

Pilot Lodge Analysis of Years to Demit After Initiation (Period 2000 to 2019)

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1.0 Introduction.

The following is a Pilot Lodge analysis of *Years to Demit*¹ after initiation, for one Lodge in Onondaga District, Grand Lodge of New York. The Lodge has no particular conditions other than the fact of having this analyst access to the data. The period under analysis corresponds to January 2000 to December of 2019 (i.e. twenty years).

We have analyzed all the initiations occurred during this twenty-year period, and looked at those individuals that have left the Institution (Demit) officially, by submitting the letter of resignation, or by stopping paying their membership dues.

The object of this Pilot study is to start looking at the phenomenon of attrition in our Lodges, in order to eventually resolve it positively.

We start by analyzing all the data (combining the times of those who have left with those who remain as members of the Lodge). This will give us the probability of *Time to Demit*, which will allow us to obtain a general estimate for it. The advantage of analyzing all data together is that, at the start, we do not know who will remain a Mason, and who will leave the Institution.

Then, we analyze the data for those who have Demitted only and obtain its probability. And we conclude with a Survival Analysis using a Distribution-Free procedure.

2.0 ANALYSIS FOR ALL DATA (Including ZEROS/Retirement, Before Raising):

There were 90 Lodge initiations in the Period January 2000 to December 2019. Of these, 51 members Demitted or otherwise left Lodge and 39 remain as members. We start by implementing a Descriptive analysis (graphical and numerical).

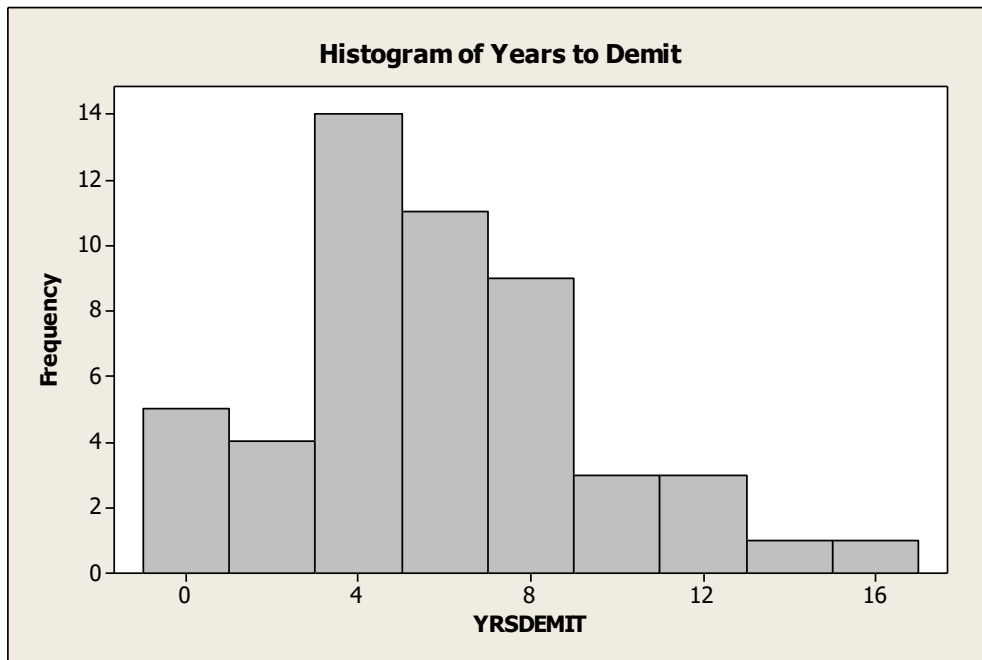
Descriptive Statistics: YRSDEMIT (Years from Raising to Demit)

Variable	N	Mean	SEMean	StDev	Minimum	Q1	Median	Q3	Maximum
YRSDEMIT	51	5.255	0.478	3.411	0.00	3.0	5.0	7.0	15.0

