Zeitschrift: Familienforschung Schweiz : Jahrbuch = Généalogie suisse : annuaire = Genealogia svizzera : annuario

Herausgeber: Schweizerische Gesellschaft für Familienforschung

Band: 43 (2016)

Artikel: Mortality research with genealogical data

Autor: Zollinger, Marcel

DOI: https://doi.org/10.5169/seals-816274

Mortality Research with Genealogical Data

Marcel Zollinger

Résumé

La démographie et la généalogie utilisent pour l'essentiel les mêmes sources: les registres paroissiaux, les recensements de population, et toutes les sources complémentaires qui peuvent être une aide. Tandis que la démographie s'intéresse à la population d'une région particulière, la généalogie s'intéresse d'abord à une famille particulière, où qu'elle soit. Lorsqu'une base de données généalogique est suffisamment importante, elle peut être exploitée en démographie. C'est ce qui est démontré dans l'article qui suit.

Zusammenfassung

Demografie und Genealogie benützen im Wesentlichen die gleichen Quellen, Pfarrbücher und Bevölkerungsverzeichnisse, und zusätzlich was immer ihnen zweckdienlich sein könnte. Während sich die Demografie für Bevölkerungsdaten bestimmter Gebiete interessiert, befasst sich die Genealogie vor allem mit bestimmten Familien, egal wo. Ist eine genealogische Datenbank genügend gross, könnte sie auch für demografische Auswertungen dienen. Das wird in diesem Artikel vorgestellt.

Summary

Demography and genealogy use in essence the same sources, parish books and population registers, and in addition they use whatever sources may be useful for their purpose. While demography is interested in population data of a specific area, genealogy focuses on a specific family no matter where. If a genealogical data base is large enough, it might allow for demographic evaluations, too. This will be the topic presented in this article.

1. Background

A most interesting article with the title “Hungersnöte und Notnahrung” by Walter Letsch in the 2015 “Jahrbuch” of the SSGS inspired me to think about this topic. Since I have a substantial database on my Zollinger family tree, I then wondered if I could extract information on this topic. However, the data, as it exists, can only provide information on birth-rates, life spans and mortality. And so if I was going to use my data, I realized that I would first need to make some assumptions. First of all there is the assumption that a famine would cause death, and therefore one would find an increased mortality level in such “hunger” years. A second assumption is that famines were closely related to wars, and so the actions of war might be contributing to these mortality figures. And a third assumption is that a higher level of mortality could also be caused by diseases, from the bubonic plague to the Spanish flu of 1918. However, as the last plague epidemic hit the Canton Zurich in 1668, this was beyond our time range. These outbreaks of disease in turn could also have led to famines, but at the same time diseases as a cause of mortality could not be separated out.

2. Parameters

The overall genealogical data base of my Personal Ancestry File contains some 36,000 entries, but there was a need to create a more homogenious sample by concentrating on a specific population group. So the first limitation I set was to focus on all persons with the name Zollinger, where the sample is then reduced to 12,929.

Furthermore, since the data contains many entries from other regions of Switzerland, as well as Germany and other foreign countries, the focus needed to be limited to those born in the Kanton Zurich, where 10,366 could be found. Then, and in order to be able to find mortality rates, each entry required a date of death, and this then reduced the sample to 6,344 individuals. So the actual base of the research contains 6,344 entries of Zollingers born in the Kanton Zurich.

The next consideration was the time frame. Here I started with the research year of 1630, because that was the beginning of proper record keeping on population parameters. It quickly became apparent that the early year samples were too small, and so the start year became 1670, when the sample size was more substantial and constant. Under the assumption that famines were no longer prevalent after 1850, I wanted to use that as the end year. But then I

considered that the Spanish flu of 1918 might show up in mortality rates, so the end date became 1920.

Finally the actual number of deaths in a year would vary over time as the population changed, and a better way to present reliable and useful information was to express the mortality rate as a percentage of the overall population. So a second round of data analysis was necessary, to establish the base population parameter. Again we are here looking at the population of Zollingers in the Kanton Zurich, who were alive in a given year.

3. Methodology

For each year I then entered the above stated search parameters in my Personal Ancestry File, where the data is stored. I then entered the year, and the gender of the person. This provided me with the number of Zollingers in the Kanton Zurich who died in a given year, by gender.

