

Characteristics of pipe smokers in the United States

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Reading the article on “Women and the Pipe World” in the last (sadly) issue of *Pipes and Tobacco Magazine*, I was struck by how little we know about the characteristics of pipe smokers in the United States. I knew that there is statistical information on pipe smokers that is collected by the U.S. Department of Health and Human Services. Collected yearly since 1997, The Survey on Drug Use and Health is a large survey done yearly containing a randomly selected sample of approximately 50,000 respondents.

The survey asks two questions regarding pipe smoking: “Ever smoked pipe tobacco?” and “Have you smoked pipe tobacco in the past 30 days?” The “ever smoked” question is rather useless to find current characteristics. So, this leaves us with smoking pipe tobacco in the past 30 days. Note, the question does not specify pipe smoking. It is possible that pipe tobacco is being used in roll-your-own cigarettes or some other medium. Also, past 30 days may also suggest that use was experimental. It does not mean that the respondents continue to smoke a pipe. A third question about past year pipe tobacco use would have been useful because the past month and past year could have been combined to weed out the experimental user.

Nevertheless, the past 30 days question is the best we have. The first part of the analysis presented here uses this question to ascertain the characteristics of pipe smokers. Part 2 examines the percentage of past month pipe relative to the rest of the population. A third part of the analysis attempts to ascertain what characteristics distinguish pipe smokers from non-pipe smokers. These three parts use data, except where specified, from the 2017 survey. The last part examines a few trends from a different data set that combines the years 2002 to 2017.

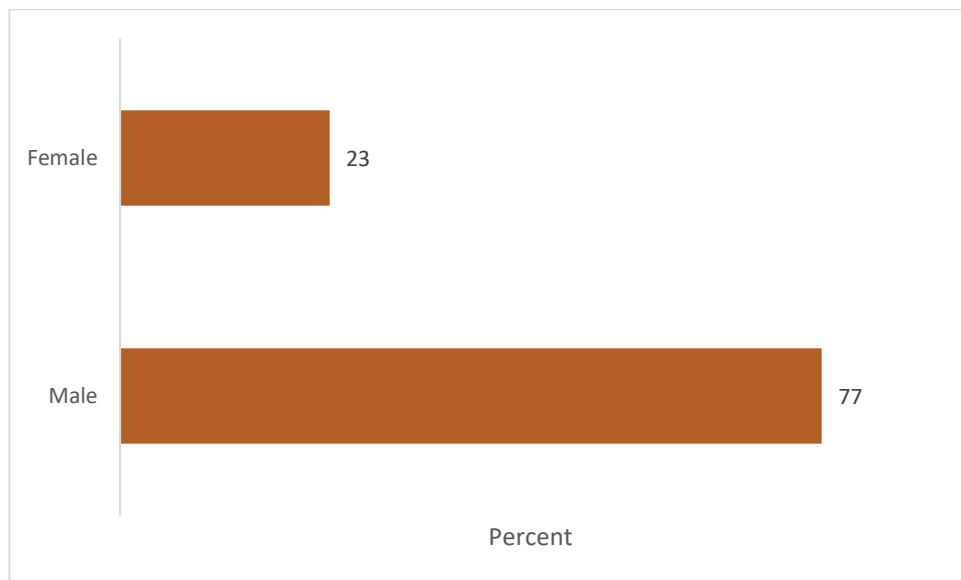
The adult population of the United States is close to 250 million people. According to the 2017 survey 0.9% of the adult population smoked a pipe in the past 30 days. As a result, an estimated 2,254,856 adults tried a pipe (or at least smoked pipe tobacco in some form) in the last month.

So, with these caveats, I present you results regarding the characteristics of pipe smokers in the United States.

Part I. Demographics of Pipe Smokers, 2017.

Sex and Pipe Smoking

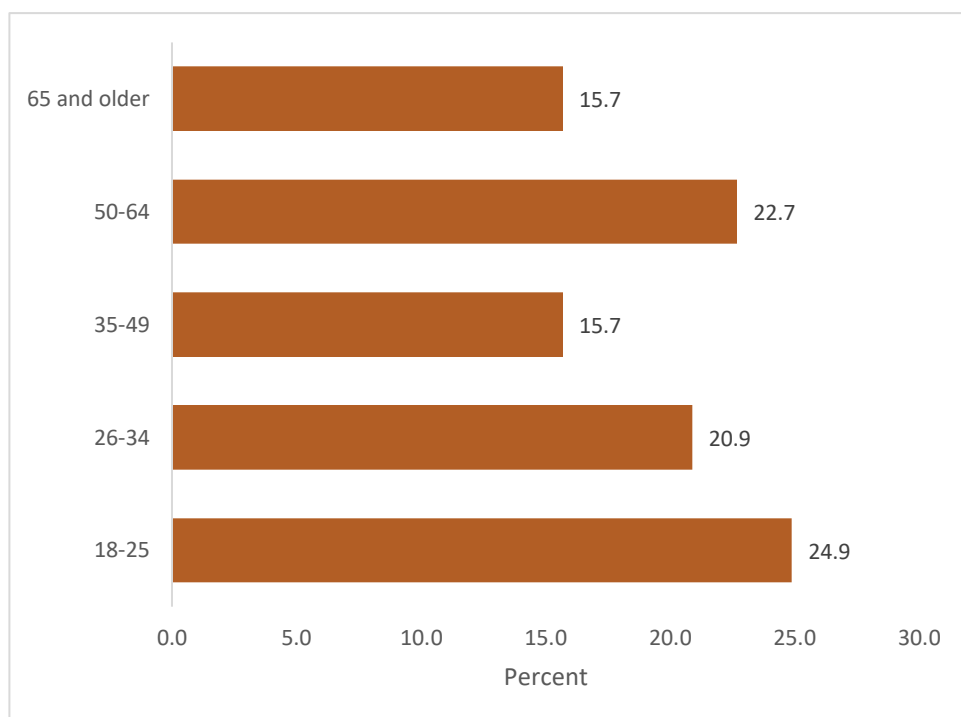
Males outnumber females by 3 to 1. But the number of females seems higher than what I would have expected. However, when we look at the combination of sex and age something interesting happens. See below.



Age and Pipe Smoking

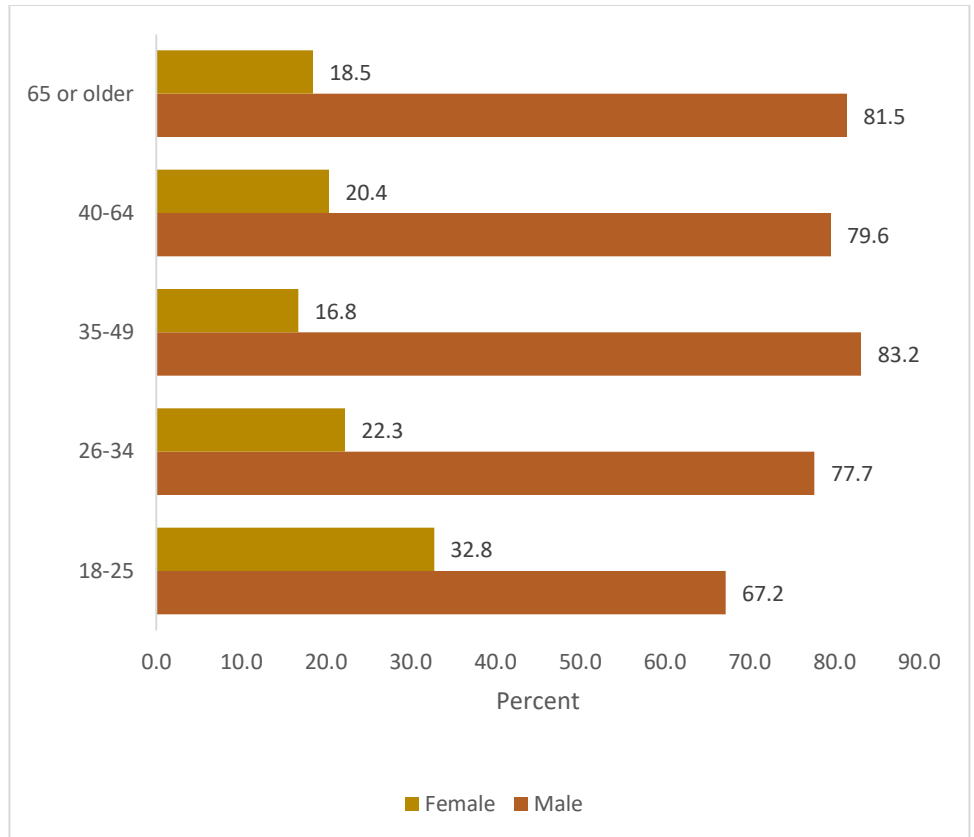
The percentage of pipe smokers is highest among those 18-25 year old. The percentage of pipe smokers tends to decrease with age (although the blip can be seen among those 50-64).

Marriage and health concerns may be a contributing factor for the desistance of pipe smoking after 25.



