**EXTENDED ESSAY IN MICROECONOMICS**

***“To what extent has the Delhi Government’s interventions have been effective in minimizing the externalities caused by consumption of oral tobacco in the city from 2015-2020?”***

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**I. INTRODUCTION**

Negative externality is the cost suffered by a third party due to economic transactions where producer and consumer are the first and second parties, while third parties such as individual, organization, resource, or property owner are affected indirectly. Similarly, oral tobaccos are harmful to society as they produce negative externality. Externalities lead to market failure because the true costs and benefits of a product or service are not reflected accurately by price equilibrium of that product or service. Market failure means a situation in which goods and services are not allocated efficiently by the free market, and that finally leads to a net social welfare loss. So, to address this problem, institutions and governments take up different remedial measures. In recent times, media was abuzz after the state Government in Delhi clamped a blanket ban on all types of oral tobacco. According to the news by Indiatoday.in, in April 2016, Delhi Government’s ban....” “...chewing tobacco”. Delhi administration’s Food Safety Department had issued the ban order for curbing the menace of rising cases of diseases from tobacco chewing in the regions of Delhi (“All Forms....”, ANI). So, identifying the need to control and reduce the negative externalities arising from the consumption of oral tobacco, Delhi Government has introduced some interventions. Therefore, the intended economics essay aims to discover as to what extent the plan of the Delhi Government has been effective.

Demerit goods are goods or services whose consumption is often unhealthy and degrading; they are considered to be socially undesirable as they leave negative effects on consumers. For example, cigarettes, alcohol, and various drugs are some examples of demerit goods. Similarly, chewing tobacco has various health concerns and leads to diseases on the human body due to prolong chewing and consuming tobacco (Chewing tobacco facts; Stöppler & Davis). According to World Health Organization (WHO), tobacco takes lives of above 8 million people each year, and this involves 7 million deaths from direct tobacco usage, while around 1.2 million are the result of non-smokers but being exposed to second-hand smoke. In the majority of the incidences, due to chewing of tobacco, the ill effect turns into oral cancer (Tobacco Effects). Factually, as per the records of (Health risks of....; Mayoclinic.org,) the rate of mortality for tobacco chewing related cancers in the oral cavity is more than 8 million each year according to WHO report of 2019. In the context of India, there were 784,800 cancer deaths in 2018, according to a study, and the patterns are dominated by tobacco-related head and neck cancers, oral cancer in men (Sharma, 2020). There is no question of any form of confusion or ambiguity from the latest ban, affecting either the tobacco manufacturers or sellers (“Delhi bans”.......; Telegraphindia.com). Other than this, the offenders are also entitled to strict punishments and fine. The ban came into force on April 15th, 2016. So, naturally, the implementation of the ban is well more than three years from the time of writing this essay.

Nonetheless, it is not possible to confirm is the ban successful or not in fulfilling its objectives. This leads to investigating further on the topic as to whether the ban has been successful or not. This made our research topic as

***To what extent has the Delhi Government’s interventions have been effective in minimizing the externalities caused by the consumption of oral tobacco in the city from 2016-2020?***

**Hypothesis:** The hypothesis of this research is Delhi Government’s latest prohibition on chewable tobacco has been not only effective but also successful in disciplining the mass consumption of this dangerous and killing chewable tobacco.

