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A STUDY ON PASSENGER'S SATISFACTION USING FASTAG WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

FASTag is a technological improvement in toll collection system. It is a system based on RFID technology. RFID is radio frequency identification device. A tag with RFID technology known as FASTag tag is affixed on the windscreen of the vehicle. When the vehicle passes the toll the tag is detected and the amount is deducted from FASTag account. The FASTag account can be opened in any bank or through net banking or by mobile apps. The amount in the account gets deducted automatically and SMS will be received for the transaction. And if the account is of insufficient balance will also be notified. FASTag reduces the fuel consumption of the vehicle, reduces traffic congestion, reduces paper works and it also reduces air pollution. The essential objective of this study is to know the satisfaction level of people using FASTag with special reference to Coimbatore city.

KEYWORDS: *FASTag, Technology, RFID, SMS, Fuel.*

INTRODUCTION

India is a country with huge population.As the population increases the technological advancements also increases.And India is a country with the second largest road network in the world,out of the total stretch of 5.4 million km of road network,almost 97,991 km is covered by National highways.The NHAI[National Highways Authority of India] is responsible for the road maintanence and the expansion of highways.It is a nodal agency of the Ministry of Road Transport.These National highways collect tax from the people who pass through the toll,which is known as toll tax.And the amount collected is used for road maintenance.The toll collection is done by cash method.But now it is made automatic way of toll collection system using FASTag with RFID technology.

FASTag

In January 2019, the state-run oil marketing companies like IOC,BPCL AND HPCL have signed MoUs enabling the use of FASTag to make purchase at petrol pumps.And from September 2019,FASTag lanes are accessible on over 500 national and state highways. And over 54.6 lakh cars are enabled with FASTag. Starting on 1st January 2021,Fastag was made mandatory for all vehicles but it was later postponed to 15th February 2021.

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FASTag is a simple reloadable tag which detects toll charges automatically.The need for stopping at the toll plazas for making payments is not necessary.The tag is affixed on the vehicle's windscreen and it works with the help of Radio-frequency Identification [RFID] technology.The customer can get his FASTag account created by paying a onetime fee of Rs.200 by visiting any Point of Sale[POS] location at toll plaza or any Issuer agency.FASTag account is procured by making a payment through cheque or online through Credit card or Debit card or by NEFT or RTGS or through Net banking. FASTag account can have a maximum balance of Rs.1,00,000[One lakh rupees only].After recharging FASTag account the passengers can drive their vehicles through FASTag lanes at toll plaza and the toll amount will be automatically deducted from their FASTag account.

STATEMENT OF THE PROBLEM

People were accustomed to using roads for free by only paying tax. Then the roads became better and charges were collected for using those roads. People who wanted lesser travel time chose those roads with Toll plazas. Now, most of the National Highways have become roads with Toll plazas. This has made all the people to come across Toll plazas in their travel often. Now, Government has also introduced FASTag services which provides RFID Tags and makes the payment for the Toll plazas linked to their various bank accounts and other cash accounts. Government's effort to make FASTag is not being welcomed by the people. They feel it as a burden many times. So, this "Study on Passenger's satisfaction using FASTag services with special reference to Coimbatore city" was carried out to find out where the people face problems because of FASTag services and what make them feel satisfied about the FASTag services. The study also aims at identifying the suggestions of the people to overcome the problems associated with the implementation of FASTag services.

OBJECTIVES OF THE STUDY

1. To understand the demographic characteristics of the people using FASTag
2. To examine the problems faced by the people due to the implementation of FASTag
3. To analyze the satisfaction of people towards FASTag

METHODOLOGY OF THE STUDY

Research design

A research design is truly and simply the framework of plan for a study and it guides the Collection and analysis of data. It is descriptive in nature.

Area of the study

The study is take on in Coimbatore city.

Sample size

The sample size for the study is limited to 125 respondents.

Sampling techniques

Convenience sampling technique is used for the study.

Period of the study

The Period for the study is 4 months i.e. January 2020 to March 2021.

Methods of data collection

Questionnaire method is used to collect the data from the respondents.

Source of data

The study is based on primary and secondary data. The primary data had been collected from the respondents through questionnaire and secondary data is collected from articles, books, magazines and newspapers.

TOOLS USED FOR THE STUDY

The tools used for analysis are

- ➢ Simple percentage analysis
- ➢ Rank analysis

LIMITATIONS OF THE STUDY

- The major limitations of the study are that respondents' bias cannot be judged and small sample size.
- The study confined to Coimbatore city only and hence the result cannot be generated to other areas.
- Internal prejudice of the respondents serves as a limitation of the study.
- Due to time constrains, the number of respondents taken for the study is limited to 125

REVIEW OF LITERATURE

Venkatesh Suvarna, Jeet Patalia have tried to analyze some of the current RFID highway toll collection systems and to predict their practicality in real conditions. They also support researchers who take

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this review as a baseline to continue to better the systems discussed for better performance, efficiency or reduced complexity.