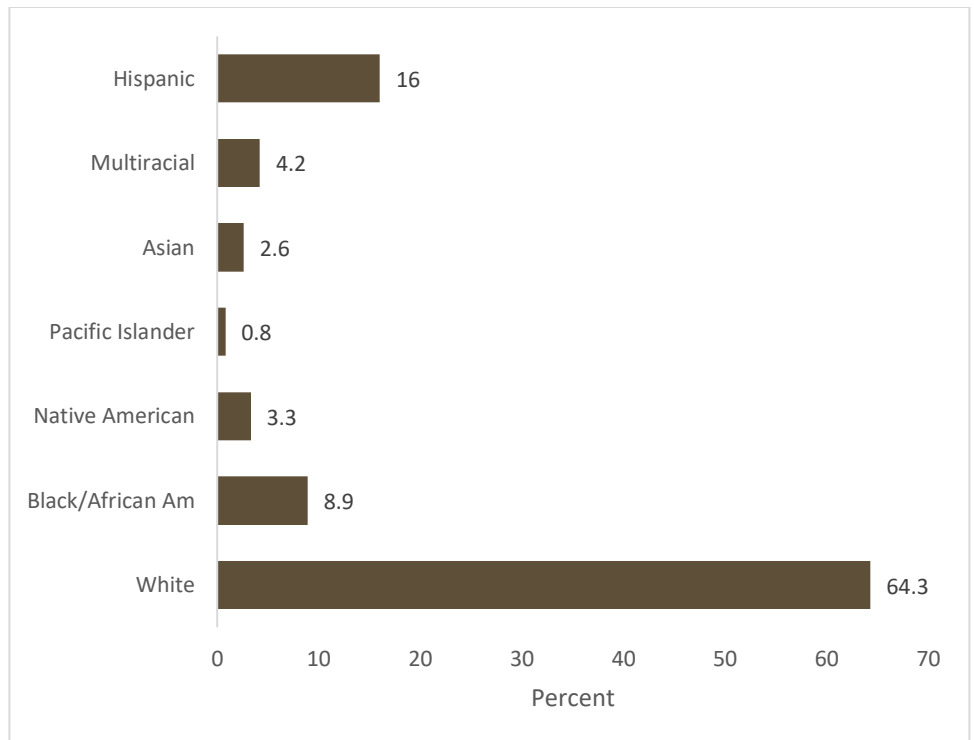
Sex and Age and Pipe Smoking

Age has a definite effect on the sex of pipe smokers. While almost a third of those 18-25 year old are female; however, the percentage of females who smoke a pipe decreases with increases in age. Likewise, as age increases the percentage of males increases. So at 18-25 the ratio is two for every one female while at 65 and old the ratio is over 4 to 1.



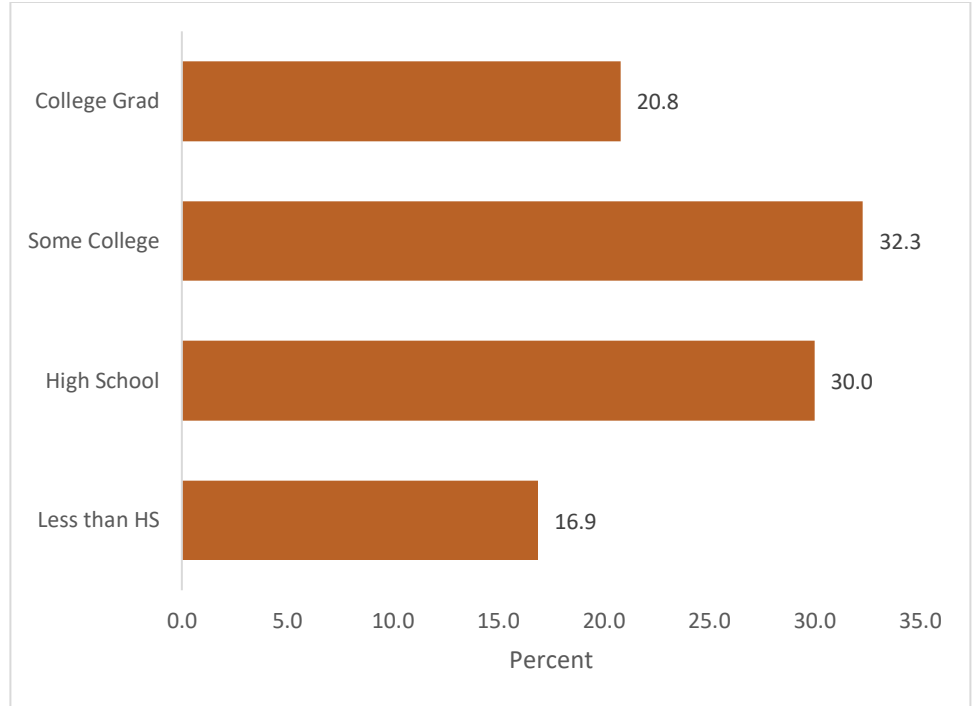
Race/Ethnicity and Pipe Smoking

Whites and Native Americans are overrepresented among pipe smokers (they make up 58.2% and 1.6%, respectively, of the overall sample). Blacks/African Americans and Asians are under-represented (12.7% 4.4%, respectively, of the overall sample). This will be shown better in Part 2.



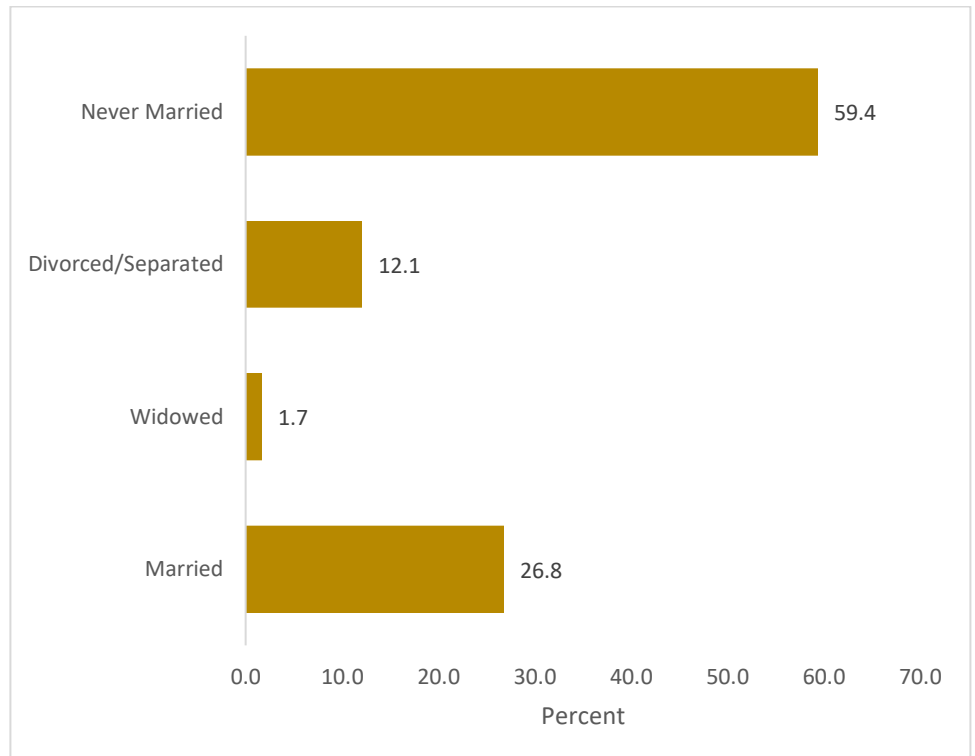
Education and Pipe Smoking

Despite the young ages of pipe smokers, over 50% have some college or more.



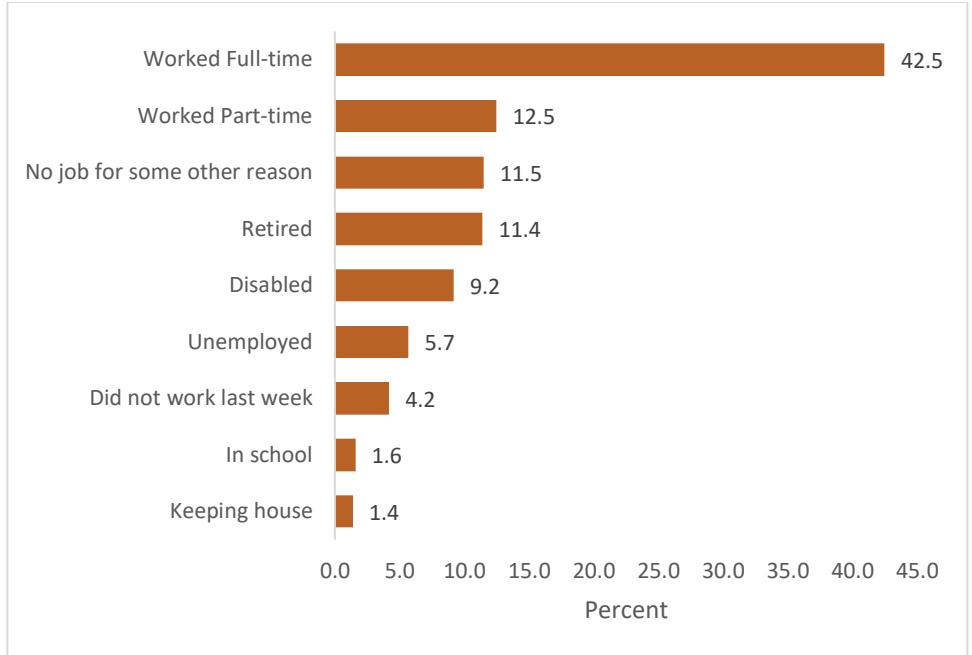
Marital Status and Pipe Smoking

Again, the age of pipe smokers is the reason that 60% of respondents have never married. Only 1 in four pipe smokers are currently married.



