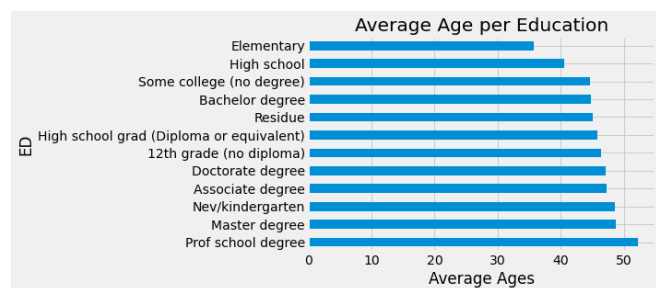
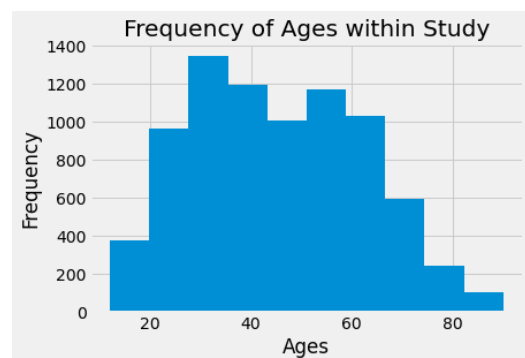


Analysis of the 2020 National Crime Victimization Survey

The primary goal of this survey was to collect information about victims that may or may not have experienced crime, and to estimate the amount of incidents and incident reports filed. This was a prospective observational study where the respondents were asked household and crime questions within six months of the committed crime, which could include: sexual assault, robbery, assault with weapon, burglary, larceny, and motor vehicle theft. This data was collected utilizing a stratified multistage cluster sample, as respondents were divided into subgroups by sex (gender) and age, then clustered into other subgroups like income, living type, education levels, race, sexual orientation, citizenship, and so on. As such, and considering how much data has been collected within this survey, the NCVS applies 'weights' to some parts of the data more than others, which would equalize and make the sampling procedure more unbiased. The overall sample seems to be unbiased as all persons in the United States 12 years of age and older were interviewed in each randomly selected household (which is nearly 150,000 households in a year) found through the census bureau. An overall summary of this data shows that there are 8043 total observations across the total 81 columns. This study had the results of 1811 unique households at a given interview and 83 unique household records in a collection quarter. There are only 78 actual variables (not including the year, IDHH, and ICPSR columns). The variables can be split into household and crime specific variables. Common household variables focused on in this analysis include: sex, age, income, housing, education, vehicle, sexual orientation, living type, and marital status. The crime variables focused on in this analysis are: known offender, sexual assault, and vehicle theft.

The study incorporates more middle-aged respondents, with an average age of 45.25 years at the time of this study. In the graph below, we see a nearly bimodal distribution of ages in the observational study. We also see within the data that people with higher education levels tend to be older, with the highest degree level being Prof. school degree with an average age of 52.29, and the second highest average age of 48.7 for a Master degree, as shown by the barplot here. Given how the older respondents typically have higher levels of education, the data set seems to correlate education to the number of vehicles one would own. The developed graph showed that higher education levels showed more respondents with personal

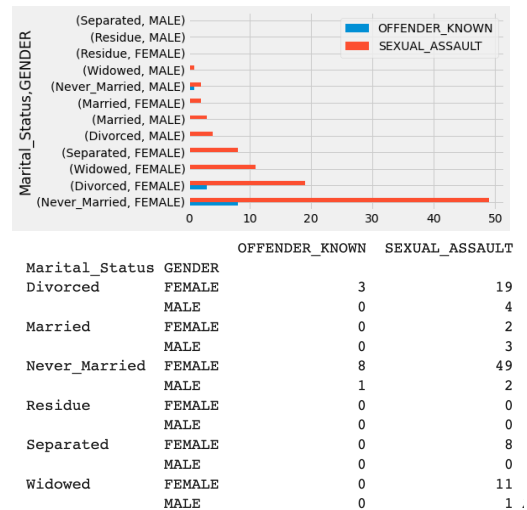


vehicles. Correlating income to the number of vehicles showed that respondents who fell within an income range of 50000-74999 USD owned the most amount of vehicles (1349). Lastly, we see that, in relation to vehicles per gender, more women tend to own more vehicles than men (at a ratio of 4338 females : 3705 men).

In relation to marital status, we see that the average age for marital statuses vary, with the never married population averaging at the lowest of 33.25 years of age, and the widowed population averaged the highest at 68.29 years of age. Lastly, we see that in terms of gender and education, males surveyed for this data take longer on average to receive higher education degrees than the surveyed females do. These are just trends in the data and may not be statistically significant in the long term.

