Data Analytics for Self-Pooling Facility in Cabs

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Abstract: Transportation System is one of the backbones for any country growth. Either in Developed or Developing countries transport system plays key role as people are not interested to stuck in traffic or get affected by the pollution. Now almost all the countries are moving towards smart transportation system. On top of it for the Business People Time is very precious. The business people will think how to utilize the travelling time. At the same time students who are travelling regularly to college in the same direction interested to travel together. Either Business People or Students if they have their own car, they will do carpooling or vehicle pooling. But still the problem is if the distance is too far no one is interested to drive such a long distance. And also as a socio cause now a days the people are worried about environment, people are very much interested to use cab services instead of using their own car. The only problem with cabs is though people are affordable to pay for cab every day the problem is they cannot travel together to utilize the travelling time for business purpose or for the students to save money. Though the Cab Services has grown a lot in India like OLA, UBER , MERU etc.., Started with Self Cab Booking[3] to Share Cab Booking still the above two problems of Utilizing Travelling Time for business people and Saving the money for students who are frequent travelers is not solved. To solve these two problems the proposed method of Self Pooling facility is needed. Self-Pooling Facility is mandatory for the developing countries like India to serve the Students, Employees[3]and Business People who are frequent Travelers. And it also solves the problem of Business People from Developed and Developing Countries as well. The proposed method may not give 100% solution to the above two problems at least It solves the above two problems to the extent of 80-90%.

Key Words: Transportation, Self Pooling, Students, Business People, Traffic.

I. INTRODUCTION

The Cab Services has grown a lot in developing countries like India from local cabs like MERU & OLA to International Brands like UBER. Initially when Cab Services started in India people could be able to book their own cabs from source to destination without considering the type of the vehicle. **Fig.1. Major Players in Cab Services**

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Later stage the Cab Services [2] has grown to a level where the people can choose the vehicle based on Number of People. The cab Services moved to a level where people can The cab Industry named it as MINI, MICRO, PRIME, SUV, GO, X etc.., (Fig.2. and Fig.3.) based on different cab service providers they named on their own. And now cab Services moved to a level where they entered into Auto Booking through same application and they have not stopped there it self-moved to next level called Two Wheeler Share. Parallely to solve the need of Middle and Lower Middle class people [1] the cab Services started Share or Pooling facility in the cabs.

book cab based on people and also based on their need like luggage space etc.

This has brought revolution in the Cab Industry not only that the people who are frequent travelers or who are coming to metro Politian cities are very happy by the Induction of this Service. Thought the Cab industry moved step by step from Single Men Booking [1] to Share or Pool (Fig.2. and Fig.3.) alongside based on their need like people, Space, Luggage, Comfort still the problem is for the frequent travelers still it is an burden in the name of cost and wasting time as they cannot do pooling along with their friends and colleagues.

II. LITERATURE SURVEY

The Literature Survey in this paper is continuous research made on the cab Services the entire research took 6 months to understand the Cab Services Functioning and study made in the city of Bangalore, India by considering two major players in this services like OLA and UBER. The major problem identified is Cost and not able to pool along with Friends or employees though they are travelling in the same direction every day
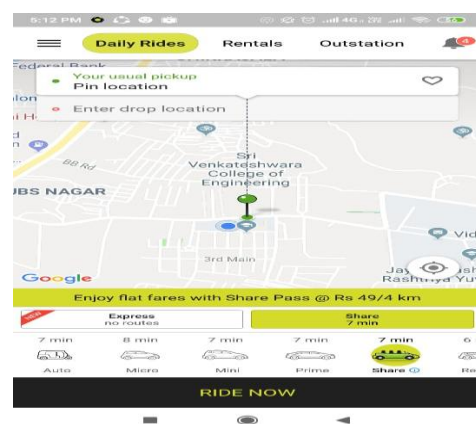

Fig.2. OLA Different Type of Cab Services Available

To give an example if 3 members want to travel from source[3] A to Destinations B[1] still they need to book three different cabs either own or share based on their need.

And another problem the algorithm used in this cab industry is providing max of 3 customers in share pool if it crosses 3 the preference will be given to next cab based on the distance. Though this cab has one more vacant place [2] to occupy moving in the same direction the algorithm will give preference to next cab. Let's assume if he got only one passenger either he will reject the trip or he will be under loss as he is going for only one person. To avoid this problems after keen research and study on cab industry the need of Self Pooling Arisen.

