

Original Article

# A Study on the Socio-Economic Condition of E-Rickshaw Pullers in Guwahati City, Assam, India

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**Abstract** - The paper is an attempt to study the socio-economic status of the e-rickshaw drivers and understand the sustainability of the e-rickshaw occupation. The study has been conducted in the city of Guwahati, Assam, India. The sample size is 45 e-rickshaw pullers and 5 e-rickshaw dealers. The e-rickshaws comparatively have a greater advantage than the general rickshaws as they have a higher seating capacity along with a fuel-free and pollution-free mode of transportation, there is no adverse effect on health like the general rickshaws have on the rickshaw pullers. But at the same time, it has higher maintenance costs and high investment. Due to this complicity, it is necessary to understand the condition of these e-rickshaw drivers in terms of their socio-economic status, different financial facilities available to them, satisfaction level. It is complicated to determine how this new means of livelihood create changes in the life of the e-rickshaw drivers. Thus to find these answers, a study has been carried out through exploratory research, which attempts to fulfill some well-defined objectives.

**Keywords** - Socio-economic, Satisfaction level, E-rickshaw, Investment.

## I. INTRODUCTION

“Electric rickshaws (also known as electric tuk-tuks and in Guwahati it is known as Tom-Tom or e-rickshaws) have been becoming popular in the city recently and are an alternative to pulled rickshaws because of their low fuel cost and less human effort compared to pulled rickshaws. They are also widely accepted as an alternative to petrol, diesel auto-rickshaws for shorter distances as the cost of running is cheaper, and people tend to prefer the same. The e-rickshaws comparatively have a greater advantage than the general rickshaws as they have a higher seat capacity along with a fuel-free and pollution-free mode of transportation, there is no adverse effect on health like the general rickshaws have on the rickshaw pullers. But at the same time, it has higher maintenance costs and high investment. Due to this complicity, it is necessary to understand the condition of these e-rickshaw drivers in terms of their socio-economic status, different financial facilities available to them, satisfaction level. It is

complicated to determine how this new means of livelihood create changes in the life of the

e-rickshaw drivers. In order to determine how this new means of livelihood create changes, a detailed study of the secondary sources of literature was done before framing the structured questionnaire. Singh (2014), in the paper entitled "A study of the battery-operated E- rickshaws in the state of Delhi", studied the socio-economic impact and the technical characteristics to make a case of regularisation of e-rickshaw in the state. Further, an attempt was made to understand the role of the industry in urban employment and income generation and the various problems that affect the system.

Dutta and Das (2014), in the paper entitled "Development of an effective hybrid tricycle", highlight the existing model and design of tricycle rickshaws. The effort was directed to design lightweight, high strength, and economic both human pulled and electric powered hybrid rickshaws. Khan (2010), in the paper entitled "Socio-economic profile of cycle rickshaw pullers, A case study", tried to analyze the socio-economic characteristics of cycle rickshaw pullers and to find out the cause of rickshaw pulling. The adverse effects of this profession on the health of the rickshaw pullers, the problem faced by them, and their remedial measures have also been taken into account. The study is based on primary data collected through the field survey and direct questionnaire to the respondents in Aligarh city. Sharma (2011), in his case study on Rickshaw Bank, highlighted how Rickshaw Bank collects money and provides finance to rickshaw pullers so that they can own their respective rickshaws. Rajvanshi's (2002) paper entitled "Electric and improved cycle rickshaw as a sustainable transport system for India" explains the need for battery-operated vehicles. It explains the existing cycle rickshaw scene and also explains the commercial, technical and policy issues related to the CNG-powered vehicles. Bose, (2014) article entitled "Cheap rides, low costs: it's Tuk-Tuk time in Tripura" tries to elaborate the advantages of e-rickshaw; it also shows how the e-rickshaw creates impact in society. Rajvanshi (2014), in the paper entitled "History of electric rickshaws at NARI," elaborated the revolution of technology that is used in rickshaws, it describes the history of electronic rickshaws and the



development of other battery-operated technologies. Islam and Podder (2016), in the paper entitled "Socio-economic profile of selected rickshaw puller at Hugra union in Tangail district, Bangladesh," try to carry out a descriptive cross-sectional study of 50 rickshaw pullers in the selected area (Hugra union) in Tanglai district.

**II. OBJECTIVE OF THE STUDY**

- i. To study the Socio-Economic Status (SES) of the e-rickshaw drivers.
- ii. To study financial amenities offered to the e-rickshaw drivers.
- iii. To study the sustainability of e-rickshaw occupation.

