the size of the population of the various classes within Joseon can be estimated, as well as with regard to the calculation of population indicators pertaining to women and those who passed away prior to marriage. However, it becomes possible to estimate population indicators related to the male members of the *yangban* class by using several assumptions and methods to resolve the problems associated with genealogical materials. Rather than using all the materials contained in genealogies, this involves solely using the parts which are reliable. It is crucial that this method be used to improve the integrity of the data.

To this end, while legitimate posterity (*jeokson*) should be retained as a subject for analysis, the data related to the children of concubines and their descendants (*season*) found in genealogies should be excluded. This proposed omission is premised on the fact that the miss rate for the *season* is quite high, and as such the relevant data boasts a degree of reliability that is much lower than that associated with the *jeokson*. A study conducted by Son Byeong gyu (Son 2004:94-99) found that approximately 30 percent of the members of the Hapcheon Yi clan were omitted from the family genealogy, and that the majority of these omissions were *season*. In one of the cases, while their names were included in early versions of the genealogy, they disappeared from the latter ones.⁹ Second, the number of members of a clan, which has generally been estimated by inserting data, should be determined using a version comparing method. One of the biggest problems associated

9. Other cases included those who dishonored the clan. However, as there were few cases in which the members of a clan actually vanished from the records, there is no real cause for concern about any possible underevaluation caused by this phenomenon.

with the use of genealogies to this point has been that of inserting data. In this regard, the solution lies in comparing various versions of a genealogy. Comparing the earliest version of a genealogy produced during the Joseon era with latter versions makes it possible to resolve the problems caused by the inserting of genealogical data. This can be achieved by excluding records that were not included in the earlier versions but appeared in later ones, and records on which, while the entry no child was registered, the family clan nevertheless continued.

Third, there is a need to limit the periods in which genealogies were published to those that boast not only more precise entries in terms of the year of birth and death, but also similar ratios of such descriptions. In almost all genealogies published up to the early eighteenth century, the ratio of entries that included the year of birth and death was rather low. However, the ratio of genealogies that boasted such entries increased during the late eighteenth century, and remained at a steady rate until the nineteenth century. As such, the bias occasioned by the omission of the year of birth and death can be reduced by limiting the genealogies under study to those that appeared from the late eighteenth century onwards.

Fourth, there is also a need to supplement the information related to factors which can, to some extent, be gleaned from genealogies, such as age at marriage and death rate prior to marriage, through the introduction of other records related to the *yangban* class. For instance, documents such as marriage letters and personal anthologies include the relevant parties' age at marriage. Meanwhile, the birthrate of males can be restored based on the information about death prior to marriage contained in the personal chronicles (*yeonbo*) included in the personal anthologies and the bibliographies of the deceased (*haengjang*) of women.

The Fertility and Mortality of Male Adults from the Yangban Class

Table 2. Entries selected from the genealogies

ID number	Father's ID number	Adoptive father's ID number	Name	Official position
Birth date y/m/d	Death y/m/d	Burial place	Father's name	Adoptive father's name
Adopted son	Wife's name	Wife's birth date y/m/d	Wife's death y/m/d	

As mentioned above, overcoming the bias inherent in the genealogies produced during the Joseon era requires that clear objectives for a demographic database be established, and that, once this has come to pass, the items to be entered in the desired database be selected and input. It is essential that analytical methods and programs which can facilitate the use of the current databases be developed. In this regard, the data needed to conduct a historical demography-based analysis can be divided into the numerical data from which population indicators can be extracted, and the non-numerical data used to analyze family and social relationships. As a database of demographic materials is needed to analyze population phenomena, it becomes necessary to extract numerical data related to birth, marriage, and death.

