

THE PRICE OF SMOKE: ANALYZING THE SOCIOECONOMIC AND ENVIRONMENTAL BURDEN OF TOBACCO IN PAKISTAN

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ABSTRACT

This qualitative study explores the socioeconomic and environmental burden of tobacco in Pakistan. It reveals a complex interconnection between tobacco consumption, poverty, public health challenges, and environmental degradation. The findings show that tobacco use places a significant financial strain on low-income households by diverting essential spending away from food, education, and healthcare. Additionally, the rising costs of treating tobacco-related illnesses intensify existing health disparities. Environmentally, tobacco cultivation contributes to deforestation, soil exhaustion, and widespread pollution. These pollutants, which include harmful chemicals such as benzene, toluene, aldehydes, carbon monoxide, and sulphur oxides, not only damage terrestrial ecosystems but also pose serious risks to aquatic life and livestock. The study highlights the urgent need for more effective regulatory frameworks, noting how interference from the tobacco industry hampers public health policymaking. It concludes by calling for comprehensive anti-tobacco initiatives, public education campaigns, and the promotion of sustainable, eco-friendly alternatives to tobacco production. Where outright bans are not feasible, the study recommends improved waste management to minimise environmental harm.

INTRODUCTION

Pakistan is a country where the usage of tobacco has increased over the past decades. Pakistan is considered a country that has increased its use of tobacco. About 22 million adults are active, and some are passive smokers. A large population is involved in smoking. Out of these 22 million adults, approximately one-third are male. Besides males, a large population of females is also engaged in such addictions. About 5.7% of women smoke in Pakistan. Besides smoking, there are also various alternatives introduced, such as Gutka, Naswar, and Pan.

Along with adult men and women, large populations of young teens are also involved in these kinds of illegal activities. According to an estimate, about 61% of young teens in Lahore and 14.1% of young teens in Karachi are involved in smoking issues. These kinds of activities can pose a risk to human health. Smoking is not only harmful to humans and the people who do this, but it also has a very bad impact on the environment. It can be very hazardous for the environment and other living things around.

According to estimates and data, about 100,000 deaths are recorded and observed in

Pakistan per year due to tobacco and cigarettes. Different kinds of cancers, such as lung cancer and others, can be caused due to continuous smoking. Moreover, many cardiovascular diseases and several respiratory diseases are also caused by smoking. Tobacco can cause many health and economic consequences. Pakistan is recognised as a significant exporter of tobacco products. More than 75,000 tobacco plants are grown all over Pakistan. Out of this, about 45,000 are grown and produced in Khyber Pakhtunkhwa. Tobacco smoking is legal, but due to different kinds of circumstances, it is banned in Pakistan. If we talk about the stats daily, more than 177 million cigarettes are being consumed by consumers.

According to a medical report and analysis, many deaths are caused due to different kinds of cancers. The most prominent one is lung cancer. Due to the increased number of active and passive smokers, a large number of deaths occur due to smoking. Some carcinogens enter the body via smoking, and when that smoke is inside the body, the lungs are damaged. By considering such circumstances, the government ordered a ban on tobacco and all such products. However, due to the economic decline, such products cannot be completely banned in Pakistan. According to another government statement, smoking is prohibited in public places, workplaces, and family areas.

1.1 Manufacturing of Cigarettes

Pakistan is referred to as the 10th-largest country in terms of tobacco manufacturing. Pakistan is a significant exporter of tobacco leaves and related products. Almost 100,000 tons of tobacco are being produced by Pakistan. After the processing of tobacco leaves, cigarettes are manufactured. After the manufacturing of cigarettes, they are packed.