**III. METHOD OF DATA COLLECTION**

The research design is exploratorily followed by a descriptive study with both primary and secondary data being used to analyze the issues. The Primary Data has been collected through a structured Questionnaire. The questionnaire contained closed-ended questions and was in a structured format, making it clear and simple for the respondents. The secondary data has been collected from books, websites, and journals. Convenience sampling has been used in the study to select the respondents. The study was conducted within a time frame of six months, November 2018 to April 2019. The sample size is 50 respondents, 45 e-rickshaw pullers (male), and 5 dealers from Guwahati city.

*Population:* The e-rickshaw drivers and dealers of Guwahati city of Assam

*Elements:* The e-rickshaw drivers and dealers of Guwahati city of Assam.

**A. Educational Qualification**

*Sampling unit:* The e-rickshaw drivers and dealers of Guwahati city of Assam.

*Sample size:*

- Total 50 respondents
- 45 for the e-rickshaw drivers
- 5 dealers

**IV. ANALYSIS OF DATA**

The data analysis has been done based on the objectives set for the study. In order to cover the first objective, the educational qualification, family structure, migration of e-rickshaw pullers, and the financial cost involved in the occupation have been studied to find an overall picture of the socio-economic condition of the respondents.

**Objective 1:** To study the socio-economic status of the e-rickshaw drivers

Socio-Economic Status is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others, based on income, education, family size, occupation, etc. To fulfill the above objective, certain variables are taken into consideration. They are- Educational qualification, family size, time period of e-rickshaw business, previous occupation, holding of bank account, amount of daily income, amount of daily savings, daily battery charging cost, battery replacement cost, initial investment amount, job security, better living condition and change in social status.

**Table 1.1 Educational qualification**

Educational qualification	Numbers of respondent
Illiterate	0
Primary	10
H.S.LC	25
H.S	4
Graduate	6
Total	45

*Source: Data collected from field survey*

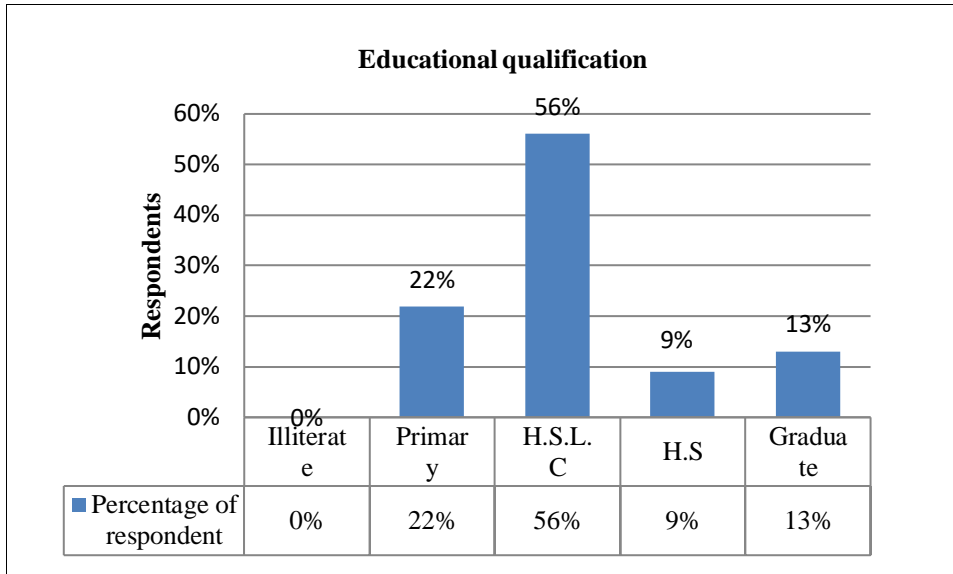


Fig. 1.1 Educational Qualifications

Interpretation: Table 1.1 and Figure 1.1 shows that among 45 respondents, 56% of them are H.S.L.C qualified, 9% of them have qualified their Higher secondary, 22% of them have completed education only up to primary school, and 13% of them are graduate

**B. Family Structure**

Table 1.2 Family structure

Numbers of family members	Numbers of family members
Less than 3	2
3	5
4	15
5	13
More than 5	10
Total	45