As Korean genealogies are registered on a family unit basis, one can avoid the troublesome process of family reconstruction associated with the Parish Registers found in Europe and Japan's 宗門改帳 (*Shuman artame cho*) and simply input the data provided. However, analyses of family size, as well as the task of transferring the years of birth and death inscribed in lunar calendar-based genealogies to a database that is based on the solar calendar system, nevertheless requires that individual relationships be ascertained. The most difficult problem in terms of establishing a demographic database that is based on genealogies is, in fact, that of transferring data compiled in accordance with the lunar calendar system to a new database rooted in the solar calendar system. As the year of birth and death found in genealogies were entered based on the sexagenary cycle (干支, *ganji*), there is a need to transcribe such data into years that correspond with the Anno Domini system. To this end, as the task of manually transferring data based on the lunar calendar into solar calendar-based data requires a lot of labor and time, it becomes necessary to develop a software program that can carry out such a process. There were generally three types of inscriptions based on the sexagenary cycle: inscriptions which featured only the sexagenary cycle, inscriptions that included both the sexagenary cycle and Chinese reign name, and inscriptions that contained both the sexagenary cycle and the posthumous name of the last Joseon king (*myoho*). While it is possible to transfer the years found in inscriptions that included both the sexagenary cycle and Chinese reign names, or the posthumous names of Joseon kings, to solar calendar-based years, the corresponding year on the

solar calendar is required to ascertain the year(s) found in inscriptions that feature solely the sexagenary cycle. It becomes impossible to transfer the data for a person whose entry is based solely on the sexagenary cycle to the solar calendar without calculating the relevant years of birth and death on the solar calendar of those who are known to have had a relationship with that particular person. As such, the following process is required to calculate the year of birth and death of those whose entry features only the sexagenary cycle. First, the year of birth and death of those whose entries were based on the sexagenary cycle and either the Chinese reign name or the posthumous name of a Joseon king should be transferred into solar calendar-based years. Second, as sexagenary cycles commence every 60 years, it becomes possible to transform the data compiled based on a person's sexagenary cycle into concrete years on the solar calendar through a thorough perusal of his/her relationships with other people. This is of course based on the assumptions that people's life expectancy did not exceed 100 years, the age difference between father and son was less than 60 years, and the age difference between siblings as well as couples was less than 30 years. Third, in cases where it is also impossible to ascertain the years of birth and death on the solar calendar of those surrounding the relevant person, the first step should be the inscription of the solar calendar years of the birth and death of the closest relative for whom such data can be ascertained. By tracing back the generations based on the use of the relationships between father and son as well as amongst siblings, the software program should then be able to transfer the years of birth and death inscribed based on the sexagenary cycle and lunar calendar into solar calendar years (Park and Cha 2003:4-5).

The individuals found in a family genealogy are all linked together in one way or another. In this regard, it becomes necessary to develop tools which can be used to connect them to one another. To this end, it is necessary to input the individual identification- related information needed to analyze relationships such as those between father and son, siblings, and husband and spouse. Here, sequential numbers must be assigned to facilitate the analysis of relationships such as those between father and son, or siblings. Thereafter, one can establish a database which can be used as a *yangban* male population index by inputting the years of birth and death of the selected individuals and their spouses.

Death Prior to Marriage, Age at Marriage, and the Population Index of Yangban Males

Population indicators for all *yangban* males can be calculated by combining the database established through genealogies with the information about those who died prior to marriage. Genealogies only covered those who were married, and as such did not include those who passed away prior to marriage. Therefore, the fertility and mortality rates compiled based on genealogies solely represent the people who lived long enough to marry (Harrell 1987:56-57).

Table 3. Number of Entries

Data	Before 15th cent.	16th cent.	17th cent.	18th cent.	19th cent.	Total
Genealogy						
Fertility of those who lived until marriage			1,935	3,914	6,366	12,215
Chronological Records						
Number of deaths before marriage			300	275	72	854
Male age at marriage	34	145	196	208	189	772
Female age at marriage	35	53	139	198	144	559

Note: 1) The figures above represent the data for those who died prior to marriage and the age at marriage as ascertained using the personal anthologies.

2) Source: Park and Kim 2008:7.