II. **METHODOLOGY**

During this study, both primary and secondary data were duly and ethically collected from the respective sources. As primary data will give insights into the related issue or problem using techniques such as surveys, interviews, and questionnaires, while secondary data will provide easy access to already conducted research on the topic. A survey was conducted among the inhabitants of the union territory, i.e., Delhi, for gathering primary data. The random sampling method was used for determining samples as it is the best method of selecting a sample from the population of interest. Samples were collected from the entire length & breadth of Delhi, such as South, West, East, and North. The sample size was 30 participants, representing each of these four areas, totaling 120 participants because it was thought that this sample size would effectively reveal the data and answers for which the research is intended for. Moreover, the participants chosen were mainly oral tobacco users and other tobacco-related products. They all have a history of using such products for more than a year so that it was possible to identify as to whether they have decreased consumption of tobacco after the ban. The survey was conducted through ‘in-person’ questionnaires distributed to the participants that were from varied income groups, such as drivers of car auto-rickshaw, bus, domestic help, and then washer man, guards, peons, etc., who all were likely to be the main consumers of ‘chewing tobacco’ while other forms of gutkha users belonging from middle-class people were also included and high-class people, youth who have used e-cigarettes. So, it is likely that most of the strata of the Indian society are either directly or indirectly consuming tobacco-related items. The survey questionnaires were designed to know about the participants’ patterns and habits of consuming oral tobacco and the after-effects of these consumptions. Besides this, one more survey was held among 100 Pan shops in north and west of Delhi. The survey’s main purpose was to know whether oral tobacco is still on sale in these areas, even after the ban.

These apart, different theories of Economics, such as price, demand, and demand’s income elasticity, market failure government intervention, and consumption’s negative externalities, have also been incorporated in this essay, as the secondary research’s part. All these helped proceed with the research and answer the question(s) of the research.

**3. FINDINGS**

1. **Government of Delhi’s sale and consumption ban of Chewable/Oral Tobacco in the union territory**

All types of possession, sale, and purchase of oral tobacco were banned in Delhi since its promulgation on 15th April 2015 (“Deli govt. bans ….” Indianexpress.com). According to the ban, the offender had to be punished up to 6 months of imprisonment and fined up to INR 300,000 (“Delhi govt. bans…”; Timesofindia.com). A total prohibition on tobacco products’ producing, stockpiling, trading, distributing, bargaining, and vending had clamped in every nook and corner of Delhi. The blanket ban has been made valid for all sorts of arrangements, such as mixed, flavored, scented, and what may be the cataloging like pan, masala, gutkha, scented/flavored, or any form of tobacco.

Above all types of bans on most of the tobacco and related products were exercised by the Government and Health and Safety Department to deter users from consuming these products. So, before investigating as to the extent of the effectiveness of such a ban, it is necessary to identify as to what policy and regulations are there and what punishments are there if anyone breaches the ban.

# Consumption of Chewable/Oral Tobacco causes Diseases and have economic implications as well

As per the reports of WHO, an individual’s number using or consuming gutkha is galloping very fast in India (“Short-term acute ......” Itagi) because WHO has predicted tobacco use in India will be the principal cause of death and disability in the year 2020. In India, as per various researches, there is a strong connection between oral cancer and chewing tobacco, nicotine, and oral cavity related precancerous lesions (“Smokeless Tobacco .....”, Betobaccofree.hhs.gov). Oral cancer, as one of the body ailments, takes away the lives of 2% of the female and 4% of the total male population in India (“Effects of ...., NHP.gov.in).

Due to tobacco abuses, cancers, such as leukoplakia and oral mucosa are the common incidences (“Health risks ..”, Mayoclinic.org). Other types of cancers are hyperkeratosis, development of tongue tumors, even mild dysplasia are the names, attached with these body conditions for the oral tobacco uses (“Smokeless Tobacco...”, CDC.gov). There are other oral tobacco-related diseases, such as fillings and teeth discoloration, bad breath or halitosis, dental caries, teeth abrasion, leukoplakia, gum recession, oral cancer, and nicotine dependence (“Effects of ......”, NHP.gov.in). Diseases like gum cancers, pharynx, larynx, mouth cancer, and esophagus are the names of different types of oral cancers or its genre (“Causes of ..…,” Cancer.org).

The economic implications of tobacco are twofold. The first one is the costs of using tobacco, and the other relates to costs of reducing is the presence among smokers. Apart from the purchase cost of tobacco, it has far-reaching economic and health impacts on individuals, businesses, taxpayers, and families. Therefore, costs of smoking can be classified as direct, indirect, and intangible. Direct costs include expenses of treatment because of illness due to excessive smoking (explained in section d.), and other health care expenses. Indirect costs are borne by society in public places in the form of second-hand smoking, loss of productivity (this cost is borne by employer as with time they will be noticing decreased productivity of employees): sickness benefits, smoking-induced fires, litter are another example of negative externalities.