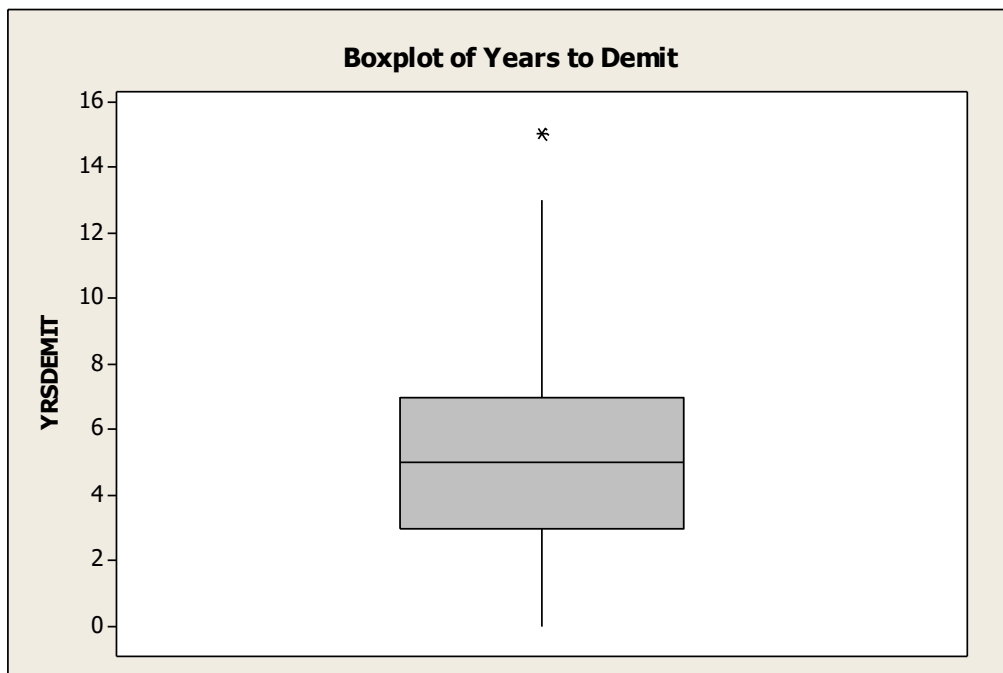
Notice how the Overall Mean/Median are about Five Years to Demit.

$$\text{Probability of Demitting} = 51/90 = 0.567$$

¹ Defined as the time from joining a Lodge of the Masonic Institution until officially leaving it.



Both (Histogram and Boxplot) graphics illustrate the Demit process and confirm Mean = 5 yrs.



Things to Notice:

1. We have analyzed twenty years of data: 2000 to 2019, inclusive.
2. More than half of those Candidates raised after Yr 2000 have Demitted.
3. Half of such Demitts occurred withing their first Five Years in the Craft.
4. We are lacking member periferal information, which is very useful:
5. Such as: age, degree preparation time, types of Lodge meetings, etc.

3.0 Analysis Not Counting Zero times (i.e. EXCLUDING demits before the Raising)

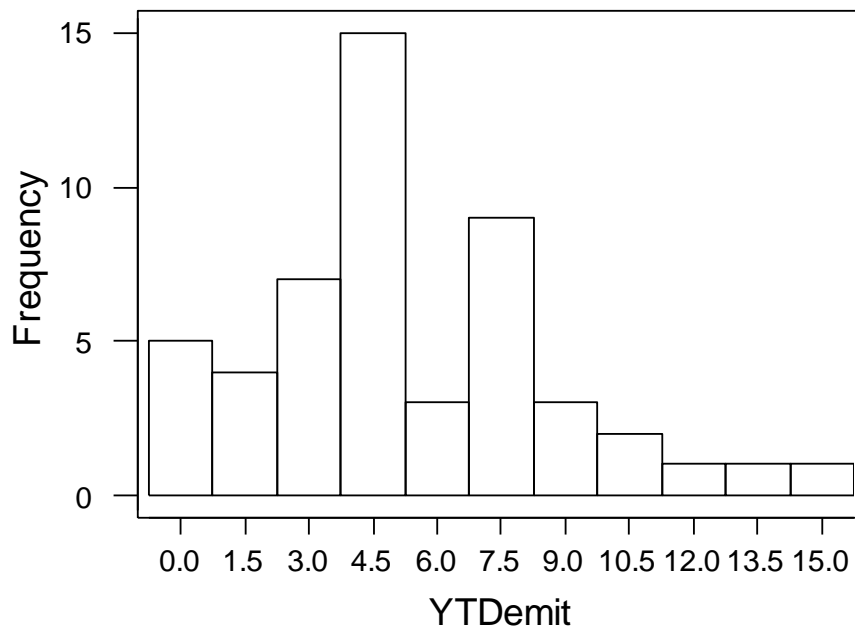
$$\text{Total Demits} = (51-6)/(90-6) = 0.53571$$

There were $6/45=0.1333$ Zeros/Demits before the Raising of the Brother.

