



Cluster 3/Module 1 (C3/M1): Policy Issues in Urban Transport.

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Objectives

To understand:

- Some of the key policy issues that need to be decided up front
- What choices need to be made
- How and why certain cities made policy choices by examining several examples
- The kind of factors that need to be kept in mind while making choices

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In the first module, we saw that it is necessary to develop a vision about what kind of city we want before developing a comprehensive strategy for urban transport. Developing and realizing such a vision requires several important policy choices to be made.

In this module we seek to understand:

- What some of these policy issues are
- What choices exist
- Relevant examples from around the world
- The kind of factors that need to be kept in mind while making some of these choices



Opening Exercise City Policies Problem



- What is the current policy in your city on the following?
 - Use of the private sector in running public transport services
 - Fares for public transport
 - Cleaner fuel and vehicle technologies
 - Densification of certain areas in the city
- Is there is no formal policy, what policy would you propose?

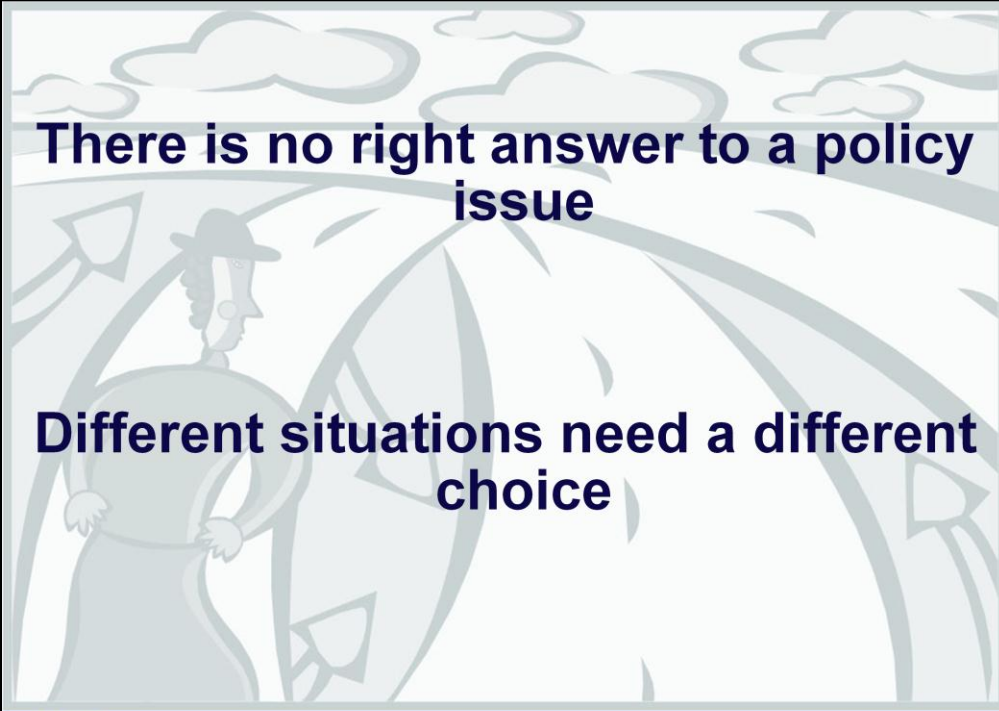
Some Policy Issues

- **Which level of government should be responsible for city transport**
- **What type of land use plans do we want**
- **Balancing the supply of transport services with the demand for transport services**
- **Type of mode shares**
- **What kind of technologies are needed for motor vehicles and fuels**
- **Public vs. private ownership / operations**
- **How to finance urban transport investments and who should pay for them**

There are several such policy issues that different cities and countries need to consider. Here, we will look at some of the more common ones. The specific issues we will look at in this module are:

- Which level of government should be responsible for city transport – national government, provincial government, or local government
- Type of land use plans – mixed land use/strongly segregated living and working areas, or compact city forms/sprawling forms (with lots of green areas in between)?
- Balancing the supply of transport services with the demand for transport services – higher capacities to meet the growing demand, or demand restraints that limit the need for supply side measures?
- Type of mode shares – high share of public transport or higher non-motorized modes, or high personal vehicle reliance?
- What kind of technologies are needed for motor vehicles and fuels – conventional fuels that are tried and tested, or alternative technologies that would be cleaner but would entail significant investments?
- Public vs. private ownership / operations – should there be a greater private sector involvement, or should the public sector own and operate urban transport facilities?
- How to finance urban transport investments and who should pay for them – should it be only users, or non-users as well?