# Tobacco Consumption’s Negative Externalities

Both consumption and production of tobacco are known as the externality, which comes in the form of tobacco chewing’s side effects, and can be both harmful and beneficial for society (Pettinger, Definition of Externalities). Some of the stakeholders are consumer, producer, individual, organization, property owner, or resource.

External benefits can be yielded from the positive externalities, which may roll out as the production’s spin-off and exchange as increased demand for tobacco and other related products will increase the production of these products, raising employability in these sectors. If the externalities are negative, it can cause societal damage as the slice of exchange mechanism or production process (“Negative Externalities....”, Riley). As discussed before, externalities are of two kinds, one is negative, and the other one is positive. Similarly, negative externalities are also of two types 1) Production’s negative externalities and 2) Consumption’s negative externalities.

Production’s negative externalities take place in case a producer creates external costs. To exemplify it, because of production activities, water, and air pollution can be caused by a cement factory. Conversely, Consumption’s negative externalities are caused due to the consumers’ created external costs. For instance, people in Delhi are addicted to different types of chewable tobaccos. To exemplify it, due to smoking, smokers are subjected to be affected by a respiratory or related health problems. Non-smokers also become passive victims. When smokers enjoy smoking, non-smokers become victims due to passive smoking or smokes around, causing various health issues. Now, this shows the importance to why the government needs to control these externalities and as to what groups of stakeholders to be widely effected with the ban on tobacco products.

As already discussed that there are negative externalities in terms of health issues, economic impacts, and decreased productivity of individuals making it crucial to control negative externalities. With the introduction of such duties and taxes increase the price of these products, it has lessened down the price of products to a vast level. Moreover, the Government of India recently has even banned the sale and production of tobacco.

**d. Implications of the ban on the consumption of tobacco**

The prohibition of Electronic Cigarettes Bill 2019 has made it illegal to consume, produce, manufacture, import, export, distribute, transport, sale, advertise, and store all e-cigarettes. As per the assessment of government, 12 lakh deaths are reported each year, and the government has to hold liability for these deaths. This has raised debate as the government has also been earning dividends from such sales of tobacco, so it is the social responsibility of government to compensate to families, and those suffering due to cancer or other smoking relates illnesses. The suit demanded that about 60 lakhs people dying during the tenure of the current government in the last five years should all be considered for compensation. This sums to Rs 3 lakh crore as a pool for disbursement to the affected one (PTI, 2019).

Cigarettes make a small part of the tobacco market, and this market is dominated by ITC Ltd, accounting for more than 85% of sales. This makes the cigarette industry well-organized and highly concentrated. Secondly, the Government of India will benefit from the ban directlybecause the government and Life Insurance Corporation of India together have a stake of more than 28.6% in ITC Ltd. In contrast, a high tax on cigarettes (64% excise duty, 28% GST, and 5% cess) brings tax revenues of almost 86% from tobacco. So, it will deprive the government of the important stream of revenue (Rajgopalan, 2019).

Regarding the price elasticity, tobacco products’ demand is price inelastic,which means tobacco consumption decreases by a lesser percentage with an increase in price. This is simply because users become addictive. Due to the elasticity factor, the graph seems to be variant with consumer burden and seems to be increased in comparison to the buyer burden. The representation concerning such has been represented with the help of the graph given below.