Descriptive Statistics (Years From Raising to Demit)

Variable	N	Mean	Median	Tr Mean	StDev	SE Mean
YTDNoZer	46	5.826	5.000	5.643	3.086	0.455

Variable	Min	Max	Q1	Q3
YTDNoZer	1.000	15.000	3.750	7.000



This analysis does not consider those candidates who never pursued Freemasonry after their Initiation. We now see how, more than half of the OVERALL Candidates Raised, have Demitted.

The Longest Time to Demit is 15 years. The Median Time to Demit is still Five Years (Average is 5.8 yrs). The overwhelming number of Demits occurs in less than ten years in the Craft, and mostly in the first Five years.

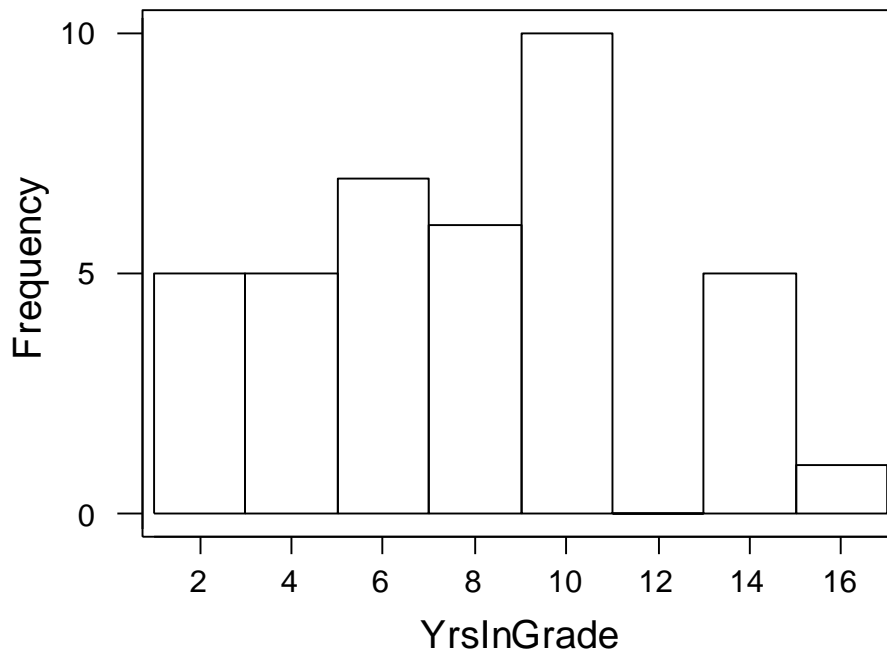
4.0 Analysis of Years in Grade for those Brothers Still in the Lodge (Non-Demits):

We now analyze only those Lodge Members that were initiated in the period, and have not Demitted. The problem with the analysis of this information is that we do not know, a priori, who will and who will not Demit as years pass (this is called time-censoring). For example, a Brother may still be a Lodge Member in 2019, three years into the Craft. But five years later, beyond said 2019 date, said Brother may Demit. We should add such Time-censored information appropriately, to enrich our analysis.

