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Case Report OMICS International

Differences between Monopoly and Perfect Competition in Providing Public Transportation (Case Study: Lane No. 10 and 96 of Mashhad Bus System)

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Abstract

Urban infrastructure systems are the pillars and backbone of cities and play a pivotal role in any development such as mobility, lodging, energy, portable water, sanitation and communication. As far as, there would be no development without good quality and sufficient infrastructure. In between, transportation development as an important infrastructure has a high impact on urban economic and sustainability and this is the reason why transportation is a main concern of urban operators in the whole world.

This paper is aimed at deeping our understanding on the functioning of competition in the public transportation industry and to evaluate its effectiveness on urban economics and management. Therefore, Mashhad public bus transportation system that includes both monopoly and competition markets in, is chosen to provide a conceptual framework to identify the best practices for provision of this specific public infrastructure. So the main question is what the role of private sectors is and what are the differences between these two kinds of markets? In response, I am going to compare costs and revenues of both private sector and current Mashhad bus transportation system in order to compare maximum efficiency and profits in competition circumstances.

Keywords: Urban infrastructure; Private sector; Economic development; Monopoly firm; Competition firms; Public bus transportation system

Introduction

The history of cities is almost as old as its civilization. Cities have been centers of wealth and power, innovation and decadence, dreams and frustrations. During the past several decades, many countries have experienced rapid urbanization. As a consequence, a large proportion of the world's population now resides in cities. Yet cities are among the most complex human creations, and in many ways the least understood. This became dramatically clear with the eruption of urban problems throughout the world starting in the late 1950s. Since that time, a great number of scientists in various fields have endeavored to develop a better understanding of cities. With respect to economics in particular, these urban problems have triggered the birth of a new field, namely urban economics [1].

The interface between transportation investment and economic development has broad ramifications that go beyond transportation's basic purpose of moving goods and people from one place to another. Whereas there is no doubt that transportation is essential in the operation of a market economy, much still needs to be understood about ways in which an efficient transportation system can improve the productivity of the economy [2].

Transportation also has a broader role in shaping development and the environment. Policy concerns in the next millennium will increasingly focus on the effects of transportation on where people live and on where businesses locate; and on the effects that these location decisions have on land use patterns (Figure 1), congestion of urban transportation systems, and use of natural resources, air and water quality, and the overall quality of life [2]. That's why providing public transportation is a critical concern of urban authorities.

Users of this specific infrastructure need safe and comfortable services with affordable costs and appropriate coverage. On the other hand, it must guaranty a suitable income for the owners in order to continue the business. Therefore, this research, with regards to the role of public transportation in saving time and space, determining land use, increasing urban investment and etc. aims to represent a viewpoint for managing public bus transportation in a metropolis of a developing country. Also, it's necessary to make appropriate decisions to develop

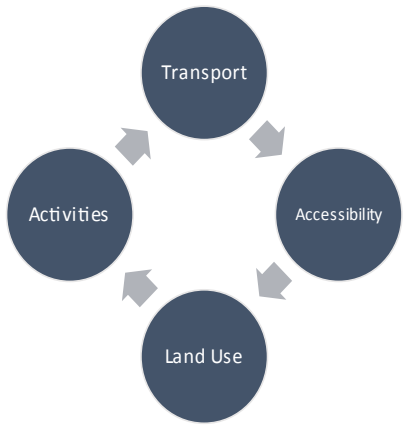

Figure 1: Transportation and Land use interactions.

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economic policies in urban transportation section as an important part of urban economic developments. At this point, the participation of private sectors in order to improve the quality of government services is highlighted. In between, some important questions will be mentioned about this subject who needs to be considered:

1– What is the role of public transportation network in urban infrastructure?

2– How transportation infrastructure does effect on urban economic development?

3– What are the differences in providing public transportation under the coverage of public sectors and private owners?

Urban transportation networks have a major impact on the formation of urban shape, creating communities, commercial centers, municipal departments and how to move through these centers. Also, it can support economic development by facilitating the movement of goods, services and people between different regions.