Price of tobacco

**S + TAX**

S

Pr2 BURDEN ON CONSUMER

GOVERNMENT REVENUE

Pr1 Welfare loss reduced

Pr3

D BURDEN ON PRODUCER

Qu2 Qu1 Quantity of tobacco

**Graph: Impact of low PED on Negative Externalities of Consumption**

Because demands concerning tobacco consumption are inelastic, making the shape of curve D like in the above picture. This has been a result of the tax imposition by Delhi’s government and makes the supply curve be titled toward S-Tax. The area concerning the consumer burden has been shown with the help of a rectangle that has been drawn amid Pr1 and Pr2 and is higher in comparison to the burden on the producer. It is for the reason that consumers seem to be more addicted to tobacco and increases the chance of consuming the tobacco product.

The above finding shows that it is possible that addictive users of tobacco will anyhow find a way to source and consume tobacco either legally or illegally. In the absence of self-realization of the ill-effects of tobacco, the government ban and any control exercises will not be fruitful. Therefore, the above explanation and illustration represent that tax and duties increment doesn’t have much consequence on the consumption and sales of demerit products that introduce the negative externalities. About such, the government is responsible for taking the adequate steps of banning the selling and in the taking of tobacco as it tends to entirely abolish the welfare loss about society, and thus, there would be no weight loss being encountered.

**Primary Research Results – Random Survey upon residents of Delhi to know the following things**

**e. Why was the ban necessary?**

The survey was conducted to discover the consequences of chewable tobacco, causing the general people that reside in Delhi. Along with such, it tends to understand whether the ban is being successful or not in reducing the consumption of Tobacco. The outcome obtained through the survey will be discussed in the next section of the report.

The initial question asked people was whether they consume tobacco or not. The answer of the individual is being represented with the help of the graph given in Appendix 1. It has been found that 50% of the surveyed people have stopped their habit of chewing tobacco. However, 30% of the surveyed individual claims that individuals never had tobacco consumption, and a 20% claim of consuming oral tobacco. Despite the ban, this 20 % is the group of people who have been getting tobacco products from the shops that are selling these products illegally.

After such, inquiry is made for the reason following the consumption of tobacco (Appendix 2). This query was only asked the individual that claims to have tobacco chewing habit that was 20% of the total individual surveyed.

Now, the question was enquired to people that say they don’t consume tobacco (Appendix 3). The chart shows the different causes due to which individuals do not consume tobacco. Warnings through advertisements and not willing to consume tobacco (25%) are the major reason. The other question surveyed to the individual having past experiences with tobacco consumption; however, at recently quitted such habit. It was noticed that most of the users quitted this habit because of negative advertisements, and as the government has made, it crucial to introduce the clip of Mukesh (the man suffering from oral cancer because of consuming tobacco and gutkha). Also, banning and making it illegal to involve in any activity related to tobacco are also some factors encouraging the individual to quit tobacco.

The other question that was asked to them was the grounds for consuming tobacco in the past (Appendix 4). The outcome revealed the fact that most individuals use to consume chewable tobacco in the past due to addiction at such an instance. This question asked was direct to the same category of individuals enquired in the above question.

Now, the question was related to the reason due to which they stopped consuming tobacco at the present instance (Appendix 5). It has been found that half of the surveyed individual that quitted their habit of consuming tobacco was because of a ban by the government. About such, 20% of people quit such habit due to pictorial warning on the packets.

The other query was enquired to the individual that still consume tobacco. According to National Calamity Contingent Duty (NCCD), it is highly likely for India to become a preferred destination for “smuggled cigarettes.” This has incentivized illegal cigarette trade operators. It has also been estimated that illegal cigarette in India has been growing consistently and accounts for one-fourth. So, it seems that it is probable that there may be a black market of tobacco and its related products. Research respondents have also confirmed the existence of mobile vendors and some shops selling loose forms of tobacco products (Chart 7). This makes the government plan ineffective as no policy or rules will work if there will be a loophole in the system or the market.

The query was asked whether the tobacco is available easily in the shop after being banned (Appendix 6). The result shows that 60% of people say that oral tobacco is not available easily in the market. However, about 30 percent of the surveyed individual’s claims that are easily obtainable, and the remaining 10% didn’t give a response to such a questionnaire.

