



## DYNAMIC PRICING BY INDIAN RAILWAY- A WAY TO CUSTOMER LOSS

**Dr. Jojo K Joseph,**

Associate Professor and HOD, Research and PG Department of Commerce, Marian College, Kuttikkanam

**Boby Thomas,**

Assistant Professor of Commerce, Pavanatma College, Murickassery

### ABSTRACT

*Dynamic pricing is regarded as the best way to maximize revenue in the internet economy. This dynamic pricing is beneficial to the customers, industry and society as a whole in many respects. But its implementation in many areas raises ethical questions. For example if a hospital increases doctors consultation fee with the number of patients on the day, it may be generally regarded as unethical. The same is there for any essential services. It is more unethical if it is adopted by a monopoly firm. This paper is an empirical analysis of the dynamic pricing adopted by the Indian Railways in selected trains. The paper gives a light into the benefit/loss that is gained by a passenger as well as railway.*

**Key Words:** Pricing, Differential pricing, Price Dynamics, Dynamic Pricing, Price Discrimination, Airline Price, Railway fare

## **Introduction**

### **The concept of price:**

Price can be defined as the quantity of compensation given by one party to another in return for some unit of goods or services. In simple price refers to the quantity of payment requested by a seller of goods or services. But the meaning of the price differs with changes in the occasions. Moreover the term becomes more complex at certain circumstances. The given below are some occasions which provides different meaning to the term price:

- Asking/selling price: It is the price demanded by the seller from the buyer.
- Transaction price or traded price: It is the price agreed to pay by the buyer to the seller.
- Actual payment price: This is the actual payment made by the buyer to the seller, after cash discount.

In modern economy, prices are generally expressed in units of money (currency). In the barter system, prices are expressed in terms of quantities of other goods or services. In the modern economy also, this barter system is in practice in some areas like prisons, hyper-inflated economies, black market economy, though rare. It is also used as a modern medium of corruption. For eg. Presenting goods and services to doctors, politicians and govt. officials, for obtaining an illegal service.

Price is also used by government for the social regulation. For instance; certain amount of penalty is imposed for the violation of rules. It becomes the price of the violation of particular rule. Generally police has a price list of penalties to be imposed on certain violation of rules by the public. For eg. penalty for not wearing of seat belt. It may become the price of promoting something. For eg. Prize given to an athlete. Here prizes become the prices for promoting the athletes. Now a day anything can be priced. Art, talents, skills, soft skills, critical mind, humor, games, sports, etc. are also priced by the market economy. Eg. Pricing of sports man by Clubs, artists by advertising agencies, etc.

The impact and concept of price is there in every spheres of human life. In the modern commercialized world it may not be an extremity if one considers religion, charity, and social culture as markets where one should pay the price. Dowry, fee, donation, offering, etc. are the various forms of price that one is paying for obtaining the service or for practicing the culture. Social parties, Birth Day parties, rituals, festivals, etc. are occasions where people are priced indirectly.

## **Pricing System**

Price systems are the result of scarcity. If something is in abundance, there is no question of pricing it. For eg. air is not charged. Water was never charged before few years. Purified water became a necessity due to water pollution. Therefore pure water becomes a scarce resource. Now it is priced per bottle. If time is not considered as a scarce resource, or where it is so, it cannot be priced. But, where the time is precious and scarce for an individual he would be ready to pay for it. That would be one of the reasons for hiring a taxi for reaching the destination. Hence price is the outcome of scarcity. So it will provide a mechanism for the optimum utilization of scarce resources. There for a major task of the economic system is that of devising a good price system to achieve the basic goals of the economy. This is true for an economic organization also. It should utilize the pricing system to achieve its organizational objectives.

## **Basic Objective of Price System**

Price system is a means of organizing economic activity for attaining the objectives of the state. Pricing system coordinates the decisions of consumers, producers, owners of productive resources, Govt. and the society as a whole. The system enables an Indian sitting at Kerala to purchase a product from Kashmir, without even meeting or caring about the producer and consumer. It enables a person to travel from India to Uganda, which is a novel country to him. Thus pricing enables people to occupy their goods and services without any direct communication. It also enables the development of a hidden public market like sex-toys, pornography, anti-social movements, etc. It also influences the social interest of people, their purchase behavior, their dress and food habits, beliefs, ethics, etc. (through the manipulation of news, advt., etc.). Thus in a modern economy the price system enables a consumer to buy new product, that he has never previously purchased, or even thought of purchased, and which may be produced by an unknown firm.