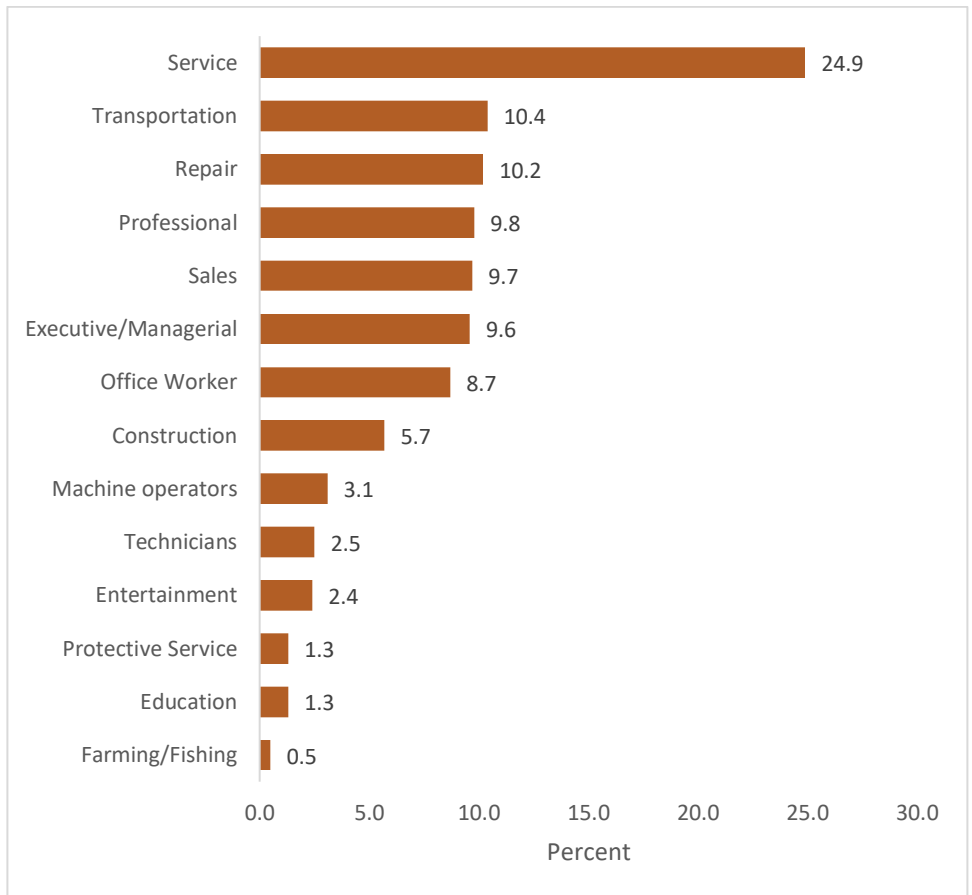
Work Status and Pipe Smoking

Over half (55%) work either full-time or part-time. So 45% of pipe smokers do not work for a variety of reasons, including “no reason” (11.5%), retirement (11.4%), disability (9.2%), unemployed looking for work (5.7%). A small percent are in school (1.6%) or keep house (1.4%)



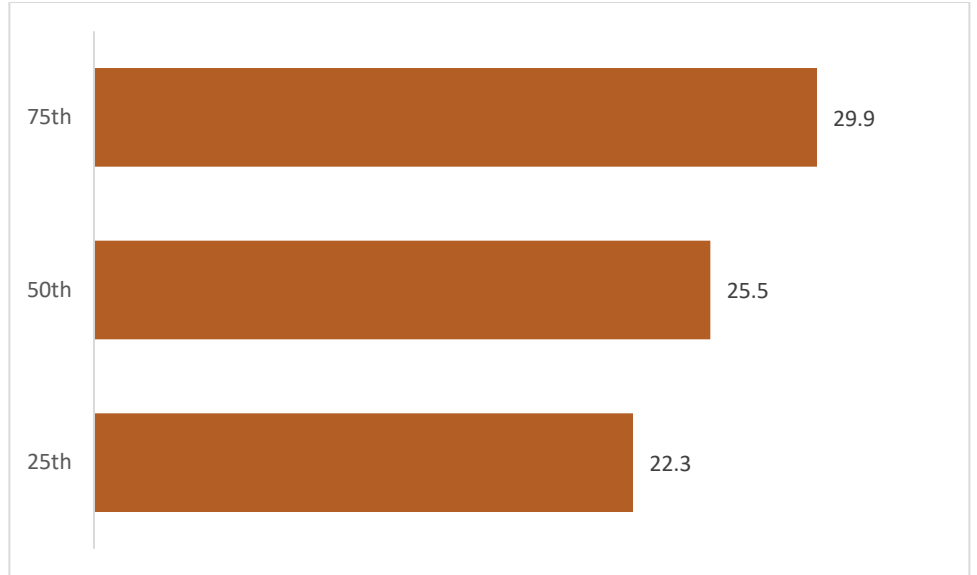
Occupation and Pipe Smoking 2014

Among pipe smokers who do work, a quarter work in the service industry (24.9%), About 10% work in transportation or installation, maintenance and repair. Close to 10% work as professionals, executives or managers, or in sales. Office worker make up 8.7% of pipe smokers. Less than 3% are found in machine operators, technicians, entertainment, protective services, education or farming/fishing. These data are from the 2014 survey, the latest year that asked this question.



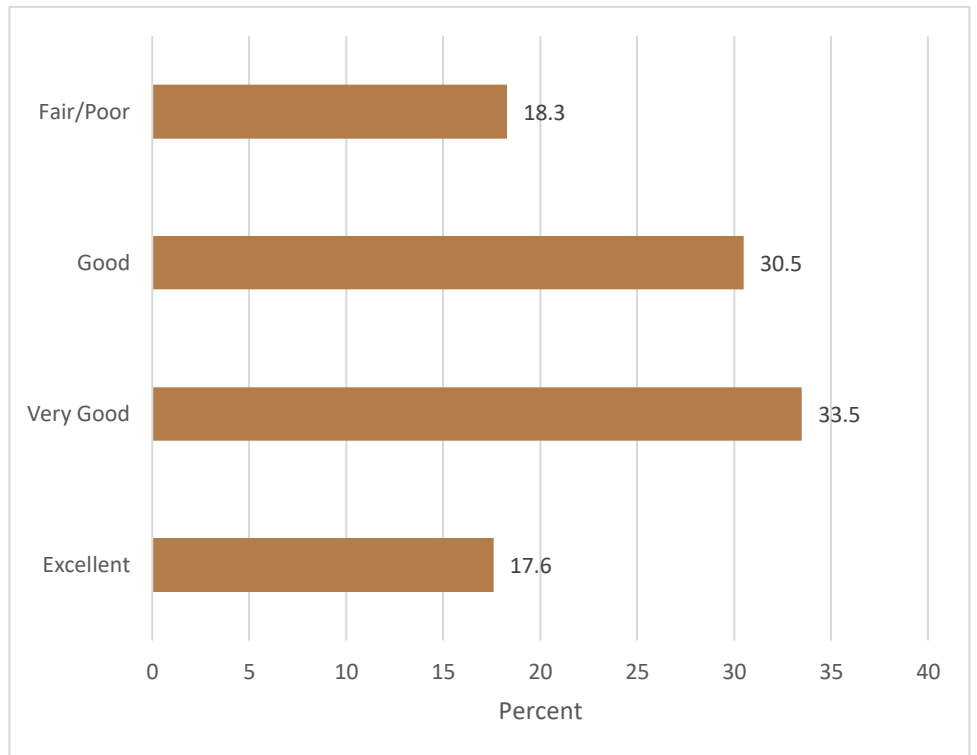
BMI and Pipe Smoking

When examining the body mass index (BMI), below 18.5 is underweight, 18.5-24.9 is average, 25.0-29.9 is overweight and 30.0 and above is obese. The middle 50% of pipe smokers are between 22.3 to 29.9 or average to overweight.