With regards to the importance of public transportation network in cities, operating of this system has high significance in urban managing and because of this, making proper policies in public transportation management counts as a key area of economic growth. Lack of proper management in public transportation network as an essential infrastructure leads to social, economic and environmental issues in the city. In this article we are going to review different management systems, economic markets and existing system in Mashhad public transportation.

Monopoly and perfect competition are two cross points in economic market structure. Although, there are some similarities between these two kinds of market: both have same costs and production process but seeking maximum benefit. On the other hand, in a highly competitive industry the benefits of economies of scale might not be obtainable. However, despite of higher price and lower quality of monopoly productions, in competition, companies choose to produce in modest way. Although, most developing countries take advantage of urban utilities in the form of monopoly services, a tendency toward competition market happened in recent years. Since 2007 the private sectors partnerships have activated in Iran and with two years delay Mashhad joined it. Thus, some part of Mashhad public transportation system has given to private companies. Therefore, this research is going to take place in current public bus system of Mashhad which faces two categories of management: first, part of the public transportation system that is under the public sector supervision and the second one performs by several private operators, in order to make a bright sight of which one is more beneficial in the present circumstances.

Literature Review

Infrastructure and private sectors

Across the globe, infrastructure is the lifeblood of prosperity and economic confidence in the 21st century. Well-planned and well executed investments offer developing economies the hope of basic facilities for all and a chance to compete in a global marketplace. In developed economies, superior and well maintained infrastructure attracts the best talent as well as dynamic businesses seeking reliable connectivity and a high quality of life for workers. Infrastructure (the structure or underlying foundation on which the continued growth of a community depends) is critical for countries in all stages of development [3].

Energy, water, transport, digital communications, waste disposal networks and facilities, are essential ingredients for the success of a competitive modern economy. Research has shown that well-designed infrastructure investments have long-term economic benefits; they can raise economic growth, productivity, and land values, while providing significant positive spillovers. However, investing wisely in infrastructure is critically important as over-investment can lead to projects that are inefficiently large, and therefore have low marginal returns [4].

Historically, most infrastructure investment was undertaken by the private sector. Heavy government involvement is a more recent, 20th century phenomenon. However, the performance of public infrastructure (airports, highways, waterways and public railways) has been far from exemplary, with cost blowouts, planning and construction delays as well as safety problems commonplace and a lack of innovation and technological advance. Since the 1980s, there has been a renewed push to involve the private sector in infrastructure, either exclusively or in partnership with the public sector [5].

Infrastructure projects typically exhibit economies of scale, possibly leading to natural monopolies; they may be socially desirable but not privately profitable. To correct these failures governments may regulate private service providers or provide the services themselves [5].

Role of transportation in economic development

The principal role of transport is to provide or improve access to different locations for businesses and individuals, for both freight and personal movements. For the business sector, this involves connections between businesses and their suppliers, between businesses and other businesses, and between businesses and their markets. For the household sector, transport provides people with access to workplaces, schools and shops. It connects them to social, recreational, community and medical facilities for personal and leisure activities. The level of transport investment together with the amount of expenditure on transport operations can have wider effects on the economy (as is seen when transport fuel prices increase substantially, resulting in reduced household expenditures on other goods and services) [6].

The direct effects of transport investment are to reduce transport time and costs by reducing travel times, decreasing the operating costs of transport and enhancing access to destinations within the network. Transport investment may also mitigate any economic dis benefits, for example, by reducing congestion or the risk of injury. These incremental benefits of transport investments may be measured through conventional cost-benefit analysis [6].

Other indirect consequences of transport investments should also be considered in the evaluation of transport projects. These include effects on productivity and the spatial pattern of economic development. In the long term, transport investments contribute to economic development by stimulating a variety of inter-connected economy-wide processes, which can yield spatial and regional effects that augment page 5 of 19 overall productivity. In particular, lower costs and enhanced accessibility, due to better transport links and services, expand markets for individual transport-using businesses and improve their access to supplier inputs. Increased access and connectivity create increased opportunities for trade, competition and specialization, which can lead to longer-term productivity gains. These changes are analogous to the gains from lowering barriers to trade and the expansion of opportunities that come from this. Therefore, knowing the circumstances in which these impacts occur is an important part

of understanding the economic benefits that may arise from transport investments [6].