The information on mortality prior to marriage contained in the chronological records (*haengjangnyu*) serves as a good source of data on infant mortality. In addition to the items which can be gleaned from the bibliographies of the deceased (*haengjang*), personal chronicles (*yeonbo*) can be regarded as a good resource for information on such matters as changes of address, disease, infant mortality, and causes of death. These two types of materials provide insight on population movements within the *yangban* class, as well as with regards to the types of diseases that prevailed during a particular period. Chronological records (*Haengjangnyu*) were mostly included within the personal anthologies (*munjip*). During the Joseon era, personal anthologies (*munjip*), which encompassed the entire collection of

essays written by one individual, were published as a means to leave behind essays written by outstanding scholars for posterity. *Munjip* were by and large composed of a preface (*seomun*), list of contents (*mongnok*), main texts (*bonmun*), appendix (*burok*), and epilogue (*balmun*). While the preface (*seomun*) appeared in front of the book, the list of contents (*mongnok*) was designed to facilitate readers' convenience. The list of contents for all volumes was either comprehensively compiled at the beginning of the work, or presented on an individual basis within each volume. For their part, the main texts (*bonmun*) consisted of memorials (*juso*), verse (*si*), writings (*seo*), personal records (*gi*), admonitions (*jam*), inscriptions (*myeong*), lamentations (*aesa*), memorials for the deceased (*jemun*), and personal chronicles for the deceased (*jijang*). Finally, the epilogue (*balmun*) was written by the publisher as a means to shed light on aspects of the publication of these personal anthologies (*munjip*), such as the publication process in and of itself.

The publication of personal anthologies (*munjip*) was carried out by one's disciples or descendants after the relevant party's death. The contents of these personal anthologies included the chronological records (*haengjangnyu*) in which the life history of men and women were inscribed. These chronological records (*haengjangnyu*) in turn consisted of personal chronicles (*yeonbo*), bibliographies of the deceased (*haengjang*) and burial records (*jimyeong*). Personal chronicles (*yeonbo*), which constitute detailed records of a person's words and deeds, and events that marked specific periods in their lives, offer the highest level of information about individuals of all the records of the Joseon era. Although bibliographies of the deceased (*haengjang*) did not record the specific age at which important events occurred, these accounts written by those who had intimate knowledge of the deceased help to shed some light on the latter's personality and conduct. Burial records (*jimyeong*) were simple epigraphs etched on the gravestone of the deceased. During the Joseon and colonial eras, it was commonplace for the upper-middle class *yangban* to leave behind chronological records (*haengjangnyu*) after their deaths. As these chronological records were written by descendants and friends, they tended to include a wide range of personal information. Furthermore, as they were written by those with in-depth knowledge of the deceased, these works can be regarded as records which generally boast a greater degree of reliability than is the case with other such materials.

These chronological records (*haengjangnyu*) included information about the year of birth and death of the relevant person (the age at marriage in the case of women), exultations of the deceased, and lamentations. As they also include information about marriage and the deceased's spouse, these works have been identified as a solid source of information about aspects of the lives of individual *yangban*, such as their births, marriages, and deaths. Although the majority of chronological records (*haengjangnyu*) makes no mention of those who passed away prior to marriage, there are some that do include such information. In this regard, information about 647 individuals who passed away prior to marriage was gleaned from these chronological records (*haengjangnyu*).

As mentioned above, chronological records (*haengjangnyu*) were included as part of personal anthologies (*munjip*), the majority of which are currently housed in public and university libraries. Examples of institutions that house such records include Seoul National University's Kyujanggak Institute for Korean Studies, Seongkyunkwan University's Jongyeonggak Library, the Academy of Korean Studies' Jangseogak, the Korean Studies Advancement Center, and the Institute for the Translation of Korean Classics. In addition, the task of analyzing the types and quantities of personal anthologies (*munjip*) is greatly complicated by the fact that such records can be found in almost every library.