About such a response, the next question was asked that how you still being able to buy chewable tobacco after being banned by the government (Appendix 7)? The result shows that 50% of the individual said that it has been available by illegal means that indicate that tobacco products are still accessible at the shop. 25% of the people said it is being available by mobile vendors who carry tobacco in the bag and move around places for selling them. This shows that government policy has not been that much enforceable as consumers are still able to access tobacco. This makes government policy to fail.

Regarding 18 years, the age restriction is more symbolic because small vendors do not even know about it. Even if they know about it, there are minimal chances of following. People were also asked for their opinion on the ban of tobacco by Delhi’s government (Appendix 8). Most of the people around 65% support the government initiative of banning the tobacco product; however, 25% seems to be against the regulation of the Government as it has impacted related tobacco industries and has caused unemployment as well.

After getting such a response, it was enquired to each individual whether they feel right in government decision to ba tobacco products. The outcome resulted in mixed feelings as tobacco-related businesses expressed aggression, while informed and knowledgeable users have appreciated the move of the government. As India’s public health community had applauded decisions to exemplary bean measures to protect public health, on the other hand, one of the officials of the Tobacco Board of India traveled to Washington to attend a conference on the tobacco industry (Gupta, 2019).

**f. Survey results obtained from the 30 Pan Shops in Delhi to show the impact of the ban (Appendix 9)**

The survey has been conducted by visiting 30 pan shopkeepers that are located in the main commercial and shopping areas of Delhi as being represented in the map of Appendix 9.

The survey results represent the fact that the sale of oral tobacco has dropped considerably after the ban being introduced by the government in Delhi. It shows that the government initiative of banning tobacco products considerably affects the sale of tobacco products in Delhi. Along with such government policies and fine makes 80% of the shopkeeper not selling oral tobacco that represents the reason and fear of prosecution by the official authorities.

From the overall response, it can be said that the ban by the government on tobaccoproducts seems to be major reason for less consumption of tobacco by an individual. However, even after the ban some addicted individual is still finding access to tobacco illegally. Now the point of concern is how to make the ban effective completely.

# CONTROL MEASURES

# At one side where Government plans to introduce a ban on the other hand, official is reported to attend a conference on tobacco in Washington. This exemplifies the lack of a coherent approach by the government towards control policies and programs of tobacco. Though the trip was cancelled later on it shows the inability of the government to reconcile the larger concerns towards harms on public health because of the tobacco industry versus the gain harvested from the trade of tobacco economically. Due to the behaviour of the tobacco industry, the government may be reluctant to regulate or adopt a strict measures to completely eradicate its use. For current Prime Minister Narendra Modi, to succeed in curbing this issue caused by tobacco, stringent rules, and hard decision are required (Gupta, 2019)IV. CONCLUSION

Data obtained through primary research represent great refuse in the consumption of oral tobacco but not completely. The research has suggested that the ban is effective and successful in attaining the aim and has reduced tobacco usage considerably.

However, the study does not comprise the impact of the ban on the seller and manufacturer of tobacco, the impact of ban on producer profit, and revenues, except it has acted as a demotivation tool for not storing and selling tobacco products.

The final words can be said that the government of Delhi has interfered with lessening down the negative issues of consuming tobacco through the common public. Instead of such, the forbid has not been entirely successful for the reason that several banned substances still seems to be available through illegal means. This can be assumed as stretched as the banned products are available in the market; it can’t represent the total consequence of ban along with negative externalities available in the economy. But this seems to be the most effective process as it shows a major reduction in not only the sale but also in the consumption of oral tobacco products. The conclusion can be extended with information that the interventions of the government of Delhi have been quite effective in reducing the externalities caused by oral tobacco in Delhi. However, still, a lot of work needs to be done to lower the menace of oral tobacco consumption , the capital and more stringent policies can be a good idea for the same.