There is no right answer to a policy issue

Different situations need a different choice

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In most cases, there is no universal right choice. If one option was always the best, then there would be no choice to make!

In most cases, the choice depends on the local situation. What is good for one situation may not be the best for another. Therefore, choices exist and need to be chosen wisely.



Which Level of Government

- **Who should be responsible for urban transport**
 - **National government**
 - **Provincial government**
 - **City government**
- **Pattern varies – generally dependent on issues relating to:**
 - **Technical and financial capacity at different levels**
 - **Economy of scale issues**
 - **Political concerns of the government at different levels**

Let's first look at the level of government that should be responsible for urban transport. Should it be the national government, the provincial government, or the city (local) government?

You might think that all actions should rest at the same level of government because urban transport is very complex and needs coordinated actions across multiple dimensions. The local government might be best because they are closest to the people who will use the transport system. Therefore, you might think that they would be the most accountable to the principal stakeholders.

However, this is not always the case because responsibilities vary. There could be issues relating to the technical capacity or the financial strength of different levels of government. These issues might determine which level of government deals with each aspect of urban transport. Small cities may have neither the technical capacity to deal with this, nor the financial resources to invest in public transport systems. Therefore, higher levels of government might have to assist.

There could also be issues of economies of scale that become important in deciding which level of government should be responsible. Many small cities could benefit from a common entity undertaking this responsibility for them.

There could also be political issues, such as the higher levels of government being unwilling to delegate some of their powers to lower levels because they fear they would lose much of their influence.

All of these issues are relevant in deciding which level of government should deal with urban transport. However, it is important to remember that urban transport needs strong coordination across a range of functions. It may be best to assign the entire responsibility to large cities. However, small cities might benefit from a common entity taking responsibility, which would

enable economies of scale.



Examples

- In the United States, Russia, and China responsibility lies with the local government
- In India responsibility lies largely with the provincial government
- In the Philippines land use planning is with the local government, but transport services are the responsibility of the national government
- In Singapore responsibility lies with the national government
- Responsibility in South Africa was fragmented, however, recent legislation has entrusted responsibility to the local government

Patterns vary across countries. In large countries like the U.S., Russia, and China, the responsibility rests with local government. The provincial and national governments do have a role in providing funds, but the responsibility for planning and providing the facilities rests with the local government.

In India, the responsibility rests with the provincial government in most provinces. Only in Gujarat and Maharashtra has this been transferred to the local government. Again, the national government does have a role in providing funds. It also has a national policy that guides actions by the provincial and local governments as also guides its financial support.

In the Philippines, the responsibility for land use planning is with the local government, but the responsibility for ensuring transport services rests with the national government.

In smaller countries like Singapore and Kuwait, the national governments take on a much more intensive role in urban transport planning.

In South Africa, the responsibility used to be fragmented across the three levels of government, but with the enactment of new legislation in 2009, the responsibility has been transferred entirely to the local government.

Policy on Land Use Plans

- **Do we want a compact city with many high rise buildings and high density living**
- or**
- **Do we want a sprawling city with low density living and large open spaces**

Let's now discuss land use policies.

Two important questions come up when considering land use policies:

1. Do we want a compact city where people can access jobs, education and such other needs quickly and easily, even if they have smaller places to live in? Or, do we want a sprawling city where everyone has plenty of space to live in, but needs to travel longer distances which costs more and is time consuming?
2. Do we want residential and commercial areas to be close to each other and interspersed, or do we want them to be segregated?

A choice on the above issues will be an important determinant of the kind of transport systems that are necessary. Compact cities entail shorter travel distances and, therefore, easier access. The shorter travel distances could allow a large share of the travel needs to be met by modes like walking and cycling. Public transport tends to get more attractive in compact cities as public transport stations are generally within a short distance. This means that investments should be on good public transport, as well as footpaths and cycle tracks.

On the other hand, sprawling cities offer generous space to all, with big houses and plenty of green space that people like to see. However, travel distances tend to get long and personal motor vehicles become more important for meeting the travel needs. This needs investments in good roads.