Source: Data collected from field survey

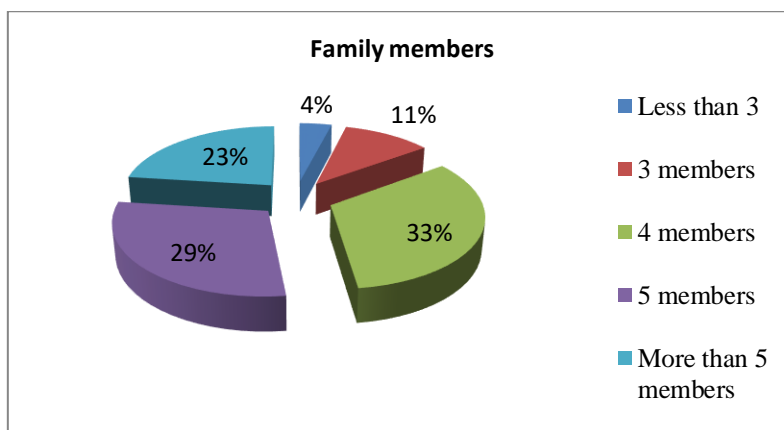


Fig. 1.2 Family structure of respondents

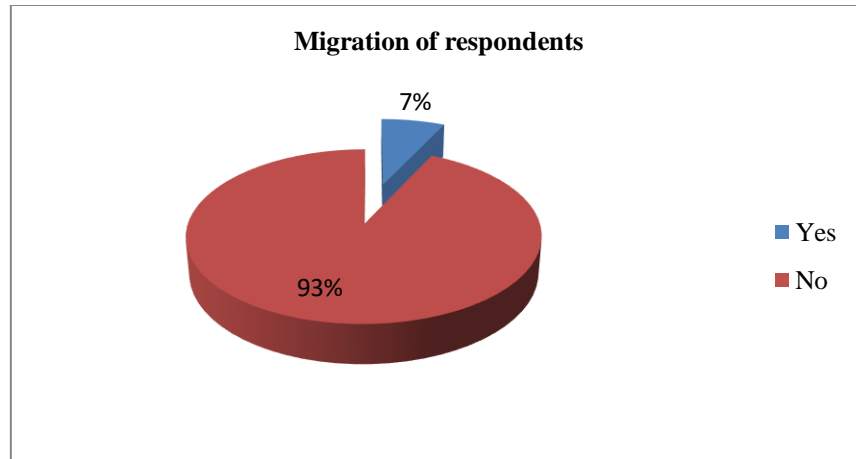
Interpretation: In the above table 1.2 and figure 1.2, it is seen that among the 45 respondents, most of them, i.e., 33% of the respondents are having a family structure consisting of 4 members, next 29% of them are having 5 members. These data show that the e-rickshaw drivers who are indulging in this business belong to the neutral family rather than the joint family.

**C. Migration of Respondents**

**Table 1.3 Migration of the respondents**

Migrant	Respondents
Yes	3
No	42
Total	45

Source: Primary data collected from field survey



**Fig. 1.3 Migration of respondents**

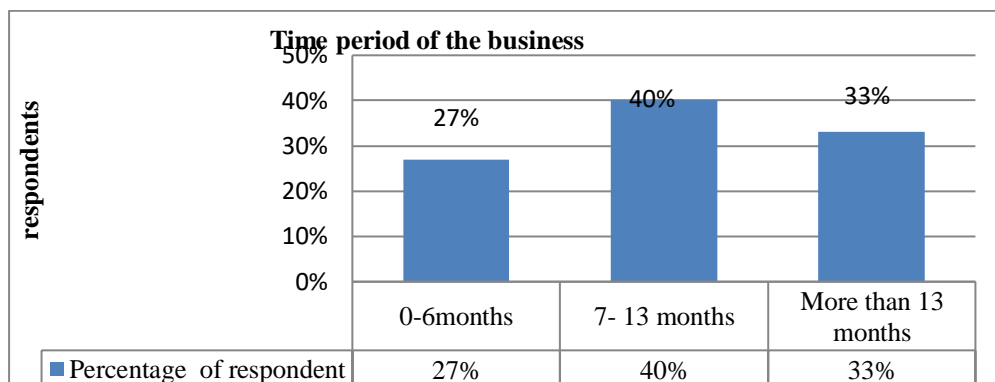
Interpretation: The above table 1.3 and figure 1.3 show the migration status of the e-rickshaw drivers. Among 45 respondents, 93% are from Guwahati itself, and the rest 3 of them are from outside of Assam. They are from Kochbehar, West Bengal, and Bihar. This shows that the current profession helps them in earning a decent wage which they could send back to their family.

**D. Time Period of the e-rickshaw Business**

**Table 1.4 Time period of the e-rickshaw business**

Time period	Numbers of respondent
0-6months	12
7- 13 months	18
More than 13 months	15
Total	45