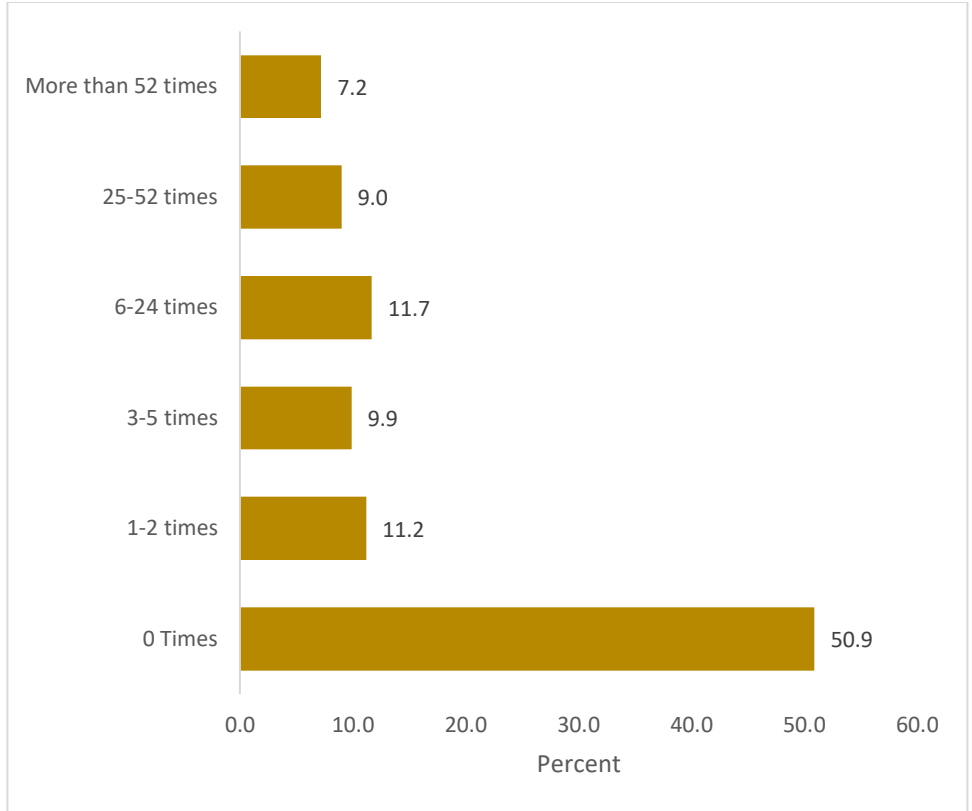
Self-Rated Health and Pipe Smoking

About 50% of pipe smokers are in fair to good health and the other 50% are in very good to excellent health. Again, it may be that health concerns make people stop smoking the pipe.



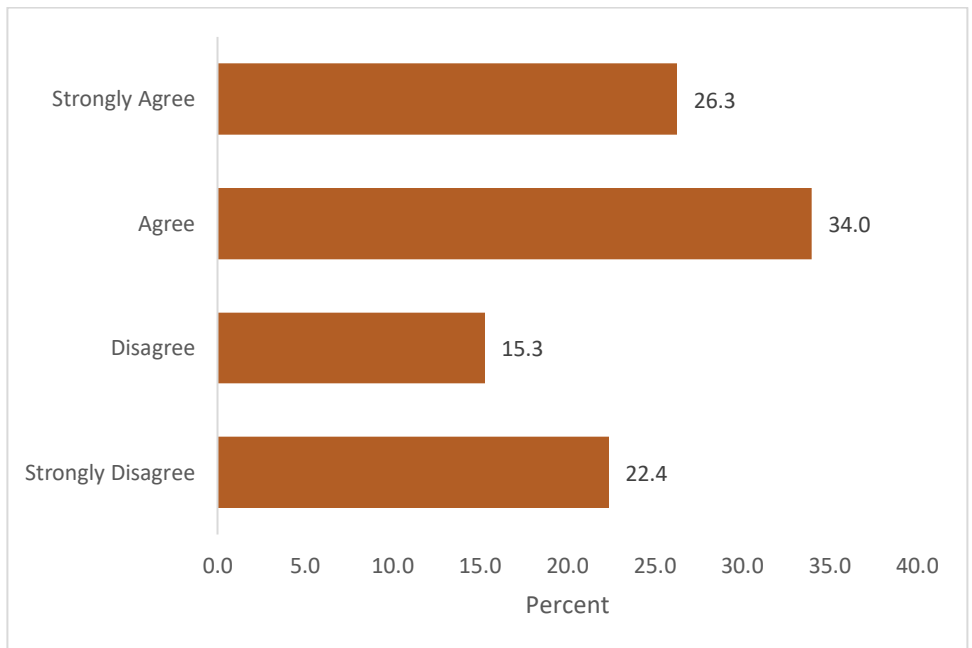
Religious Service Attendance and Pipe Smoking

Half of the pipe smokers do not attend religious services while 16.3% attend weekly or almost weekly.



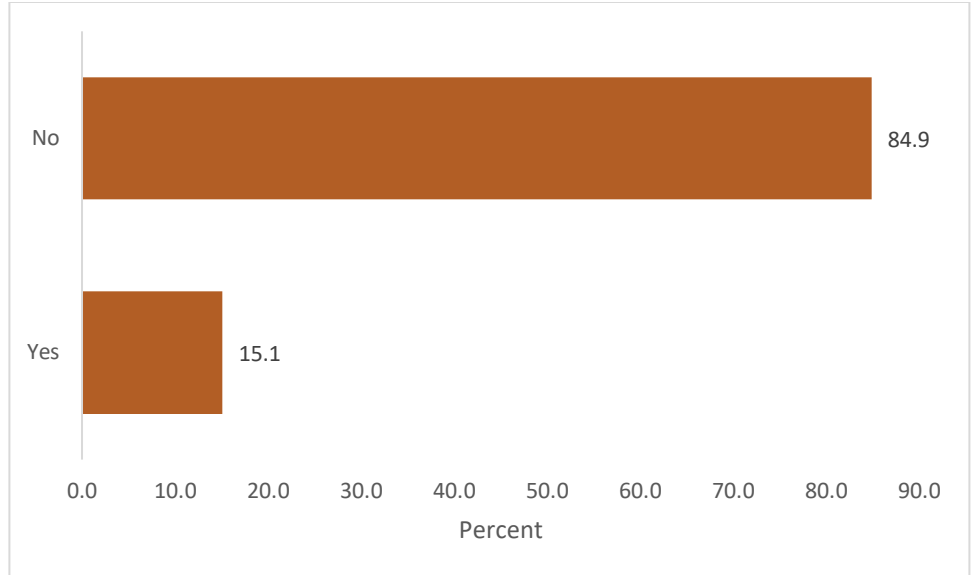
Importance of Religious Belief and Pipe Smoking

While religious service attendance is low, pipe smokers appear to be somewhat spiritual with 60.3% agreeing or strongly agreeing with the statement that religious beliefs are important to them.



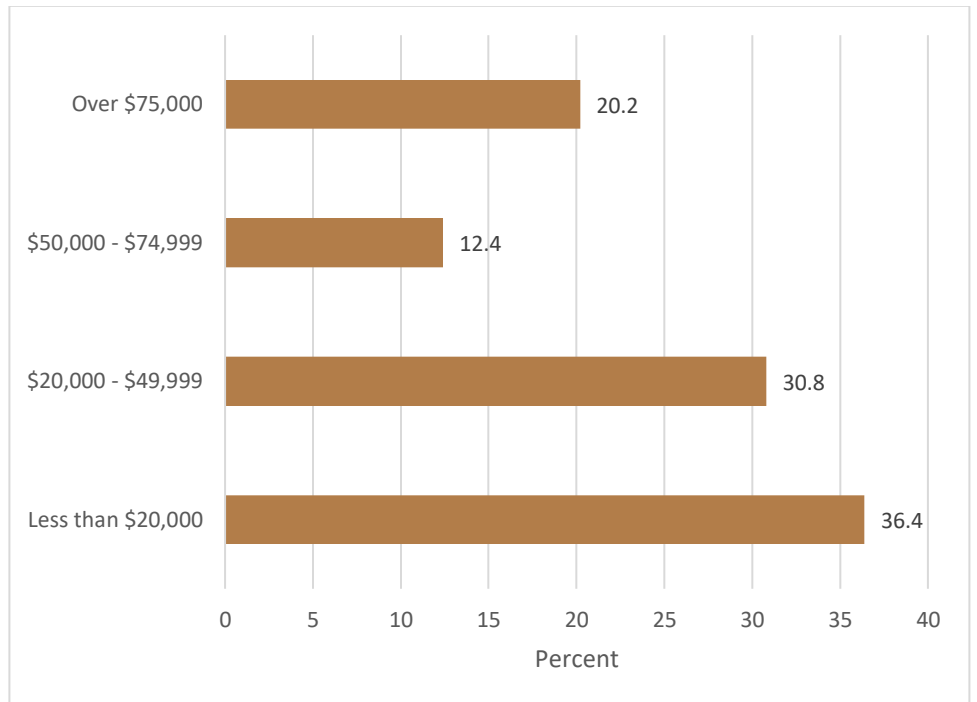
Military Service and Pipe Smoking

Among pipe smokers, 15.1% have served in the military. As we will see below that is a significant number.



