Analysing Cigarette Smoking Urges and its Adverse Effects

Course: ISDS 577 – Seminar in Information Systems Implementation

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I. Executive Summary

Cigarettes are the only legal consumer products that cause half of its long-term users to encounter premature death. According to the information provided by the Centers for Disease Control and Prevention (CDC), smoking causes more than 480,000 deaths every year in the United States out of which 41,000 deaths are as a result of passive smoking [1]. Despite the increased awareness among individuals, it remains the number one contributor to most of the deaths in the United States. Cigarette smoking has become a common thing in our culture nowadays. Its ease of availability and affordability has spread its prevalence to the youth, and nicotine abuse has become a topic of serious concern. Studies report that nicotine, one of the highly toxic substances found in tobacco, affects the nervous system and the heart and can even cause death if absorbed excessively. It also affects the life expectancy of the smoker and is considered to take away an equivalent amount of time that the person has spent smoking.

The project focusses on identifying the leading contributors that cause smoking urges among the high school students, quantifying the amount of nicotine consumed as compared to the lethal dose, and estimating the effect of cigarette smoking on life expectancy. It involves exploring the data available on drug use and related attitudes and beliefs captured as part of the Monitoring the Future (MTF) survey conducted on 8th and 10th-grade students throughout the United States and take actions towards smoking cessation and reduce the spread of drug-culture amongst American youth.

II. Objective and Scope

The project aims to identify the causes of cigarette smoking behavior prevalent among high school students. It involves studying the survey data collected from 8th and 10th-grade high school students to recognize the basic parameters that contribute to cigarette smoking.

The primary focus of the project is on three crucial metrics – prevalence of cigarette smoking characterized by demographics like age, sex, grade, etc., amount of nicotine consumed by the youth and comparing it with the lethal dose to conclude its fatality, and the effect of long-term cigarette smoking on life expectancy of an individual. This will be achieved with the help of basic machine learning models complemented with visual dashboards for detailed analysis. The classification models will help us accurately measure the importance of each of the underlying contributors based on historical data to classify a person as a smoker or a non-smoker. The visual analysis of data using dashboards and charts will help us unveil the underlying patterns within the youth data and help us make stronger conclusions about the factors that cause smoking urges among individuals.

Thus, the project intends to draw conclusions from the data available and make recommendations that could help reduce the exposure to cigarette smoking among high school students. However, the ultimate objective is to increase awareness among people and strengthen their intention to quit among the smokers by providing them with the necessary information, motivation and increased availability of cessation services.

III. Data Description

Monitoring the Future (MTF) is an ongoing epidemiological study conducted on school and college students that includes survey information on drugs – both legal and illicit, its use among adolescents and adults in the US, its disapproval and the associated perceived risk for each drug and are conducted annually on an ongoing basis.

The aggregated data file contains about 619 variables and 182353 records on drug use and related attitudes for the years 2012 to 2017. Since the focus of this project is on cigarette smoking, a subset of the dataset is used. Thus, the number of variables reduces significantly to about 73 and contains information on cigarette smoking habits among students, demographics, lifestyle, sports, and parental information. Following is a snapshot of the variables and their description that will be further processed to ensure completeness.

ID	Variable_Name	Variable_Description
CASEID	CASE_ID	Case identification number
V1	YEAR_OF_ADMINISTRATION	Year of Administration
V3	FORM_ID	ID associated with a form
V4	RS_ID_SERIAL	5 digit code exclusive to each grade
V5	SAMPLING_WEIGHT	Sampling weight used for all analyses
V501	GRADE	Grade
V507	SCHOOL_REGION	Region of the country, based on Census categories, in which the respondent's school is located.
V508	LARGE_MSA_1_NOT_0	Measure of population density
V509	MSA_1_NON_MSA_0	MSA: Metropolitan Statistical Area
V7101	EVR_SMK_CIG_REGL	Have you ever smoked cigarettes?
V7102	CIGS_SMKD_30DAY	How frequently have you smoked cigarettes during the past 30 days?
V7442	GR_1ST_SMOK_DLY	When (if ever) did you FIRST Smoke cigarettes on a daily basis?
V7441	GR_1ST_SMOK_EVR	When (if ever) did you FIRST Smoke your first cigarette?
V7103	TRY_STP_SMK_FL	Have you ever tried to stop smoking and found that you could not?
V7180	TRY_STOP_SMK	How many times, if any, have you tried to stop smoking?
V7181	WNT_STP_SMK_NW	Do you want to stop smoking now?

ID	Variable_Name	Variable_Description
V7475	DIF_TRY_QUIT_CIG	For cigarettes, was there ever a time in your life when you tried to quit or reduce your use and had difficulty doing so?
V7428	ALL_FRD_SMK_CIGS	How many of your friends would you estimate smoke cigarettes?
V8473	STDNTS_SMK_1CIG	Now think about all the students in your grade at your school. How many of them do you think smoke one or more cigarettes a day?
V7437	PRESR_TO_SMK_CIG	How much pressure do you feel from your friends and schoolmates to smoke cigarettes?
V7412	EASY_GT_CIGS	How difficult do you think it would be for you to get cigarettes?
V7167	CIG_HOW_BUY_FRND	During the last 30 days, about how many times (if any) have you bought cigarettes by having a friend or relative buy them for you?
V7168	CIG_HOW_BUY_VEND	During the last 30 days, about how many times (if any) have you bought cigarettes on your own from vending machines?
V7169	CIG_HOW_BUY_MAIL	During the last 30 days, about how many times (if any) have you bought cigarettes through the mail?
V7170	CIG_HOW_BUY_PKUP	During the last 30 days, about how many times (if any) have you bought in a store where you pick up the pack (or carton) and bring it to the check-out counter?
V7171	CIG_HOW_BUY_CLRK	During the last 30 days, about how many times (if any) have you bought cigarettes in a store where the clerk has to hand you the pack or carton?
V7172	CIG_WHERE_SUPMKT	During the last 30 days, about how many times (if any) did YOU buy cigarettes for your own use at a big supermarket?
V7173	CIG_WHERE_SMLGRC	During the last 30 days, about how many times (if any) did YOU buy cigarettes for your own use at a small grocery store?
V7174	CIG_WHERE_DRGSTR	During the last 30 days, about how many times (if any) did YOU buy cigarettes for your own use a drugstore?
V7175	CIG_WHERE_CNVGAS	During the last 30 days, about how many times (if any) did YOU buy cigarettes for your own use at a convenience store (like a Hop-In or 7-11) or a gas station?
V7177	CIG_PROOF_OF_AGE	The last time that you tried to buy cigarettes in a store or gas station, were you asked for proof of age?