There are various agricultural sites for tobacco processing. These sites include Khyber Pakhtunkhwa, Mardan District, and Nowshera District. There are several industries related to tobacco in Pakistan. However, the largest and most common one is the Pakistan Tobacco Company (PTC). This company has two factories. One is present in Nowshera, and the other one is present in Jhelum. It is essentially a subsidiary of British American Tobacco. The main headquarters of PTC is in Islamabad. Its complete revenue is approximately Rs. 125 billion. Moreover, they are also planning to establish their BPO hub, which will serve both the Asia Pacific and Middle East regions. According to an assessment, in the early 2000s, PTC's market share exceeded 50%. However, considering today, it is now greater than 60%. In terms of output and employment, the industry has consistently proven to be a less significant contributor to the economy, as shown in Table 1.

Table 1: Share of Tobacco Industry in GDP

Years	Market share
2010-2011	1.63%
2017-2018	1.11%

According to Table 1, the market share of the tobacco industry has been in continuous decline for several years. Regarding the years 2010-2011, the market share was 1.63%. However, according to recent data, the share declined to 1.11% before the COVID-19 pandemic. However, from 2020 to 2021, the share faced a severe decline due to the pandemic. Since all factories and industries were closed as per government order, manufacturing declined, and consequently, exportation also decreased. Due to a severe decline in the tobacco industry's share, the

cigarette shares also decreased from 0.5% to 0.3%.

1.2 Consumption of Cigarettes

The usage and consumption of cigarettes have increased over the past few years. Due to advancements in social media sciences and other involvements, a large number of young people have become involved in severe illegal activities.

Dangerous and harmful to their health and the environment, too. If we talk about Pakistan, here, cigarettes are usually sold filtered tipped, having about 85% of Virginia and 10% of

American blend tobacco. The consumption rate is calculated as:

Similarly, in the case of per capita consumption of cigarettes, it is calculated as:

Table 2: The Relation Between Cigarette Price and Its Per Capita Consumption

Years	Population (millions)	Consumption of cigarettes (billions)	Per capita consumption Of cigarettes. (number)
2014-2015	189.9	62.7	330
2015-2016	193.6	53.5	276
2016-2017	197.3	34.4	174
2017-2018	201.0	59.1	294

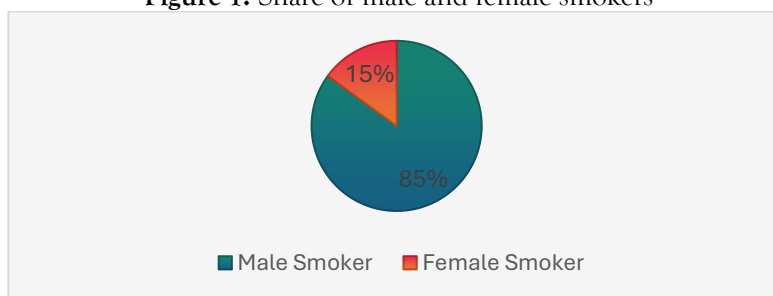
In Table 2, the actual relationship between production, price, and consumption of cigarettes is discussed. Such as, in 2014-2015, the consumption per capita was 330, and in 2015-2016, it declined to 276. Similarly, in 2016-2017, it continued to decline to 174. However, after 2017, in 2018, its consumption per capita began to rise, and it increased to 294 in a single instant. It was a tragic and incredible increase in its consumption. In 2021, it reached a level that is extremely hazardous to humans, yet they continue to consume it.

1.3 Tobacco Usage and Its Consequences

Annually, 6 million deaths occurred per year worldwide. Most of the deaths occur in middle-income countries, where the income is very low. Those people are not that well educated, and they do not know what the impact of such activities as tobacco smoking, ingesting gutka,

pan and answer. According to a report, between 1997 and 2008, approximately 55% of tobacco was consumed. Afterwards, in 2008, there was a great peak of tobacco smoking. Cigarette smoking was at its highest peak. Although several deaths also occurred due to this, people still used to smoked in large quantities. It is also expected that by the end of 2030, there might be 8.3 million deaths due to this. Besides this, most of the deaths occur at a young age, ranging from 25-40. In studies, it is stated that, in high-income countries, where the income of every single individual is high and maximum, those people who quit cigarette smoking before the age of 40 have a 90% chance of death. Men are more likely to be addicted to cigarette smoking as compared to women. However, now, many female populations are also addicted to smoking, as shown in Figure 1.