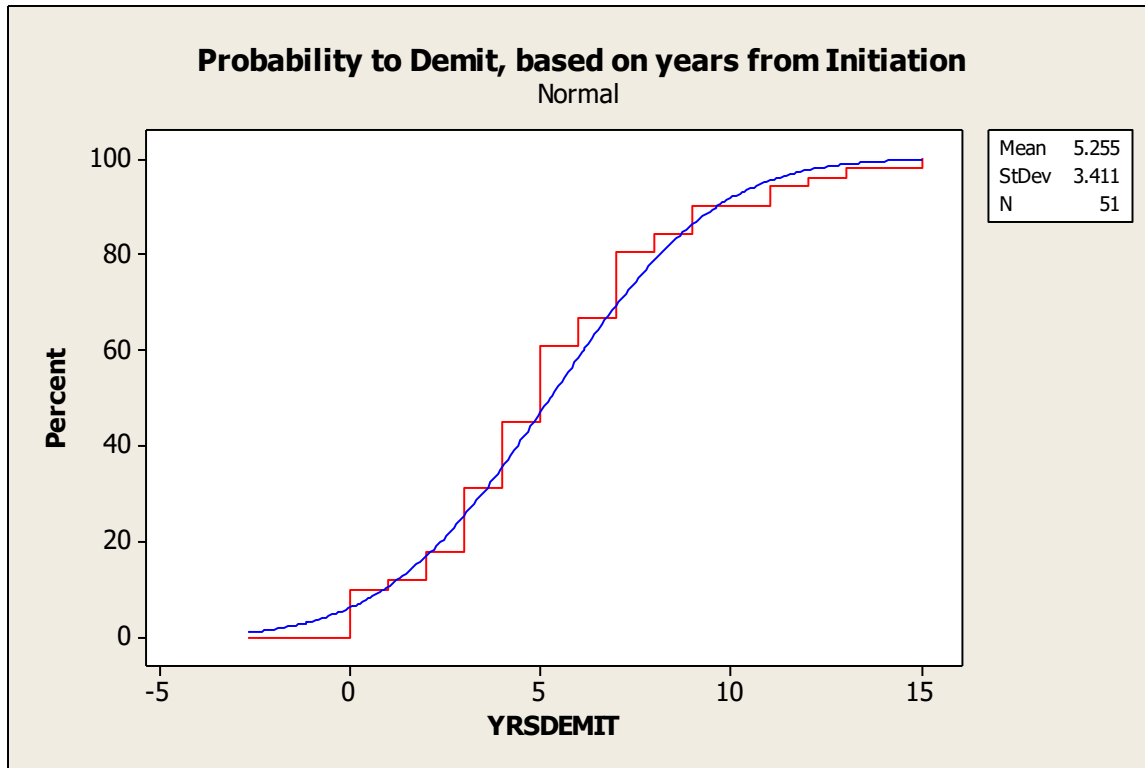
Descriptive Statistics (Years from Raising to 2019)

Variable	N	Mean	Median	Tr Mean	StDev	SE Mean
YrsInGra	39	7.205	7.000	7.143	3.826	0.613

Variable	Min	Max	Q1	Q3
YrsInGra	1.000	15.000	4.000	9.000



Finally, we consider the Probability of any Brother to Demit, counted in Years from his Initiation into the Craft. We present this information below. For example, the Probability for any Brother to Demit, after Five Years in the Craft, is approximately 43%. We can do likewise with any other time, using the graph below.



5.0 Survival Functions (e.g. probability of Non-Demit of any Brother)

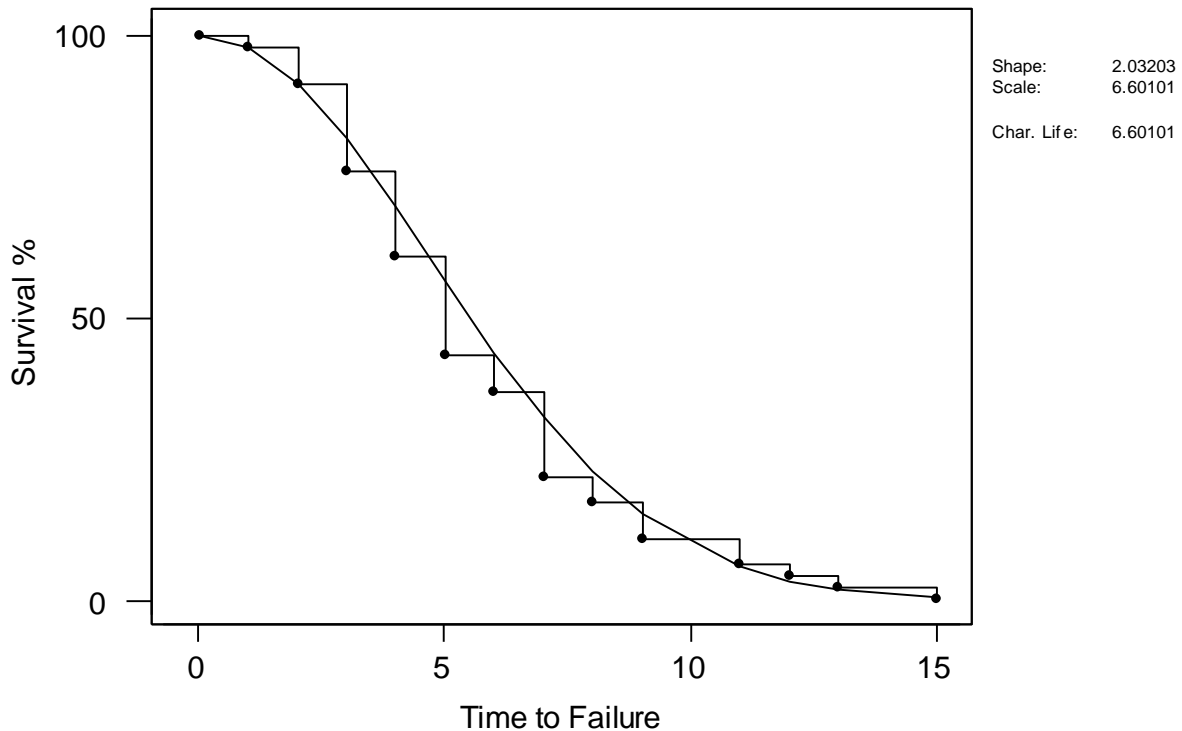
Next we provide two Survival Functions (Distribution Free, first, and then the Weibull Distribution approximation). Survival is defined as the probability that any Brother once Raised will Not Demit (e.g. *Survives*), given number of years as a Member of The Craft.

