



USERS PERCEPTION TOWARDS FASTag IMPLEMENTATION IN COIMBATORE CITY

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Introduction

As the owner, mostly the NHAI, isn't conducting customer satisfaction surveys, across all the toll stretches rigorously, these styles of studies can help the authorities of NHAI for taking appropriate actions. The main focus of the study is on the general public opinion towards the traffic in a parcel of land and toll plaza operations. A spread of studies is conducted for ending the assessment which includes: A field survey at the parcel of land sites for collecting information on tolling service. A road user study in terms of user survey was disbursed for an overall analysis of the performance of toll plazas and this assessment is required to judge how each toll performs. These analyses enable the citizens to supply feedback about the issues that prevail within the concept of FASTag and to enable the developers to grasp these problems which can further help to attenuate those problems.

Review of Literature

Shivani Sawarkar, Vidhita Kamble, et.al (2017)¹, conduct a study to review on online toll collection system based on optical character recognition the main objective of the project is to improve the efficiency and performance of the system the objective is which it will detect the number plate of the vehicle and through that, it will grasp all the information of the owner such as owner name owner contact details account no of the particular bank, etc.

Dr. Shakti Singh and Rakhi Yadav (2018)², had conducted a study on a comparative study of toll collection system at Kherki Daula toll Plaza, Gurugram (Haryana). The objective of the study was to check the awareness level of commuters about the various payment system at Kherki Daula toll plaza, to compare user's opinion about the available toll payment options at the toll plaza, and to recommend the best possible option to pay tolls at the toll plaza. The methodology used in the study was both exploratory and descriptive research techniques in which the data was collected through a questionnaire toll on a random sampling basis. The findings of the study were that all the respondents (100%) were aware of the conventional method of payment

only (20%) know about the RFID and 70% respondents know about the FASTag awareness level of the commuters about the FASTag service in high when it comes to payment preference 50% people prefer to pay by conventional method only 5% want to pay RFID method and 45% want to pay by FASTag method. The recommendation from the study is that the government should make more efforts to make people adopt the cashless paying option.

Abhishek Sontakke (2019)³, examined a study on Intelligent Automatic Traffic Challan on Highways and Payment through FASTag Card. This study aims in taking steps in the field of trafficking to initiate a hassle-free and most convenient way such as using (RFID) Radio Frequency Identification cards to pay at the toll plazas. The finding deals with the application of the latest technology of the FASTag which is beneficial in avoiding the traffic hassle at the National toll Plaza. With the use of FASTag installed on the front windshield of vehicles, toll generation is made a fun job. Automatically, the toll charges are deducted from the FASTag linked to the vehicle.

Akshay Hinge (2020)⁴, conducted a study on, Toll plazas for Impact Assessment and Remedy Measures on Existing ETC system. The main objective is to study the existing ETC system implemented on all toll plazas in India and to provide remedial measures for the existing ETC system to improve its functionality during peak hours. In this research, they used the methodology of a preliminary survey, traffic flow, and traffic composition survey. The findings of the study were observed that the existing ETC system has some marginal issues during its operation which create unnecessary delays for both commercial and non-commercial vehicles.

B. Gayathiri and Dr. K. Ravindran (2020)⁵, conducted a study on customer Discernment towards FASTag Implementation in Madurai District. The objective of this study was to analyze the customer discernment towards electronic toll collection systems and system payment methods. The methodology used in the study was primary and secondary data collection. The finding of this study was most responders have aware of the FASTag and its importance, and the majority of the vehicle are cars, vans and other kinds of four-wheelers that have the welfare.

N. Akshaya and Dr. R. Guna Sundari (2021)⁶, in their article entitled, a study on passenger's satisfaction using FASTag with special reference to Coimbatore city. The main objectives of the study was to understand the demographic characteristic of the people using FASTag and to examine the problems faced by the people due to the implementation of FASTag. They used the methodology of primary and secondary data collection. Hence, the finding has concluded that people using FASTag are more satisfied with the ease of payment in FASTag.

Statement of the problem

Even though FASTag is healthier than conventional toll collection. Still, FASTag has several problems. The requirement for this study is primarily to unravel the issues associated with operational toll roads, as users of these roads, frequently complain About the very functioning of the system and are latterly dissatisfied with the way the operators collect hefty toll amounts but fail miserably in providing quality service across several mandated quality parameters. The most problems of the parcel are how it's optimizing the queue length of

vehicles, loss of FASTag, technical glitches, and optimizing the time of shoppers within the system. Our goal is to confirm that the FASTag system could handle the issues and to figure toward minimizing those problems.

Objectives

1. To understand the demographic characteristics of the users using FASTag.
2. To examine the awareness of the users towards FASTag.
3. To analyze the level of satisfaction of users.

Scope of the study

The study covers users of the FASTag toll collection system in Coimbatore city. It makes effort to determine the satisfaction level of users of FASTag toll collection. The factors that lead to test the satisfaction level of users are by using this factor to live the satisfaction level towards the FASTag toll collection system.