The same parameters were used for the overall population, but additional search parameters stipulated that the person had to be born before that year, and died after that year.

So for each year this search generated five figures: the male and female population in a given year, the male and female mortality rate in that year, and then, based on these two figures, the percentage of mortality (not segregated by gender).

Mortality as percent of Population for Zollingers in Zurich (excerpt)

Year	*Population*			*Deaths*			*Percentage*
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Deaths*
1769	…	…	…	…	…	…	…
1770	399	316	715	9	9	18	2.5 %
1771	404	318	722	14	7	21	2.9 %
1772	396	324	720	16	16	32	**4.4 %**
1773	389	318	707	8	10	18	2.5 %
1774	395	324	719	9	14	23	2.5 %
1775	399	321	720	8	3	11	1.5 %
1776	…	…	…	…	…	…	…

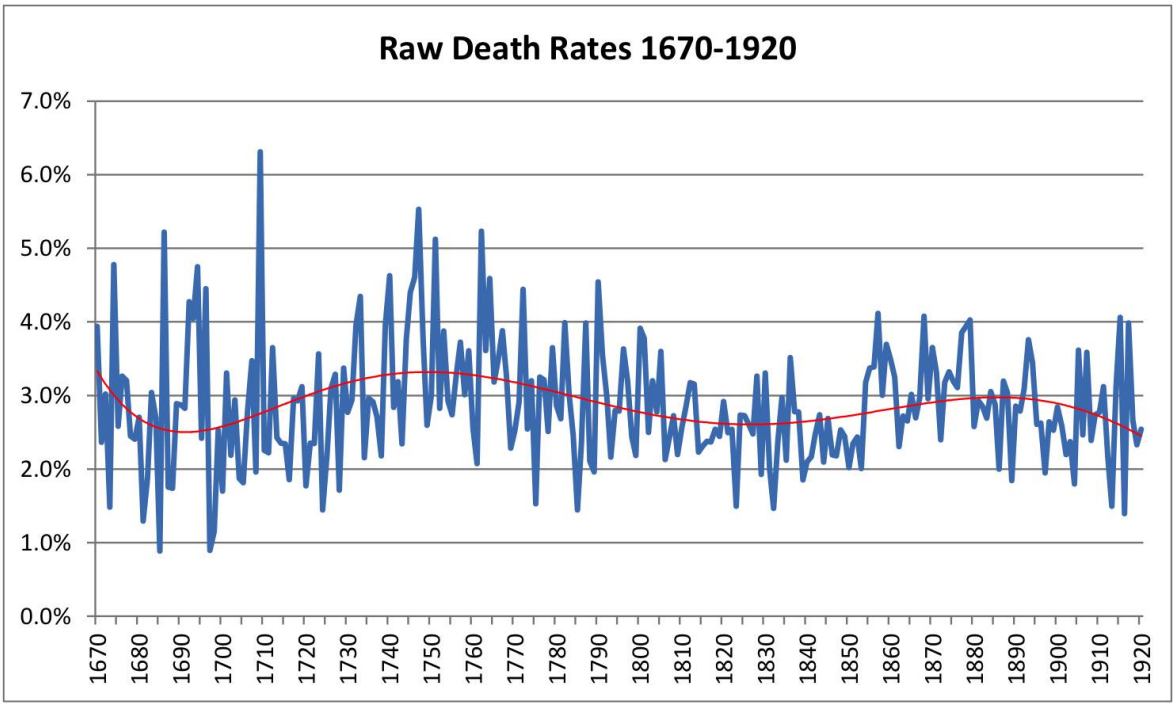
1770 and 1771 were well known years of scarcity and famine that resulted in a high number of deaths in 1771. In our case the higher number of deaths occurs only in 1772; the reason for this is not known.