Source: Primary data collected from field survey



**Fig. 1.4 Time period of the e-rickshaw business**

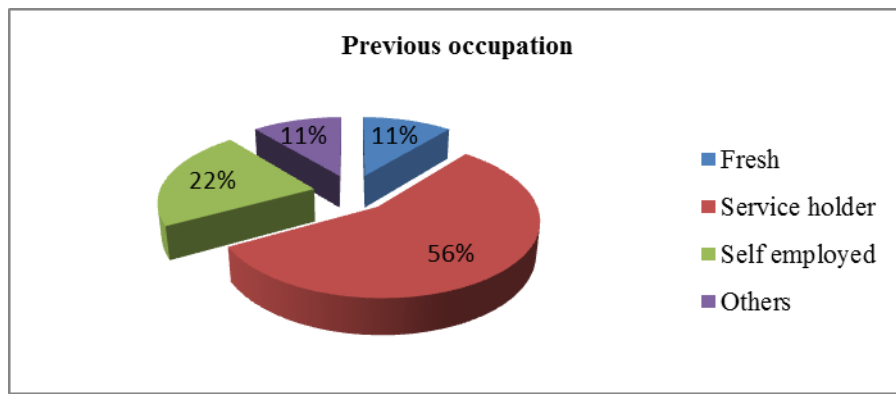
Interpretation: In the above table 1.4 and figure 1.4, the data depicts the time period of the e-rickshaw business. 40% of the respondents have been in the e-rickshaw for 7-13 months, 33% of them have been in the e-rickshaw business for more than one year, this refers the e-rickshaw business is a new occupation in the society.

**E. Previous Occupation**

**Table 1.5 Previous occupation**

Previous occupation	Numbers of respondents
Fresh	5
Service holder	25
Self-employed	10
Others	5
Total	45

Source: Primary Data collected from Field Survey



**Fig. 1.5 Previous occupation**

Interpretation: In table 1.5 and figure 1.5, the previous occupation of the e-rickshaw drivers is shown. It is seen that 56% of the respondents are service holders. 22% of them are self-employed whereas 11% of them are fresh in regard to their occupation and the rest another 11% are fall in the other category which signifies the occupations like painter, plumber, carpenter, daily worker, tailor, etc. In the service sector, the respondents are found from various services like Army, private service holder, etc. So from the perspective of employment and income generation, e-rickshaws is an effective source of income for e-rickshaw drivers.

**F. Having Bank Account**

**Table 1.6 Existence of bank account**

Bank account	Number of respondents
Yes	42
No	0
Processing	3
Total	45

Source: Primary Data collected from Field Survey

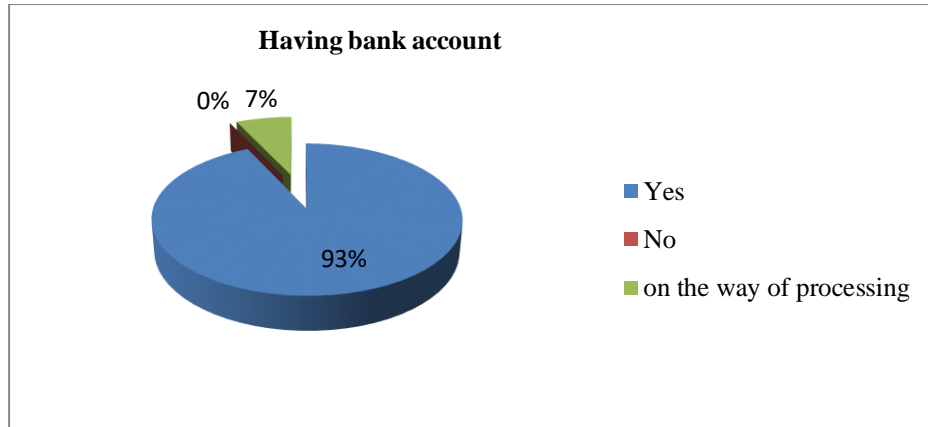


Fig. 1.6 Having a bank account

Interpretation: The above table 1.6 and figure 1.6 show the information about having a bank account. The data shows that the majority of them, i.e., 93% of them having a bank account of their own. 7% of them are in the way of processing. And from the data, no one was found without having a bank account.

**G. Initial investment for the business**

Table 1.7 Initial investment for the business

Amount of investment	Number of respondents
0-50,000	11
50,001-1,00,000	22
More than 1,00,000	3
Total	36

