Vikash Singh 11C

Economics Coursework- Traffic Congestion

Traffic congestion is the build up of traffic preventing efficient movement. In the UK, traffic congestion is a major issue as it causes a lot of problems for example is there is a lot of congestion in cities as we ll as main roads in towns. In theory the problem of congestion is that there are high marginal social costs associated with congestion not paid by the driver. Also did you know that traffic levels on Britain's roads have risen by over 80% in the last 20 years. This is mainly due to the fact of increasing demands for a car. An example of traffic congestion is on Sunnybank Road in Mirfield. In the morning there is congestion going up towards Roberttown. There is a great volume of cars on the road and at a ver y slow speed and so there is a lot of traffic trying to come out of Mirfield.

Problems of Congestion

From a few people who I have asked in the survey which is located in the appendix. I have found out from taking comments that they have made and from my own knowledge that the traffic congestion on Sunnybank Road is a problem for drivers as well as people who live in that area. Comments of people in survey have been summarised in the explanations of the problems. On Sunnybank road every weekday morning there is a lot of congestion as it leads to Leeds and Huddersfield. A problem of congestion is that the journey times of the driver's increase that causes a lot of anger and frustration and in the worst case leads to road rage. With the increase in journey times people can be late for school or work because of this congestion.
Another problem would be that there is a lot of pollution created by the congestion. Air and noise pollution are created. There is too much carbon monoxide emissions that let out int o the environment, which is damaging to the environment and people's health. Also car horns are being blown and cars coming past the road cause noise pollution for the people who live around the main road, which is damaging to the environment and to the pe ople. Also

there is visual pollution caused by congestion as people see a lot of cars passing by which is visual pollution for people who live on the main road.
Parking problems are caused by commuting and congestion as there are more and more cars that want a parking space but there is a limited amount of parking space available.
Also there is an increased risk of accidents due to congestion as there are more cars on the road and people who pass by have a big risk of a car accident, as Sunnybank road is a very busy road in rush hour and in the evenings.

List of Solutions

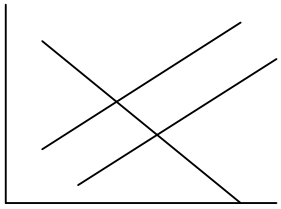
- Widen the roads
- Introduce the road charge
- Put a subsidy on public transport
- Slow down speed of traffic
- Introduce bus lanes
- Rise in petrol Tax

Externalities

An externality is side effects that result from the actions of an individual, firm or government. If they give benefits they are positive. If they cause problems or cost money, they are negative.
An example of an externality is congestion as it causes problems for other people beside themselves. It is a negative externality and with congestion the price has to be increased of our car journeys to internalise the externality. This means congestion has side effects of cost people money. This is also referred as a negative externality.

Solutions to Congestion

The solutions to traffic congestion would be to widen the roads. By widening the roads, the cars can go along a wider road so that two cars can fit in one lane. This would reduce the congestion by half. So the demand would stay same and supply would increase.

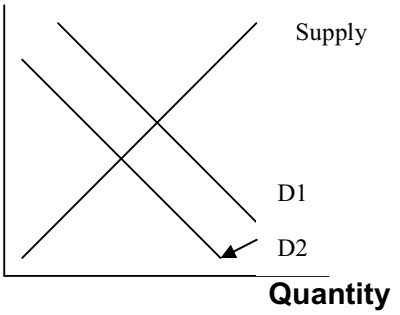


With widening roads the demand of using road would stay same and supply would increase from S1 to S2 This means there is more road for cars to spread and reduced quantity of cars.

Another solution would be to introduce the road charge, which would tax drivers every so often for using the roads. This would reduce the traffic congestion, as people wouldn't want to use the roads, as they ha ve to pay a certain amount of money to use the road. This would reduce the demand for use of roads and for car ownership which reduces congestion.
Another solution would be that there would be a subsidy on public transport, which would reduce the price of public transport and improve the quality of

public transport. The lower price relative to private use of the car will encourage people to switch to lower priced substitute e.g. buses. With the growing use of public transport then the quantity of vehicles on the road and levels of congestion would decrease so then less pollution is produced. The demand for public transport increases, demand for private cars decreases and so supply of the road increases.

Demand and supply for private cars instead of public transport



With the subsidy on public transport the demand for private cars would decrease from D1 to D2 and the supply stays same. This means that the price for public transport would be cheap and there is still a high quantity of buses but not for cars. Also this means fewer cars on the roads and less congestion people will use public transport instead of private transport.

To make roads safer for people they could slow down the traffic by making the speed limit lower than normal so that speed of traffic will decrease. The reduced traffic speed will initially increase road cong estion but in turn will encourage drivers to seek alternatives of transport to reduce their travel time. So basically reducing the speed of traffic will reduce the incentive to drive, which means a decrease in road congestion. The demand of car use will decrease.

Another alternative would be to introduce bus lanes, which will change demand conditions for road use through regulation and legislation. With the bus lanes it will restrict the use car access giving priority to buses so it makes public transport more attractive alternative to the car. The time saved by using a bus will encourage individuals to shift from private to public transport. This will reduce the number of vehicles on the road so level of congestion will decrease. The demand for public tran sport increase then the supply will have to increase to meet the demand. But for cars the demand will decrease then the supply will decrease which means less car ownership and less manufacture of cars.

A final solution would be a rise in petrol tax so tha t every driver will have to pay an additional tax to the purchase of petrol, which is an external cost. People now have to pay a higher cost for their car besides car insurance and etc. With the rise in tax people will look for an alternative than using a car which will in turn reduce the amount of congestion on the road. Also the market for car transport will decrease as there is a reduced demand for cars and the market for public transport will increase, as there is an increase in demand for public transp ort as it is cheap and cost effective.

