

# **An Empirical Study of Factors Affecting Cigarette Consumption among Youth**

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*The objectives of this research are to study the pattern of cigarette consumption among the youth. The specific emphasis has given on to analyze the factors affecting the consumption of cigarettes as well as the dominant discouraging factors influencing people's efforts to quit smoking. In this empirical study information is collected on various demographic parameters through a structured questionnaire using simple random sampling technique. The results of Factor Analysis and Chi - Square test suggest that the encouraging factor affecting smoking habits are social factor, with maximum contribution of enhancement of social status whereas awareness, government intervention and market factors are some of the discouraging factors.*

## **INTRODUCTION**

Tobacco consumption in any form is injurious to health. It may result in permanent disability or even death in many cases among the consumer. It has huge economic costs implied on individuals as well as on society. Consumption of tobacco can be smoking, in the form of either cigarettes or bidis and or chewing Gutkha, Paan Masala, Zarda etc. Smoking is the most common way of tobacco consumption among males whereas other forms are popular among females. There are more than one billion smokers in the world; low- and middle-income countries (LMIC) account for more than 80% of the world's smokers (WHO, 2013)<sup>1</sup>. There are about 1.1 billion smokers in the world, and about 4 in 5 smokers live in LMICs. The per capita consumption of cigarettes in India is merely a tenth of the world average (equity master). India has the second highest number of smokers in the world after China. There are already 1 million adult deaths per year from smoking. Cigarette smokers in India increased from 25 million to 46.4 million over 14 years (1996 to 2010), and per capita annual consumption of cigarettes declined marginally, from 101 to 96 cigarettes over the same period.<sup>2</sup>

The problem is more unique in India as there are various other forms of tobacco used. The smoked tobacco prevalence has risen to 19% whereas smokeless tobacco prevalence has risen to 9% among youth between the ages of 13 and 15 years in the past decade in India (WHO, 2013).

Secondhand smoke exposure remains a major health hazards. In the 1990s tobacco smoking and exposure to second hand smoke (SHS) ranked among the top three risk factors contributing to the global

burden of disease along with childhood underweight and household air pollution. Today, after two decades, tobacco smoking and exposure to SHS still rank among the top three risk factors (Nazar GP, 2013).

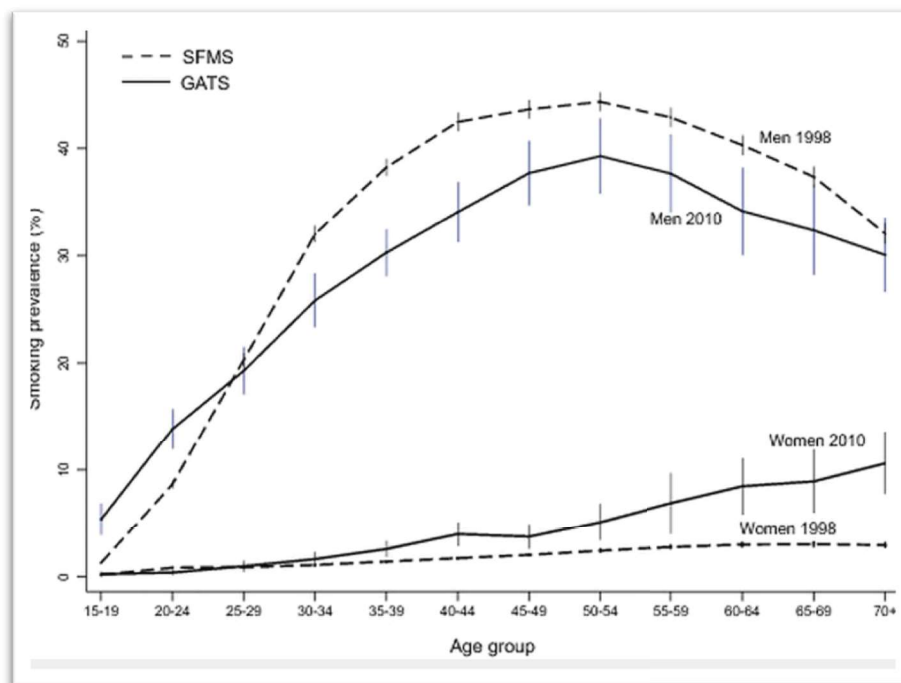
In most countries, an estimated 15%–50% of the population is exposed to secondhand smoke; in some countries secondhand smoke exposure affects as much as 70% of the population. The WHO says annually, around 6 million people die from diseases caused by tobacco use, including about 600,000 from secondhand smoke exposure. The burden of disease from tobacco is increasingly concentrated in LMICs (Monograph 21).