Figure 1: Share of male and female smokers



1.4 Supply of Tobacco Products in Pakistan

Pakistan is a significant net exporter of tobacco leaves. In Pakistan, more than 3 quarters of the tobacco is produced. Various sites in Pakistan are involved in the manufacturing and supply of such products. Most of the tobacco and tobacco-based products are made in Khyber Pakhtunkhwa. Besides this, there are various other reservoirs to produce tobacco.

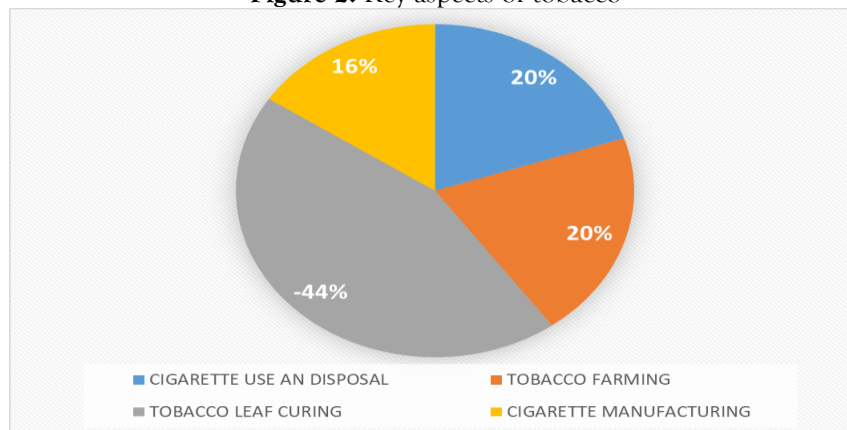
Pakistan Tobacco Company is one of the largest and most significant producers of tobacco products, utilising the manufacturing of tobacco plants and leaves.

For the manufacturing of various tobacco products, tobacco farming is done. Throughout Pakistan, they are grown and produced by using virgin. In the case of light sun-cured Virginia, it is specifically designed for use in water pipes. If we talk about

Dark Sun cured Virginia; it is manufactured for use in Naswar. Besides all the pros and cons, tobacco is also considered a minor crop in the agricultural sector. Many crops are being

produced using various fertilisers, and similarly, tobacco is also considered a crop, albeit a minor one.

Figure 2: Key aspects of tobacco



1.5 Demand for Cigarettes

The demand for cigarettes fluctuates. Sometimes, demand increases, and sometimes it decreases. According to a survey, it is estimated that in high-income countries, where the income per person is high, demand usually increases. Whereas, if we consider middle-income countries, where the income per person is not high enough to meet their needs, they typically have a low standard of living. Since their income is not high, they cannot afford extra activities and other unnecessary things in life. In such countries, when the inflation rate increases, demand for these products decreases. An important factor in the reduction of demand for a product could be an increase in

Taxation of that product. When there is an increase in taxation and the price of a product, it will reduce the demand for that product.

1.6 Supply and demand chain concerning prices

In any area or country, when there is no inflation (when prices are lower), the supply is unlimited. Supply is done in stock. If the supply of anything is increased, ultimately, the demand for that object would decrease.

On the other hand, when the inflation rate increases (prices are very high), the demand for that object decreases. Since not everyone can afford it, they cannot meet the cost. Ultimately,

when demand decreases, the supply will also decrease.

The tobacco taxation structure is very complex. It is typically done with a significant price difference among different cigarette brands and their various tobacco and cigarette products.