Research Methodology

The study is formed to investigate the user's preference toward the FASTag toll collection system. Questionnaires are entrusted to 168 respondents for data collection. a research methodology is a top-level view of how a given piece of research is distributed.

Source Of Data

Primary Data

Primary data refers to the first-hand data gathered by the researcher himself. This research uses primary data for the research work. A pretested questionnaire was administered to the respondents with the questions. The answers given by the respondents were recorded and used for analysis purposes.

Secondary Data

Secondary data was collected from various books, websites, and magazines.

Sampling technique

The sample is obtained from the available FASTag users within Coimbatore city. The sample was collected by simple random sampling. The sample is based on Simple Random Sampling.

Sample size

The sample size selected is an important step in the research study. The sample size is based on respondents who use FASTag toll collection. The results of the sample are expected within a specific range. The sample size of the study is 168 respondents

Area of the Study-

The study is with the most regard to Coimbatore, a city in India. After Chennai, it's one of the fastest-growing cities in Tamilnadu. it's mainly called the manufacturing hub of India. A study on users' satisfaction with the FASTag toll collection system was made in Coimbatore city.

Tools for analysis

The collected data were analyzed and presented in the form of tables to suit the study and also to interpret the results. The following tools were used to analyze the data, Simple Percentage analysis, Weighted average, and Henry Garrett's ranking

Analysis and Interpretation

Table 1 showing the Demographic Profile of the Respondent

Demographic profile	No. of Respondents	Percentage (%)
Gender		
Male	85	51
Female	83	49
Age (In Years)		
18 years	20	12
19 - 30 years	123	75
31 - 40 years	15	9
41 years and above	7	4
Educational qualification		
SSLC	5	3
HSC	18	11
Undergraduate	112	67
Post Graduate	29	17
Others	4	2
Annual Income		
Less than Rs. 2,99,999	104	62
Rs. 3,00,000 - Rs. 4,99,999	43	26
Rs. 5,00,000 - Rs. 7,99,999	12	7
Rs. 8,00,000 and above	9	5
Occupation		
Student	92	55
Self-employed	13	8
Employee	49	29
Business / Professions	10	6
Others	4	2

Source; Primary Data

Interpretation: From the table 1 ,it is concluded that the majority of respondents were between 19-30 years (75%).51% Percentage of respondents were male whereas 49% of respondents were femalerespondents. The majority of respondents were students (55%).Educational qualifications of most of the respondents were undergraduate (67%).Majority of respondents' annual income were less than 2,99,999 (62%)

Table 2-Shows the Awareness of the FASTag toll collection system among the respondents.

S.No	Awareness	No.of .Respondent	Percentage
1.	Yes	154	92
2.	No	14	8
	Total	168	100

Source: Primary data

Interpretation:

From the above table 2 (92%) of the respondents were aware of the FASTag toll collection system. And (8%) of respondents were not aware of the FASTag toll collection. Majority of the respondents (92%) were aware of the FASTag toll collection system.

Table 3-Showing The Factors That Influenced To Buy The Fastag

Factors	Highly influenced	Influenced	Neutral	Not influenced	Highly Not influenced	Total	Weighted erage
Saves time	73	43	34	10	8	168	4.45
	365	172	102	20	8	667	
E-Access	45	54	49	16	4	168	4.16
	225	216	147	32	4	624	
Avoidance of long queue	50	42	56	11	9	168	4.11
	250	168	168	22	9	617	
Cash free transaction	59	40	45	15	9	168	4.19
	295	160	135	30	9	629	
Accident free zone	42	50	52	11	13	168	4.01
	210	200	156	22	13	601	
Save fuel	48	41	54	14	11	168	4.03
	240	164	162	28	11	605	
Total Weighted Average							24.95
Weighted Average							4.158

Source: Primary Data

Weighted average $W = \frac{\sum WX}{\sum W}$

Total weighted average $\sum WX = \sum (4.01 + 4.03 + 4.11 + 4.16 + 4.19 + 4.45) = 24.95$

Weighted average $W = 24.95/6 = 4.158$

Interpretation:

From the above table 3 that E-access provided by FASTag with a score of 4.19 was the factor that influenced most of the respondents to buy FASTag. Nowadays most people prefer cashless transactions as a result, the cash-free transaction facility (4.19) provided by FASTag was the second most influential factor. It is concluded that the factors influenced the respondents to buy FASTag had a weighted average of 4.158 which is close to the E-access facility provided by FASTag with a weighted average of 4.19.