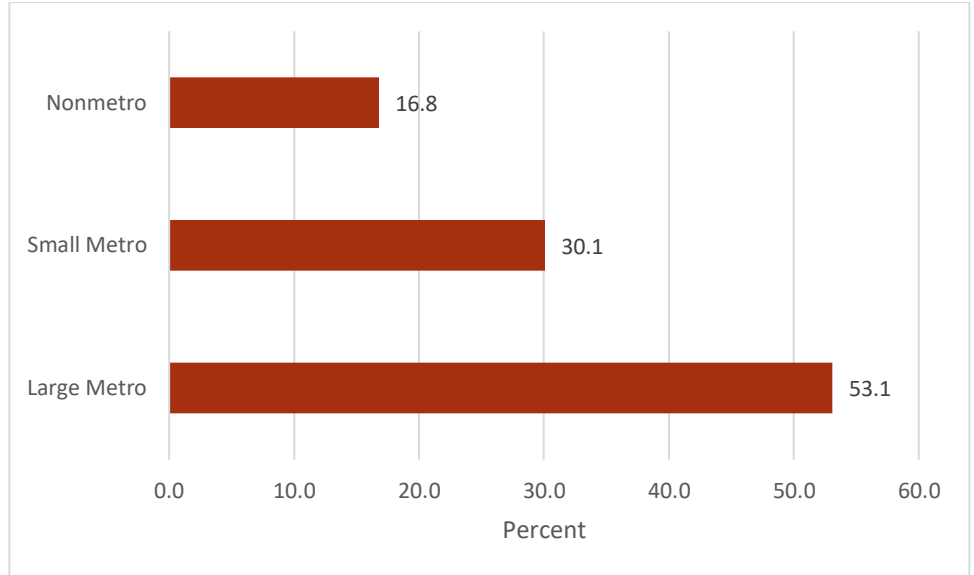
Family Income and Pipe Smoking

The median family income is in the \$20,000 to \$49,999 range. Over a third of pipe smokers have family incomes of less than \$20,000, reflecting the young age of pipe smokers. A little less than a third make between \$20,000 and \$50,000. The remaining third make over \$50,000.



Residence and Pipe Smoking

Over half (53.1%) of pipe smokers live in large metro areas, followed by 30.1% living in small metro areas and 16.8% living in nonmetro areas. This is pretty close to what it is in the population.

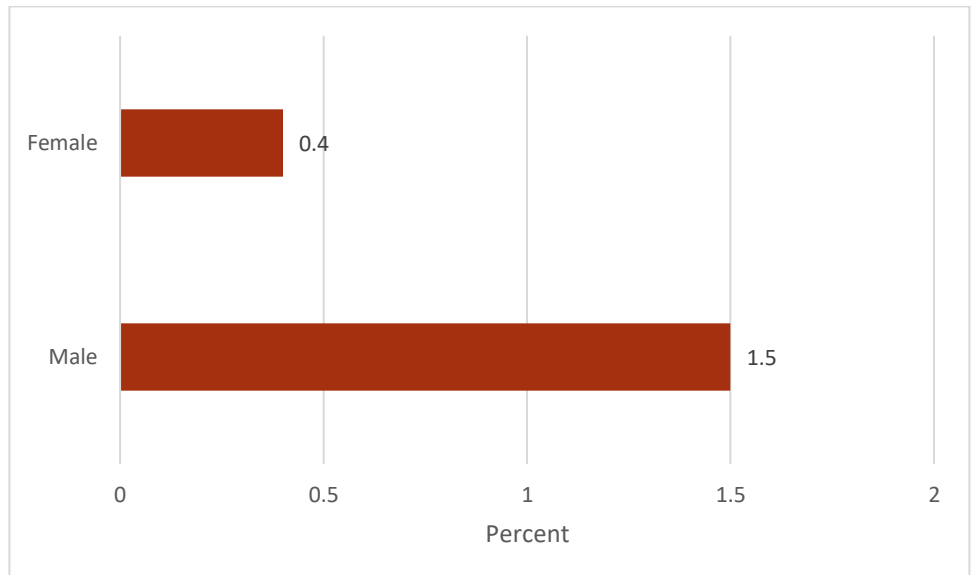


Part II. Proportion of pipe smokers on selected characteristics

If past month pipe smokers constitute 0.9% of the population, then when the percentage is greater than 0.9 pipe smokers are overrepresented and when the percentage is less than 0.9 pipe smokers are underrepresented.

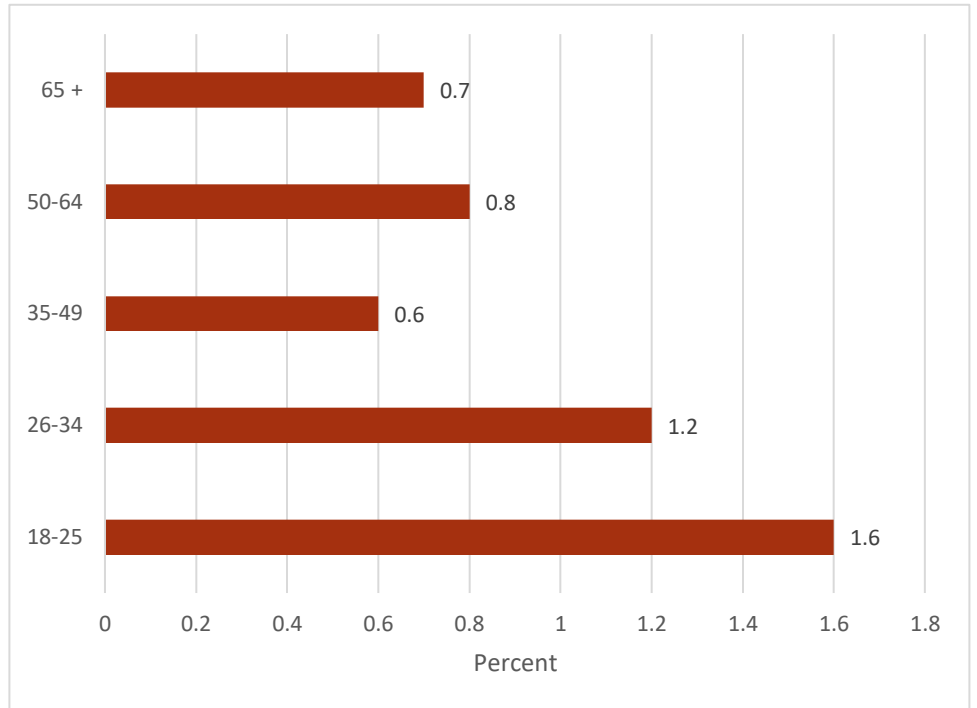
Sex and Pipe Smoking

Male past month pipe smokers make up 1.5% of the population while females make up only 0.4% of the population. Males are overrepresented as pipe smokers—no surprise.



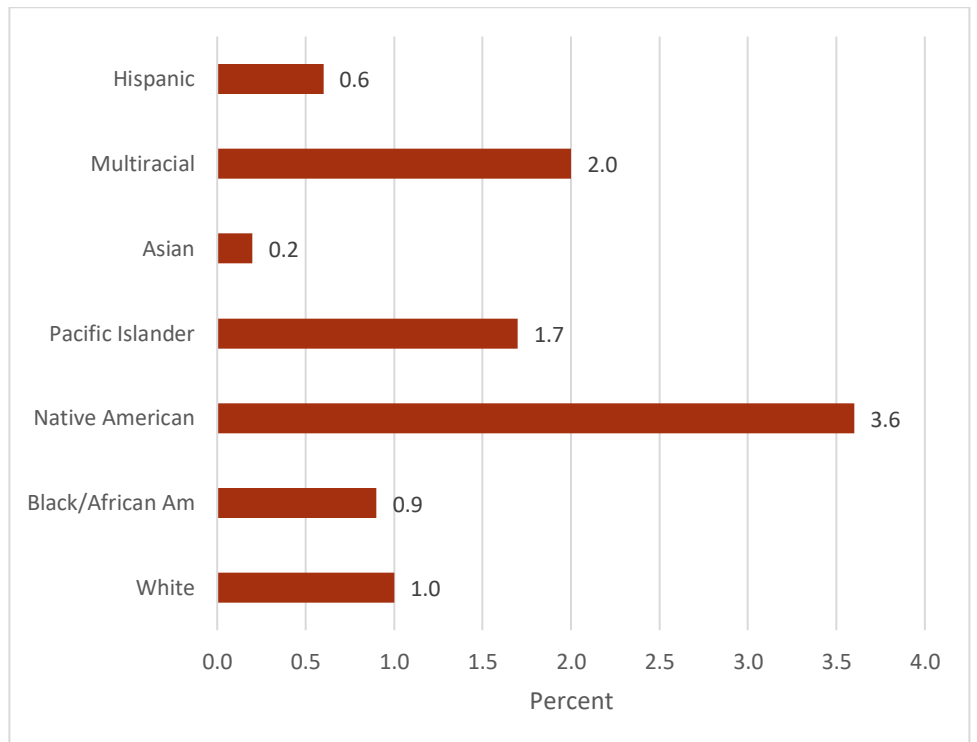
Age and Pipe Smoking

Younger pipe smokers are overrepresented as past month pipe smokers while those over the age of 35 are underrepresented.