Problems of Solutions

There are various reasons for the solutions for not working and these reasons come from the 4 people that I had surveyed and from the research on traffic

congestion. People's comments have bee n summarised in the comments about the problems below.
The problem with widening the roads is that pavements will be cut off, will only increase the level of traffic and number of vehicles. Also there will be increased pollution. It also has bad effect on the environment. Also there wouldn't be enough room to widen the road and costs a lot. But it work as there would be more room so cars can pass so volume would decrease. Buildings would have to be moved back and so the pavements would have to as well.
The problem with introducing a road charge but is that it hasn't worked in the past and charges are already paid through excise licence so people will complain and also it is bad to use it in cities as there is a lot of traffic everyday. Also people would com plain as it is costing them more money. It would not stop traffic in rush hour, as everyone has to go to work. Also there will only be a small reduction of cars. It would have an impact on wider economy as it will increase price of operating commercial veh icles and if prices goes high there could be cost push inflation. It would work as there would be a meter in the car would record where you have been and how much distance you've travelled which then goes to companies and a bill is sent home. This would c ost more in cities as there is a lot of congestion and is big so the time in the car is increased in cities so therefore would cost more. The advantage of this is that more cars won't be on the roads, it will stop unnecessary traffic. Also with the high p rice of private cars then it should reduce the amount of traffic on the road as they will have to pay more to use car then before so then use other alternatives.
The problem with putting a subsidy on public transport is that not only a subsidy should be p ut on public transport but the quality of it should improve so that he public find more confidence in the system and therefore use it. Also with quality being increased there will be higher taxes for public to pay for this which isn't good as there will be a lot of complaints. Only will stop a minority of people using the cars and there will be a risk of increased congestion. The government would have to pay for this but can only get money from increase in taxation and shift of expenditure like on education to the public transport which will have big consequences on the economy. It will work by giving a subsidy of 5% on public transport so that quality can be improved and confidence is found in the public. The subsidy will then be paid back by profits made by public transport goes back to government. The advantages of this is more people not using cars will use public transport and price of public transport will be reduced which will give customers incentive of using lower priced substitute. This should be us ed, as it will reduce number of vehicles on the road.
The problem with slowing down the speed of traffic is that congestion isn't caused by speed but volume and will only increase congestion in some areas but not all areas. It will cause more problems in short run and is ineffective as there would be hard to find quicker alternative that the car. It would work, as the speed of traffic will be reduced from 30mph to 20mph on a main road so traffic will be reduced. The advantages of this is that the risk of a ccidents will be reduced and encourage car drivers to find quicker alternative than the car to reduce travel times, in long run will encourage individuals to switch to non - car transport and congestion will be lowered.

The problem of introducing bus lanes is that it would only work in certain areas and does not address the main cause, which is a car. The quantity and quality of buses should be good otherwise cars will be used. Also it will take a lot of time to prepare. Also resources of this would have to come from expenditure of education. It would work as roads will be extended and bus lanes introduced with new roads. The advantage of this is that it is a good short term solution only, makes buses more attractive and therefore the bus will be used more, The bus lanes will restrict car access therefore giving priority to buses. This makes it more attractive than the car. Time saved by using buses will encourage people to use them. This will reduce congestion. The problem in having a rise in petrol tax is th at there is already a tax in Europe and won't work successfully because congestion still remains and makes people angry. Also it won't get many cars off the road. It would work, as the price of petrol would increase so some of that goes to government. The advantages of this is the market for car, the demand would decrease because of this high price of petrol and also this would result in increase use of public transport which would decrease level of congestion.

Evaluation

From the survey that I have recorded and research done into the solutions which can be found in appendix, I have to decide on one of the solutions which would be the best. The solutions that I would not pick are to put a rise in petrol tax, a road charge and to slow down the speed of tra ffic. As these solutions have already been tried and will not reduce congestion but make people complain. The other solutions are to widen the roads, put a subsidy on public transport and to introduce bus lanes. These are good as with widening roads more cars are able to pass and the volume of traffic will decrease but the problem is it costs a lot of money and effort. Also a lot of pollution is produced due to this. But with putting a subsidy on public transport new bus lanes can be produced and the quanti ty and quality of public transport will be improved. This will encourage drivers and other people to use public transport and therefor the level of congestion will be decreased. The disadvantage of this is there will be increase of taxes, which people will complain and expenditure from education might be needed to give this subsidy. But in time it can be paid back to the government. Another good solution is to introduce bus lanes as it will make them more attractive, restrict access of cars and give priority to buses, which are better alternatives than using a car, reduces congestion. But the disadvantage is it will only work in certain areas, short - term solution and a lot of time to prepare for.
The last two solutions (above) are linked as a subsidy can be put on to bus lanes and public transport and therefore making the quality good and cheap to people as well. They both will reduce congestion and encourage people to use a different alternative. I would recommend these two solutions together as they reduce congestion, it is good quality, it is cheap and reduces travel times. I wouldn't recommend the others because they cost a lot of money, create more pollution and some have already been tried and failed.

The solutions would work in Sunnybank Road as with the road being quite big, the road can be extended to give bus lanes. People in the local area will

use the buses as it is cheap, quicker than a car and is good quality. The buses will then go on their routes. With more and more people being encouraged to use the bus then private car numbers will decrease and therefore congestion is decreased. With the profit made by the buses some can go to bus companies and the other profits will go to the government to pay back the subsidy so more expenditure will be on education. This means of transport will also reduce the amount of pollution given into the air everyday.