Pure monopoly

A pure monopoly exists if only one firm produces a commodity for those which have no close substitutes. A pure monopolist faces no competition from other producers since there are no close substitutes for its product. But such a condition is rare because there are substitutes for almost all commodities. The products of firms commonly regarded as monopolies have some substitutes: a telegram substitutes for a telephone call; natural gas and fuel oil can substitute for electricity used in heating; aircraft and buses provide transportation alternatives to trains [7].

The definition and identification of monopoly depends on the closeness or similarity of such substitutes, and thus on the extent of the firm's power to affect the price of the product by controlling the quantity supplied to the market. A monopolist therefore is described as a price maker [7].

Other firms are prevented from producing the same commodity by various barriers. Some monopolistic conditions are created by government actions, including the granting of patents, creation of public utilities. Sale of franchises, and the placing of quotas or embargoes on specific imports [7] (Figure 2).

Natural monopoly

Older industrial organization theory cited that the presence of scale economies determines whether an industry is a natural monopoly. It is important to note that much of the theory of natural monopoly is concerned with the precise meaning of increasing returns or, equivalently, decreasing average costs. Scale economies exist when a proportionate increase in output leads to a less-than-proportionate increase in cost [8] (Figure 3).

With a natural monopoly, average total costs (ATC) keep falling because of continuous economies of scale. In this case, marginal cost (MC) is always below average total cost (ATC) over the whole range of possible output.

In order to maximize profits the natural monopolist would charge Q and make supernormal profits but it's likely to be inefficient. To achieve allocative efficiency, the regulator will have to impose an excessive price-cap (at P*). The output needed to be efficient, at Q*, is so high that the natural monopolist is forced to make losses, given that ATC is above AR at Q*.

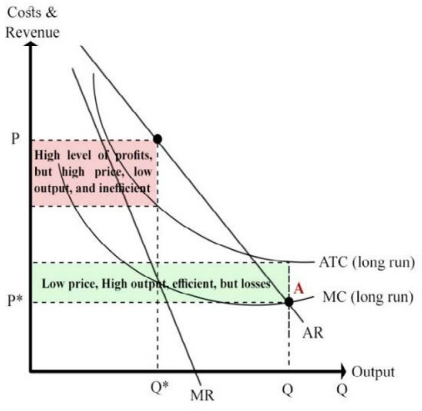

Figure 2: Monopolist's maximum profit, output and price. A Monopolist is a price maker because there will be no competitors. Therefore demand is price inelastic. Also a monopolist seeks to maximize profits by setting output where MR=MC and this will be at output Q* and Price P*.

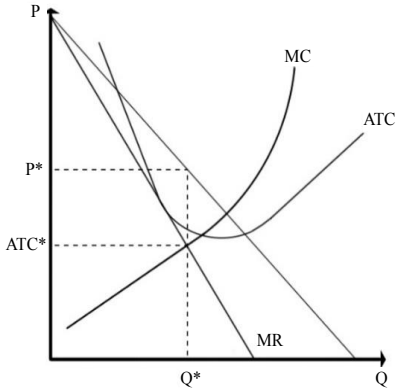

Figure 3: Natural monopolist's maximum profit, output and price.

Government monopoly

A government monopoly is the existence of a government monopoly in a certain product or service market appearing as the monopoly of specific government enterprises (for instance, railway transport), including barriers to the entry of new firms to a particular branch (for instance, in the field of exports and imports of essential goods of strategic importance). Unlike perfect competition, this type of monopolist sets the price in the market based on market demand and its costs. Thus, in a government monopoly, the monopoly is fully or partially government-owned and is managed by a board of directors appointed by the government. In this case, prices are determined on the basis of government financial policies [9].

A government-regulated private monopoly is controlled by private individuals whose activities are most often limited by the government's tariff policies. Prices are determined on the basis of government tariff policies [9].