ID	Variable_Name	Variable_Description
V7178	CIG_SHOW_ID_SELL	What happened the last time that you tried to buy cigarettes in a store or gas station and you were asked for proof of age?
V7179	CIG_STORE_BUYLS_THN20	Have you ever gone to a store and bought just one or a few cigarettes (fewer than the usual pack of 20)?
V7199	CIG_HOW_BUY_OTHR	During the last 30 days, about how many times (if any) have you bought cigarettes bought them in some other way?
V7200	CIG_WHERE_WEB	During the last 30 days, about how many times (if any) did YOU buy cigarettes for your own use from a Web site?
V7185	NO_SMK_IN_5_YR	Do you think you will be smoking cigarettes five years from now?
V7186	NEVER_CIG_ADDICT	How much do you agree or disagree with the following statements?
		A: I will never get addicted to cigarettes.
V7187	QUIT_CIG_WN_WANT	How much do you agree or disagree with the following statements?
		B: I could smoke a pack a day for a year or more and still be able to quit if I wanted to.
V7188	SMK_DANGER_QUIT	How much do you agree or disagree with the following statements?
		C: At my age, smoking is not too dangerous because you can always quit later
V7184	START_SMK_THISYR	If you have never smoked, do you think you will try smoking cigarettes sometime this year?
V7451	USE_DRUG_HOME	During the LAST 12 MONTHS, how often (if ever) have you used drugs at your home?
V7452	USE_DRG_FRNDS	During the LAST 12 MONTHS, how often (if ever) have you used drugs at friends' houses?
V7453	US_DRG_SCHEVE	During the LAST 12 MONTHS, how often (if ever) have you used drugs at a school dance, a game, or another event?
V7454	USE_DRG_ATSCH	During the LAST 12 MONTHS, how often (if ever) have you used drugs at school during the day?
V7455	USE_DRG_NRSCH	During the LAST 12 MONTHS, how often (if ever) have you used near school?
V7456	USE_DRG_INCAR	During the LAST 12 MONTHS, how often (if ever) have you used in a car?
V7457	USE_DRG_PARTY	During the LAST 12 MONTHS, how often (if ever) have you used drugs at a party?
V7481	X_USE_DRG_PARK	During the LAST 12 MONTHS, how often (if ever) have you used drugs at a park or beach?

| ID	Variable_Name	Variable_Description
V7183	START_SMK_LOSEWT	Was losing weight one of the reasons you started to smoke?
V7182	QUIT_SMK_WRY_FAT	Do you (or did you) worry that quitting smoking would make you gain weight?
V7405	HAD_DRUG_EDUCATN	Have you had any drug education courses or lectures in school?
V7344	DISAP_1_PK_CIGS	Individuals differ in whether or not they disapprove of people doing certain things. Do YOU disapprove of people smoking one or more packs of cigarettes per day?
V7359	RSK_OF_CIG1_PK_D	How much do you think people risk harming themselves if they smoke one or more packs of cigarettes per day?
V7377	RSK_1_5_CIGS_DAY	How much do you think people risk harming themselves (physically or in other ways) if they smoke one to five cigarettes per day?
V7706	CIG_SMKRS_ATHLTS	These days, how many professional athletes would you guess are regular cigarette smokers?
V7196	SAVED_CIG_COUPON	Have you ever saved coupons from cigarettes (whether or not you bought them yourself)?
V7197	SAVE_CIG_CPN_NOW	Are you currently saving coupons from cigarettes?
V7518	SCH_ACTV_ATHLTCS	To what extent have you participated in athletic teams during this school year?
V7329	LSTYR_ENJOY_SCHL	Now thinking back over the past year in school, how often did you enjoy being in school?
V7330	LSTYR_HATE_SCHL	Now thinking back over the past year in school, how often did you hate being in school?
V7332	LSTYR_SCH_2_HARD	Now thinking back over the past year in school, how often did you find the school work too hard to understand?
V7537	SCHL_RULES_FAIR	Do you feel that the rules about student behavior in your school are generally fair and reasonable?
V7313	DALY_ACTV_SPORTS	How often do you do actively participate in sports, athletics or exercising?
V7258	PRNT_ALW_OUT	How often do your parents (or stepparents or guardians) allow you to go out with friends on school nights?
V8512	SATISFD_W_MYSELF	How much do you agree or disagree that on the whole, you are satisfied with yourself?
V7202	RS_SEX	What is your sex?

ID	Variable_Name	Variable_Description
V1070	RACE_B_W_H	Race: Non-Hispanic Black, Non-Hispanic White, Hispanic
V8529	OFTN_EXERCISE	How often do you exercise vigorously?
V7555	DA_WK_ACTV_60_MIN	During the LAST 7 DAYS, on how many days were you physically active for a total of at least 60 minutes per day?
V7593	SMKRS_IN_MOVIE	Did any of the characters in the movie that you watched most recently smoke cigarettes?
V7666	SMK_REG_CIG_BEST_FRND	If one of your best friends were to offer you a cigarette, would you smoke it?

IV. Data Cleaning and Preprocessing

Data cleaning is a critical process that involves detecting and correcting inaccurate or incomplete records from a dataset. Handling missing data is the primary step of the data cleaning process, and hence it is essential to check if deleting or imputing values do not introduce bias in the data.

a. Handling missing values

On exploring the data with around 182K records and 73 variables, it is found that most of the columns contain missing values. Therefore, columns with more than 70% of missing values are removed from the dataset. Thus, the dataset is further reduced to 40 variables. For the remaining columns where the missing values account for less than 70% of the data, the median value imputation method is used.
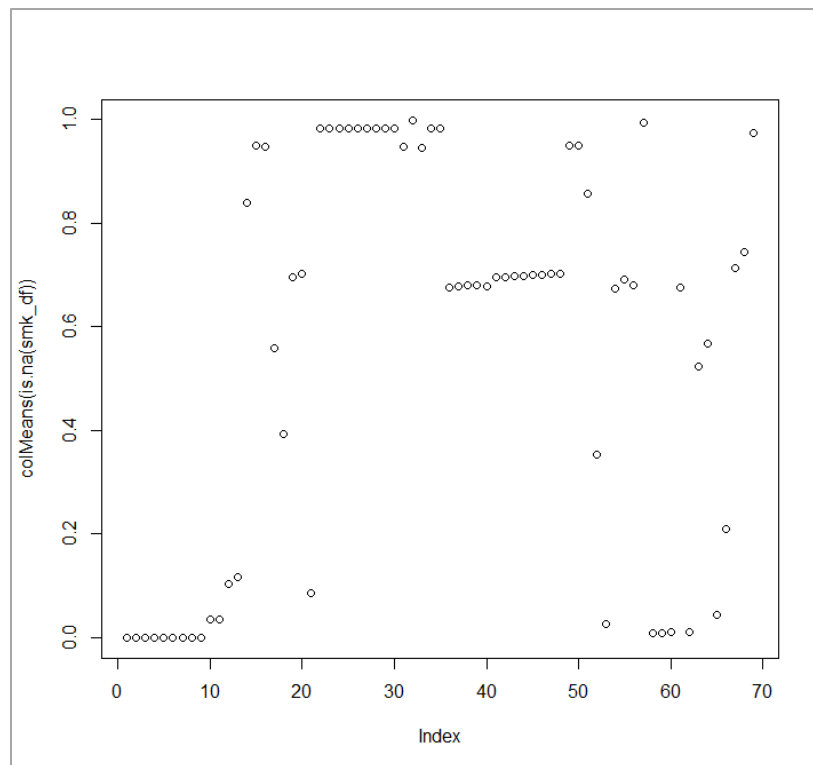
Figure 1: Missing values within the dataset