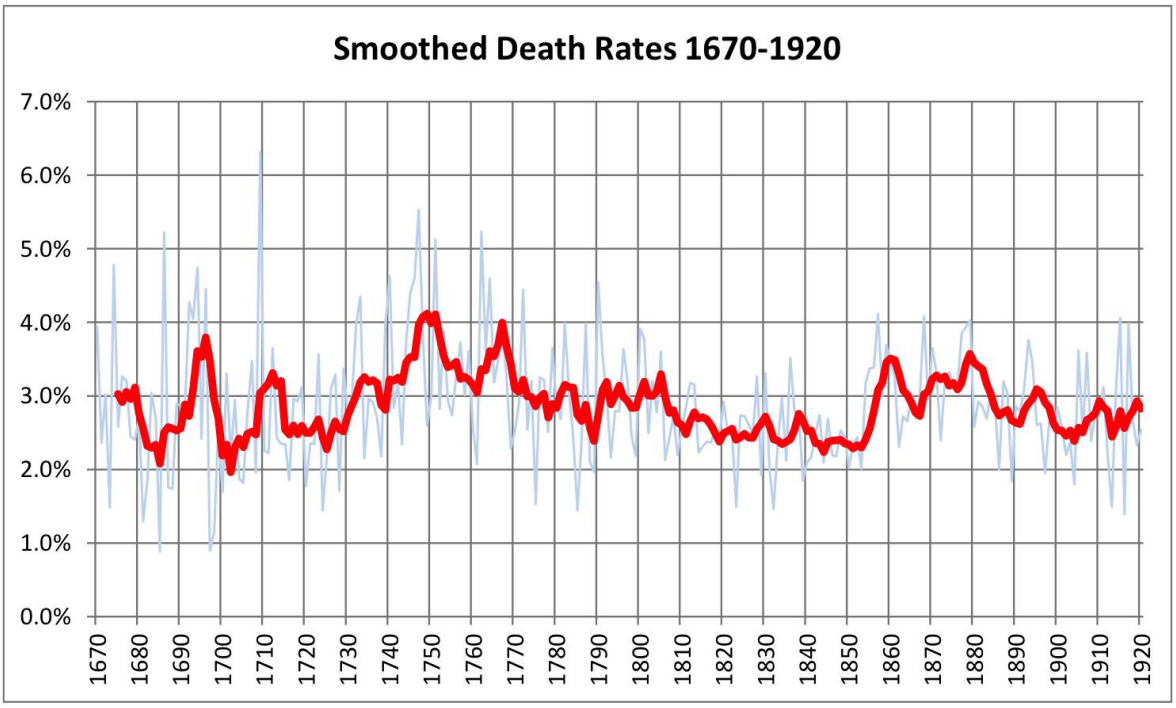
4. Observations

Most years the mortality rates were in a very narrow range, between 2.4 and 3.3 percent, and the overall average for the time span 1670 to 1920 is given as 2.9 %. It must be assumed that this level is the standard long-term average mortality rate of a population. However in some odd years the rate would go as low as 1.5 %, for which I have no explanation. But the focus of this research was on the high years, where periodic spikes were observed, going up from an average of 2.9 % to between 4.5 % to 6.5 %. These years would be obvious candidates for external causes of death responsible for such mortality spikes. These causes could be famines, but might also have been caused by wars or disease (or a combination). Such periods were all relatively short, interspersed by long periods of normalcy.

The graphs, based on the data tables, show these peaks in mortality and, not surprisingly, the early years (1670 to 1750) show a much higher incidence of such peaks, which decrease in both frequency and severity as we approach more recent times. But what can also be observed are two types of spikes, one for just one year, the other over several years. An interpretation is difficult. We may see random fluctuations, but we may also deal with epidemic diseases, such as smallpox, measles, whooping cough, dysentery, etc., and the longer-term variations may be due to climatic variations.

A further observation of interest is that years of high mortality are frequently followed by a year of extremely low mortality levels. This can best be explained by assuming that deaths of old or sick people were hastened by a year in times of crises, leaving, on average, somewhat healthier people behind. Note also that in several cases there is a low level after a peak, only to return to further peaks. And finally a strange occurrence can be observed in the years 1914 to 1918, where two peaks (1915 and 1917) are separated by a low (1916). A more detailed analysis of these figures show that these peaks were caused by a much higher male mortality (18 male versus 6 female), and the obvious conclusion that comes to mind is that the death rate was caused by the flu or war-related problems. However I was then able to show that the majority of these males actually died in old age (in their seventies). So there seems to be no obvious explanation.