For example, the probability that a Brother Does Not Demit (e.g. is still a Member) after Five Years in the Craft, is 0.5 (about half, or one in two). The Probability that a Brother is still a Member after Ten Years is approximately 20%

This information is exclusively derived from the analysis of Members that have already Demitted. Recall that we do not know, a priori, which member will Demit and which will not. So we will again analyze for all members initiated after January 2000.

Survival Plot for YTDNoZer

Weibull Distribution
No censoring



6.0 Survival Analysis for All Members initiated after January of 2000.

Consider that the present work is only a Pilot Study of the Demit problems of the Craft.

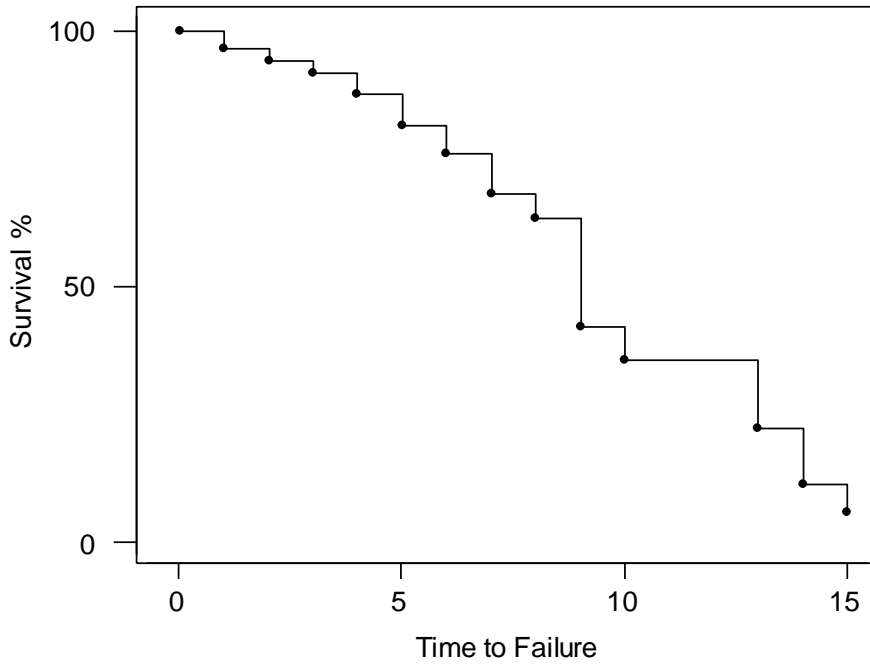
Half of Demits occur in the first five years as Craft members. The other Half occurs after five years (and up to fifteen years, in this sample). The bulk of Craft Demits (centered 50% of them) occur between three and seven years.

We now enrich this analysis by including the time served by those Brothers, also raised after the Year 2000, that have not Demitted so far (up to December 2019). We obtain this information by redoing the Survival analysis, but now including these Brothers years in the Craft as Censored Data. For those readers that indulge in statistics, we use both: Distribution Free and the *approximate* Weibull Distribution.