b. Combining categories

On checking frequency table for each of the factor variables, all the variables seem to have a good count of the frequencies. Hence, there were no changes made to the categories of the variables.

c. Data transformation

Since the data is in a consistent categorical format with category 1 being the lowest in scale or impact and category 5 (or the highest category) being the highest in scale or impact, the data is transformed into continuous values ranging from 1 to 5 (or the highest value).

d. Dichotomizing variables

The outcome variable EVR_SMK_CIG_REGL was dichotomized into a binary variable for it to be in an appropriate format for the classifier and renamed as SMK_CIG.

e. Collinearity check

On checking the correlation matrix for independent variables, it was observed that there was a high correlation (i.e., correlation above 80%) between a few variables. Among these, the variables (USE_DRG-SCHEVE, USE_DRG_FRNDS) that had less correlation with the outcome variable (i.e., SMK_CIG), were removed and the one that had a stronger correlation with the outcome variable is retained. Thus, the dataset is free from multicollinearity. The resulting correlation matrix is as follows.
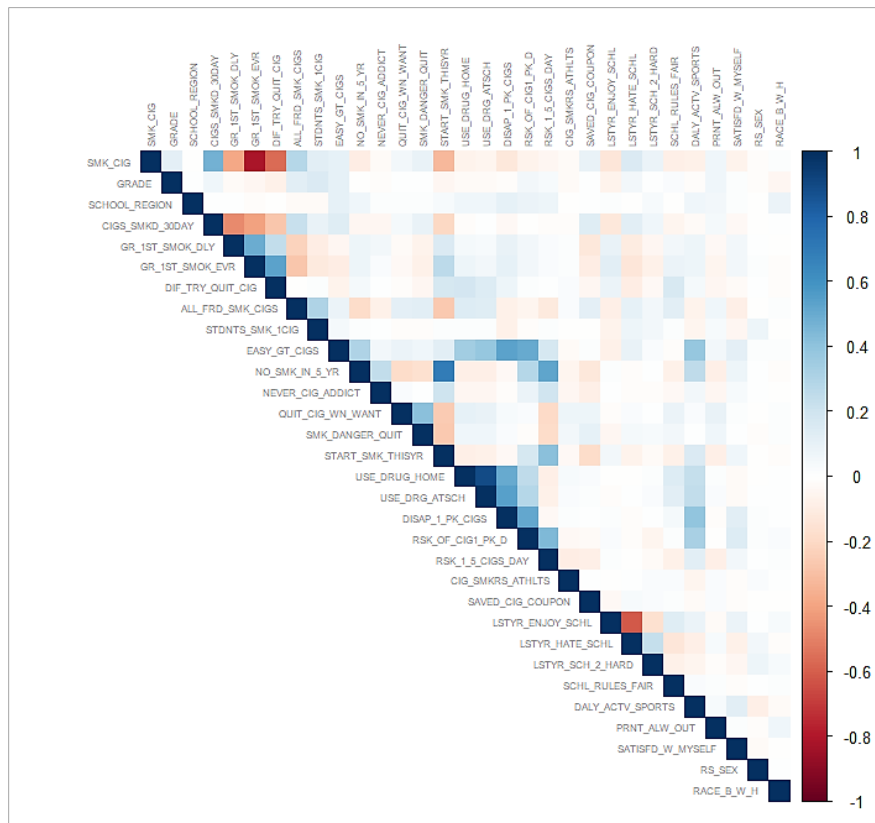

Figure 2: Correlation matrix for independent variables

V. Data Models

The dataset thus obtained from the previous step is then partitioned into training and test set, in order to build a model and evaluate its accuracy. A 60-40% partition was used to split the data into the training set and test set. After that, machine learning models were built and assessed to identify the variables that play an important role in classifying whether a person is a smoker or not.

a. Binomial Logistic Regression

Initially, the basic binomial logistic regression model is used to train and fit the model using the Generalized Linear Model function in R. This model considers all the predictors from the dataset while building the model that can help us accurately distinguish between a smoker and a non-smoker. However, only a few significant predictors are returned in the form of an equation. This is because those predictors were more dominant in classification than the others. Thus, the logistic regression equation can be mathematically stated as follows.

SMK_CIG = 12.739513 - 2.121587 GR_1ST_SMOK_EVR + 1.056257 CIGS_SMKD_30DAY - 1.93578 DIF_TRY_QUIT_CIG - 0.500527 START_SMK_THISYR + 0.201741 NO_SMK_IN_5_YR + 0.604829 GRADE + 0.891574 GR_1ST_SMOK_DLY - 0.333611 DISAP_1_PK_CIGS + 0.171419 EASY_GT_CIGS + 0.271992 USE_DRUG_HOME + 0.076751 LSTYR_HATE_SCHL - 0.10535 RSK_OF_CIG1_PK_D + 0.155477 STDNTS_SMK_1CIG - 0.182052 SCHL_RULES_FAIR + 0.128706 LSTYR_SCH_2_HARD - 0.216372 RS_SEX - 0.079908 LSTYR_ENJOY_SCHL + 0.093662 ALL_FRD_SMK_CIGS + 0.047885 RSK_1_5_CIGS_DAY - 0.049908 CIG_SMKRS_ATHLTS + 0.045357 NEVER_CIG_ADDICT - 0.031412 SATISFD_W_MYSELF - 0.444563 SAVED_CIG_COUPON + 0.053965 RACE_B_W_H - 0.019003 SCHOOL_REGION + error

The McFadden's Pseudo R^2 value of 0.784 calculated from the summary statistics shows that the model thus obtained is a fairly good one. Also, the p-value associated with that R^2 can be calculated using the log-likelihood by using the Chi-square distribution as follows.

```
> 1-pchisq(2*(ll.proposed-ll.null), df=(length(obj.full$coefficients)-1))  #p-value = 0
[1] 0
```

Thus, the p-value of 0 helps us validate the R^2 value obtained for the model.