Table 4. Personal anthologies (*munjip*)

Materials	Location	Number of Personal anthologies (<i>munjip</i>)
Collection of Ancient Korean Anthologies	Kyeongin Munhwasa	2,999
Collection of Korean Anthologies	Institute for the Translation of Korean Classics	554
Anthologies of Yeongnam Sarim Scholars	Korean Studies Advancement Center	1,328
Anthologies	Kyujanggak Institute for Korean Studies, Seoul National University	3,955
Anthologies	Jongyeonggak Library, Seongkyunkwan University	1,542
Anthologies	Jangseogak, Academy of Korean Studies	1,486

However, the lack of materials with which to analyze the age at marriage of all social classes makes it necessary to introduce other materials which can in fact be regarded as representing the various classes. In this regard, while the age at marriage of the *yangban* class can be found in marriage letters (*honseo*) and chronological records (*haengjangnyu*), the age at marriage of commoners (*pyeongmin*) can be ascertained by a perusal of household registers (*hojeok*). By combining the death rate prior to marriage and the age at marriage with the birth and death rates of adult males uncovered through an analysis of genealogies and household registers, it becomes possible to analyze population indicator-related trends during the Joseon era.

The Future Direction of Korean Historical Demography

The Development and Use of Materials with Which to Overcome the Inherent Problems Associated with a Database

The mere inputting of demographic materials does not result in the creation of a demographic database. More to the point, the inherent weaknesses of the demographic materials prepared during the traditional era makes it such that more than the simple collection and estimation are required before these can be used as reliable demographic sources.

For example, the ability to derive various population indicators from genealogies is premised on the presumption that these genealogies are in fact representative of the entire population at the time. However, genealogies are saddled not only with the problem of inserting data, but other issues such as bias in terms of social classes, omission of those who passed away prior to marriage, as well as the omission of others for various other reasons. They also do not include any information about the birth and death of female members of the clan. Those who passed away prior to marriage were in principle not registered in genealogies.

Even if these problems are resolved, there are still many issues that must be addressed before genealogies can be regarded as a valuable source of demographic data. For instance, in order for genealogies to be regarded as a significant source of demographic data, 80 percent or more of such

materials should include information related to birth and death. However, less than 5 percent of all genealogies actually satisfy this condition. Thus, only a small percentage of genealogies can be said to be of demographic value. The same holds true for household registers, which also have several difficulties associated with them. These include issues with the identification of the characteristics of the household and inhabitants (*hogu*), population movements, omission of individuals, frequent change of names, estimation of the year of death, and the inaccuracy of the year of birth.

The numerous problems associated with the use of genealogies and household registers as demographic data renders it essential to introduce other materials such as personal chronicles (*yeonbo*), chronological records (*haengjangnyu*) and various burial records (*jimyeong*) that can be used to confirm the character and integrity of genealogies. To this end, the personal chronicles (*yeonbo*), chronological records (*haengjangnyu*) and burial records (*jimyeong*) should be used to accumulate reliable data concerning such factors as marriage relationships, fertility and mortality, and family relationships which cannot be analyzed based on genealogies and household registers alone. In addition to chronological records (*haengjangnyu*) and similar documents, the establishment of various demographic databases necessitates that other materials which include information about important events in individuals' lives be uncovered and made use of.

Establishment of Database based on Materials Suited for Historical Demographic Analysis

Korea must now follow the path laid out by Europe, China, and Japan and develop demographic programs that mesh with its own materials. The family reconstruction technique developed by Louis Henry provided the impetus for the introduction of a historical demographic method which analyzes population phenomena based on micro-level materials. This marked a clear departure from the previous research methods associated with demographic history that sought to estimate population scales based on macro-level materials gleaned from unreliable population surveys.