Competition

The notion of competition has long been of central importance both in (micro) economics and strategic management. While these two disciplines are highly interrelated, they treat competition in distinct ways. Indifferences on how competition is treated stem primarily from conceptual differences in the concepts of markets and firms. To understand the concept of competition, it is important to highlight that strategic management scholars have explicitly viewed competition as a function of firm strategy and not as a function of markets. Central to this important conceptual difference of competition, is that strategic management scholars perceive firms as inherently different. In fact it is these differences, strategy scholars argue, that provide firms with opportunities to appropriate economic value and endure competition [10].

One common and intuitive starting point for measuring competition is the extent to which production is concentrated in the hands of a few firms, each of which therefore faces comparatively little rivalry. The crudest measure of this concentration is simply the number of firms that are operating in the same or a recognizably similar market.

To be useful this measure depends on there being some practical method of defining the relevant market [11].

Perfect competition

Classic models of microeconomic theory usually treat competition in separation from strategies interaction. While the notion of competition usually suggests some short of rivalrous behavior, between firms that are trying outperform their rivals in order to survive, such models rather treat competition only in relation to the prices invoked by firms in their respective markets. Such microeconomic models base their assumptions on the existence of perfectly competitive markets [12].

A perfect competitively market satisfies four basic assumptions:

1– The number of sellers and buyers in the market are very large.

2– There are no barriers to entry in the market.

3– The products exchanged in the market are homogeneous.

4– Buyers have full information on the prices announced by the sellers [12].

Neoclassical economists borrowed from their classical predecessors the view that, in a production economy, perfect competition is the simple, inescapable conclusion of free entry. And with free entry comes zero profits. Almost to the same extent as price-taking, the common identification of perfect competition with a free entry/zero profit equilibrium eliminates the space needed for the expression of market creativity [10] (Figure 4).

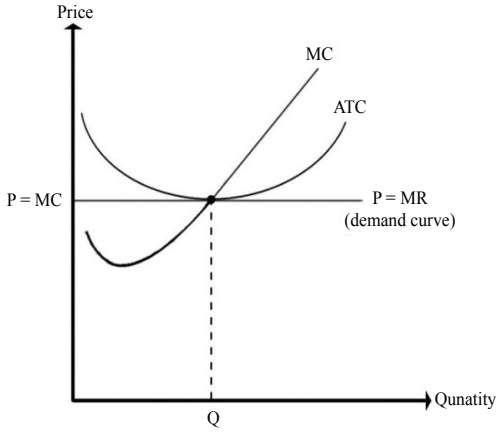

Figure 4: Perfectly Competition Firm in the long run.

- In the long-run a perfect competition firm will earn a normal economic profit. It cannot earn an abnormal profit in the long-run because firms will enter the market and the subsequent increase in supply will cause the price of the good to fall. Conversely, the firm cannot earn a loss (provided it can cover its fixed costs) in the long-run because firms will leave the market and the subsequent decrease in supply will cause the price of the good to increase.

Differences between perfect competition and monopoly

Monopoly and perfect competition mark the two extremes of market structures, but there are some similarities between firms in a perfectly competitive market and monopoly firms. Both face the same cost and production functions and both seek to maximize profit. The shutdown decisions are the same, and both are assumed to have perfectly competitive factors markets. However, there are several key distinctions. Therefore, a general comparison between monopoly and perfect competition has been depicted as below in Table 1.

Then we are facing this question that which one of these markets can performance better in existing Mashhad city condition for providing public bus network?

Mashhad public bus transportation system

Since Mashhad is the second most populous metropolitan area in Iran with two and a half million people living in and accepting 11 million tourists per year, it has been always facing with an increase in air pollution and traffic congestion. Thus, providing efficient public transportation is necessary. Public transportation functions as city vessels which transporting passengers allover. Now if the system runs perfectly, there would be no time loss for passengers to reach their own destinations and there would be efficiency for passengers in time management, urban development and running projects. In Iran, due to the lack of advanced transportation system such as metro, tramway, monorail, LRT and etc. public transportation means more as public bus services [13]. So Mashhad public bus transportation system, which an important part of it, works under the coverage of private sectors, has chosen to be studied in this paper. And thus, lane no. 96 which is public and lane no. 10 which is a private lane has been emphasized.