The graph displayed below shows the predicted probabilities a person being a smoker against the actual values. The light blue colored points refer to people that are predicted to have a high probability

of being a smoker, whereas the deep blue colored points are the ones that are predicted to have a low probability of being a smoker.
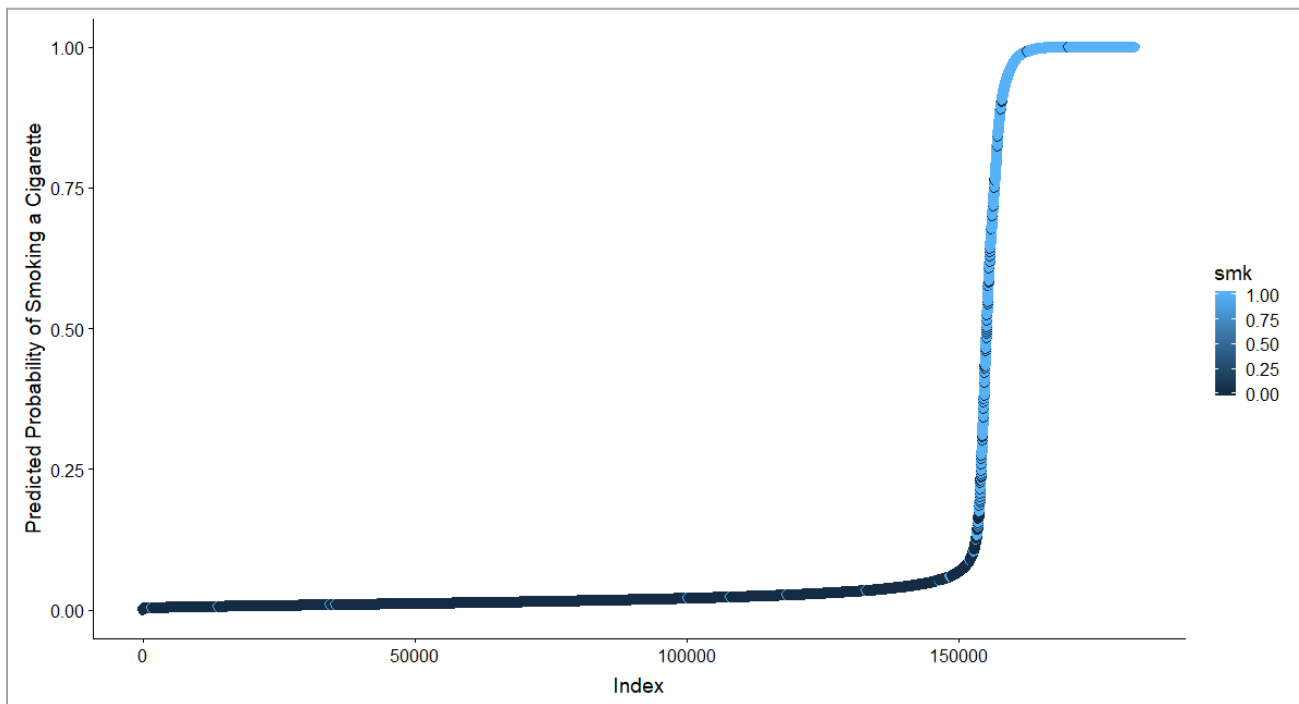
Figure 3: Predicted Probabilities of a person being a smoker.

Thus, it is evident that the majority of the population fall into the latter category. Since this overall effect is due to the parameters returned by the logistic regression model, it can be concluded that modifying the parameters a bit can help us achieve a combination that can be used towards smoking cessation among high school students.

b. Classification Tree

Another method for classification is to use a decision tree. Classification trees provide an easy and effective way for decision making since all the decision rules can be graphically represented into one single view. Following image shows the classification tree built using the training dataset.
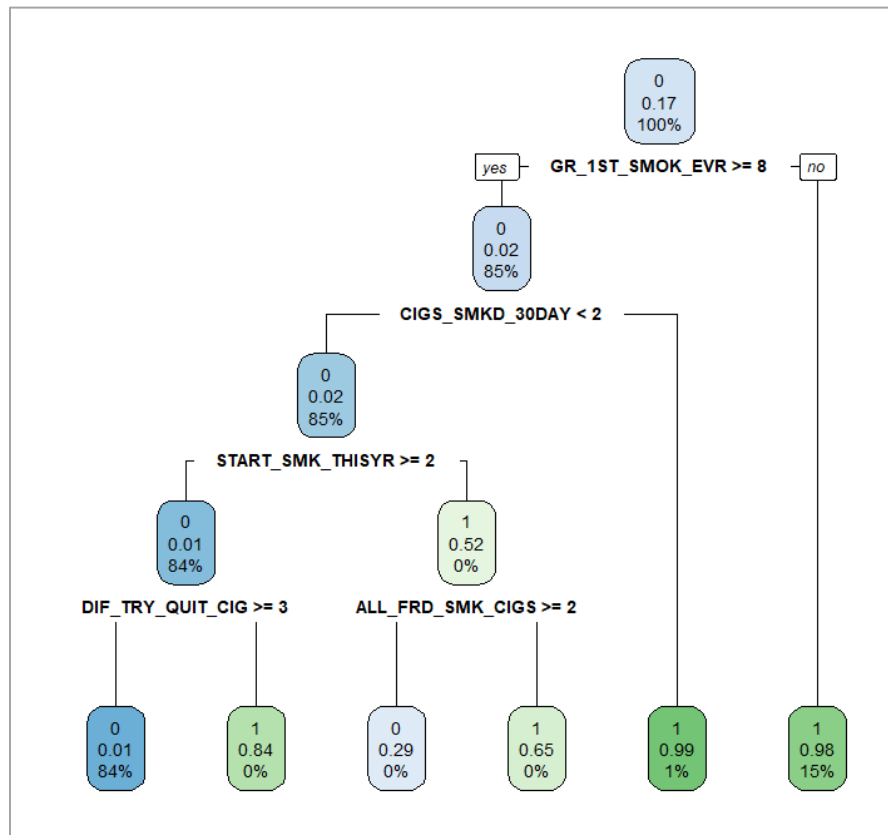
Figure 4: Classification tree using training data

The above-mentioned tree can be assessed for its accuracy by applying the tree onto the test dataset.

The cross-validation results for the tree are as follows.