Similarly, mixed land use allows shorter travel distances, whereas segregated land use makes these longer. In cities with noisy and polluting industries, it may be preferable to keep living and working places segregated. However, in a service-oriented economy, where employment centers are not noisy or polluting, mixed land use would be preferred.

Compact vs. Sprawling



Here we have pictures of Singapore and Detroit. While Singapore is a compact city, Detroit is a sprawling one. Therefore, in Singapore we see lots of people out on the roads, whereas in Detroit we don't.

Copenhagen

Before and after a comprehensive urban transport scheme in the city center



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A comprehensive redevelopment of this street in Copenhagen resulted in people using it in greater numbers as this was converted for use by pedestrians only. The picture on the left shows this street full of vehicles, but on the right it became a good place for people to be out.



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London

Before and after traffic calming at the Trafalgar Square near the National Gallery



In yet another example, we see the before and after effects of traffic calming measures in Trafalgar square. The initiative made it much safer for people to use the streets.

Examples

- **Tokyo is a dense city, but Washington, D.C. is low-rise and sprawling**
- **Delhi is low-rise, but Mumbai is high-density and compact**

By way of example, we see that Tokyo is a very dense and compact city where as Washington, D.C., and Mexico City are relatively sprawling and have lower density.

Within India, Mumbai is compact, but Delhi is sprawling.

In China, Beijing is sprawling, but Hong Kong and Shanghai are compact. These are some examples of the kind of land use policies that have been adopted.

Supply vs. Demand

- **Do we meet the rising travel demand by enhancing supply or by constraining demand**
- **Supply side measures**
 - Increase road capacity
 - Increase public transport capacity
- **Demand side measures**
 - Constrain parking facilities
 - Congestion pricing
 - Road use fees
 - Constraining ownership of vehicles

Let's now discuss supply side versus demand side measures.

As the travel demand grows, there are options of creating capacity to meet the growing demand or taking up measures that seek to reduce the demand. Creating capacity would generally happen if we add road space, build more public transport infrastructure, add more parking spaces, etc.

In considering demand side measures, we must remember that demand depends on:

- The number of people who travel
- The average number of trips that each of them makes (typically on motorized modes), and
- The average length of each of these trips.

In this context we need to remember that if several people use a single vehicle to make a trip, it is construed as one trip and not several trips.

Thus, travel demand is a function of the population, the average number of motorized trips, and the average trip length. Reducing any of them has the impact of reducing demand.

If compact cities are developed, trip lengths are small and therefore contribute towards reducing the demand. Similarly, measures such as high parking fees or high fuel prices tend to reduce demand because they encourage the use of public transport. Good telecommuting infrastructure helps avoid some trips and thereby reduces travel demand.

Usually, people ask what the focus should be – to manage supply or to manage demand. However, successful policies need a mix of both. The challenge is to come with the right mix in the policy framework.

Growing cities in countries that are still at low levels of urbanization cannot escape significant investments in creating new capacity. However, an early effort at demand side measures would help them save significant investments in creating new transport capacity. In cities which are growing more slowly, it may be possible to provide adequate capacity by focusing attention on reducing the demand to

match with the available capacity.



Examples

- **While most other cities seek to enhance capacity of road space and public transport, there are examples of good demand side measures as well:**
 - **Singapore has strong restraints on ownership and use of personal vehicles, coupled with good quality public transport**
 - **London has a congestion charge for entry into the core city area**
 - **Curitiba and Singapore use effective “TOD” measures**

While most cities invest in new capacity as a supply side measure, there are several good examples of how demand side measures have been used to great advantage.

Singapore tends to be one of the best examples. In Singapore, there are restraints on both the ownership of personal motor vehicles and the use of such vehicles. There are also strong land-use policies that reduce the need for personal motor vehicle use.

London has imposed a congestion charge to discourage the use of personal motor vehicles in core city areas.

Curitiba has a strong focus on “Transit Oriented Development” as a land use strategy that encourages the use of public transport.

What Kind of Mode Share ?

- **Respective shares of:**
 - **Public transport**
 - **Non-motorized modes**
 - **Personal motor vehicles**

Now we will discuss mode share policies.