Source: Primary Data collected from Field Survey

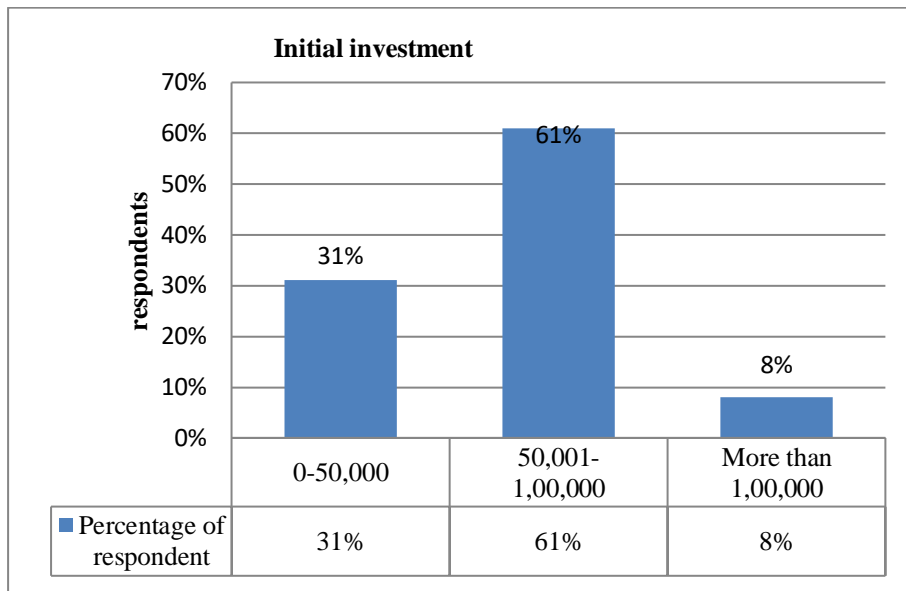


Fig. 1.7 Initial investment

Interpretation: In table 1.7 and figure 1.7, the initial investment of the e-rickshaw drivers is given. Out of the 45 respondents, 61% of them have done an initial investment of Rs. 50,001-100,000. 31% of them have done initial investment of Rs. 0- Rs. 50,000. 8% of them have done an initial investment of more than Rs. 1,00,000.

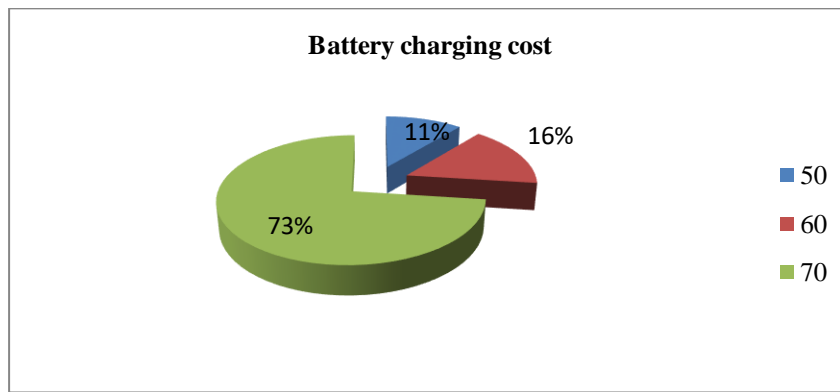
**H. Battery charging cost**

**Table 1.8 Battery charging cost**

Cost per day (In rupees)	Numbers of respondent
50	5
60	7
70	33
Total	45

Source: Primary Data collected from Field Survey

Interpretation: In the above table 1.8 and figure 1.8, the battery charging the cost of the e-rickshaw has been given. Out of the 45 respondents, 73% of them pay Rs.70 daily for their battery charging. According to to16% of them, it costs Rs. 60 and the rest 11% say that the daily battery cost is Rs. 50.



**Fig. 1.8 Battery replacement cost and Numbers of Battery replaced**

Interpretation: In the above table 1.8 and figure 1.8, the battery charging the cost of the e-rickshaw has been given. Out of the 45 respondents, 73% of them pay Rs.70 daily for their battery charging. According to to16% of them, it costs Rs. 60 and the rest 11% say that the daily battery cost is Rs. 50.

**I. Battery replacement cost and Numbers of Battery replacement**

Source:

**Table 1.9 Battery replacement cost and Numbers of Battery replacement**

Numbers of times	Battery replacement cost	Numbers of respondent
One time	21,000	20
2 times	21,000	10
More than 2 times	21,000	0
Total		30