Output

```
> printcp(fit)

Classification tree:
rpart(formula = SMK_CIG ~ ., data = dat.train, method = "class",
    control = rpart.control(minsplit = 30, cp = 0.001))

Variables actually used in tree construction:
[1] ALL_FRD_SMK_CIGS CIGS_SMKD_30DAY  DIF_TRY_QUIT_CIG GR_1ST_SMOK_EVR
[5] START_SMK_THISYR

Root node error: 18058/109411 = 0.16505

n= 109411

        CP nsplit rel error    xerror      xstd
1 0.8579023      0  1.000000 1.000000 0.0067998
2 0.0328940      1  0.142098 0.142098 0.0027721
3 0.0031934      2  0.109204 0.109204 0.0024369
4 0.0010000      5  0.099623 0.099623 0.0023294
```
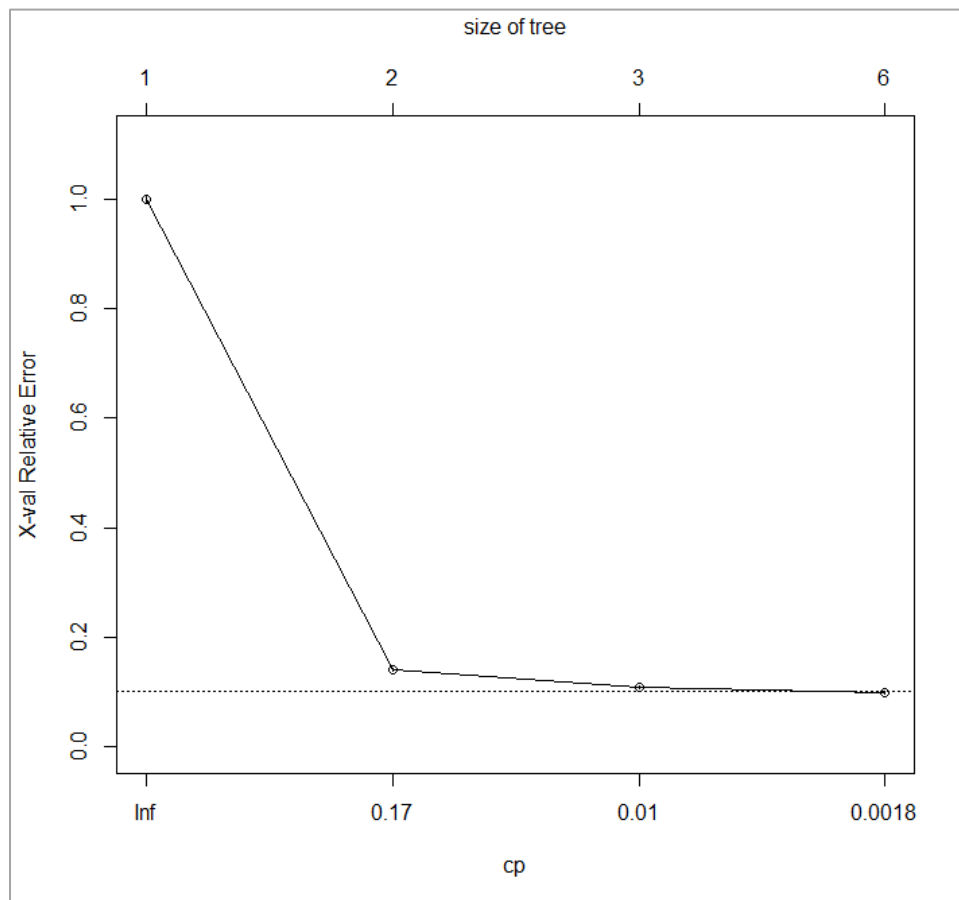
Figure 5: Misclassification error

From the above image, it is evident that the decision tree does not perform well on the test data since the cross-validation error is high. As a result, pruning the tree can be considered that can help us achieve better accuracy on the test data. Following is the result of pruning the tree.

Code:

```
> # prune the tree
> pfit<- prune(fit, cp=   fit$cptable[which.min(fit$cptable[,"xerror"]),"CP"])
> # plot the pruned tree
> plot(pfit, uniform=TRUE,  main="Pruned Classification Tree")
> text(pfit, use.n=TRUE, all=TRUE, cex=.8)
```
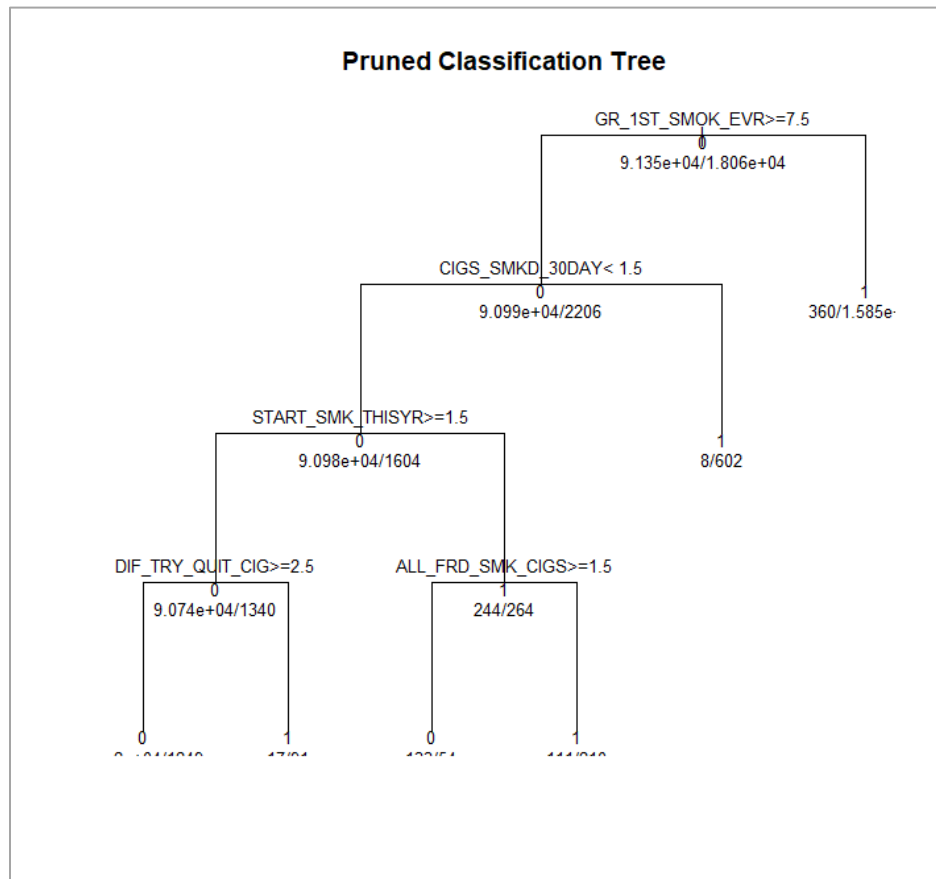
Figure 6: Pruned Classification Tree

The pruned classification tree thus obtained is said to have enhanced accuracy and can be used to classify unknown data more precisely.

i. Findings

Although the data models – Binomial Logistic Regression and Classification Tree, are capable of classifying a person as a smoker or a non-smoker, the combined effect of them can be much more powerful.