## **Traditional system of Pricing**

Traditional system of charging price for a product was associated with the cost of that product or service. Cost plus fair profit was an accepted criterion for pricing the product. And much time there was confusion in the pricing for services. For example Ayurveda medicines had been given for a number years at free of cost or without any specific price. Even now in the villages, various services are given by the farmers at free of cost, as part of hospitality.

The method of cost plus profit is used for fixing the price of scheduled transportation services.

### **Pricing in Free Market Economy**

In a free market economy, market price reflects interaction between supply and demand. Marginal utility of the asset to different buyers and to different sellers also affect the demand, supply and price. It helps to optimize the revenue of the seller. If the price is totally due to the influence of the free market, it would be accepted by the society.

### **Price Discrimination**

Price Discrimination is a microeconomic pricing strategy where identical / similar goods or services are sold at different prices by the same seller in different markets. This strategy was used to increase the revenue. Charging different prices from different customers were not considered as illegal, since it was not based on cast, race or gender.

In the modern scenario, price discrimination was modified and expanded by differential pricing. The term differential pricing has a little broader meaning. Selling the same product or service to different customers of the same or different markets at different prices is called differential pricing. Government adopted this system of differential pricing, as it is termed now, as a means of ensuring social justice. For eg.charging no fee/subsidised fee for different services from backward communities. For eg.application fee, school/college fee, etc. Price discrimination has been adopted by the government through various other forms also, such as subsidies, free insurance, etc. In the modern economy price differentiation takes various forms such as:

With Value addition: Some alterations in the product is made, keeping the basic product the same and differential pricing is adopted.

Without value addition: Differential pricing is charged for the same product/service without any change in the product.

### **Differential pricing in Travel Industry.**

#### **Road Transport:**

Scheduled service transportation sector has two forms of price differentiation.

(a) Social concern price discrimination: Concessional rates to students, blinds, regular customers, etc. and

(b) Value added price differentiation: like Ordinary, Fast Passengers, Super Fast Passengers, etc.

### **Rail Transport:**

Indian railway has three forms of price discrimination/differentiation

(a) Segmental discrimination: Concessions provided to disabled passengers , patients, senior citizens, awardees, war widows, students, kisans, youth, artists & sportspersons, medical professionals, izzatmst at various rates.

(b) Value added price discrimination: It is on the basis of travel class such as Super fast, Rajadhani, Ist/IIInd/IIIed A/cs, SL, 2sitting, Chair car, II class, etc.

(c) Time based price discrimination: Premium for Talkal

### **Air Transport**

The airline companies are adopting multidimensional price discrimination.

a) Segmental differentiation: concessionary fare to armed forces personnel, gallantry award winners, differentially abled, LTC concession, senior citizen concession, student concession, etc.

b) Discount based differentiation: seasonal discounts, frequent buyer discounts, Round trip fare, Corporate booking, etc.

c) Value added differential pricing: This premium pricing is generally based on Travel class and flexibility.

i) Travel Class: Business class, First class, Premium economy class, and Economy class are the four classes of travel offered by airline companies. The amenities provided in each of these classes are different.

ii) Flexibility Based: Flexi service (flexibility to change the trips and flights), Super value economy (least price with no flexibility), Flexi saver economy (limited number of chances to change the date and flight), Flexible economy (unlimited number of chances to change the date and flight), Segmental differentiation (discount offered to students, senior citizens, armed forces, etc.) and Discount coupons (limited period discount offer given to individual customers).

## **Dynamic Pricing**

A system of pricing in which price is determined as per the demand and supply for the product or service can be called as dynamic pricing. Most products can be sold for the best price, when demand and supply meet. Here the prices are not fixed, but flexible. It varies depending on the current market demands. Now a day dynamic pricing is practiced by various industries like hotels, travel, entertainment, and even in retail sector. The spread of ecommerce and computer based algorithms facilitates dynamic pricing. In most industries automated dynamic pricing is in practice. Dynamic price strategies may include:

1. Supply and demand: Demand and supply based dynamic pricing is common in air travel industries.
2. Time-based: They are common in bars and pubs. They offer a happy hour at off time during which discounted prices are charged for drinks and food.
3. Competitor pricing: This method is used by online retail shops. They use it for optimising their price in comparison with the price of it's competitor.
4. Customer behaviour: This method is often used by online shops. Here each consumer is evaluated on the basis of mass analysis software, and unique prices are offered.
5. Segmented Dynamic Pricing: This method is also adopted by online shops. Consumer data is collected and it is used for segmenting the consumer on the basis of occupation, income and even nature.
6. Peak pricing: Peak pricing refers to charging high price at peak time and peak seasons. This is adopted by hospitality, entertainment and travel industries.