Pranoti Salunke,et.al. The Electronic Toll Collection system in expressway based on RFID, a design scheme was put forward. It is low cost, high security, far communication and efficiency, etc. It not only improves the passage ability of expressway but also improves the technology level of charge. Electronic toll collection system using RFID is an effective measure to reduce management costs and fees, at the same time, greatly reduce noise and pollutant emission of toll station. In the design of the proposed Electronic toll collection (ETC) system, real time toll collection and anti-theft solution system have been designed. This reduces the manual labour and delays that often occur on roads. This system of collecting tolls is eco friendly and also results in increased toll lane capacity. Also an anti-theft solution system module which prevents passing of any defaulter vehicle is implemented, thus assuring security on the roadways.

T. Arun Prasath, M.S.Dhanabal said that RFID is not replacement of Bar code but it is a technology offering various features. RFID offers highly reliable data collection in harsh environments. RFID technology can provide new capabilities as well as an efficient method to collect, manage, disseminate, store, and analyze information It not only eliminates manual data entry but also inspires new automation solutions. RFID's attributes provide greater automated tracking capability than existing technologies, and thus create the opportunity to reduce abhor, improve inventory management and generate better market intelligence, leading to lower operational costs and increased revenue generation .

M. Sumithra and B. Buvaneswari reviewed the research and development of the tax collection at the toll gate on highway with the help of RFID using SMART CARD technology. By developing this system, the knowledge of RFID system PIC microcontroller, GUI design are realized. For this system, passive tags are better than the active tags because of low cost low power consumption and also radio signals environmental factors. By using smart card system, the vehicle can check for security with the passing time, save time and reduce traffic congestion at the toll plaza. Therefore, the RFID based SMART CARD technology is the best way for the toll collection at the toll gate.

SIMPLE PERCENTAGE ANALYSIS

TABLE SHOWING THE DISTRIBUTION OF THE OCCUPATION OF THE RESPONDENTS

S.NO	STATEMENT	NO. OF RESPONDENTS	PERCENTAGE
1	Student	26	20.8
2	Employee	26	20.8
3	Businessman	60	48
4	Others	13	10.4
	TOTAL	125	100

Source: Questionnaire

INTERPRETATION

It is interpreted that 20.8% of the respondents are students ,20.8% are employees,48% are businessman and 10.4% are other occupation.

INFERENCE

Majority 48% of the respondents are Businessman.

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TABLE SHOWING THE DISTRIBUTION OF THE RESPONSE TOWARDS THE STATEMENT "BY WHICH VEHICLE YOU PASS TOLL?"

S.NO	STATEMENT	NO. OF RESPONDENTS	PERCENTAGE
1	Car	82	65.6
2	Bus	19	15.2
3	Lorry	13	10.4
4	Others	11	8.8
	TOTAL	125	100

Source: Questionnaire

INTERPRETATION

It is interpreted that 65.6% of the respondents pass by car,15.2% pass by bus,10.4% pass by lorry and 8.8% pass by other vehicles.

INFERENCE

Majority 65.6% of the respondents pass by car.

TABLE SHOWING THE DISTRIBUTION OF THE RESPONDENTS TOWARDS THE STATEMENT "HAVE YOU EVER FACED THE PROBLEM OF DOUBLE CHARGES TAKEN FROM YOUR ACCOUNT?"

S.NO	STATEMENT	NO. OF RESPONDENTS	PERCENTAGE
1	Yes	55	44
2	No	70	56
	TOTAL	125	100

Source: Questionnaire

INTERPRETATION

It is interpreted that 44% of the respondents have faced the problem of double charge taken from their account and 56% have not faced the problem of double charge taken from their account.

INFERENCE

Majority 56% of the respondents have not faced the problem of double charge taken from their account.

RANKING ANALYSIS

LEVEL OF SATISFACTION IN FASTAG

FACTORS	1(5)	2(4)	3(3)	4(2)	5(1)	TOTAL	RANK
EASE OF PAYMENT	56 280	24 96	26 78	11 22	8 8	125 484	I
CONVENIENCE	21 105	55 220	25 75	21 42	3 3	125 445	II
SAVES TIME	29 145	35 140	37 111	15 30	9 9	125 435	III
SAVES MONEY	26 130	34 136	28 84	32 64	5 5	125 419	V
ONLINE PORTAL	26 130	36 144	25 75	18 36	20 20	125 405	VI
FUEL CONSUMPTION	27 135	34 136	40 120	11 22	13 13	125 426	IV

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INTERPRETATION

The above table shows the level of satisfaction of people using FASTag and that are ranked based on the returns of the respondents.

From the analysis it is understood that the respondents have given 1st rank to Ease of Payment, 2nd rank to Convenience, 3rd rank to time saving, 4th rank to fuel consumption, and 5th rank to money saving and 6th rank for online portal.

Hence it is concluded that people using FASTag are more satisfied with Ease of payment in FASTag.

CONCLUSION

FASTag is considered to be an advantageous mode of toll collection system in India. It offers a numerous benefits for environment and for both the user and the collector. But it also has many problems in it. If these problems are designed with appropriate solutions then FASTag will be a technologically superior mode of toll collection and it would be a game changer in toll collection system in future. The present study has brought out the satisfaction level of passengers and the benefits they enjoy using FASTag and the problems faced by them and suggestions to be improved in FASTag for its betterment.

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