It can be seen that few variables, mentioned below, appear in each of these models.

- *GR_1ST_SMOK_EVR*
- *CIGS_SMKD_30DAY*
- *DIF_TRY_QUIT_CIG*
- *START_SMK_THISYR*
- *ALL_FRD_SMK_CIGS*

These variables thus can be considered to be strong predictors in identifying a person's smoking habit and can be used to produce highly accurate results.

VI. Visual Analysis and Key Findings

a. Smoking Behaviour by Demographics

The following Tableau interactive dashboard displays the number of smokers characterized by year, sex, place, grade, and race.
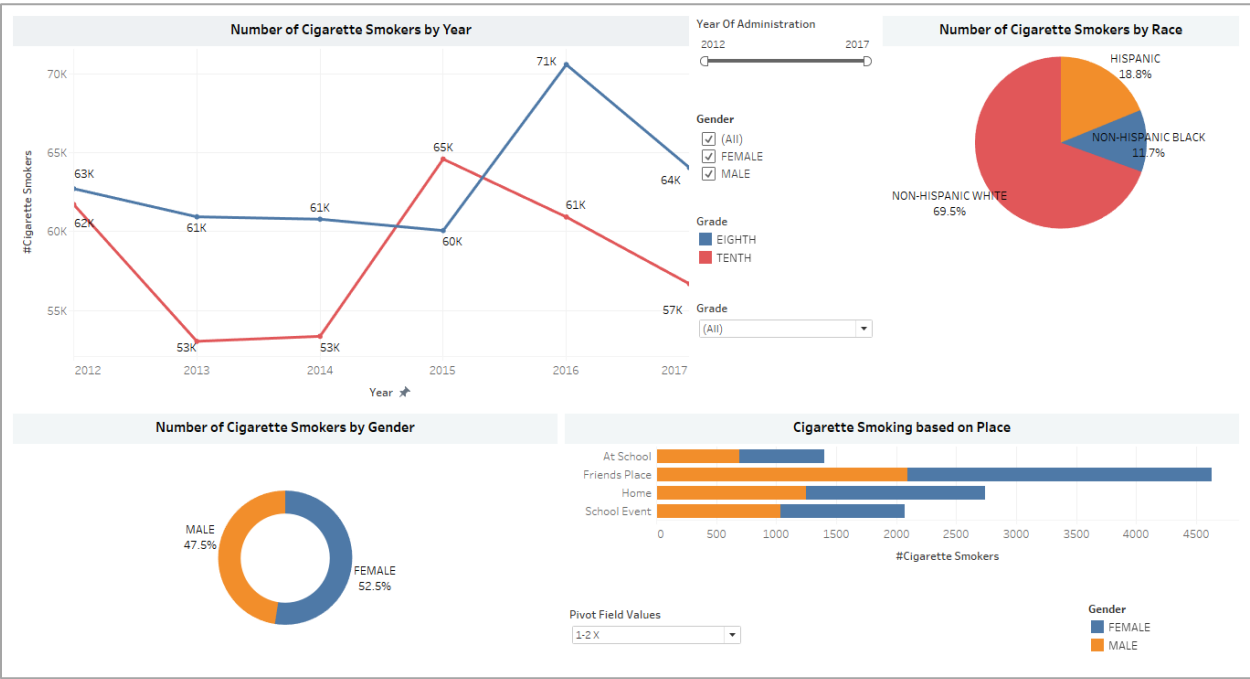

Figure 7: Smoking behavior by demographics

From the chart that characterizes smokers by Year and Grade *(top left)*, it is evident that on average, the total number of 8th-grade smokers is greater than the total number of 10th-grade smokers. However, the year 2016 shows a contrasting effect with 10th-grade students being more in number than the 8th grade. Also, there seems to be an overall upward trend in the smoking habits for the 8th-grade students since 2012; whereas the number of 10th-grade smokers has been reduced since 2012.

From the chart that characterizes smokers by gender *(bottom left)*, it seems that on an average there are more female smokers than the male ones. As per the Race chart *(top right)*, it seems that the Non-Hispanic White category contributes to a major portion (about 70%) of the cigarette smokers.

b. Smoking Behavior by External Factors

Cigarette smoking is a highly catching addictive nature that spreads from one person to another in spite of the associated drug awareness and known risk. External factors play a major role in urging a person to smoke, and if they go beyond the line that the mind has set for not entertaining or contributing towards smoking, then a person has no choice left but smoking. Some of these factors include the availability of cigarettes, being in a friends circle that practice smoking and are addicted to cigarette smoking.
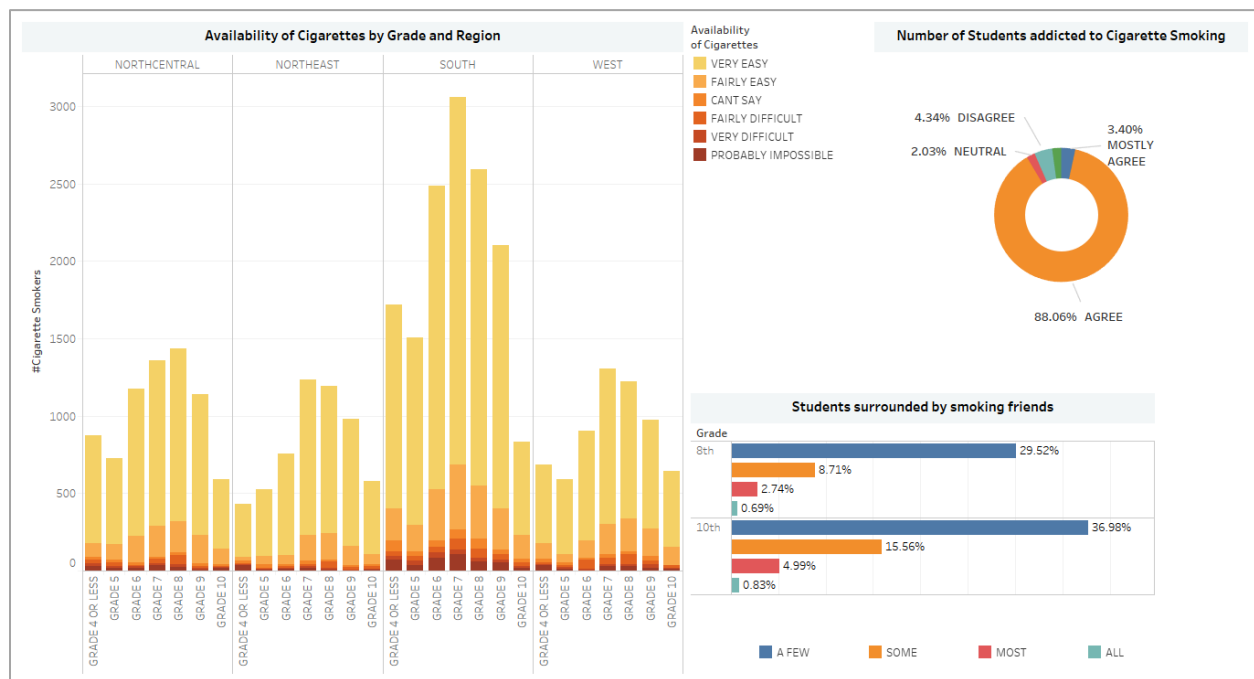