### **Dynamic pricing by Indian Railway**

It has been reported that the Ministry of Railways is having a rethink on flexi-fares and bringing in a dynamic pricing system that will help increase occupancy and enhance revenues. Railway minister Goyal has said that a committee has submitted a report on how to dynamically price the train tickets which would also help improving profits. Almost all the Rajadhani trains and Durgam Expresses have adopted dynamic pricing has now a days. Railway claims that premium trains are fast Express rail service which is operated in busiest routes. These trains have dynamic fare structure. It means ticket price is not fixed and it varies according to booking time and seat availability.

## **Methodology of Sampling**

Out of the Routes where premium trains are there, four routes are selected for observation. They are from New Delhi to Mumbai, Chennai, Kolkata and Bangalore. From these routes a premium train has been selected randomly. Date of travel is selected as to the nearest availability of it from the date of observation.

An express train is also selected from the same route with nearby departure time. This is made to observe the demand existing in that route. Flights are selected which starts at least after one hour from the departure of the train, to adjust the check in time.

## **Methodology of Data Collection**

Travel fare of Train was collected from IRCTC website using login id and password of the scholar for ticket booking. Air fare was collected from the travel agency website of Cleartrip for ticket booking.

## **Data Analysis**

Two dimensional analysis is made to analyse the economic gain brought in by the implementation of dynamic price system by the Indian Railway in Rajadhani and Doronto trains. They include:

### **1. Economic benefit to the passenger**

Economic benefit to the passenger is analysed in two dimension. The direct economic benefit available to him in terms of money and economic benefit available to him considering one of the opportunity costs, ie loss of wages due to additional travel time in train. The following opportunity costs are ignored for data analysis:

- a. Additional cost incurred for the up/down journey to airport, air charge for additional luggage.
- b. Opportunity cost incurred in connection with body fatigue in train travel, associated pride in air travel, associated additional expenses that may be incurred in travel.

### **2. Economic benefit to Railway**

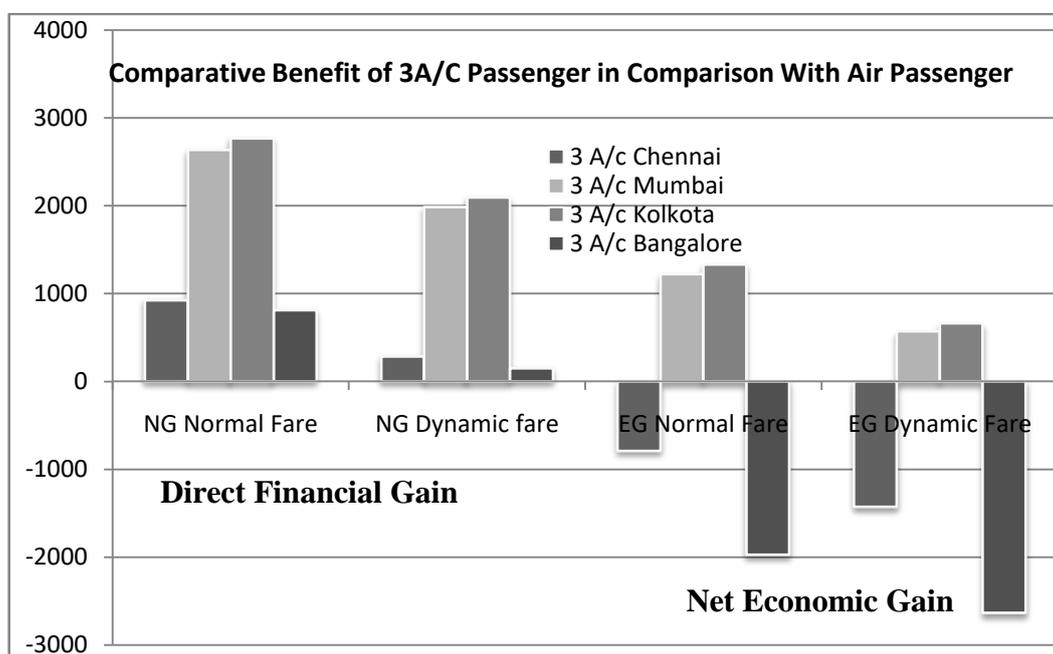
- a. Here the direct increase in revenue due to dynamic fair
- b. Loss of revenue on vacant seats, in comparison with normal fare of ordinary train.