Beyond the mortality rate, one can also make some observations on the population size of Zollingers. The sample has provided consistently higher numbers of males than females. That is not a reflection of the population, but a weakness of the data. As females tend to marry away, and then obviously assume a different name, they can often no longer be found. Thus the data is much weaker for females, just 42% of total data, and their number of deaths is then also lower. This results in a systematic error which, however, cannot be

corrected easily. As a result, the overall number of male deaths is more than 500 higher than female deaths.

In 1670 the population size of Zollingers in the Kanton Zurich was 254 persons, and this population then grew very slowly, at a rate of about 1.2 % per year in the early years of observation (1670 to 1750). Evidently, during years of higher mortality, the population would decrease a bit, only to start growing again during normal times. A century later the average growth rate was even lower at 0.7 %, but from then on the growth accelerated to a peak of 1,211 Zollingers in the year 1842. From there the population remained stagnant for some 40 years, and then started to decline, so that by the last year of observation (1920) the number of Zollingers in the Kanton Zurich had declined to 550, almost exactly half of what it was 80 years earlier. This figure however has nothing to do with mortality, but with the emigration of Zollingers from Zurich to other cantons, to Germany and to the USA. This situation can also be observed in special communities such as Maur and Urdorf, where once a large percentage of the population carried the name Zollinger, when today there is only one family left.

5. Interpretation

While the tables give the year to year mortality of males and females, the graphs especially show up the years of heightened mortality. But I am in no position to show if and how these peaks are related to famines and diseases. It turns out that some of the peaks can be related to known years of dearth or to epidemic diseases, but others cannot. This may be interpreted as being due to the limited size of the database, but what is much more likely is the fact that epidemics have been restricted to very small areas, often just a few neighboring villages in a specific year, with other clusters of villages being hit a year earlier or a year later. Remember that there was no public transport system available and many locations were rater isolated. This results in a pattern for the whole canton that is difficult to interpret.

If the results are to be trusted, there was a considerable decrease in mortality between 1750 and 1850, then a sudden worsening and then again an improvement after 1860. Overall, the death rate improved from around 2.96 % to 2.80 % in the 250 years under observation, which appears to be very modest.

Literature

Zollinger Website: www.zollinger-genealogy.com.
Zollinger, Gustav, Aus der Geschichte der Zollinger und Zolliker von Zollikon, Mittelalter, 16. Jahrhundert, bis 1634. Mit Überblick über die späteren Bürgerorte und Angaben über Zusammenhänge, 1937 (Schweiz. Nationalbibliothek Bern); 1951 (Staatsarchiv Zürich).
Zollinger, Gustav, Der Name Zollinger: Über Namensforschung, in: Schweizer Sammler und Familienforscher, Bern 1935 (Nationalbibliothek Bern, Staatsarchiv Zürich).
Zollinger, Christoph Heinrich, Die Zollinger Chronik. Der Weg in die Vergangenheit der Zollinger von Egg bei Zürich, 1976 (Nationalbibliothek Bern, Staatsarchiv Zürich).

I was born in Wetzikon in 1944, and after my apprenticeship as printer, noted that at the time some of the first Third World countries were becoming independent. So I decided that I wanted to become part of this process. To be able to do so I emigrated to Canada, and studied agriculture at McGill University. After four-year assignments in both Botswana and Papua New Guinea, and further studies in England, my family settled in Ottawa, where I was working as a consultant for the Canadian Government and Aid organizations.

In 1985 I inherited two large volumes of family history from my Uncle Gustav Emil Zollinger, meticulously researched and presented. I felt an obligation to continue his work, and after much research was able to find several other family history books, and was able to link up with genealogists in Switzerland, Germany and the USA. With their immense help I then gave myself the task to not only research my own line, but to record the sum total of all persons with the name Zollinger. To achieve this, I then telephoned over 1000 contacts in Switzerland and Germany, followed by another 1000 in the USA, and many more in the rest of the world. As a result I have been able to accumulate a data base that I can show to include over 95 % of all Zollingers who ever lived, or are alive today. There are 5200 entries with our name in the USA, and 13,500 in Europe. This data base is then substantial enough that it can be used as the basis for some historical research, and here I am giving an example.