Lane no. 96 introduction (public operator)

- Lane no. 96 which is a public lane, covers region one from public transportation land zoning. The bus starts its route at Azadi

Feature	Monopoly	Perfect competition
Description	Extreme market situation, where there is only one seller. He has no competition and so controls supply and price.	A fair, direct competition between buyers and buyers; sellers and sellers; finally between buyers and sellers.
Buyers and sellers	Only one seller and practically all byers depend on him, hence he has absolute control over the market.	Large number of buyers and sellers, hence no sellers and buyers can alter the price in the market.
Supply	Supply from only one seller, hence absolute control over the supply.	Supply comes from large number of sellers.
		Individual supply is negligible.
Demand	Demand is inelastic. Demand curve slopes downward.	Demand is perfectly elastic. Demand curve is a horizontal straight line.
Product	Homogeneous product.	Homogeneous product.
Nature of competition	No competition at all. No price or product competition.	Pure and perfect competition in price.
Price	Higher price. Higher than all competitive price P> MR=MC	Normal price P=MR=MC
Output	Small output fixed by the sole seller.	Large output fixed by MR=MC
Profit	Excess profit monopoly gain.	Normal profit realized by price competition.
Application	Pure monopoly is rare but elements of monopoly are there in markets.	Quite unreal.

Table 1: Differences between perfect competition and monopoly.

Terminal and after passing 17 kilometers and stopping at 35 stations; it will terminate at Niroo Havayi Terminal. Figure 1 shows the path of lane no. 96.

- Right now there are 10 active buses for this specific lane (Mega Trance Benz model mostly). Each bus uses 120 L gas oil daily, needs 2 drivers in each shift (first shift starts from 6 am to 2 pm and the second one is from 2 pm to 10 pm), carries 300-400 passengers per shift and transport 700 passengers on average per day.

- Lane no. 96 path is covering south-west of Mashhad and counts as one of the most popular public lanes. Region of influence for this lane includes approximate 80,000 people.

- According to mentioned details above, lane no. 96 has 10 active buses; each of these buses needs 2 drivers whom are paid 16,000,000.00 IRR per month. Each bus has to operate 16 hours which starts at 6 am and ends at 10 pm. Every bus transports average of 700 passengers per day and every passenger pay 3,000 IRR per travel and also each bus needs 120 L gas oil per day and cost of gas oil is 6,000 IRR per litre.

Lane no. 10 introduction (private operator)

- Lane no. 10 which is a Private lane covers region two from public transportation land zoning. The bus starts its path at Ghadir Terminal and after passing 42 kilometers and stopping at 55 stations, it will end its way at Vakilabad Terminal. Figure 1 shows the path of lane no. 10.

- Right now there are 20 active buses for this specific lane (Sconia 457 model mostly). Each bus uses 100 L gas oil daily, needs 2 drivers in each shift (first shift starts from 6 am to 2 pm and the second one is from 2 pm to 10 pm), carries 400-500 passengers per shift and transport 900 passengers on average per day.

- Lane no. 10 is connecting west of Mashhad to east and counts as one of the most popular Private lanes because Region of influence for this lane includes approximate 166170 people and covers the most important highway in Mashhad (Vakilabad highway).

- According to mentioned details above, lane no. 10 has 20 active buses; each of these buses needs 2 drivers whom are paid 8.500,000 IRR per month. Each bus has to operate 16 hours which starts at 6 am and ends at 10 pm. Every bus transports average of 700 passengers per day and every passenger pay 3,500 IRR per travel and also each bus needs 100 L of gas oil per day and cost of gas oil is 6,000 IRR per litre.

As mentioned before, the study includes lane no. 96 and 10 which the number of buses per lane is depend on the population of affected areas. Also it shows that there are no crowded bus lanes in any public path lanes and this is the result of the willingness of private organizations to manage more crowded bus lanes in order to gain more benefits (Figure 5).