Smoking kills over one million people in India annually and is the fourth leading cause of non-communicable diseases (NCD) such as cancer and heart diseases, which account for 53 per cent of all deaths in India. The global health and economic burden of tobacco use is enormous and is increasingly borne by low- and middle-income countries. The number of tobacco-related deaths is projected to increase from about 6 million deaths annually to about 8 million annually by 2030, with more than 80% of these occurring in LMICs Monograph 21. Direct cost of tobacco related diseases in LMIC, where as in HICs, it's related to health care expenditure due to smoking in terms of % of total health care expenditure. Indirect cost of smoking is results in displacing house hold expenditure on education and medical care, which are important investment to improve economic wellbeing (Monograph 21).

Age and gender have been highlighted by the other researchers which motivates smoking. As the age-specific rates in 1998, 2004 and 2010 showed consistent increases at ages 15–29 years and modest declines at older ages. In the research paper by BMJ Global health, the findings reveal that age is an important variable in determining the tobacco consumption pattern. The age-standardized prevalence of any smoking in men at ages 15–69 years fell from about 27% in 1998 to 24% in 2010, but rose at ages 15–29 years. Cigarettes are displacing bidis, especially among younger men and also among illiterate men. This change might further increase the smoker: nonsmoker relative risks of disease. Thirty per cent of the population (15 years or older) 47% men and 14% of women—either smoked or chewed tobacco, which translates to almost 195 million people—154 million men and 41 million women in India (BMJ Global Health 2016). The female smoking rates as estimated by the 2.9 per cent. The trend of increase in female smoking rates, meanwhile, is a global one with some rare exceptions like Japan where rates have stayed constant over the years ( GATS factsheet for India, 2009-10).

Globally, more than 80% of the world smokers are men (Monograph 21). An estimated 25 million youth currently smoke cigarettes. Although cigarette smoking rates are higher among boys than girls (Monograph 21). 24.3 per cent of Indian males smoked and the female smoking rates as estimated by the Tobacco Atlas is 3.2. The prevalence of tobacco use among people between 15 and 24 years has reduced from 18.4% in 2009-10 to 12.4% in 2016-17. There has been a 54% relative reduction in the prevalence of tobacco use among minors (15-17 years) and 28% reduction in the age group of 18-24 years. 100-million people in India smokes tobacco as absolute number of smokers has been increased (GATS 2009-10). About 21 % (about 1.1 billion people) of world population age 15 and over are smokers. About 7% of youth ages 13-15 worldwide smoke cigarettes, including about 9% of boys and 4.5% of girls. An estimated 25 million youth currently smoke cigarettes.

**FIGURE 1**  
**SMOKING PREVALENCE BY AGE AND GENDER (WITH 99% CI): 1998–2010**



Source: *GATS, Global Adult Tobacco Survey; SFMS, Special Fertility and Mortality Survey.*

Education emerged as a relatively stronger predictor than household wealth, both among men and women. It is likely that poor and less educated people are: less aware of the health hazards of tobacco consumption; more likely to find themselves in conditions predisposing them to initiation of smoking and chewing of tobacco; and more likely to have higher degree of fatalism or higher overall risk taking behavior (M Rani et. al., 2004).

The existing literature also indicates the direct relationship between advertising and extent of smoking. The companies have now taken the resort of surrogate advertising for tobacco marketing and promotion (Gupta et al., 2013). Tobacco manufacturers take support of other indirect techniques such as sponsoring music or sport events, surrogate advertising, print, electronic and outdoor direct advertisement and promotion of tobacco in any form is legally banned in India since 2004, tobacco advertisements, sale at Point of Selling (PoS), and product display, brand stretching, competitions / contests, attractive packaging and Corporate Social Responsibility (CSR). These unique strategies influence the youngsters. Behavioral changes such as a desire to hold a cigarette or articles akin a cigarette are found in a large proportion of youth being influenced by movies portraying tobacco use (Goswami & Kashyap, 2005). The surrogated advertising defeats the very purpose of banning tobacco advertisement. The youth watching anti-smoking media messages were likely to be current smokers, which was true for both boys and girls (Shah et al., 2008).