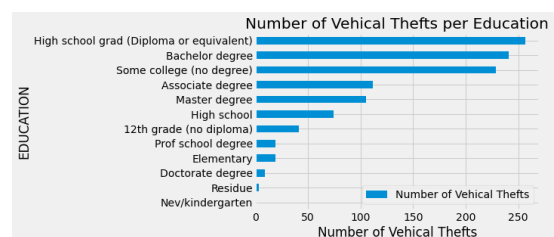
Average Age			Average Age		
ED	SEX		MARITAL	SEX	
Associate degree	FEMALE	47.092742	Divorced	FEMALE	52.773767
	MALE	47.382060		MALE	54.946215
Bachelor degree	FEMALE	44.596340	Married	FEMALE	47.538317
	MALE	44.844933		MALE	49.825211
Doctorate degree	FEMALE	45.283784	Never_Married	FEMALE	32.897113
	MALE	48.835443		MALE	33.581973
Master degree	FEMALE	48.599138	Separated	FEMALE	44.579487
	MALE	48.869822		MALE	47.632075
Prof school degree	FEMALE	49.112903	Widowed	FEMALE	68.701705
	MALE	55.070423		MALE	67.121951

With a focus on marital status and gender, and the crime of sexual assault, the data shows that in 2020, never married women (with an average age of 32.89 years) experience sexual assault the most (49 total cases of sexual assault). Within these 49, 8 of the women knew of their offender. To avoid misattribution of offender known to sexual assault, the dataframe containing these variables have removed offender known when no cases of sexual assault occurred. This, of course, does not erase how the offender could be known within another type of crime, but does bring light to how many women may know their offenders given sexual assault cases.



With a focus on education and living type and the crime of vehicle theft, the data shows a position correlation in the number of vehicle thefts to education. Completing high school with a diploma or its equivalent increases the number of vehicle thefts a person may experience. Completing higher education

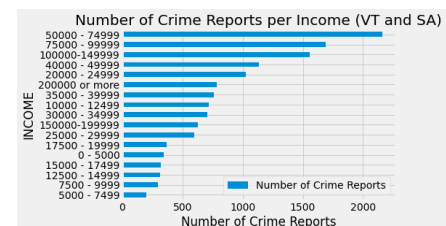
EDUCATION	LIVING_TYPE	GENDER	OFFENDER_KNOWN	VEHICLE_THEFT
Bachelor degree	House, apartment, flat	FEMALE	5	138
High school grad (Diploma or equivalent)	House, apartment, flat	MALE	2	129
Some college (no degree)	House, apartment, flat	FEMALE	11	121
High school grad (Diploma or equivalent)	House, apartment, flat	FEMALE	0	111
Bachelor degree	House, apartment, flat	MALE	2	101



may still place victims at higher levels of vehicle theft (although at a less risk than high school graduates). In relating gender and living type to education, we see that females who have bachelor degrees and live within a house, apartment, or a flat are more often victims of vehicle theft. Women with some college but no degree are more likely to know the offender of such theft. To avoid misattribution of offenders known to vehicle theft, the dataframe containing these variables have removed offenders known when no cases of vehicle theft occurred. This, of course, does not erase how the offender could be known within another type of crime, but does bring light to how many women may know their offenders given vehicular theft.

Within both of the relationships presented, the one association noticed the most is that women are the ones who are more likely to know the offender and / or be victim to sexual assault and/or vehicle theft. Neither of these associations are causal, as in the first relation, never having been married or having female status does not guarantee sexual assault, but both are correlated with an increase in forced sex. Some potential cofounders and/or colliders could be age, education, and living type, as all three could individually affect marital status and sexual assault, but marital or gender status does not outrightly influence sexual assault. The second relation is also not causal, as living in a house, apartment, or flat and/or having higher education with a specific gender status does not guarantee vehicle theft (as some may not own a vehicle), but it does correlate to an increase in vehicle theft. Some potential cofounders and/or colliders could be income, job type and location, and climate near victims area, which would potentially influence one's owning of a vehicle, but neither their living type or access to education have a causal relationship with vehicle theft.

From this dataset, one can denote that people with medium to high income and higher levels of education may be victims of vehicle theft and/or sexual assault. Many of the women who have higher levels of education are typically the ones that file the greatest number of crime reports, and typically, they make an income of 75000 to 99,999 USD a year. Lastly, the data notes that women within the income range of 50,000 to 74,999 filed the most crime reports at 1,176 in 2020.



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