Generally, mode share policies aim to maximize the share of trips by public transport or by non-motorized modes, as these types of transport occupy less road space and are considered to be environmentally cleaner. They are also fuel-efficient and cause less accidents.

However, in cities that are spread out over a large area, the challenge is in making public transport accessible to as many people as possible. This is easier in compact cities. Similarly, non-motorized modes are attractive in compact cities and those that use mixed land-use policies because travel distances are shorter. Thus, land use plans have a very strong influence on the mode share.

The cost of using public transport and the price of fuel are another set of factors that impact mode share. A high cost of public transport will have an adverse impact on the mode share. It will also be inequitable, as far as the poor are concerned. High fuel costs tend to encourage people into looking at public transport as a travel option.

The quality of public transport is also a strong determinant of the mode share. Comfortable, clean, punctual, reliable, and safe public transport attracts people away from personal motor vehicles.

Higher share of non-motorized modes can be facilitated by ensuring that safe facilities for walking and cycling are available. Thus, it is important to have good footpaths and cycle tracks

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that are safe and segregated from motor vehicle traffic.



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Fuel and Vehicle Technologies

- IC engines or alternative technologies
- Petroleum fuels or alternative fuels
- Conventional fuels or cleaner fuels

Policies relating to fuel and vehicle technologies are becoming increasingly important. So far, the Internal Combustion Engine (IC Engine) has been the primary vehicle technology. Conventional diesel or gasoline has been the dominant fuel for road-based systems. Rail-based systems in urban areas have tended to use electricity as a fuel. Today, some alternatives are under development that give countries more options.

The electric vehicle is a strongly emerging alternative to the IC Engine. The electricity that such a vehicle uses could come from a variety of primary sources, such as coal, water, wind, and solar sources.

Another vehicle technology issue that is important to policy relates to the fuel efficiency of vehicles. Should we adopt specific policies that encourage the use of fuel-efficient vehicles, or should our policies be neutral about it? The oil shocks of the mid-1970's created the momentum to encourage fuel-efficient vehicles in several countries. Today, concerns about energy efficiency and global climate change continue to keep that momentum going. Therefore, some countries have tax rates that are linked to the size (fuel efficiency) of the engine. Bigger and more powerful engines are taxed higher than smaller and more energy efficient ones.

Some countries have opted for cleaner fuels and most have been tightening their emission norms. Thus, lead-free gasoline and low-sulfur diesel have become more common. Some have opted for Compressed Natural Gas (CNG) as a cleaner fuel.



Examples

- **Latin America**
 - Cities opting for bus based systems (petroleum fuels) in preference for metro rail systems (electricity fueled systems)
- **Russia**
 - Cities continue with trams and trolley buses
- **China**
 - Auto industry moving towards electric cars and scooters
- **Delhi, India**
 - Actively encouraged CNG for public transport by requiring all public and paratransit vehicles to convert to CNG
- **China**
 - Positive encouragement of electric vehicles, with several cities offering subsidies for the purchase and use of such vehicles
- **California, United States**
 - Has policies for encouraging the sale of Zero Emission Vehicles

As an example, many Latin American cities have opted for vastly improved bus systems instead of metro rail systems, thereby demonstrating the preference for petroleum fuel instead of electricity. This is largely on account of the lower capital cost of bus-based systems when compared to rail-based systems.

In contrast, most Russian cities continue with electric trams, trolley-buses, and metro rail systems as the primary mode of public transport.

The Chinese auto industry is moving strongly towards electric cars, scooters and buses.

Delhi has actively encouraged CNG for public transport. California has policies for encouraging the sale of zero-emission vehicles.

Role of the Private Sector

- **What role should the private sector play in urban transport infrastructure and services ?**
 - Private sector more efficient
 - But private sector is driven by the profit motive
 - Urban transport is a public good and there are universal service obligations
 - So a conflict between private profit motive and public good obligations
- **A strong case for PPPs and publicly managed competition of private operations**
 - Need for public budgets to financially support non-commercial services

We will now look at policies relating to the use of the private sector in owning and operating urban transport facilities.

The private sector is generally known to be more efficient; however its prime motive is to earn a profit. In contrast, public utility services have a high universal service requirement. Thus, public bus services must be available on all routes and not just high demand routes. In addition, they should be available at all times, and not just the peak demand times. The private sector would only be interested in the high demand routes and the peak demand times, but not in the others. How does one reconcile these conflicting motivations?