Figure 8: Major external factors that contribute to cigarette smoking

Majority of the people who smoke did not start smoking on their own in the first place. There is always someone to trigger them to choose the path of smoking; cause may be that is what they did when they wanted to relieve stress. The primary factor that contributes to and magnifies smoking is friends. The dashboard above displays the major factors that are involved in creating smoking urges.

The bar chart for the external factor friends *(bottom right)* demonstrates the distribution of one's friends particularly with smoking characteristic. Most of the students have friends circle wherein only a few people are a smoker. Moreover, on average, 10th-grade students seem to have more smoking friends than 8th grade students.

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Out of the total number of student's that smoke cigarette, about 88% of people agree to the fact that they are addicted to cigarette smoking.

Another crucial factor that can control cigarette smoking is its availability. The legal age for smoking ranges from 18-21 years based on the US state they are buying from [2]. However, this age is way more than the age of high school students; yet, the students seem to be smoking. This is because they have resources that help them buy cigarettes or redirect them to the markets where the age/ID proof is not checked.

The bar graph *(top left)* in the above dashboard shows the levels of ease of availability by US regions. Most of the smokers claim that it is very easy to get cigarettes, knowing the fact that they are underage. The graph also includes the moment when they first started smoking. It is surprising to know that some high school students started smoking since they were in 4th grade. This can only be an effect of one of the external factors since the minds at age 9 are quite innocent and naïve. Thus, it helps us realize how essential it is to control cigarette selling and to promote smoking at its source.

c. Nicotine Content Analysis

Nicotine, one of the most abused drugs found in cigarettes that is highly toxic and addictive and can even cause death if absorbed in large amounts. However, how large these amounts can be depended upon the body mass of each person. According to the CDC, the fatal human dose of nicotine has been estimated to be about 60 mg per kg [3]. Hence, for a person with 70 kg of body mass, a lethal dose of nicotine can be calculated and which accounts to be 4.2 g.

Exposure to high doses of nicotine or in cases of exceeding the lethal dose causes symptoms ranging from nausea, tremor to high blood pressure; whereas severe nicotine poisoning symptoms may include symptoms ranging from vomiting and irregular heart rate to respiratory failure; sometimes even death.

Hence, it is essential to have knowledge about the lethal dose that each person can have, and ensure that nicotine consumption stays well below the limit.

The following interactive chart indicates the nicotine levels absorbed by high school students based on the number of cigarettes they consume each day. During the analysis, the median weights for male and female high school students have been considered as per the CDC fact sheets [9][10]. Also, on average, one cigarette is considered to contain about 12 mg of nicotine [4]. This data has been used to calculate

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the amount of nicotine consumed by each person based daily, and then multiplied by the number of days to get the annual levels of nicotine.
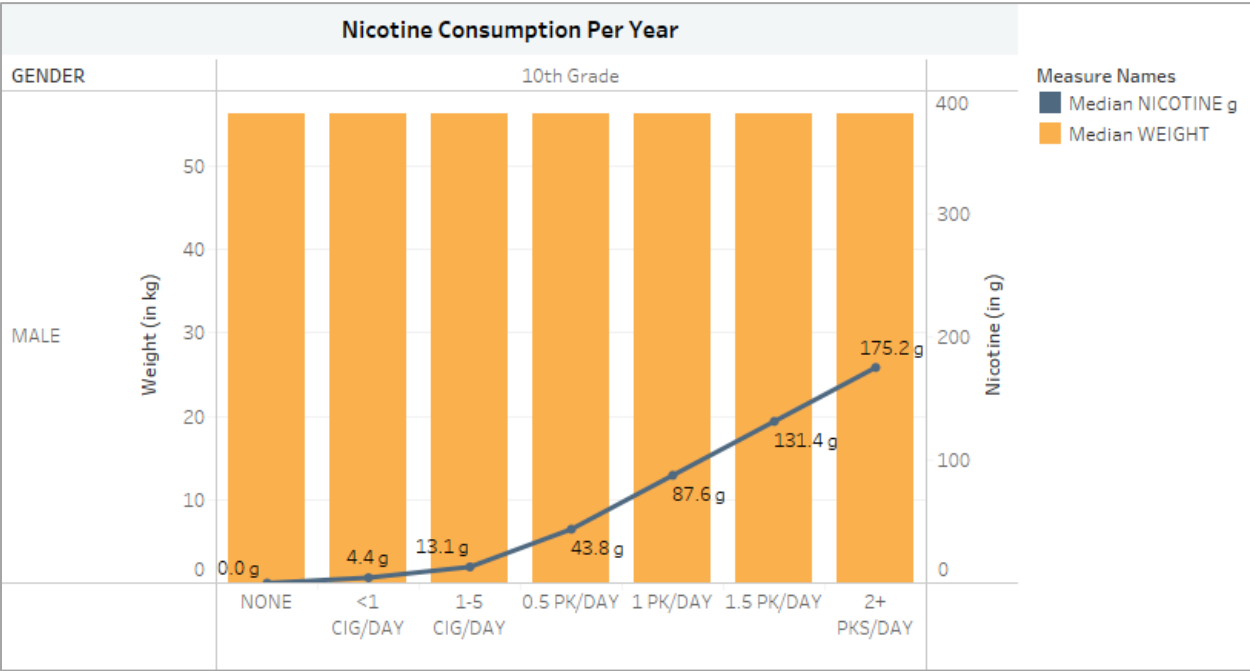