Some studies suggest inverse relationship between prices of cigarettes and its consumption. “Raising taxes is one of our strongest weapons to fight out tobacco,” said Arun Thapa, acting WHO Representative to India. Hiking tobacco taxes by 320% between 1996 and 2013 helped the US reduce its per capita annual consumption of cigarettes from 1820 to 893 cigarettes, and cut the number of adults who smoke by about a third<sup>3</sup>. According to an article in the Bloomberg Business Week and the wire, the industry is being heavily taxed and other initiatives are being taken to reduce consumption. Sales of the shortest and cheapest available cigarettes grew fourfold during 2013, from 4% to 16% of the market—an indicator of the limited budget of Indian smokers. This is the fastest-growing segment of cigarettes in India. To discourage the

consumption of low-cost cigarettes the government slapped the highest tax raise, 72%, on the bottom tier in 2014. Tobacco taxation can prevent millions of smoking-attributable deaths throughout the world. A Public Health Foundation of India study shows that increasing taxes on cigarettes by 370% would cut consumption by 54% and increase government earnings by 115%<sup>4</sup>. India faces the challenge of double burden of communicable and non-communicable diseases, leading to enormous loss to both society and economy. This is exacerbated by the high tobacco use. More than one-third of Indian adults (34.6 percent, an estimated 275 million persons) consume tobacco products. Among the economic measures outlined in the World Health Organization's Framework Convention on Tobacco Control (FCTC), tobacco taxation is the most cost effective intervention to reduce tobacco consumption. The FCTC stipulates that all tobacco products be taxed at a tax incidence of 75%<sup>5</sup>. Price elasticity of tobacco products (the change in quantity of tobacco products demanded divided by the change in its price). This implies that in rural areas, bidis and leaf tobacco were the most price elastic tobacco products, with a 10% increase in price leading to an almost 5% decrease in consumption. In urban areas, the same trend was observed, with slightly lower elasticity. Price elasticity estimates from consumer expenditure surveys 2 from the years 1999-00 to 2011-12 show that elasticity across all three products Cigarette, Bidi and Leaf Tobacco have declined across the years, with consumers becoming more and more inelastic to price changes<sup>6</sup>.

In some cases, activities present tobacco use as the symbol of luxury and power, richness and success, aspiration and amusement; which of course, is a clear way of attracting youth towards tobacco consumption and when televised may amount to the same effect as direct advertising on television. This is especially worrying given that young people are particularly vulnerable to the negative effects of tobacco (Gupta & Sharma, 2013).

A study is done by the present use and willingness to quit tobacco habit among spinning mill workers. Social concern was the main predictor of quitting tobacco usage (Srinivas et.al.) According to NFHS – 4 (2015-16) survey which is done regarding tobacco use and alcohol consumption among adults (age between 15 and 49), women who tried to stop smoking or using tobacco in any other form during the past 12 months 29 % (urban 33%, rural 28.2%) whereas 30.6% men tried to stop smoking or using tobacco in any other form (urban 29.6%, rural 31.2 %) <sup>7</sup>.

## **OBJECTIVES OF THE STUDY**

The objective of this research is to study the pattern of cigarette consumption amongst the youth of age between 15 to 35. The specific emphasis has given on to analyze the factors affecting the consumption of cigarettes as well as the dominant forces influencing people's efforts to quit smoking. On the basis of review of literature the following research questions are developed with in the premise of the objectives under study:

- RQ 1: There is a significant relationship between current age, starting age, gender and reasons of smoking.
- RQ 2: There is significant relationship between starting age and family income.
- RQ 3: There is significant relationship between starting ages, gender, family income, tried quitting, price of cigarette and no. of cigarettes smoked in a day.
- RQ 4: There is significant relationship between current age, starting age, gender, family income, qualification, no. of cigarettes smoked in a day and tried quitting.

## **RESEARCH METHODOLOGY**

Data was collected using both the available methods primary and secondary data. Responses from youngsters (18-35years) are collected across demographic parameters of age, gender, occupation etc. A sample of 300 youngsters was reached out and 124 valid responses are received using online questionnaire. Sampled data is collected using Simple random sampling technique was analyzed using Factor Analysis (EFA) and Chi Square test.