Opportunity cost of lost wages due to extra travelling time: The extra travelling time taken for travel by train is ascertained by taking the difference of standard train time and the standard flight time + 1.5 hour check in time. The standard time provided by the authorities at the time of booking is taken here for calculation.

### Comparative Benefit of 3A/C Passenger

The following diagram illustrates the normal financial gain available to the passenger while travelling in 3A/c travel class, in a Rajadhani Train. The second part of the chart shows the net economic benefit of the passenger considering the opportunity cost of lost wages due to extra travelling time in train.

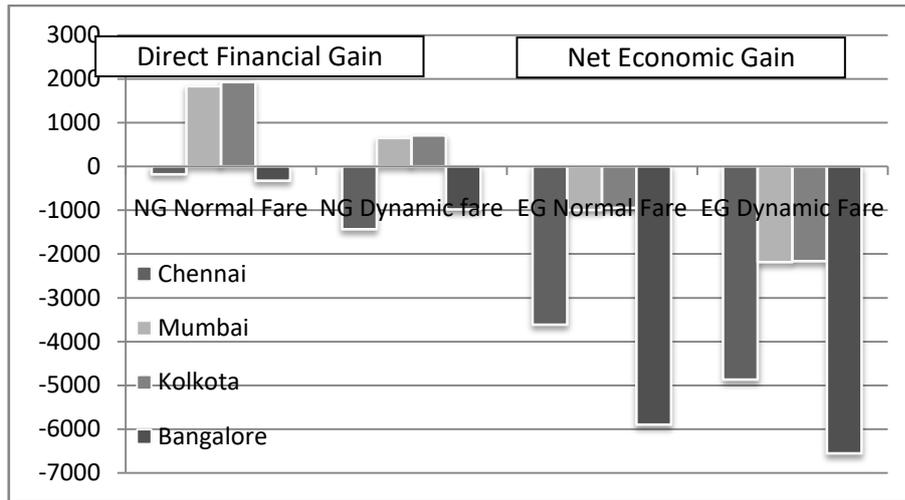
Figure1



### Comparative Benefit of 2A/C Passenger

The below diagram illustrates the normal financial gain available to the passenger while travelling in 2A/c travel class, in a Rajadhani Train. The second part of the chart shows the net economic benefit of the passenger considering the opportunity cost of lost wages due to extra travelling time in train.