Again, it would be a great improvement to this analysis if we could also add, by Brother, concomitant information such as their age, the time of preparation received during their Raising, the types of programs that their Lodge performs (i.e. instruction, as opposed to mostly paying bills, etc).

Survival Plot for StackedY

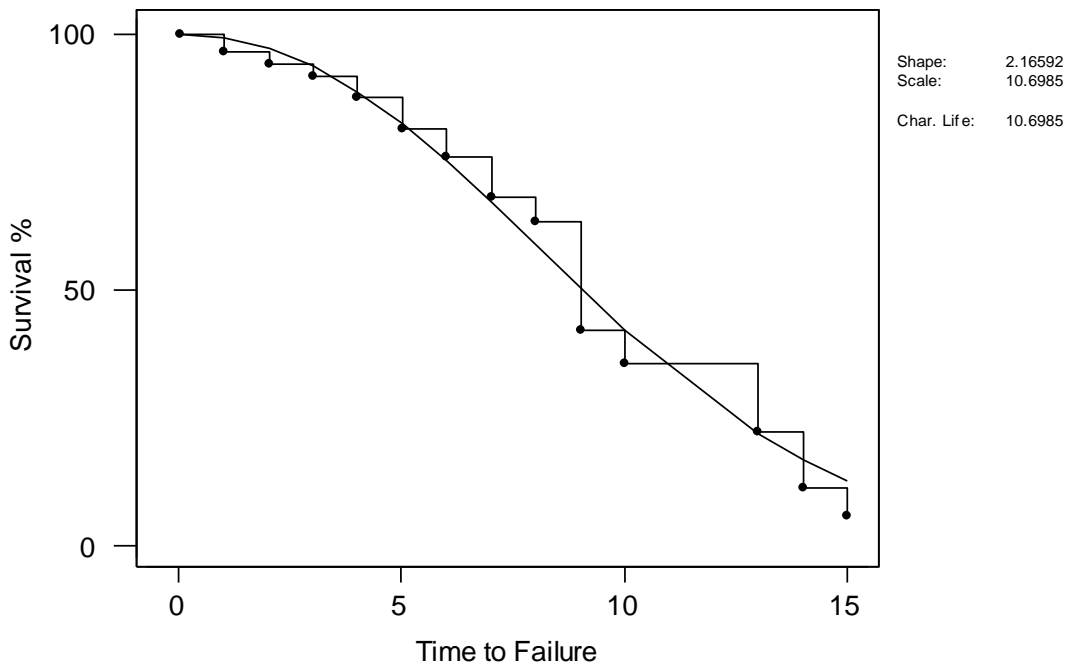
Kaplan-Meier non-parametric estimate
Censoring indicator in StackedC



With the added censored information we improved our estimations. Now, the Probability that any Brother remains in the Craft, up to Ten Years, is 40% (instead of just 20%).

Survival Plot for StackedY

Weibull Distribution
Censoring indicator in StackedC



7.0 Analysis of Candidate Preparation to join the Craft.

We also looked into Preparation time, assuming that it is associated with time (months) spent in the (First and Second) Degrees. We calculated these from the data:

Degrees	First/Still here	Second/Still here	First/Demitted	Second/Demitted
Mean Time	1.842	2.026	1.977	1.674

The Prep Time differences, between those who Demitted and those who stayed, are not significant. Hence, they do not show that Preparation Time had an effect in their Demit.

8.0 Conclusions

The Craft needs to work on the problem of Lodge Demits as much as, if not more, than on the problem of attracting new Candidates. If The Craft cannot keep those that it attracts then efforts to attract them are inefficient.

In our analysis, almost twice as many Brothers Demit, than those that remain as Lodge Members. We can hypothesize, as many others have also done, that Lodge Demits occur because of lack of satisfaction with Lodge work.

In order to prove this latter point, we would need additional Member information:

- More data than from a single Lodge (as done in this pilot analysis)
- More information from each Brother (e.g. age, prep time, type of Lodge work)
- Any other reasonable and available information, as long as it exists for all data.

We look forward to comments, and possibly to more data **to redo this Pilot Analysis.**

About the Author:

Jorge Luis Romeu is Past Master of Liverpool Syracuse Lodge No. 501, and Mentoring Chair of the Onondaga District You can find more about him through his Masonic Page:

. <https://web.cortland.edu/romeu/MasoneriaPage.htm>