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**Title: Calculating the real cost of purchasing a second-hand vehicle**

A status symbol, representing a degree of wealth that shines blindingly piercing the retinas of the most deprived, allowing owners to pontifically convey perspectives with as much noise as the jingling sound that their car keys make, now bunched up with others. The possession of a combustion engine enclosed in its mostly steel shell and powering a set of four wheels means a lot to the Zimbabwean population, a lot that is widely astray from the practical considerations meant to guide them in making the initial purchase. Staying on the issue of going astray, I will do just that, moving away from the stated price of second-hand vehicles and digging deep into the real cost of purchasing such machinery, as the objective of this blog

[Pre-owned cars have a market in developing countries because of the financial advantage in buying, repairs and general maintenance over new imports and increased choice as new vehicles are manufactured in limited quantities for the developed countries.](#) It is more attractive to buy these vehicles given the lack of alternatives as there is no [vehicle manufacturing in Zimbabwe](#) that can meet the demand of the local population on their highly stringent budgets.

Sub-Saharan Africa second-hand vehicle trade is dominated by Japan's supply, as illustrated by the [vehicle trade map](#) (Fig. 1). There has seen a rise in popularity of websites such as [Be Forward](#) where most of these vehicles can be directly acquired from Japan.

Figure 1.

However, the vehicles purchased are mostly high mileage because of affordability reasons compared to the low mileage ones, which may require spending extra which is not always a viable option for the keen vehicle owners who cannot wait to exhibit their wealth for all to bear witness.

Besides the [emissions study on second hand vehicle trade](#) which concluded that such vehicles are high emitting, [evidence has shown the link between vehicle mileage and nitrous oxide emissions as presented below](#) in fig. 2.

Figure 2.

*(The Euro 2 to 6 categories is reference to the [European Union emission standards](#) that the vehicle manufacturing industry adheres to, and countries outside the European Union can adopt these [standards to reduce tailpipe emissions](#))*

Exhaust pipe fumes from vehicles are the leading contributor of ambient air pollutants which have [been linked to 385 000 premature deaths, making a total of 11.4% of the premature deaths caused by global ambient particulate matter and ozone.](#)

So, what does this mean for the population? Tailpipe vehicle emissions are associated with adverse health impacts as the population is exposed to them. I believe that on top of the purchase price of a second-hand vehicle, these adverse effects make up the real cost of these vehicles in Zimbabwe (and the wide geographical spread enjoying the ownership of such vehicles).

### **The impact on health**

[The association between polluted air and respiratory effects is easily understood, but less known are the links to other adverse health ailments such as cardiac issues, perinatal effects and even brain related conditions.](#)

However, the [respiratory system is an entry](#) point and as finer particles of air pollutants enter the pulmonary circulation, they are able to move through the body's circulatory system to distal organs and tissues.

Pollutants' [effect on the respiratory system](#) has been [evidenced in numerous research articles](#) and [research data publications](#). Known facts of air pollution effects include the [ability to cause a decrease in pulmonary function, increase in inflammatory markers, increase in respiratory syndromes, cause chronic obstructive pulmonary disease and respiratory infections](#). The [long-term exposure to ambient air pollution is strongly associated with the incidence of lung cancer.](#)

Following fine particulate matter inception into the circulatory system, cardiovascular problems immediately arise as this is the first port of contact after the respiratory system. [The consequence of this invasion is increased myocardial pressure in response to increased oxygen demand, inflammatory markers that trigger fibrinogen formation causing a constrictive type of response, tissue damage and ultimately cardiac dysfunction.](#) This links air pollution to [myocardial infarctions](#) and [ischaemic heart disease](#).

Increasing data is highlighting the link between polluted air and the human [central nervous system](#) and the outcomes on the brain. Evidence points out that the presence of pollutants in the circulatory system [making their way to the brain](#) or through the [olfactory tract](#), providing a straight [nose-brain route](#), has led to the cumulative effects leading to Parkinson's disease, Alzheimer's disease and some autism spectrum disorders.

Available evidence also supports [the association between air pollution and low birth weight and air pollution in increased concentration it proved to be associated with premature births](#). During the [perinatal phase the child is most vulnerable as they experience organ growth but with an immature immune system to offer adequate protection against pollutants](#) and studies have shown a strong association between particulate matter and neonatal mortality.

Outdoor air pollution has become one of the [leading risk factors for death](#). As the evidence has highlighted above on the effects of air pollution on the health of the population, it increases the burden of non-communicable diseases. [These are diseases that are chronic, long lasting and non-infectious diseases that impact health negatively such as cardiovascular disease, cancer and respiratory conditions resulting from environmental factors and air pollution](#).

Along with the incidence of non-communicable diseases comes the financial burden of treating them, making it difficult for households affected to bear this burden associated with the diseases. [Low income countries are the most affected with the expenditure of pursuing treatment of noncommunicable diseases, and in some cases being financially constrained that no treatment is sought after](#). This highlights the unfair impact of non-communicable diseases which is explored further in the following section.

## **Health inequalities**

The effect of air pollution on health gives rise to health inequalities because of the unequal impact on the different groups within the population. [These inequalities are said to be systematic obstacles stemming from social structures, political, economic and legal institutions that leave marginalised groups without a fair opportunity to be as healthy as possible](#). These [inequalities are deemed to be avoidable and unfair differences](#) between groups of distinguishable characteristics on measures of health.

The effects on health associated with air pollution are unevenly distributed across the different groups of the population within a country and [the greatest impact from air pollution is reported in groups of lower socioeconomic status](#).

[Low socioeconomic status](#) is identified as low-income households without the ability to cater for adverse health episodes and associated healthcare costs because they lack financial securities such as savings or sick pay. Low socioeconomic households become heavily impacted as ill health normally disrupts employment and adds workload as members try to provide home care for the member with the ailing condition.

[Children born in highly deprived areas experience more disadvantages across all the social determinants of health such as education, housing, employment and healthcare access throughout their life](#). This means that when there is increased deprivation, opportunities to attain health are reduced and this is not a level playing field because some benefit more than others hence the differing health outcomes.

## **Conclusion**

For a low-income country, preventive action is key because consequences are harder to deal with. Noncommunicable disease require more healthcare interventions which bring about a crippling financial burden particularly for the low socioeconomic status population. It is high time we asked the difficult question, 'Is it worth it?' Addressing the health issues identified will prevent premature death, increasing the life expectancy and narrowing the health inequality gap.