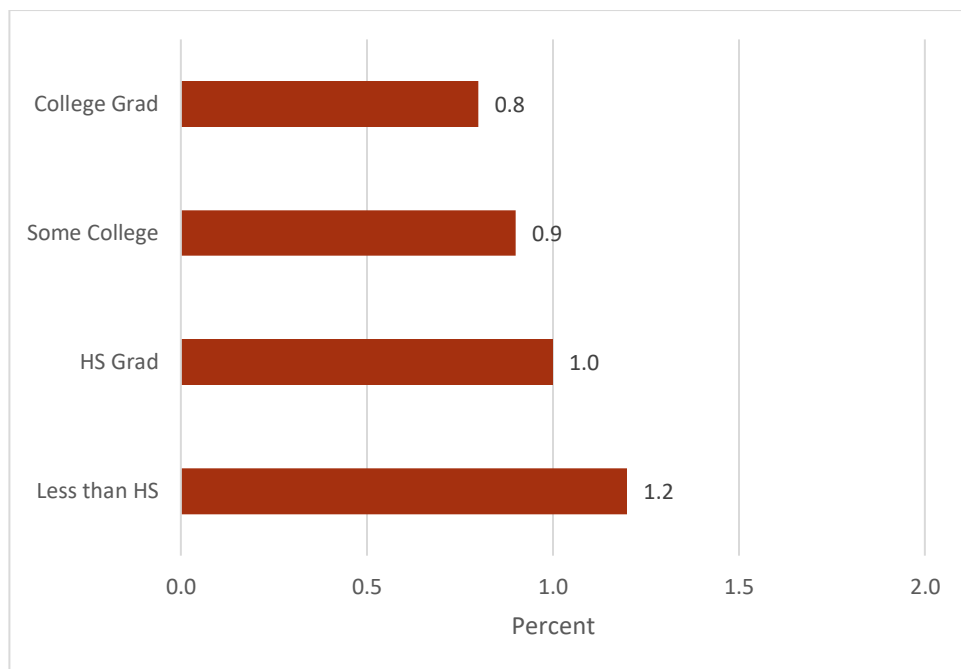
Race/Ethnicity and Pipe Smoking

Native Americans and Alaskans, Hawaiians and Pacific Islanders, and those who consider themselves multiracial are over-represented. Asians are very much under-represented. Blacks/African Americans and Whites are about 0.9%.



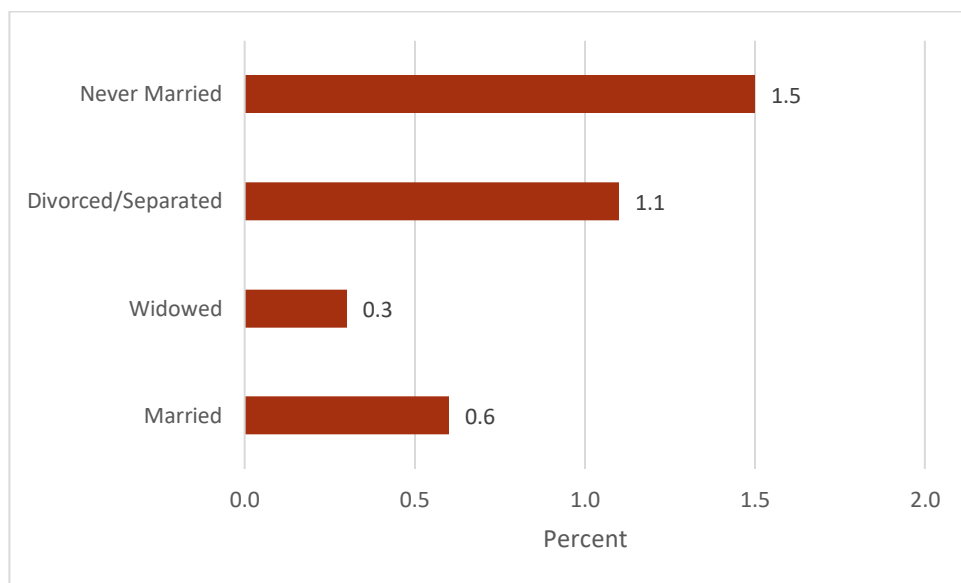
Education and Pipe Smoking

There is a slight underrepresentation of college grads as pipe smokers while high school or less is slightly overrepresented as pipes smokers



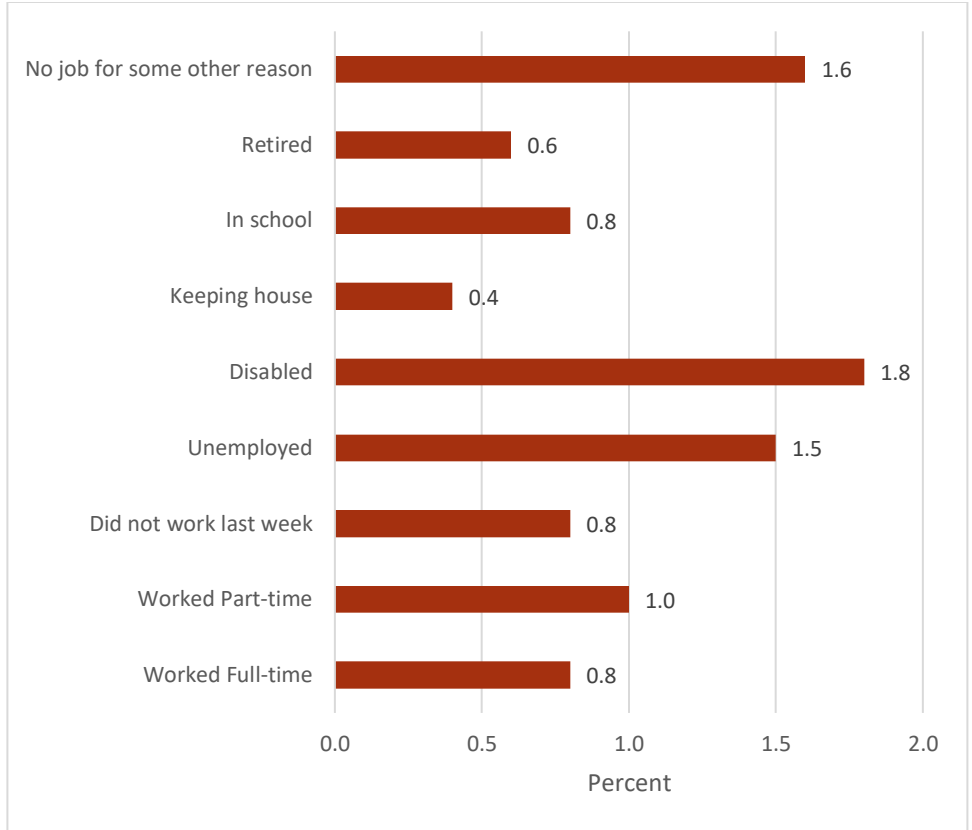
Marital Status and Pipe Smoking

Never married and divorces/separated are overrepresented. Widowed and Married are very much under-represented. This supports the idea that marriage is one of the reasons for the desistance of pipe smoking.



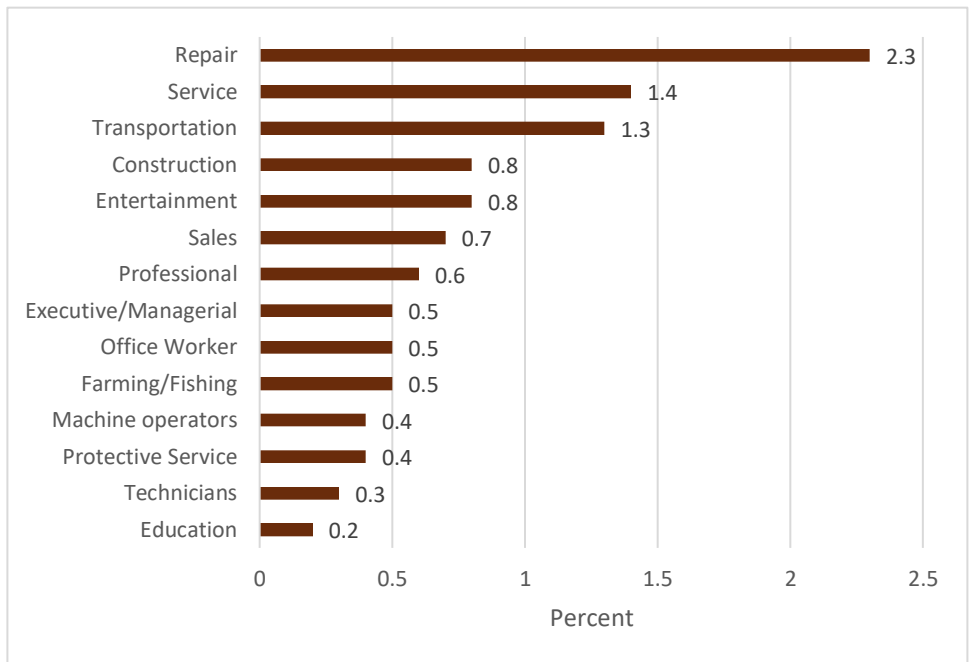
Work Status and Pipe Smoking

Past month pipe smokers without jobs are over-represented as well as those who are disabled, unemployed and had no job for an unspecified reason had proportions greater than 0.9. On the other hand, those who are retired (and thus older) or in school are under-represented. Females dominating keeping house explains the underrepresentation. Those who work full time are slightly under-represented and those who work part-time are slightly overrepresented.