Economic evaluation of studied bus lanes

With regards to previous content and removing annual depreciation for each bus, daily revenue of bus organization for each lane can be obtained from following formula no. 1:

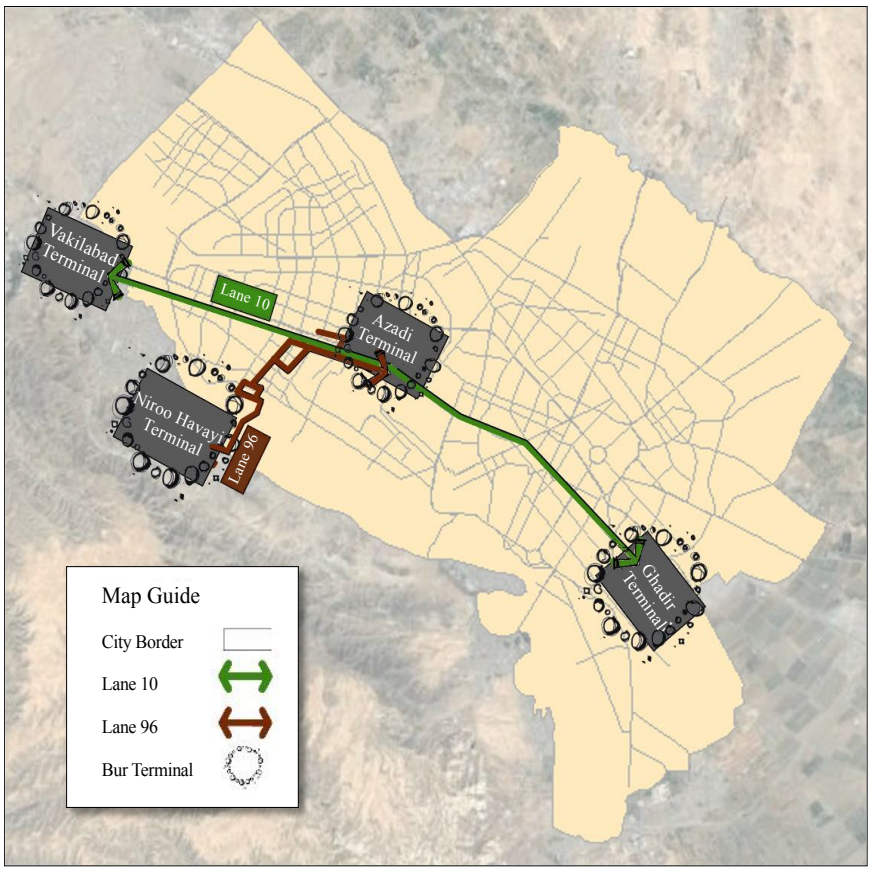

Figure 5: Lane 96 and 10 paths.

$$R = N\left(\left(M \times P(T)\right) - \left(\frac{S}{30} + F \times P(F)\right)\right) = \text{Formula no. 1}$$

R=Daily revenue of studied bus lane

N=Number of active buses for each lane

M=Number of passengers for each bus per day

P (T)=Ticket price for each passenger

S=Driver's salary of each bus per month

F=Bus fuel daily

P (F)=per unit bus fuel price.

- *Daily revenue of bus organization for lane no. 96 with public operator, has been obtained by using formula no. 1:*

N=10 buses

M=700 passengers for each bus per day

P (T)=3,000 IRR

S=32,000,000 IRR

F=120 L

P (F)=6,000 IRR

$$R = 10\left(\left(700 \times 3.000\right) - \left(\frac{32.000.000}{30} + 100 \times 6.000\right)\right) = 4.330.000$$

As can be seen above, lane no. 96 revenue is 4,330,000 IRR for bus organization of Mashhad city. That despite higher salaries, insurance of public bus drivers, lower ticket price for passengers and also higher fuel consumption of Mega Trance Benz model buses, it can counts as an efficient lane with almost high income.

- *Daily revenue of bus organization for lane no. 96 with public operator, has been obtained by using formula no. 1:*

N=20 buses

M=900 passengers for each bus per day

P (T)=3,500[1] IRR

S=17.000,000 IRR

F=100 L

P (F)=6,000 IRR

$$R = 20\left(\left(900 \times 3.500\right) - \left(\frac{17.000.000}{30} + 100 \times 6.000\right)\right) = 39.600.000$$

Higher number of passengers, higher ticket price of private sectors, lower fuel consumption of Sconia 457 model buses, lower driver's salary and critical path of lane no. 10, led to high income of 39.600.000 IRR for private sector.