Policy measures are needed to allow the private sector to earn an income even from low demand services, for example by allowing a subsidy or allowing certain other forms of revenue. Advertising rights and the right to commercially exploit property are possible policy measures that would make it attractive for the private sector to invest in urban transport facilities. We will see examples of this in another module.

Policies are also needed to lay down the kinds of revenue streams that can be allowed, the duration of the private sector concessions, subsidies that can be paid from the public budget, regulatory systems that need to be in place to give greater confidence to private providers, systems that would ensure that the successor governments honor the agreements of previous governments, and other issues. Policies can go a long way to attract private providers. The question is, do we want this or not?

Examples

- **Paris**
 - Bus services are provided by the publicly owned company known as RATP
- **Other French cities**
 - Services mostly provided by private companies
- **London**
 - Bus services are contracted out to private operators
- **Singapore**
 - Government invested in the metro rail system but has contracted operations to the private sector
- **India**
 - Publicly owned companies run bus services in many cities, but the trend is towards greater involvement of the private sector

There is a mix of models that have been used around the world.

In Paris the metro and bus services are owned and operated by a publicly owned company – the RATP. However, in most of the other French cities the services are by private companies.

However, in London, buses are operated by procuring services from private operators.

Singapore's metro system has been built by the government but is contracted for operations by the private sector.

In contrast, the metro in Delhi is operated by a public entity.

In the U.S., most public transport services are owned and operated by a publicly owned entity.

Latin American cities are increasingly using the model of bus services being contracted to private operators.

Thus, there is a range of options that can be explored.

Who Pays for Transport

- **Who should pay for investments in transport infrastructure and services – especially public transport**
 - **Should it be only the users or all the residents of the city or all the residents of the country?**

Let's look at policies relating to financing the investments in transport systems. The question is - who should pay for transport systems? A complementary question would be - who are the beneficiaries of such systems?

There are two opposing views. One view is that the users are the primary beneficiaries. Another view is that even those who do not use public transport stand to gain because they benefit from less congestion, less pollution, and greater energy security. In fact, if we consider the climate change benefits of greater public transport use then everyone living on this planet is a beneficiary.

Therefore, is it fair for the user alone to pay for public transport? Policies that permit some degree of subsidization (in other words, a payment by non-users) recognize that non users are also beneficiaries. The question that comes up then is – what share should the users pay and what share should the non-users pay?

Affordability is also an important consideration in determining the share that users should pay. Generally, public transport is used by the poorer sections of society and so they should not be required to pay more than what they can reasonably afford. High cost of public transport will adversely affect their ability to secure employment

When it comes to parking fees, for example, the non-user beneficiary argument becomes weak and one could easily say that the user is the main beneficiary and should pay the full cost of the parking space.

Thus, the policies with regard to who should pay for different components of the transport system

in a city could vary based on who benefits.



Examples

- **Singapore**
 - Capital costs of metro are financed by government, but O&M financed by fares
- **Paris**
 - Significant part of O&M financed by an employment tax (implying employers are beneficiaries)
- **India**
 - Policy says O&M should be financed by fares, but supports subsidy for capital cost of public transport
- **US and China**
 - Significant public subsidy for the capital and O&M costs of public transport
- **Bogota**
 - Capital costs of the Transmilenio borne by government, but no subsidy on bus operations

Looking at examples on who pays for public transport, we see that in Singapore, the government has paid for the metro system, but fares cover all operating costs.

In Paris, there is a significant subsidy even on operating costs and is largely paid for through an employment tax (this is an interesting example that recognizes the benefits accruing to employers if their employees can reach their work places on time and easily).

Even in the US, there is a subsidy on operating costs.

In contrast, most Latin American cities seek to cover operating costs from fares.

In India, most publicly owned bus companies receive an annual subsidy to cover their costs. However, the national urban transport policy recommends that fares should cover operating costs, even though capital costs could be met from the public budget.

In China, too, there is a significant amount of subsidy for public transport, largely with a view to ensure that public transport remains affordable.

**Thus, several issues and answers
have to be found in the local
context**

Therefore, we see that there are several policy options and the choices have to be made in the local context. There is no single choice that would best suit all cities. There is no specific “right” choice for all situations.