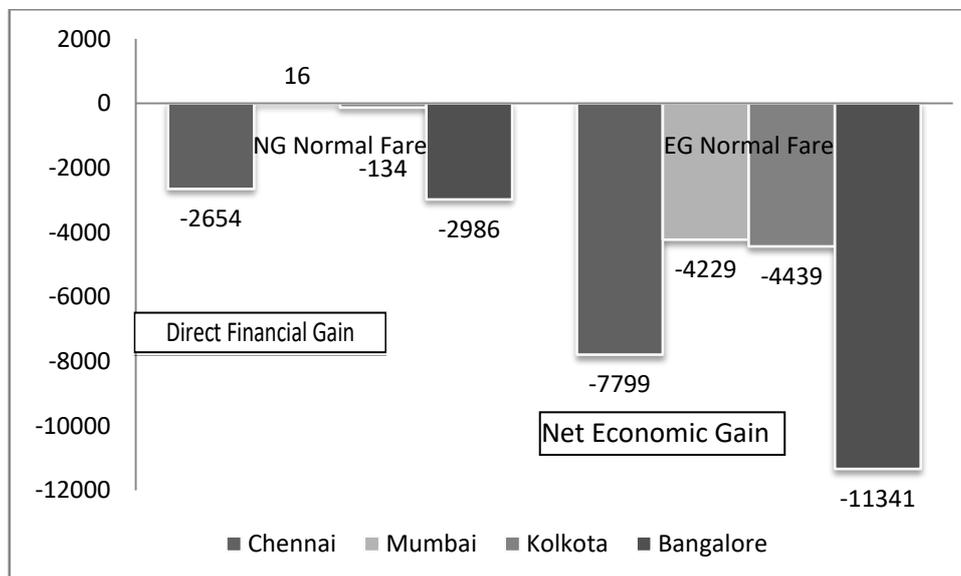
Figure2



### Comparative Benefit of 1A/C Passenger

The following diagram illustrates the normal financial gain available to the passenger while travelling in 1A/c travel class, in a Rajadhani Train. The second part of the chart shows the net economic benefit of the passenger considering the opportunity cost of lost wages due to extra travelling time in train.

Figure3

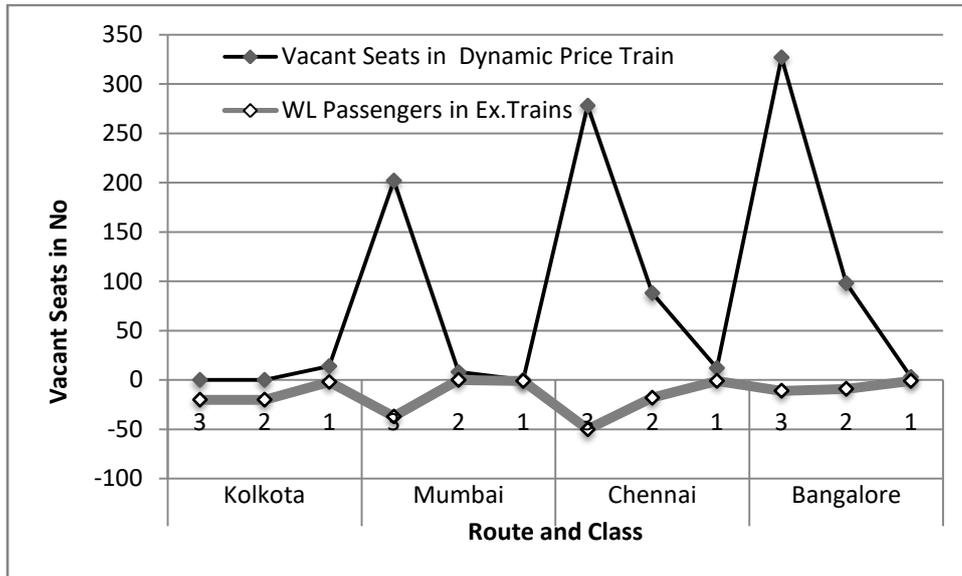


### 3. Economic benefit to Railway

The following diagram shows the number of seats vacant in Dynamic priced Rajadhani trains and the number of Waite Listed passengers in a selected express train on that

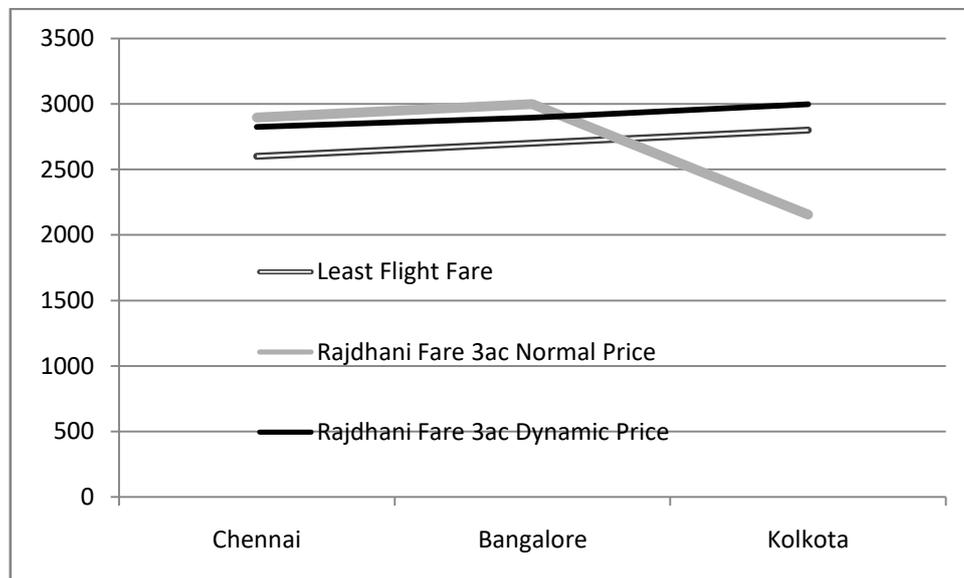
route. The selection of the express train was made which is corresponding to the departure time of the Rajadhani train.