Table 4 Showing The Scheme Of FASTag That The Respondents Use

Scheme	Rank 5	Rank 4	Rank 3	Rank 2	Rank 1
Monthly pass	41	34	26	28	39
Top up	54	49	34	17	14
Free from charges	39	35	39	25	30
Concessional charges	29	47	30	27	35

$100(R_{ij}-0.5)/N_j$	Calculated Value	Garret Value
$100(5-0.5)/5$	90	24
$100(4-0.5)/5$	70	40
$100(3-0.5)/5$	50	50
$100(2-0.5)/5$	30	60
$100(1-0.5)/5$	10	75

S.No	Schemes	5	4	3	2	1	Total	Average Score	Rank
1	Monthly pass	984	1360	1300	1680	2925	8249	49.10	II
2	Top up	1296	1960	1700	1020	1050	7026	41.82	IV
3	Free from charges	936	1400	1950	1500	2250	8036	47.83	III
4	Concession Charges	696	1880	1500	1620	2625	8321	49.52	I

Source: Primary data

Interpretation: It is inferred from the above table 4, that the ranking of FASTag schemes that respondents opt are concessional charges is rank as first with the score of 49.52, Monthly pass is ranked as second with score of 49.10, “Free from charges” is ranked as third with the score of 47.86, “Top up” is ranked as fourth with the score of 41.82, Majority of respondents often opt for the “Concessional Charges” scheme of FASTag with the Garrett score 49.52.

Table 5 Showing Number Of Respondents Rank In Recharge Mode Of FASTag

Recharge Mode	Rank 5	Rank 4	Rank 3	Rank 2	Rank 1
Debit Card	52	47	27	19	23
Credit Card	30	43	43	26	26
Paytm Payment Bank	61	42	37	17	11
Net Banking	46	47	34	23	18

$100(R_{ij}-0.5)/N_j$	Calculated Value	Garret Value
$100(5-0.5)/5$	90	24
$100(4-0.5)/5$	70	40
$100(3-0.5)/5$	50	50
$100(2-0.5)/5$	30	60
$100(1-0.5)/5$	10	75

S.No	Recharge Mode	5	4	3	2	1	Total	Average Score	Rank
1	Debit card	1248	1880	1350	304	1725	6507	38.73	IV
2	Credit card	720	1720	2150	1560	1950	8100	48.21	I
3	Paytm payment bank	1464	1680	1850	1020	825	6839	40.71	III
4	Net banking	1150	1880	1700	1380	1350	7460	44.40	II

Source: Primary data

Interpretation:

From the table 5, that the credit card is ranked first in recharge mode of FASTag by the respondents with an average score of 48.21, it was followed by net banking mode of recharge with an average score of 44.40 then the pay tm payment bank was ranked III with a score of 40.71 and debit card was ranked last (IV) with a score of 38.73. Majority of the respondents use credit cards to recharge their FASTag with a score of 48.21. Net banking was preferred next to credit cards by most of the users, debit cards were the least used by the respondents to recharge their FASTag with a score of 38.73.

Table 6 Showing The Satisfaction Level Of Users On Facilities Provided ByThe FASTag Toll Collection System

Features	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Total	Weighted Average
Saves fuel and time	63	60	37	8	168	3.06
	252	180	74	8	514	
Online recharge	58	70	37	3	168	3.09
	232	210	74	3	519	
Cashless transaction	56	64	39	9	168	2.99
	224	192	78	9	503	
Spend tracking	50	65	42	11	168	2.92
	200	195	84	11	490	
Environmental friendly	57	58	42	11	168	2.96
	228	174	84	11	497	
Total Weighted Average						13.02
Weighted Average						3.004

Source: Primary Data

Weighted average $W = \sum WX / \sum W$

Total weighted average $\sum WX = \sum (3.06 + 3.09 + 2.99 + 2.92 + 2.96) = 15.02$

Weighted average $W = 15.02 / 5 = 3.004$

Interpretation: From table 4, the respondents satisfaction level of the facilities provided by the FASTag had a weighted average of 3.004 which is close to cashless transactions with a weighted average 2.99. Majority of the respondents were most satisfied with the cashless transaction (2.99) facility provided by the FASTag toll collection system as it was close to the weighted average score of 3.004 .

Suggestions

- FASTag is a good option for the persons who are traveling on Highway roads
- There should be an improvement in the scanning process
- There must be a cash collection also for certain persons who are not aware of FASTag
- There must be an improvement in the quality of Highway roads
- The FASTag satisfies the customer by saving them time and fuel
- The cost of payment made in toll gates must be reduced

Conclusion

FASTag is considered to be an advantageous mode of toll collection system in India, operated by the National Highway Authority of India. It offers numerous benefits for the environment and for both the user and the collector. FASTag is an RFID passive tag used for making toll payments directly from the customer's linked prepaid or savings/current account. An 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 emissions of toll stations. 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. Thus it helps in better audit management through centralized user accounts and reduces the use of paper and toll payment hassles. FASTag eliminates unnecessary delays in scanning and reduces time consumption in long queues. Future improvements can be made on FASTag apps and updation on bar code readers and reduce the wrongly charged payment issues in the nearest future.

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