Primary Data collected from Field Survey

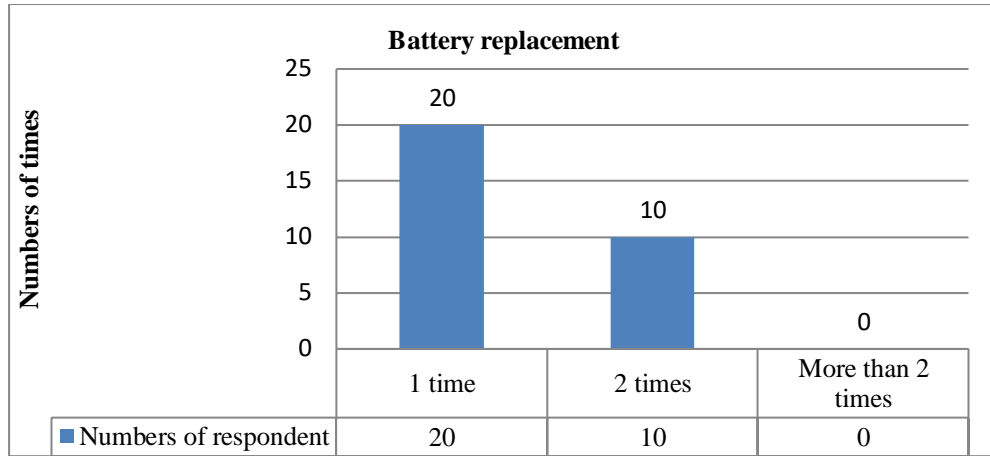


Fig 1.9 Battery replacement

Interpretation: From table 1.9 and figure 1.9, it is seen that there is no respondent who does the battery replacement more than 2 times. From the survey, it was found that the battery is replaced after 1 year, and it may vary depending upon the longevity of the battery. Moreover, the battery replacement cost is the same in all the e-rickshaws. It is Rs.21000 for the 4 batteries. Out of the 45 respondents, only 30 have done the battery replacement; where 20 of them done the battery replacement for 1 time, and the rest, 10 respondents, have done the replacement 2 times.

**J. Daily Income of e-rickshaw Drivers**

Table 1.10 Daily income of e-rickshaw drivers

Daily income	Numbers of respondent
Less than 300 rupees	0
301-600	30
601-900	10
901-1200	5
More than 1200	0
Total	45

Source: Primary Data collected from Field Survey

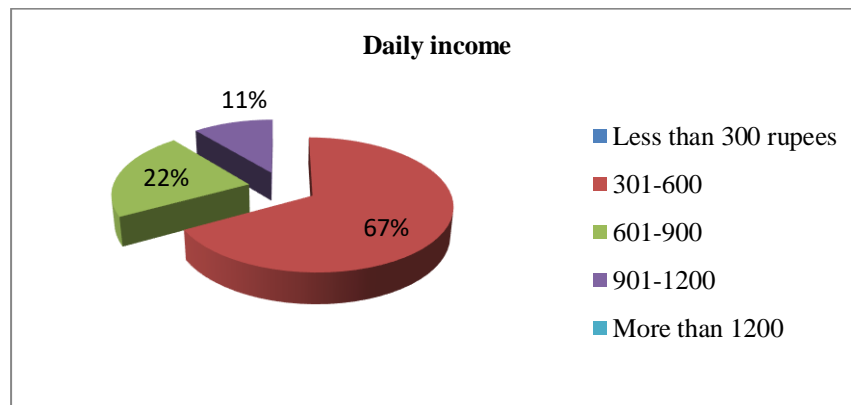


Fig 1.10 Daily Income of e-rickshaw drivers

Interpretation: In the table and figure 1.10, the daily income of the drivers are given. From the data, it was found that the daily earning of the drivers does not lower than Rs.300, every day, the earning is higher than Rs.300. Most of them, i.e., 67% of them earn daily earnings from Rs.301-600. 22% of them earn daily earnings from Rs.601-900. And 11% of them earn a daily income of Rs. 901-1200.