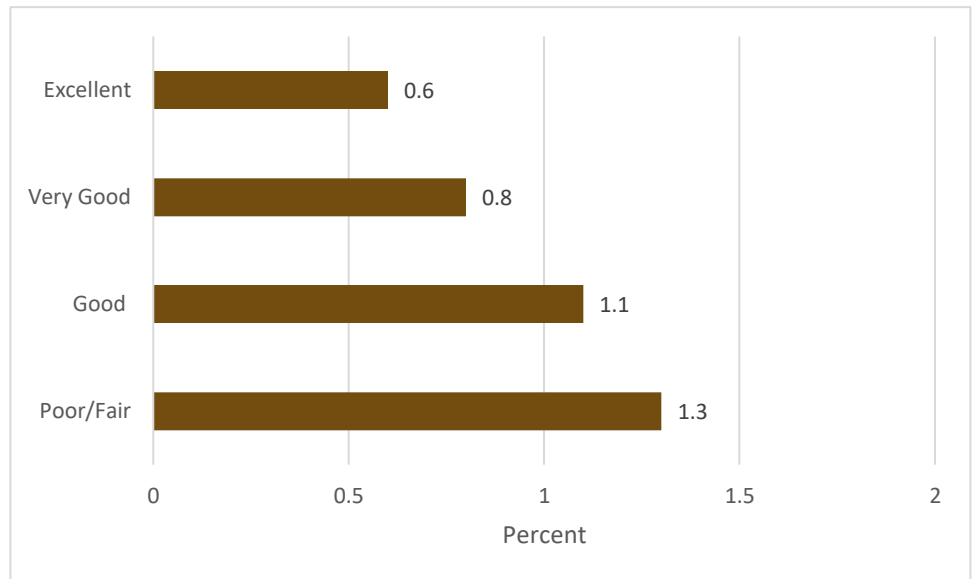
Occupation and Pipe Smoking 2014

Pipe smokers are over-represented in repair, service and transportation. They are slightly under-represented in construction and entertainment. They are very much under-represented in the professions, executive/management, office workers, farming, machine operators, protective services, technicians and education. Again, these data come from 2014.



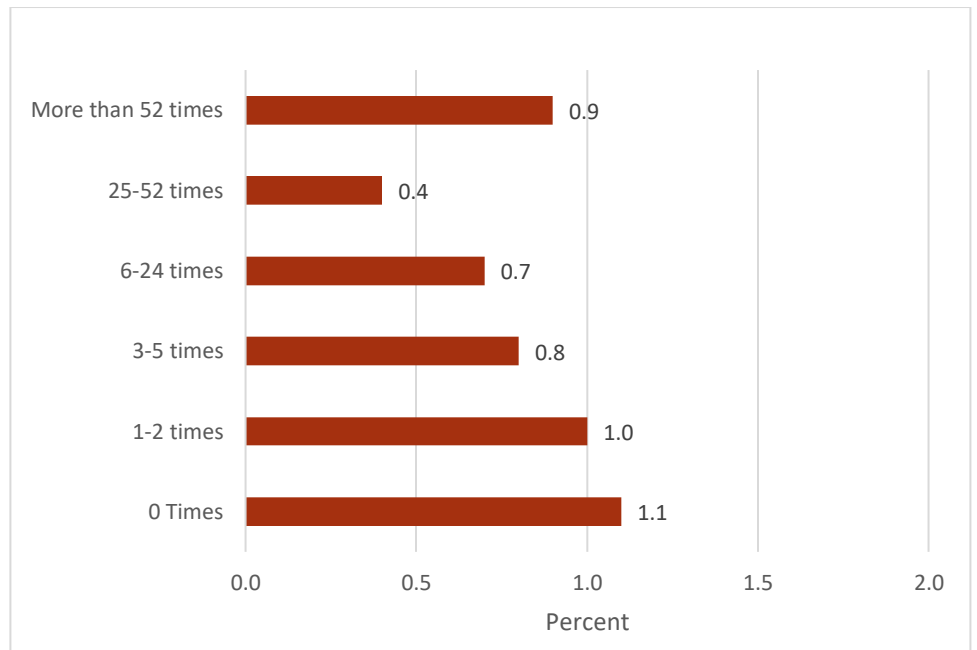
Self-Rated Health and Pipe Smoking

The health of past month pipe smokers is not very good. Those who health ranges from poor to good are overrepresented while those with very good or excellent health are underrepresented. This also relates to the overrepresentation of those who are disabled perhaps.



Religious Service Attendance and Pipe Smoking

Pipe smokers appear to attend religious services a little bit less than those who do not smoke a pipe.



Part III. Distinguishing between pipe smokers and non-pipe smokers

Unfortunately, this analysis is rather technical using a statistical technique called binary logistic regression. It is a multivariate statistical technique, which means that for each variable that is included in the model all the other variables in the model are held constant. So, for example, when we look at the relationship between sex and pipe smoking, all the other variables that are included are held constant so that they have no effect on the relationship between sex and pipe smoking. The following variables were included in the model to predict whether a person is a pipe smoker or not: sex, age, race, education, marital status (never married versus married, either currently or previously), health, serving in the military, income, residence, religious attendance and belief, and risk-taking. Also work status in the past week is examined as a set of what is called dummy variables.

One of the statistics produced is called an odds ratio (OR). If you subtract one from the OR and multiply by 100, the result provides the percentage increase, if positive, or decrease, if negative, in the likelihood of an occurrence, in this case pipe smoking, for each unit increase in the predicting variable, while all other variables in the model being held constant. Whew! In addition, the confidence interval at the 95% level is included showing that 19 out of every 20 random samples selected from the population the OR will be found within the range provided.

Table 1 shows the results of the analysis. Males are over three times more likely than females to be pipe smokers (OR = 3.079, $p < .001$). For each increment increase in age, respondents are 9% less likely to be a pipe smoker (OR = .910, $p < .001$). Whites are 45.9% more likely than non-whites to be pipe smokers (OR=1.459, $p < .001$). For each increment increase in the level of education, respondents are 11.7% more likely to be pipe smokers (OR = 1.117, $p < .001$). Those who were never married are 53.1% more likely than those currently married, or who were once married, to be pipe smokers (OR =1.531, $p < .001$). Interestingly, for each increment improvement in health, respondents are 19.3% less likely to smoke a pipe (OR = .807, $p < .001$). Pipe smokers are 52.8% more likely than non-pipe smokers to have served in the military (OR = 1.528, $p < .001$). For each increment increase in income, respondents are 13.9% less likely to be a pipe smoker (OR = .861, $p < .001$). For each level increase in metropolitan status, respondents are 1.7% less likely to be pipe smokers (OR = .983, $p < .001$). For each increment increase in the riskiness scale, respondents are 39.8% more likely to be a pipe smoker (OR = 1.398, $p < .001$). For each level increase in religious attendance, respondents are 2% less likely to be pipe smokers (OR = .980, $p < .001$). Finally, for each increment increase in the importance of religious beliefs, respondents are 5.1% less likely to be pipe smokers (OR = .949, $p < .001$).

Table 1. Predictors of the Likelihood of Pipe Smoking

Variables	Odds Ratio	CI₉₅
Sex (1 = Male)	3.079***	3.069 -3.089
Age	.910***	.909 - .911
Race (1 = White)	1.459***	1.454 -1.463
Education	1.117***	1.116 – 1.119
Never Married (1 = Never)	1.531***	1.526 – 1.537
Health	.807***	.806 - .808
Military Service (1 = Yes)	1.528***	1.521 – 1.534
Family Income	.861***	.860 - .862
Metropolitan Status	.983***	.981 - .985
Risk Taking	1.398***	1.395 – 1.400
Religious Services	.980***	.979 - .980
Religious Importance	.949***	.948 - .950
<i>Work Status</i>		
Work Full-time ^a	-.-	---
Work Part-time	1.198***	1.193 – 1.203
Volunteer	1.006	1.000 – 1.013
Unemployed	1.274***	1.266 – 1.282
Disabled	1.586***	1.578 – 1.595
Keeping House	.811***	.801 - .820
In School	.543***	.537 - .548
Retired	.942***	.937 - .947
No Job Other Reason	1.790***	1.782 – 1.799
Constant	-4.987***	
Model X^2	1896147.91***	
Nagelkerke R ²	.079	

^a Reference category

*** p. < .001.

Unweighted N = 41,254

Compared to those who work full-time, those worked part-time are 19.8% to be a pipe smoker, those who are unemployed are 27.4% more likely to be a pipe smoker, those who are disabled are 58.6% more likely to be a pipe smoker and those who are have no job in the past week for some other reason are 79% more likely to be a pipe smoker. On the other hand, compared to those who work full-time, those who keep house are 18.9% less likely to be a pipe smoker, those who are in school are 46.7% less likely to be a pipe smoker and those who are retired are 5.8% less likely to be a pipe smoker. There is no significant difference in pipe smoking among those who volunteer and those who work full-time.

The Nagelkerke R^2 is an attempt to assess how much of the variation in pipe smoking is accounted for by the variables in the model (even though technically there is no variation in a dummy variable like pipe smoking). An R^2 of .079 suggests that less than 8% of the “variation” in pipe smoking is accounted for by the variables. So, 92% is left unaccounted for. Part of this unexplained variation is due to random factors and part is due to variables that are omitted from the model. It is not possible to tell how much is random and how much is systematic due to omitted variables. Clearly, other variables are at work like social network and social psychological variables

So never-married, white males who have been in the service and don't have a lot of money and who live in non-rural areas seem to be typical pipe smokers. One interpretation for the health variable, which showed the healthier people are less likely to be pipe smokers, is that as health deteriorates, people may give up pipe. This may explain both the effects of age and retirement. So perhaps both marriage, as suggested above, and deteriorating health, lead to giving up pipe smoking.