## DATA ANALYSIS AND DISCUSSION

**TABLE 1**  
**DESCRIPTIVE STATISTICS OF THE SAMPLE**

Observed Variables	Grouped data	Frequency	%
Age group	18-21	6	4.8
	22-25	90	72.6
	26-29	24	19.4
	30-33	4	3.2
Family income	Below 3 Lakhs/annum	14	11.3
	Between 3Lakhs to 6Lakhs	38	30.6
	Between 6 Lakhs to 10 Lakhs	30	24.2
	Above 10 Lakhs	42	33.9
Education	UG	54	43.5
	PG	70	56.5
Reason of smoking	Addiction	32	25.8
	Stress Buster	40	32.3
	Networking	14	11.3
	Peer Pressure	4	3.2
	Other	34	27.4
Tried quitting	Yes	78	62.9
	No	46	37.1
No. of Cigarette/day	Less than5	4	3.2
	5-8	30	24.2
	9-12	6	4.8
	13 and above	84	67.7
Age at which respondent started smoking	15-18	32	25.8
	19-22	68	54.8
	23-26	24	19.4

Source: Prepared by researcher from primary data

**TABLE 2  
DESCRIPTIVE STATISTICS**

	N	Minimum	Maximum	Mean	Std.Deviation
Starting Age of smoking	124	15.00	26.00	20.3226	2.45793
Number of cigarette	124	.00	15.00	3.8226	2.81993
Present age	124	21.00	31.00	24.5968	2.12197
Valid N (list wise)	124				

Source: Prepared by researcher from primary data

**Analysis of Table 1 and 2**

The observations from empirical data analysis indicates that youth of India is smoking on an average 4 cigarette per day and the average age at which cigarette smoking starts is 20 years. Stress buster and addiction came out to be the main reasons of smoking (ref.: table 1)

**Factor Analysis**

**TABLE 3  
KMO AND BARTLETT'S TEST**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.561
Bartlett's Test of Approx. Chi-Square	299.316
Sphericity df	45
Sig.	.000

Source: Prepared by researcher from primary data

KMO test identifies the adequacy of sample of 124 to be sufficient to run this analysis (refer table 3 ) followed by Bartlett's test of Sphericity for interdependence of the observed variables.

Social factors explain 22.16 percent of the variance whereas other three factors explain approximately 15 percent of the explained variance each. A total of 69.4 % of the variance is explained by all the four factors taken together.

**TABLE 4**  
**SUMMARIZED EXTRACTED FACTORS**

<b>Observed Variables</b>	<b>Individual Explained variance</b>	<b>Factors/Component which influences smoking</b>			
		<b>Social factors</b>	<b>Awareness</b>	<b>Gov. intervention</b>	<b>Market factors</b>
Enhancement in social status	.847	0.912			
Influential People Smoking	.720	0.822			
Peer Pressure	.481	0.651			
Anti-smoking warnings on Digital Platform	.725		0.846		
Images on cigarettes pack	.645		0.762		
Awareness	.529		0.439		
Ease of Access	.780			0.854	
Implementing Ban on public smoking	.754			0.712	
Availability of Substitutes	.694				0.788
Increase in Price	.675				0.772
<b>Total explained variance</b>	<b>68.49</b>	<b>22.16</b>	<b>15.66</b>	<b>15.454</b>	<b>15.216</b>

Source: Prepared by researcher from primary data

### **Analysis of Table 3 and 4**

#### *Factor Analysis*

A wide range of observed variables (refer table 4) were considered to see the effect on smoking habits of youngsters. Principal component analysis and Varimax rotation is used for extraction of latent factors and summarization of data thereafter. Extracted variables are social factors, awareness about the ill effects, government intervention and market factors (availability of substitutes like Nicotine tablets as prescribed by physician or patches) affect the smoking behavior of an individual. Social factor is an encouraging factor, with maximum (21.16%) contribution of enhancement of social status. Awareness (15.66%), government intervention (15.45%) and market factors (15.216) are some of the discouraging factors towards smoking.