Demand and supply curve for lane no. 10

In this section we study that how every private bus organization acts to gain the most benefit possible. No private firm individually has the power to change the ticket price, thus the unique ticket price for all competitors is 3,500 IRR inevitably. On the other hand, each private bus organization can have any number of buses for each lane. As it can be received from Figure 6, demand curve for lane no. 10 is straight and parallel to X axis.

As mentioned before, in perfect competition market each organization should use the fixed ticket price in order to stay in the. In result as it can be seen in Figure 6, average revenue (AR) and marginal revenue (MR) are equal to the price (demand curve).

Table 2 drives this message that cost for each travel by bus is fixed and equaled to 3,500 IRR. AR and MR columns present value of each variable index in cost of 3,500 IRR. The table shows that AR, MR and Demand curves are match and parallel to X axis and on the 3,500 IRR level. Figure 7 shows Total Revenue curve (TR) which starts at zero point of coordinates and is a straight and ascending line with constant angle.

Now the amount of services by the private sector for the maximum profit has to be calculated. Marginal Cost (MR) and Demand (D) curves coincide at (M) point and this is the place that private firm supplies 20

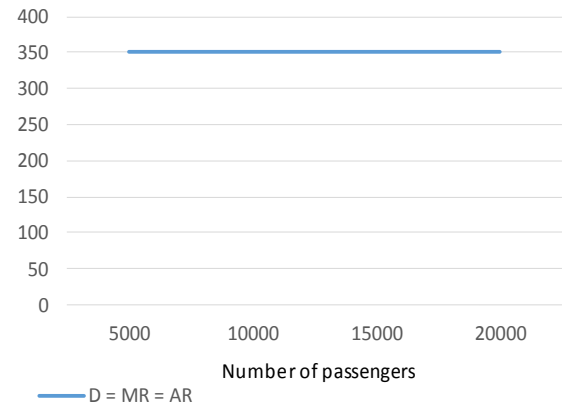

Figure 6: Demand, Marginal Revenue and Average Revenue curves for lane no.10.

$MR = TR_n - TR_{n-1}$	AR= TR/Q	TR= P.Q	P	Q
350	350	350×1	350	1
350	1750/5	350×5	350	5
350	3500/10	350×10	350	10
350	5250/15	350×15	350	15
350	7000/20	350×20	350	20

Table 2: AR, MR and TR.

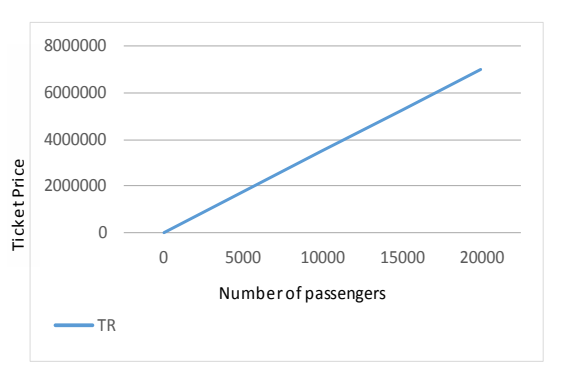

Figure 7: Total Revenue of lane no.10.

[1]We should consider that actual ticket price for each passenger is 5,000 IRR which has been reduced to 3,500IRR and the difference between paid by government to private section as a public subsides. But since additional charges for private firms has not been considered, in this article we ignore the 1,500 IRR extra for each ticket in our calculation due to get the equable answer in the end.