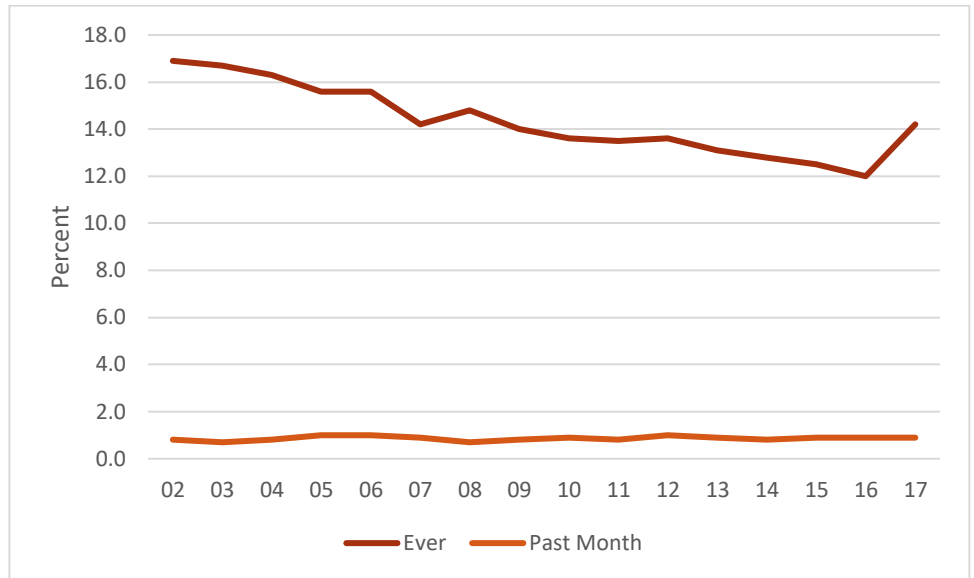
The interesting finding is the risk-taking variable. While pipe smoking stereotypically seems to go along with a conservative lifestyle, the results here show that risk takers are more likely to smoke a pipe than non-risk takers. The question is how strongly do respondents agree or disagree with the statement that they “get a real kick out of doing dangerous things.” There are four categories (never, seldom, sometimes, and always). So, if we round the OR to 40% that would mean that someone who responds “always” is almost two and a half times more likely than someone who responds “never” to be a pipe smoker.

The last interesting finding is the those who are unemployed or underemployed are more likely to be a pipe smoker than those who are employed full-time. The exception to this finding is those that keep house, are in school, or who are retired. Perhaps workplace smoking regulations and employer-provided insurance provisions against smoking inhibit full-time workers to smoke anything.

Part III. Trends in Past Month Pipe Smoking, 2002 – 2017.

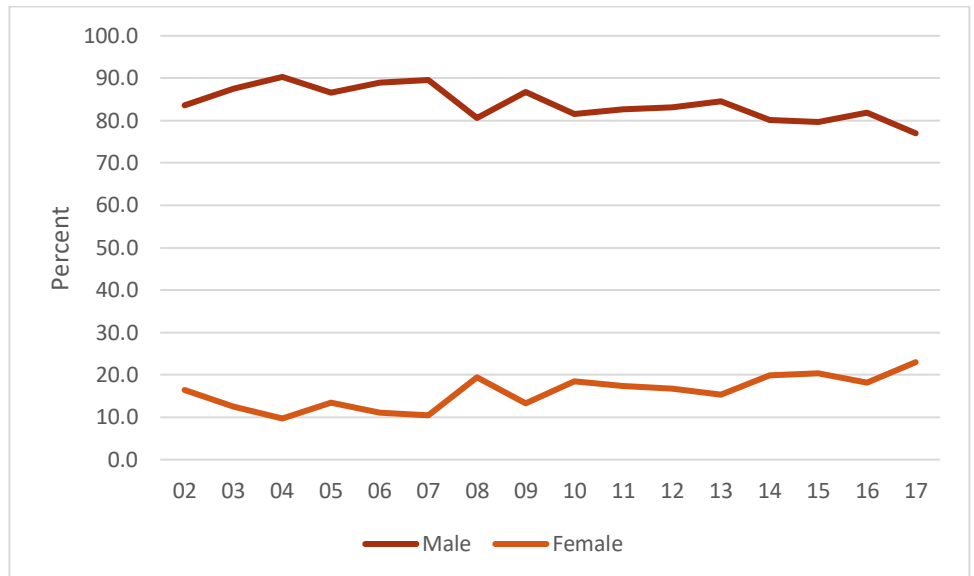
Ever Smoked a Pipe and Past Month Smoked a Pipe, 2002-17.

This chart examines the percentage of pipe smokers in the population. There is a noticeable downward trend of ever smoked a pipe (20% decrease) while there is a slight increase in past month pipe smoking (10% increase).



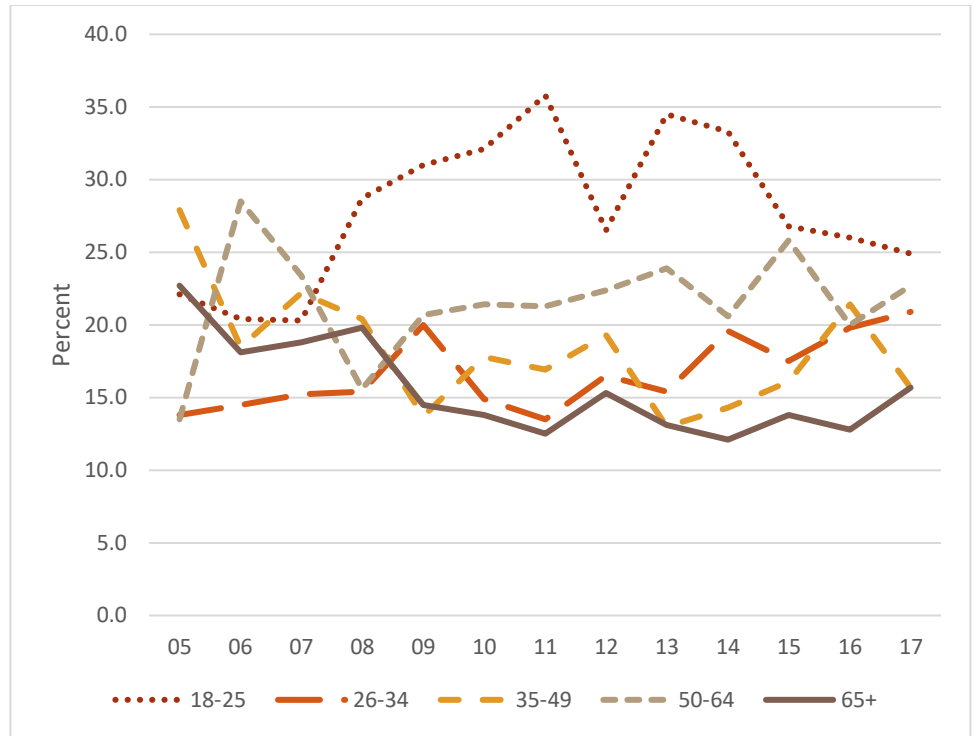
Sex and Past Month Pipe Smoking, 2002-17.

Among past month pipe smokers, a slight decreasing trend in male pipe smokers corresponds to the slight increase in female pipe smokers, particularly since 2007.



Age and Past Month Pipe Smoking, 2005-17.

Data for 2002 -04 are missing since the survey did not use the category 65 and older for those years. While there is a slight increase (13%) in those 18-25 years old, there was a 51% increase among those 26-34 and 68% increase among those 50 -64. Meanwhile, decreases were found among those 35 -49 (-44%) and those over 65 (-31%).



Conclusion

The annual National Survey of Drug Use and Health I believe is the best data on pipe smoking that is available. It is a large sample of randomly selected individuals in the United States. While the survey is weighted, the weights were used in this analysis to improve the accuracy of the estimates.

Some concerns about accuracy remain. The number of respondents 18 – 25 and the number of females seem overly large to me. This may be a function of the “last month” question that may include experimental use as well as the use of pipe tobacco in roll-your-own cigarettes. Yet the consistency of the numbers across a number of years seem to indicate, if there is a bias, it is systematic. Nevertheless, the longitudinal data does seem to suggest an increase in younger pipe smokers and women who smoke pipe. If there is a systematic bias, the trends will remain true even if the absolute values are not.

Pipe smokers are a heterogenous group. Some are lone smokers with one or a small number of pipes smoking drug store tobaccos. Others join pipe clubs and go to pipe shows, with a larger number of pipes and smoking tinned tobaccos bought online or from a tobaccanist. Still others are collectors and cavers of pipes. Hopefully, this paper provides some insight into the cross-section of pipe smokers.

Anyway, this is what I got. Comments can be directed to me at michael.garr@wilkes.edu.