1. Literature Review

Tobacco smoking significantly impacts public health, the environment, and economies globally, particularly in low- and middle-income countries where 80% of smokers reside (Sančanin & Penjisevic, 2024). It is the leading preventable cause of disease and death, contributing to approximately 20% of total adult mortality, with potential life expectancy gains of 2.4 years for men and 1 year for women if smoking-related deaths were eliminated (Rentería et al., 2016). The environmental consequences include air pollution and deforestation, exacerbated by tobacco cultivation and production (Madanhire & Mbohwa, 2019). Furthermore, smoking induces oxidative stress, leading to various health issues, including respiratory and cardiovascular diseases (Emma et al., 2022). Despite the availability of treatment options, the reach and effectiveness of smoking cessation interventions remain limited, necessitating innovative strategies to enhance their impact (Baker & McCarthy, 2021). Overall, comprehensive public health

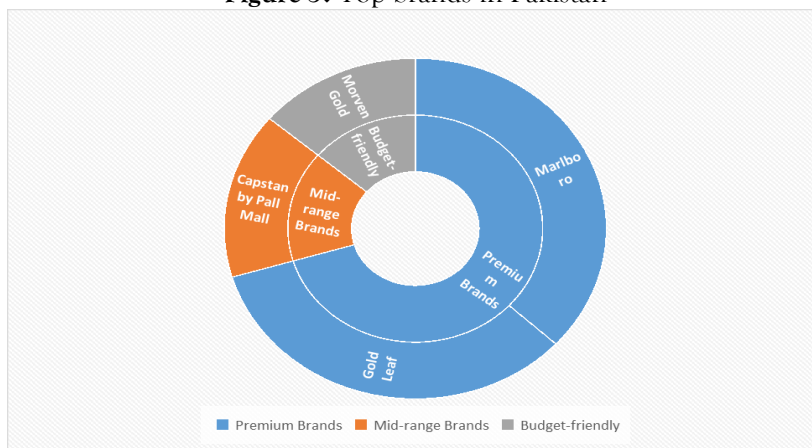
initiatives and stricter regulations are crucial for mitigating the multifaceted effects of tobacco use (Sančanin & Penjisević, 2024; Madanhire & Mbohwa, 2019).

2. Demand in Pakistan:

In the case of Pakistan, low-brand cigarettes are usually preferred due to their lower price. Pakistan is a developing country, and its people generally have a lower standard of living. The living standards of Pakistani people are middle-class compared to those of various other fully developed countries. Here, usually, low-branded cigarette products are preferred. Their demand has increased, and as a result, consumption has also increased. Price and

income are correlated with each other. They usually harm the cigarette demand. In Pakistan, gold leaf is the most commonly used cigarette. So, it is clear from the above graph that the ratio of gold leaf used in Pakistan is higher than in other. The main reason for this is its price. Since its cost is low and easily affordable to people, its taxation is also minimal compared to high-branded cigarette packs. As demand is high, so is the supply. Demand and supply are closely linked and interrelated. If one thing changes, the other also changes. With the increase in demand, the supply also increases. With the decrease in demand, the supply also decreases. The top brands in Pakistan are shown in Figure 3.

Figure 3: Top brands in Pakistan



3. Taxation of Tobacco

The productivity of tobacco is increasing day by day, as its demand is also rising. It is highly detrimental to human health. It is the hour of need that the government should ban such tobacco products from the country. It means that there should be a complete ban on the production and manufacturing of such products. Moreover, along with productivity, there must be a complete ban on the exportation of such products as well. Tobacco taxation also plays an important role in revenue. The government of Pakistan has

ordered the implementation of many taxes on cigarettes and other tobacco products.

The federal government has introduced a tobacco development corporation. This was introduced because, due to a very small productivity base, a small source of revenue was produced and issued.

There are several sources of revenue. The largest source of revenue is fed (federal exercise duty). After fees, the second largest source of revenue is GST (General Sales Tax on goods). After these, customs and regulatory duties are offered. Table 3 shows this.