Markets	Direct Benefits	Indirect Benefits	Costs	ROI
Providing public transportation by a partnership between private and public sectors.	Existence of government regulation.	Stability of price.	Lack of creativity and innovation in the private sector due to restrictions.	$ROI=\frac{(2\times2)+(2\times1)}{(2\times2)}$ ROI = 1.5
	Existence of competition.	Raising the quality of services	Disagreements between public and private sectors due to the difference in the performance	
Providing public transportation in monopoly market.	Lower price and economy of scale	The presence of equal quality as a result of monopoly	No attention to consumer satisfaction due to absence of competition	$ROI=\frac{(2\times2)+(1\times1)}{(2\times2)}$ ROI = 1.25
	Existence of single central managing		Non choice option for the consumer under the same product	
Providing public transportation in perfect competition market under government regulation.	Providing public interests instead of the interests of a particular group because of the competition.	Paying attention to consumer preferences, demands and their priorities	The higher price of goods or services to the state monopoly	$ROI=\frac{(2\times2)+(4\times1)}{(1\times2)}$ ROI = 4
	Existence of multicentre orders under multiple management	Increasing creativity and innovation		
		stable Price and service		
		Managers attempt to become conscious of less expensive methods of operation.		

Table 3: Differences between markets in providing public transportation.

buses (18,000 passengers per day) and achieves the maximum profit possible and remains in an equilibrium level. Total revenue of 20 buses for the private firm is equal to shaded area and total cost of the firm is equal to the orange area and the gray area is the super abnormal profit area which is the result of short long competition in the market.

In above figure it can be seen that if point (M) (where MC=MR) be perpendicular to the Q (number of passengers) axis, it would cut off the AC curve at point (N). Then point (H) caused by extending point (N) with 90˚ angle at P (ticket price) axis. How to calculate point (H) is given below:

H=Total costs per day ÷ Total number of passengers per day

H=23.400.000 ÷ 18.000=1.300.

Considering the fact that total costs for upkeeping the buses, parking lot, bus depreciation and other additional charges would rise by adding extra active bus for lane no. 10. Therefore, without provision of appropriate transportation infrastructure, the maximum profit for the private sector can gain at this point.

Conclusion

As it has been mentioned in the last session, part of the bus organization of Mashhad city performs in competition condition. Private sector works under supervision of public operator. To get a specific bus lane, private sector has to announce its willingness to the public section. Private sector has to provide the minimum number of buses which is enough and suitable for population of affected area. Ticket price also is determined by public bus organization and private sector has to accept it for each passenger. Bus organization pays 1,500 IRR for each passenger to the private firms In order to encourage them to continue their activities. Nevertheless because of delays in their payments, private sectors are not satisfied with the situation and having no tendency toward investing in provision of bus infrastructure. Still private sector revenue is higher than public operators. It can be the result of having the right to choose more profitable lanes by private firms and smaller region of management.

Companies determine costs for each goods and services that offer. These costs express as fees, commission, rent and etc. Between all marketing components, prices are the only factor which can effect on the revenue. Also price is the most accommodating component of marketing because it can change quickly. Although competition in pricing is an important issue that companies are faced with, but lots of companies cannot solve this issue in the best way possible. With close quality of different goods and services deliver by different competitors, competition became one of the most effective ways to attract loyal customers and satisfying them. Using an intelligent pricing in either selling goods or providing services is critical, if an investor wants to remains in a competition market. The worst that can be done by is unprincipled and inarticulate pricing, although this is a common mistake among lots of administers. Even though, there are different external factors which can effect on success and profitability of a particular firm, choosing a right price is crucial to guaranty a reliable profit. As a result of competition, existence of several competitors can lead to choosing the best available option in the market.

For better understanding the differences between monopoly, partial competition and perfect competition in providing public transportation, in this article we used cost-benefit analysis method which is represented simply in the Table 3.

For this purpose return on investment[2] has been calculated by grading each benefit and cost indicators so that each direct benefit gains 2 points, indirect benefit gains 1 point and each cost gains 2 points.

In the Table 3, benefits and costs of each market has been listed and graded in order to compute the return on investment. As we can see ROI of the third market is higher that two others and this is the reason why competition market is more efficient in providing public transportation.

In addition, as it can be seen in many developed countries, infrastructure investment by private sectors plays a critical role in urban development. Thus, it can be concluded that in spite of the fact that private investments are main bases for infrastructure provision, it is also beneficial for people, government and the investor itself.

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[2] $ROI=\frac{Bi}{Ci}$

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