**TABLE 5**  
**HI SQUARE TEST**

<b>Research Hypothesis</b>	<b>P value</b>	<b>Decision on research hypothesis</b>	<b>Conclusion</b>
RH1	0.001	Retained/ significant	There is relationship between age and reasons of smoking
RH2	0.000	Retained/ significant	There is relationship between gender and reasons of smoking
RH3	0.083	Rejected/ Insignificant	There is no significant relationship between time of start in cigarettes and reasons of smoking
RH4	0.005	Retained/ significant	There is relationship between no. of cigarette and reasons of smoking
RH5	0.000	Retained/ significant	There is relationship between start time and family income
RH6	0.002	Retained/significant	There is relationship between family income and no. of cigarettes smoked/day
RH7	0.097	Rejected/ Insignificant	There is no significant relationship between starting age and no. of cigarette
RH8	0.094	Retained/ significant	There is relationship between age and no. of cigarette smoked in a day
RH9	0.131	Rejected/ Insignificant	There is no relationship gender and no. of cigarettes
RH10	0.043	Retained/ significant	There is significant relationship between price and no. of cigarettes/ day
RH11	0.82	Rejected/ Insignificant	There is no significant relationship between family income vs tried quitting
RH12	0.398	Rejected/ Insignificant	There is no significant relationship between current age vs tried quitting
RH13	0.014	Retained/ significant	There is significant relationship between starting age vs tried quitting
RH14	0.739	Rejected/ Insignificant	There is no significant relationship between gender vs tried quitting
RH15	0.064	Rejected/ Insignificant	There is no significant relationship between no. of cigarettes smoked/day vs tried quitting
RH16	0.000	Retained/ significant	There is significant relationship between qualification vs tried quitting

Source: Prepared by researcher from primary data



**TABLE 6**  
**CONSOLIDATED CHI-SQUARE TABLE**

<b>Research Hypothesis</b>	<b>Variables under study</b>	<b><math>\chi^2</math> value</b>	<b>df</b>	<b>Asymp. Sig. (2-sided)</b>
	<b>Reasons of smoking</b> (Addiction, Stress Buster, Networking, Peer Pressure,)			
RH1	Age vs Reasons of smoking	32.71 <sup>a</sup>	12	0.001
RH2	Gender vs reasons of smoking	20.089 <sup>a</sup>	4	0.000
RH3	Time of start of cigarettes vs reasons of smoking	13.936 <sup>a</sup>	8	0.083
RH4	No. of cigarette vs reasons of smoking	28.075 <sup>a</sup>	12	0.005
	<b>Start time vs family income</b>			
RH5	There is relationship between start time vs family income	34.347 <sup>a</sup>	6	0.000
	<b>No. of cigarettes/per day</b>			
RH6	Family income vs no. of cigarettes/per day	56.443 <sup>a</sup>	30	0.002
RH7	Starting age vs no. of cigarette	10.734 <sup>a</sup>	6	0.097
RH8	Current Age vs no. of cigarettes smoked /day	14.907 <sup>a</sup>	12	0.094
RH9	Gender vs no. of cigarettes	5.629 <sup>a</sup>	3	0.131
RH10	Price vs no. of cigarettes smoked /day	21.579	12	0.043
	<b>Tried quitting smoking</b>			
RH11	Family income vs tried quitting	6.715 <sup>a</sup>	3	0.82
RH12	Current age vs tried quitting	2.962 <sup>a</sup>	3	0.398
RH13	Starting age vs tried quitting	8.536 <sup>a</sup>	2	0.014
RH14	Gender vs tried quitting	0.111 <sup>a</sup>	1	0.739
RH15	No. of cigarettes smoked/day vs tried quitting	0.727	3	0.064
RH16	Qualification and tried quitting	23.710	3	0.000

Source: Prepared by researcher from primary data

#### **Analysis of Table 5 and 6**

Chi-Square test is used to check the framed hypothesis about association among various Explanatory variables, which is summarized in the table 5. Demographically, factors were considered in order to see the effect on various aspect related to consumption of smoking. The study reveals that as the age advances people smoke more as a stress buster. It is also observed that as the family income increases, consumption of cigarette may also increase. No. of cigarettes consumed in a day has no relation with present age but it shows a positive relation with starting age and inversely related with price of cigarettes as price increases it has a negative impact on smoking. There is significant relation found between starting age, qualification and tried quitting smoking.

## CONCLUSION

Since economy of a country depends on its youth, it is vital to take extreme care of the youth and keep them away from any detrimental agent that can hamper the development of the nation. It is observed in this study that the pattern of cigarette consumption amongst the youth is higher i.e. dangerous trends for India with majority of young population. It is also observed that as the family income increases, consumption of cigarette may also increase and price increase have a negative impact on smoking that requires effective taxation and pricing policy. The dominant discouraging factors influencing people's efforts to quit smoking are awareness and government intervention. Evidences from available studies suggest that access policies for cigarettes needs to be enforced effectively to curb the consumption of cigarettes amongst youth.

The study does not cover all forms of tobacco consumption across different income brackets and government policies in this regards that leaves scope to other researchers to take it over.

## ENDNOTES

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