Figure4



### Comparison of Rail fare with Least Airfare

The following diagram shows the Comparison of price benefit available to a traveller who plans in advance. The flight fare seems to be the least for most cases.



### Summary of the Study

Dynamic pricing is not a suitable price system under monopoly to optimize revenue. Using this system under monopoly may attract customer alienation. Moreover market

educated customers may shift to other available opportunities. This will result into the loss of customers. The study is conducted during the offseason as far railway is concerned. The following findings are notable:

1. For the 3 AC passengers, some economic benefit is there for a comparatively more, if he books on a closer date.
2. For 2AC passengers, dynamic airfare leads to a direct loss of money.
3. For 1AC passengers, there exists no dynamic pricing. But even then the price leads to a direct loss of money to the traveller.
4. The passengers will incur a heavy loss, if they consider the opportunity cost in connection with loss of time in travel.
5. In a market where customers are scattered and unorganized, there may not be a direct opposition from the part of the customers, due to a hike in price, resulted from dynamic pricing. But they will retaliate by shifting the market.
6. Railway has monopoly in the Indian rail market. But for the Rajadhani and Doronto trains competition is there from the Air market. Hence implementation of dynamic pricing without any benefit to customers will lead to the loss of customers by the railway.
7. Dynamic pricing aims for the revenue maximization based on the demand and supply. Even though the demand is less, railway charges premium pricing from the travellers.
8. From the observation, it seems that railway has not implemented dynamic pricing for the revenue optimization. Dynamic pricing is implemented as a supplement to price hike.

## **Conclusion**

Every system in the economy has a basic function to play. Dynamic price system is there to optimize the revenue through the adjustment of price to attract customers. More customers and better services will increase the revenue in the long run. Air travel market has accepted the dynamic pricing system, because of its transparency and reduction in price at least for the advance booking. Wrong implementation of a modern system of pricing may bring opposite result to the organization.

## **BIBLIOGRAPHY**

1. James D. Dana, Jr., "Advance-Purchase Discounts and Price Discrimination in Competitive Markets," *Journal of Political Economy* 106, no. 2 (April 1998): 395-422.

2. Gimson, J. (2014, August 24). *What is Dynamic Pricing and Why is it Important?* Retrieved March 16, 2018, from crealytics: <https://crealytics.com/blog/dynamic-pricing-important/>
3. Indian Railway. (n.d.). *www.indianrailways.gov.in*. Retrieved March 16, 2018, from Indian Railway: [http://www.indianrailways.gov.in/railwayboard/uploads/directorate/traffic\\_comm/Concession\\_list\\_different\\_persons.pdf](http://www.indianrailways.gov.in/railwayboard/uploads/directorate/traffic_comm/Concession_list_different_persons.pdf)
4. Rubber Board. (n.d.). *Yearly prices page*. Retrieved March 16, 2018, from Rubber board: <http://rubberboard.org.in/YearlyPricesPage.asp>
5. Stigler, W. J. (2016, June 6). *Price System*. Retrieved March 16, 2018, from Encyclopædia Britannica: <https://www.britannica.com/topic/price-system>
6. Thomas, B. (2015). Impact of e-commerce in the popularity of differential pricing--Special Reference to Airfare. *Pesquisa (ISSN-2455-0736)*, 73-81.
7. Indian Railway. (n.d.). *E ticketing*. Retrieved March 17, 2018, from irctc: <https://www.irctc.co.in/eticketing/home>
8. PTI. (2018). *Railways rethinking on flexi-fares, may bring in dynamic pricing system*. E Paper, : The Economic Times.
9. Cleartrip. (n.d.). *Search Flights*. Retrieved March 16, 2018, from Cleartrip: <https://www.cleartrip.com/flights/>