Table 3: Tobacco Taxes in Pakistan

Name of tax	Stage
Fed	Retail Price
GST	Retail Price
Custom duty	Import value
Regulatory duty	Import value

Federal excise duty is a composite and very complex mixture of taxes on low-priced brands. If we get the three federal agencies, 3 of the 17 were introduced by the federal government. This was done to reduce the exportation and trade of cigarettes by reducing the price difference, thereby lowering the supply and increasing revenue. Since cigarettes are too hazardous for human health, the government should completely ban them.

4. Environmental Implications of Tobacco Smoking

Tobacco smoking is not just harmful and hazardous for humans; it can also harm the environment. People usually smoke and through cigarette butts carelessly on the floor, which can harm the environment (Deaton, 1997). Tobacco smoking can cause different kinds of pollution, too. Moreover, it can also play a significant role in contributing to global warming and other rising issues related to air and the atmosphere. This can ultimately lead to an increased greenhouse effect and climate change. This can cause severe trouble for both humans and animals. So, many environmental issues are related to tobacco smoking (Cevik, 2016). Tobacco smoking harms and contaminates the soil, water bodies and oceans in different ways. It is also harmful to the wildlife. Wildlife is also affected by the remains of cigarettes in various ways and under different conditions.

Influence on the environment during manufacturing

Environmental implications begin with the manufacturing of cigarettes. Since they are composed of a large number of different hazardous substances, they can have a severe and lasting impact on the environment. Moreover, energy is used in manufacturing, such as coal. It may also have a strong influence on the climate (Mushtaq et al., 2011).

Transportation towards factories:

During the transportation of these cigarettes towards other factories for further packaging, large-sized trucks and luggage carriers are hired. They can generate enough pollutants in the environment and the air. Those pollutants can

have a significant impact on the air and the environment.

Packaging

During the packaging of cigarettes, small plastic boxes are typically used. Plastic can prove to be hazardous to the environment. Plastic can contaminate the environment. Several tobacco products and smokeless tobacco products rely on big cartons, and those cartons are basically pure plastic, which is non-degradable. In 2016, the Indian government banned the use of such plastics for the packaging of tobacco and other products. Some companies claim to use eco-friendly materials for their packaging, but there is no conclusive evidence to support this claim.

Improper disposal of cigarette butts

When a cigarette is not properly disposed of, the hazardous chemicals inside it can contaminate the environment. Moreover, they can also contribute to polluting the air, water and land. According to an estimate, about 766,571 metric tons of cigarettes contaminate the environment. This is too much ratio. If we cannot stop the public taking this addiction, at least what we can do is to order them to through the remaining cigarette butt in the dustbin.

Effect on the marine environment

When we throw cigarette butts directly on the floor, mud, or any kind of surface, rainwater flows the butts into streams and other sources of water bodies, contaminating the water. Moreover, cigarettes contain various organic compounds, including nicotine and pesticide residue, which are the most significant ones. The rainwater flows the cigarette butts along with it to the aquatic body. Chemicals such as Nicotine, etc. They are leached into the water body and can also impact the marine environment. These chemicals can appear toxic to fish and other small creatures and can lead to the death of fish.

Deforestation

The cigarette is produced by a plant called the tobacco plant. By extracting the leaves of that plant, cigarette is manufactured. So, we can say that the most important ingredient in the production of cigarettes is the tobacco plant.

The tobacco plant is usually planted in rainforests. So, for that purpose, trees are first cut down, and then cigarette is manufactured. When the demand for cigarettes increased, the supply also increased. To meet the public's needs, a large number of trees are cut down. This will lead to deforestation; as a result, various other issues arise, such as loss of biodiversity and soil erosion. Moreover, when trees are cut down, and there are limited trees, it also contributes to an increase in global earth temperature, which is not appreciated since we cannot live in too high or too low temperatures.

Generation of toxic waste

As discussed earlier, when cigarettes are not properly disposed of, they can be toxic and fatal to the environment and living. Cigarettes contain several hazardous chemicals, including a group of chemicals such as polycyclic aromatic hydrocarbons, aldehydes, hydrogen cyanide, nitrogen oxides, benzene, and carbon monoxide (Joossens et al., 2009). These chemicals are highly hazardous to both humans and animals. Moreover, for the environment, too. When not disposed of properly, these chemicals can leach into the soil and other water bodies, potentially destroying organisms and plants due to their toxicity.