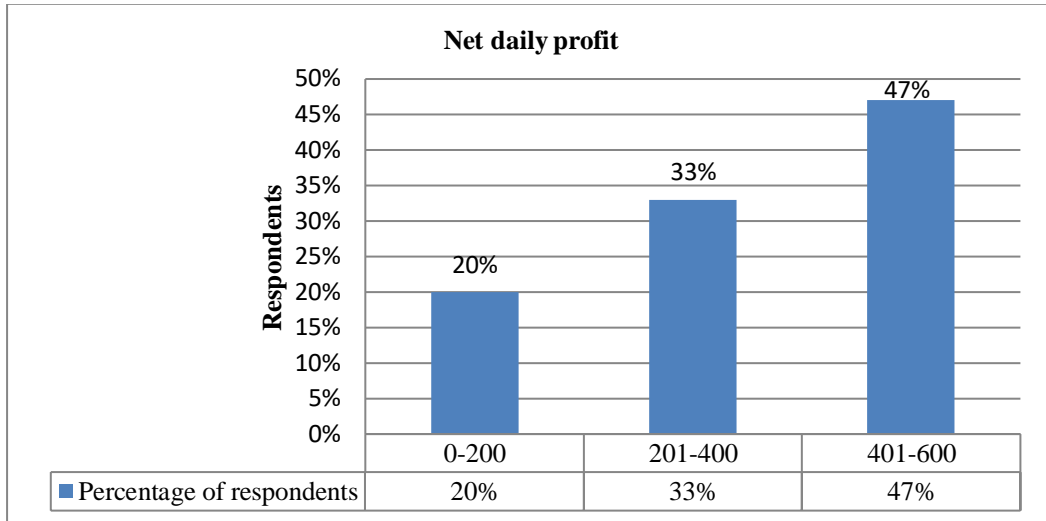


**K.Net Daily Profit**

**Table 1.11 Net daily profit**

Amount of profit	Number of respondents
0-200	9
201-400	15
401-600	21
Total	45

Source: Primary Data collected from Field Survey



**Fig. 1.11 Net Daily Profit**

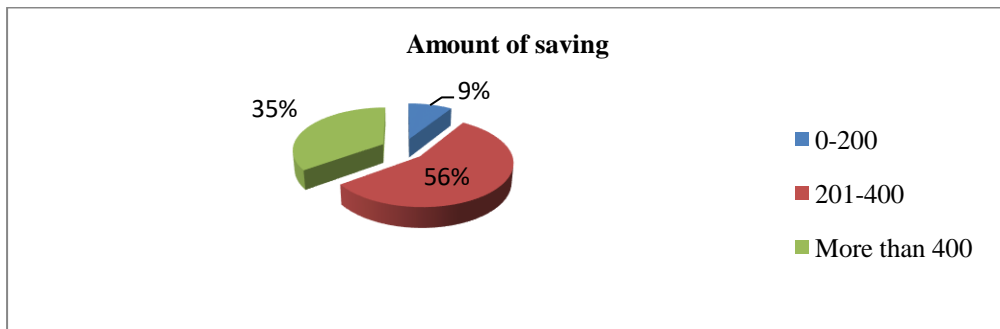
Interpretation: In the above table 1.11 and diagram 1.11, the net daily profits of the e-rickshaw drivers are given. From the collected data, it was found that the maximum net daily profit is between Rs. 401-Rs. 600, which is represented by 47% of the total 45 respondents. Out of 45% of respondents, 33% earn a daily profit between Rs.201-Rs.400. Only 9 respondents out of 45 respondents make a profit of up to Rs. 200.

**L. Amount of Savings**

**Table 1.12 Amount of saving**

Amount of savings	Number of respondents
0-200	4
201-400	25
More than 400	16
Total	45

Source: Primary Data collected from Field Survey



**Fig. 1.12 Amount of Savings**

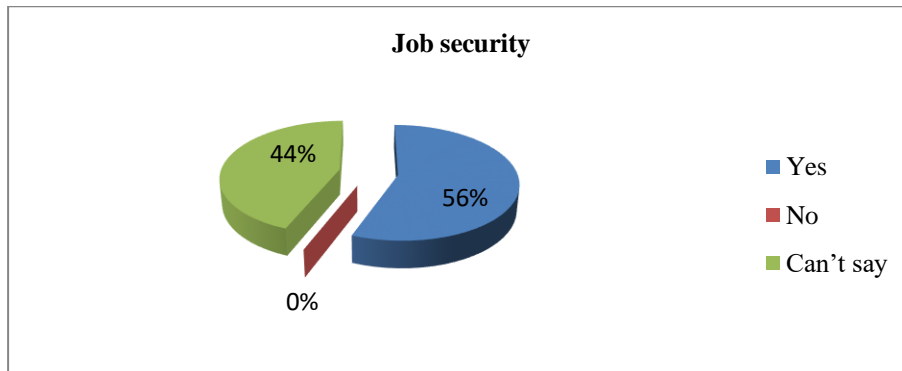
Interpretation: From the above table 1.12 and figure 1.12, it is seen that out of the 45 respondents, 25 respondents save daily between Rs. 201-Rs. 400, which consists 56% of the total respondents. 35% of the respondents save daily more than Rs. 400. And the rest, 9%, can save up to Rs 200.

**M. Job security**

**Table 1.13 Job security**

Job security	Number of respondents
Yes	25
No	0
Can't say	20
Total	45

Source: Primary Data collected from Field Survey



**Fig. 1.13 Job Security**

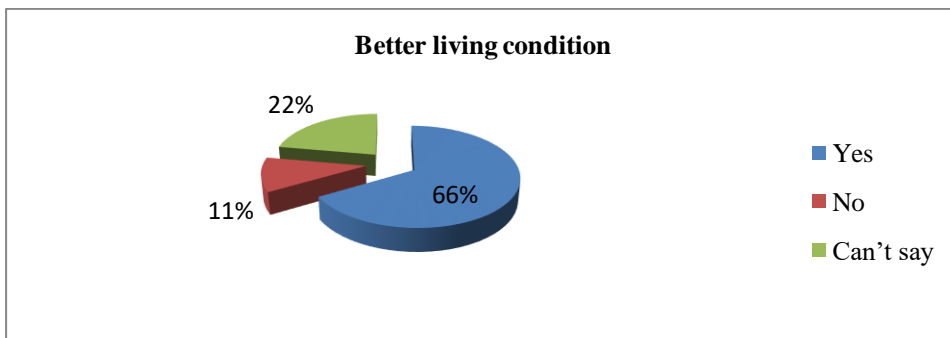
Interpretation: In the above table and diagram, the data on job security are shown. From the collected data, it was found that 56% of the respondents find the e-rickshaw occupation secure, where 44% of them do not clear idea about job security, and there is no respondent who finds this occupation insecure.