Fig.2. UBER Different Type of Cab Services Available

A. SELF POOLING

Self Pooling is a mechanism in which if customer wants to travel along with friends he can book the cab in self Pooling facility. Provided that the friends are going to join within 3 kilometers radius. For that 3 kilometers radius customer not charged anything extra if friend is beyond 3 kilometers till he reaches his friend half of the fare will be charged and also once the second person comes in he is going to charge only 75% of the actual fare[1] as he is getting confirmed order. If suppose friends want to jojn in middle and they are ready to bare fare then directly book self Pooling option and Inform same to driver for verification.[2]

B. WHAT'S THE BENIFIT?

In customer point of view: If customer want to travel along with his friends who are residing nearby without wasting the time by coming to closest point[2] and book the cab they can easily connect with each other and travel.

For Business people [1] they can easily complete their meetings without wasting time. And also they can schedule meetings over the car instead of wasting time in office. HR People can also conduct first level interaction while travelling itself. That means Self Pooling will reduce the problem of driving own cars [2] too long distance they can easily do cab pooling which will reduce overall burden of cost on customer. Apart from this the companies can easily reduce transportation cost of employees instead of owning the cars or renting the cars. And also the common reason Cab Late problem. Will be solved as the entire trip to be started by the person itself they cannot give any lame reasons to the employer.

If they book using share the driver will think twice to go or not in some areas where there is very less density of customers. And another problem with share is in the direction they may get one more booking any where the customer has to wait until he completes their trip if it is first. As discussed the problem of wasting time and also the cost will be solved by this method.

The other problem faced is from cab drivers side is once the customer books the cab they will ask destination by calling them and if there is no possibility of getting trip [3] while coming back they will reject instead of they get self-Pooling trip easily they will earn money what they are supposed to earn in round trip.cab drivers can easily earn trips and no need to reject the trips as they are not going to get trips after dropping current passenger.

C. HOW THIS WILL WORK:

This system will work based on two things based on distance and number of friends are going to join trip.

Let's consider if one person is booking self Pooling facility and only one friend is going to join on the way then there won't be any advantage for cab driver this case should be taken care

Scenario2: The customer cannot book self Pooling facility to friend who is 3 kms close to destination.

Scenario3: once the self- Pooling facility is booked the customer cannot cancel this in middle because of the delay by other person or he is not reachable [1] etc...If it is the scenario the booked person has to pay distance based fare in order to avoid loss to the cab driver and also by keeping customer into consideration

D. PSEUDO CODE FOR DATA ANALYTICS USING IS AS FOLLOWS:

- Start
- Enable All Cars in the given location.
- Check For the Routes and find the best routes amongst given source and destination.
- The Customer now can enable self-pooling option to pick their friends on the way.
- Once the cab is booked using Self Pooling Facility customer can select pickup points same will be displayed to driver.
- Once the Trip is started the fare is calculated based on distance and number of pickups and the offers of the day.
- Call Function Distance(Number of Passengers, Distance, Condition1 , Condition2)
- Trip Continues and end the trip.
- Stop

Distance (Number of Passengers, Distance, Condition1, and Condition2):Under this function the actual fare is calculated based on the above 4 parameters.[2]

Number of Passengers: Based on number of Passengers.

Distance: You cannot pick any friend near 3 kms before reaching destination.

Condition 1: Self Pooling Will is enabled when you have minimum two more friends on the way.

Condition 2: The Fare of Self Pooling route depends on the distance u travel so the bill will be generated at the end. Initially the Bill will be generated only based on Distance.

With the implementation of Self Pooling facility as per survey there should be 50% improvement in the cab services. Like this the Self Pooling will be revolution in the Cab Industry.

The Self Pooling facility will be an added advantage for both Customer and also Providers in order to save the money and time.

III CONCLUSION

Self-Pooling facility can be taken as a challenge by upcoming cab service providers to extend their business and also get good profit out of this. Along Side this cab service providers can extend share facility to out station cabs when there is an event happening in a particular location. To give an example people who are staying near to TajMahal[3] want to visit this monument in Weekends but they cannot offer own cab so that time they can either go with Share facility or Self Pooling along with their near and Dear

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