Air pollution

Cigarette butts can also cause air pollution. The largest factors contributing to air pollution are industrialisation and its waste. Smoking cigarettes can also cause air pollution. Pollutants in cigarettes can be released into the environment and air, contributing to air pollution. According to research, green tobacco can emit approximately 84 million tons of CO₂, equivalent to 0.2% of global CO₂ emissions. It means that green tobacco can cause a large-scale emission of CO₂, which can contribute to global warming and an enhanced greenhouse effect. Moreover, it is also stated that air pollution caused and emitted by cigarettes is 10 times more than that caused by vehicular emissions and car exhaust (Shabeer et al., 2024; Aberdeen et al., 2024). Cigarettes contain different kinds of small particulate matter, which can cause air pollution.

Effect on livestock

Along with various effects on land, air, water and soil, cigarette smoking can also be very impactful towards livestock. When anyone smokes and discards cigarette litter on the floor, this is a step towards destruction. When cattle or livestock feed on grass and various other plants, cigarette litter is also present. Livestock may feed on that litter and ingest that. Since cigarette is composed of different kinds of hazardous chemicals, those chemicals can be very dangerous for livestock and cattle. The livestock and cattle are exposed to those chemicals. Those chemicals can be very dangerous and, in some cases, prove fatal for the animals. This can cause the death of livestock and cattle.

5. Conclusion

The last part of this term paper is the conclusion. This paper clearly explains the socioeconomic and environmental implications of tobacco and its other products. Pakistan is known as one of the largest producers of raw tobacco. It has been shown to us that smoking and its industry play an important role in affecting the economy, but if we conclude, the tobacco industry does not play that much role in the economy. However, it has a relatively small market share and minimal economic impact.

Overall, the total tobacco crop is less than half a per cent of the total agricultural sector. Moreover, the cropped area of tobacco comprises about only 0.2% of the total area of crop productivity. Essentially, when we decrease the price, it increases demand for it. It has been observed that when the cost of cigarettes increases by about 10%, a reduction of about 5% is observed in their supply and consumption. It is the responsibility of the government to implement strict orders against its use in public and private. It should be completely banned in Pakistan since it is very harmful and hazardous to humans. As per the notice, it has.

It has been observed that not only humans, but also other environments are affected by cigarette butts. So, they must be disposed of completely. There are various recommendations that the government should implement.

6. Policy Recommendations

Tobacco significantly burdens Pakistani society; hence, it is imperative to take some action. These policies are designed to enhance environmental responsibility, promote public health, reduce tobacco consumption, and promote sustainable development.

Implement Higher Excise Taxes on Cigarettes

Excise taxes remain one of the most efficient methods of controlling tobacco products. When a government imposes strict excise taxes, it automatically regulates the price of tobacco products. It has been proven that youth and low-income smokers are greatly affected by price increases. Ultimately, with a reduction in demand, consumption will also decrease, deterring potential new users. Moreover, this will not only improve public health resulting from economic productivity, but it will also have fewer negative impacts on the environment.

Reform and Adjust the Tax Structure Related to Tobacco Products

Closing gaps in equity and efficiency for tobacco taxation requires addressing the existing structure. This can be done by closing loopholes, simplifying the tax structure, and adopting best practices from other countries. A well-considered tax policy reduces the affordability of tobacco products over time while increasing government revenue that can be allocated to public health initiatives and smoking cessation programs.

Use Fiscal Policy to Support Sustainable Development Goals (SDGs)

The taxation of tobacco products should be integrated into Pakistan's comprehensive framework for achieving the Sustainable Development Goals. Increased tax revenue can be allocated to healthcare, education, environmental protection, and other areas that suffer from the brunt of health issues caused by tobacco and its associated ecological damage.

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