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**APPENDIX 1: Consumption of tobacco**

**APPENDIX 2: Reasons for chewing tobacco**

**APPENDIX 3: Reasons due to which people avoid tobacco**

**APPENDIX 4: Reasons to consumer tobacco in past**

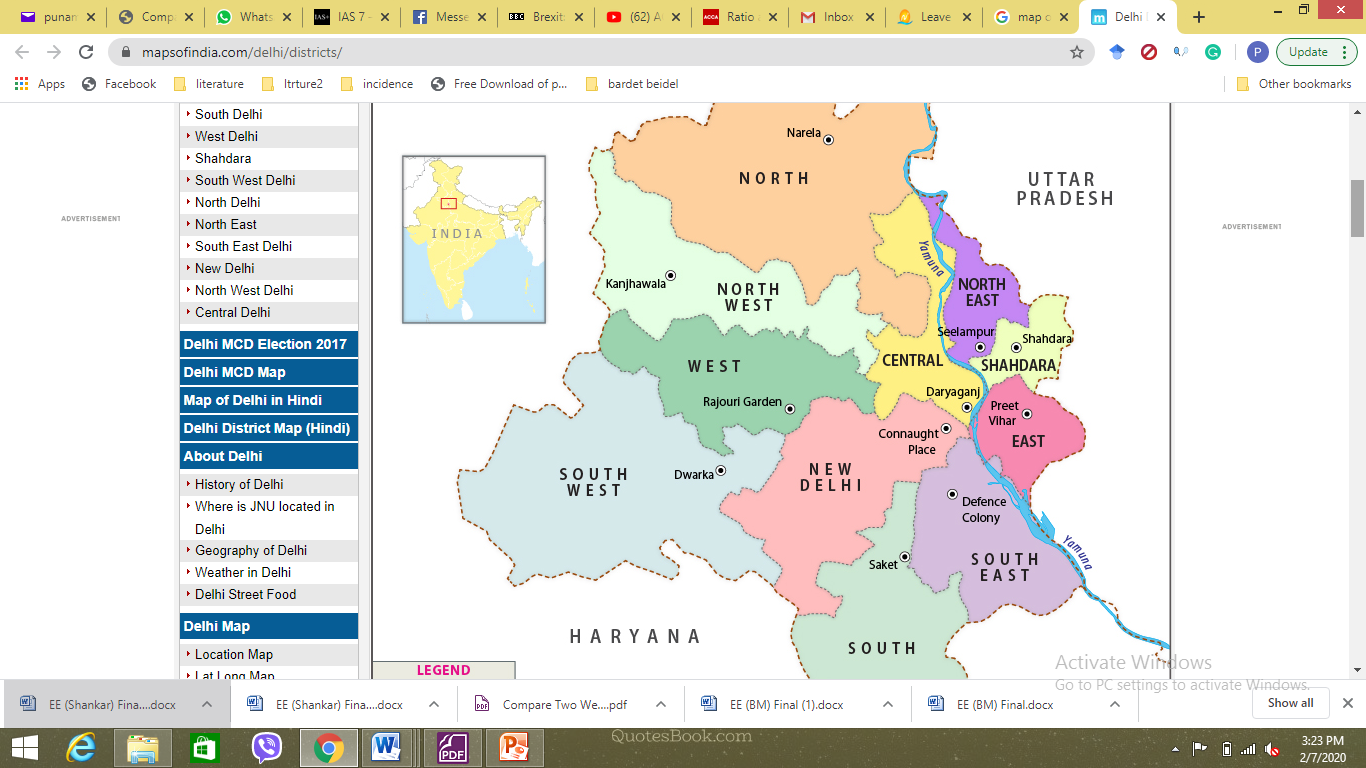
**APPENDIX 5: Reasons to quit tobacco chewing habit**

**APPENDIX 6: Is tobacco easily available even after the Government’s ban?**

**APPENDIX 7: How to purchase tobacco even in the ban of Government?**

**APPENDIX 8: Is government decision appropriate in banning tobacco?**

**APPENDIX 9: Map of Delhi**



Pan shops in North side

Pan shops in West side

Pan shops in East side

Pan shops in South side