Figure 9: Nicotine consumption levels among 8th and 10th-grade students

It seems like people who smoke less than a cigarette per day have 4.4g of nicotine at the end of the year, which is acceptable to the human as per the lethal dose; whereas people smoking a pack or more absorb a huge amount of nicotine from the tobacco within cigarettes, and which exceeds the lethal dose for the human body. Consuming nicotine in such huge amounts can be fatal and require measures to be taken in order to decrease the amount of nicotine within the body. One such measure is exercising. Any kind of exercise is believed to reduce cigarette cravings and can be an important aspect of smoking cessation. It also facilitates proper blood circulation thus making body parts back to healthy [5].

d. Effect of Cigarette Smoking on Life Expectancy

As mentioned earlier, cigarette smoking is one leading cause of preventable death. It not only affects a person's lungs and heart but also reduces the life span. As stated by the Tobacco Fact File, that the amount of time a person takes to smoke one cigarette is equal to the amount of time the cigarette takes away from his/her life [7]. On average, each cigarette shortens one's life by 11 minutes. Following chart displays the amount of life expectancy reduced as a result of smoking. During the analysis, the

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median values for life expectancy by age, sex, and race have been considered, as provided by one of the CDC reports [8].
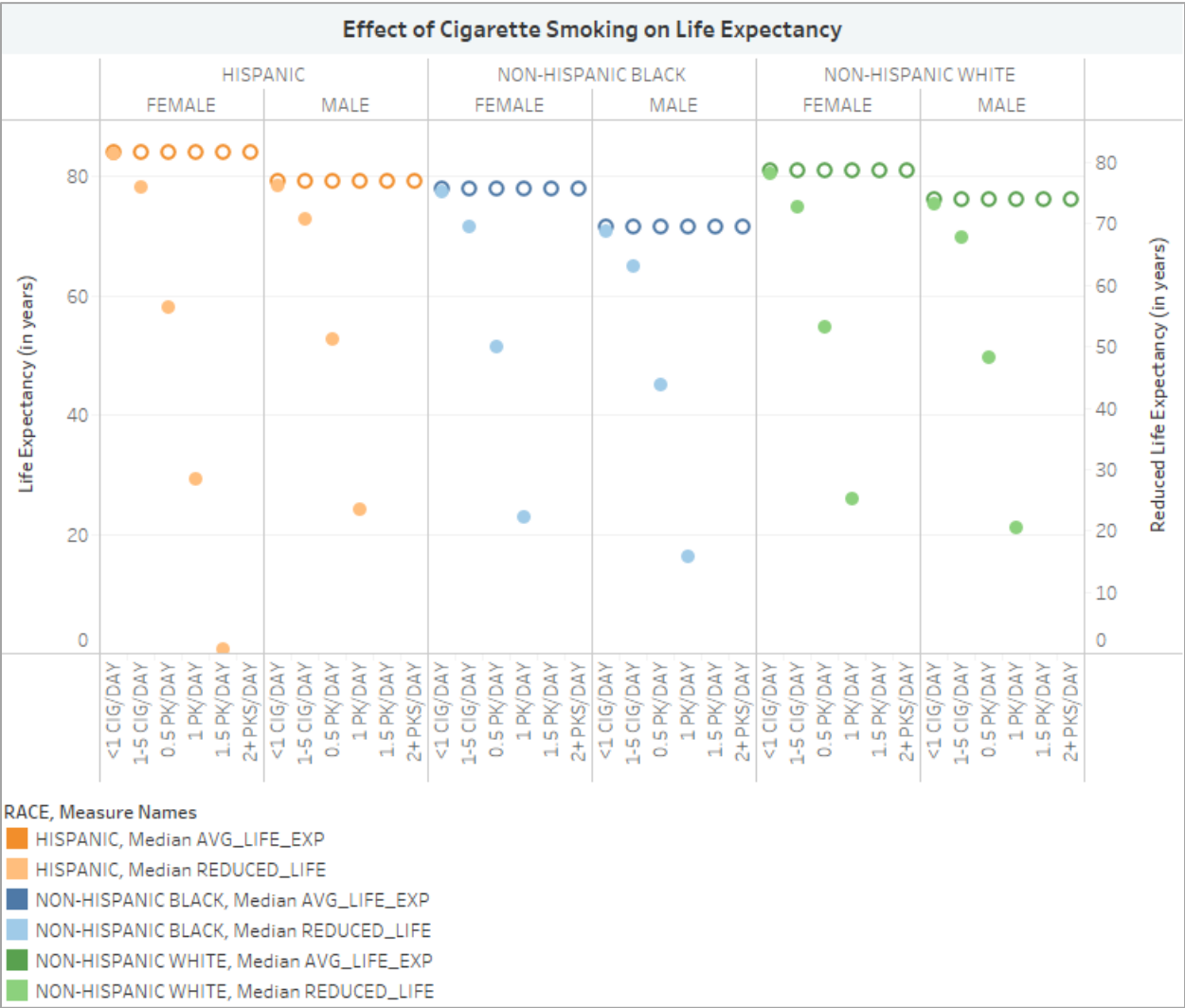

Figure 10: Effect of cigarette smoking on life expectancy

The chart indicates that a person smoking less than a cigarette per day is believed to encounter death approximately 1 year before his actual life span period; whereas a person consuming 1.5 packs or more cigarettes is supposed to die way earlier. Since consuming that much amount of cigarettes would mathematically go into negatives, it can be logically interpreted to be fatal, and hence those values do not appear in the chart.

VII. Conclusion

The project outlines some fundamental and crucial facts about cigarette smoking. It identifies some major contributing factors like external environment, availability of cigarettes, etc. Each aspect within the project eventually works down its way to one thing – smoking is harmful to health. Besides, studies have also shown that not only to the smokers but people inhaling the cigarette smoke, i.e., the secondary smokers, also are affected physically and are observed to experience health issues. Even the smoking packet provides a warning about the killing, which is often and always ignored by the smokers. The population needs to be educated about the adverse effects of smoking and drugs, and strict measures need to be taken to control such practices.

VIII. Recommendation

A good start against cigarette smoking is that about more than 450 cities and counties in 27 states have raised the legal age for purchasing cigarettes or any other tobacco products [2]. However, the high school students would still try to find out newer ways and sources for buying cigarettes, like they did until now. For this, stringent measures can be taken against the person allowing the purchase. Probably, that may help us control the illicit sale of cigarettes to the youth.

Cigarette being the most inexpensive drug available at any convenient stores, it can be the most sold drug. Hence, adding a large amount of tax on it can prevent students with limited source of income from buying it, or at least make him/her think twice.

Why do people traveling internationally buy cigarettes at the airport? This is because, cigarette prices at the airports are quite affordable, rather it is cheaper buying a carton of cigarettes from the airport than buying the same amount in any of the states. Implementing excess duties on cigarettes at the airport can help reduce the sale to quite an extent.

Enlightening young minds by promoting a superior quality drug education at schools can help us make a difference.

IX. References

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