References

- Cha, Myung Soo. 2009. Joseon hugiui chulsannyeok, samangnyeok mit ingu jeungga: ne jokboe natanan 1700-1800 nyeongan saengmol girokeul iyonghan yeongu (Fertility, mortality, and population growth in eighteenth and nineteenth century Korea: Evidence from genealogies). *Hanguk inguha* 32(1): 113-347.
- Harrell, Stevan. 1985. The rich get children: Segmentation, stratifications, and population in three Chekiang lineages, 1550-1850. In *Family and Population in East Asian History*, eds. Susan B. Hanley, and Arthur P. Wolf, 81-132. Stanford: Stanford University Press.
- Hayami, Akira. 2001. *The Historical Demography of Pre-modern Japan*. Tokyo: Tokyo University Press.
- Jung, Jin young. 2007. Yeoksa inguhak jaryoroseoui hojeok daejang iyonggeul wihan gicho yeongu: Daegubu hojeok daejang gwa chollak munseoui bigyo geomto (Basic study on the use of household registers as historical demography materials: Comparative study of the Daegubu Household Register and village documents). *Daedong munhwa yeongu* 59:363-401.
- Kim, Keun tae. 2005. Eighteenth-century Korean marriage customs: The Tansong census registers. *Continuity and Change* 20(2): 193-209.
- _____. 2006. Hojeok daejange deungjae deon hoguui seonggyeok (Characteristics of Households in the Household Registers (*hojeok*) in the Late Joseon). *Hanguksa yeongu* 132:137-177.
- _____. 2009. Jejudo yeoseongui gyeolhongwa chulsan (Marriage and fertility of women on Jeju Island). *Daedong munhwa yeongu* 65:311-351.
- Lee, Hung tak. 1990. Household patterns in early eighteenth century Korea. *Hanguk inguhakhoe* 13(2): 19-47.
- Lee, James Z., Cameron Campbell and Feng Wang. 1993. The last emperors: An introduction to the demography of the Qing (1644-1911) imperial lineage. In *Old and New Methods in Historical Demography*, eds. David S. Reher and Roger Schofield, 361-382. Oxford: Clarendon Press.
- Lee, James Z. and Feng Wang. 1999. *One Quarter of Humanity: Malthusian Mythology and Chinese Realities*. Cambridge, Mass.: Harvard University Press.
- Lee, Ki soon. 1996. Bongsan yissi jokboreul tonghae bon Joseon sidae gajok kyumo (The size of families during the Joseon era as viewed from the

- genealogy of the Bongsan Yi Clan). *Hongik sahak* 6:1-16.
- _____. 2001. Joseon hugi Goryeo sinssiui honin chulsangwa sumyeong (Marriage, fertility and average life expectancy of the women from the Goryeo Sin Clan during late Joseon). *Hanguksa hakbo* 10:75-113.
- Lee, Young gu. 1997. Joseon sidae ingu byeondonggwa gyeongje baljeon (Population changes and the economic development of Joseon). Ph.D. diss., Kyungpook National University.
- Park, Heejin. 2002. Joseon hugi gagyedang pyeonggyun gagusu: jobboreul iyonghan gajok jaeguseongeul jungsimeuro (Trends in the number of family branches during late Joseon: A special focus on the restoration of families through genealogies). *Gyeongje sahak* 33:3-33.
- _____. 2006. Yangbanui honin yeollyeong: honseoreul jungsimeuro (Yangban's age at marriage: A special focus on marriage letters). *Gyeongje sahak* 40:3-20.
- Park, Heejin and Myung Soo Cha. 2003. Joseon hugiwa ilje sidaeui ingu byeondong: jeonju yissi jangcheongunpawa hamyang parkssi jeongranggongpa jobbou bunseok (Population changes during the late Joseon and Japanese colonial eras: Analysis of the genealogies of the Jangcheongun branch of the Jeonju Yi Clan and of the Jeongnanggong branch of the Hamyang Park Clan). *Gyeongje sahak* 35:3-27.
- Son, Byeong gyu. 2004. Hanguk yeoksa inguhakui banghyang seoljeongeul wihaye: ingusajeok cheukmyeoneseo bon hojeokgwa jobbou jaryojeok seonggyeok, 17-19 segi gyeongsangdo danseonghyeonui hojeok dajanggwa hapcheon yissigai jokbo (The establishment of the future direction of Korean historical demography: Characteristics of household registers and genealogies as demographic materials as viewed from the standpoint of demographic history, with a special focus on the Household Register of Danseong-Hyeon in Gyeongsang Province and the Genealogy of the Hapcheon Yi Clan from the seventeenth to nineteenth centuries). *Daedong munhwa yeongu* 46:79-110.
- Wrigley, E. A. and Roger Schofield. 1981. *The Population History of England, 1541-1871*. Cambridge: Cambridge University Press.
- Zhao, Zhongwei. 2001. Chinese Genealogies as a Source for Demographic Research: A Further Assessment of their Reliability and Biases. *Population Studies* 55:181-93.