**N. Better living Condition**

**Table 1.14 Better living condition**

Living condition	Number of respondents
Yes	30
No	5
Can't say	10
Total	45

Source: Primary Data collected from Field Survey



**Fig. 1.14 Better living conditions**

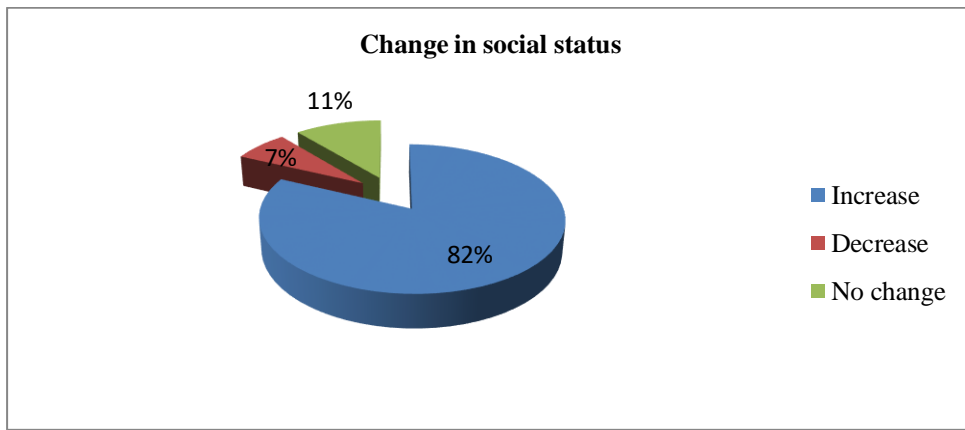
Interpretation: In the above table 1.14 and figure 1.14, it is seen that out of 45 respondents, 66% of them have a better living condition comparatively their previous occupation, according to the 11% it has not improved, and 22% of them are not able to say is it improved or not.

**O. Change in Social Status**

**Table 1.15 Change in social status**

Change in social status	Number of respondents
Increase	37
Decrease	3
No change	5
Total	45

Source: Primary Data collected from Field Survey



**Fig. 1.15 Change in social status**

Interpretation: In the above table and diagram, the data has been given regarding the change in the social status of e-rickshaw drivers. Out of the 45 respondents, 82% of them say that their social status has increased after taking e-rickshaw occupation. 7% of them say that it has decreased, and according to 11%, there is no change in social status.

Objective 2: To study if there are any financial amenities offered to the e-rickshaw drivers

The objective of this study includes whether the e-rickshaw drivers get any financial help for the business, the collection of capital, and the availability of any loan and insurance.

**P. Rickshaw Ownership**

**Table 2.1: Rickshaw ownership**

Ownership	Number of e-rickshaws
Own	36
Rental	9
Total	45

Source: Primary Data collected from Field Survey

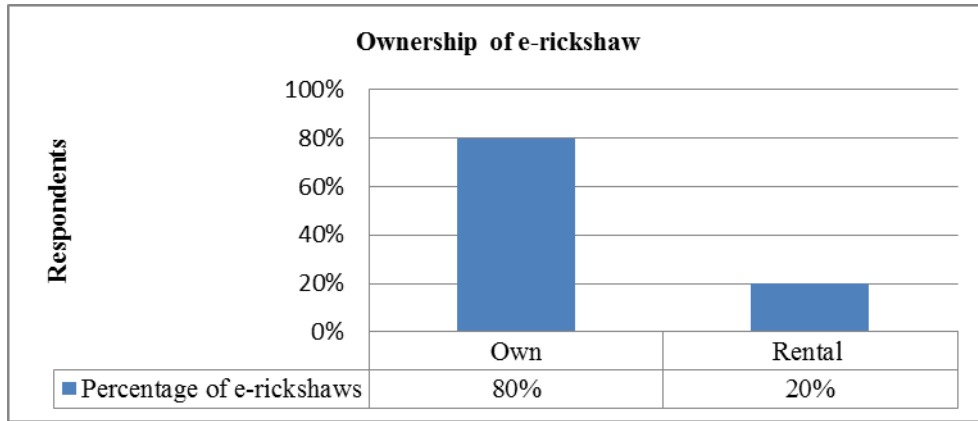


Fig. 2.1 Ownership of e-rickshaw

Interpretation: In table 2.1 and figure 2.1 is seen that 80% of the respondents have their own e-rickshaws, and the rest, 20%, are earning their income through the rental basis. The rental e-rickshaws have to pay an amount to their e-rickshaw owners.

**Q. Purchasing of Rickshaw**

Table 2.2 purchasing of e-rickshaw

Buying process	Number of respondents
Through bank loan	0
Own savings	15
Help from family members	21
Open market loan	0
Total	36

Source: Primary Data collected from Field Survey

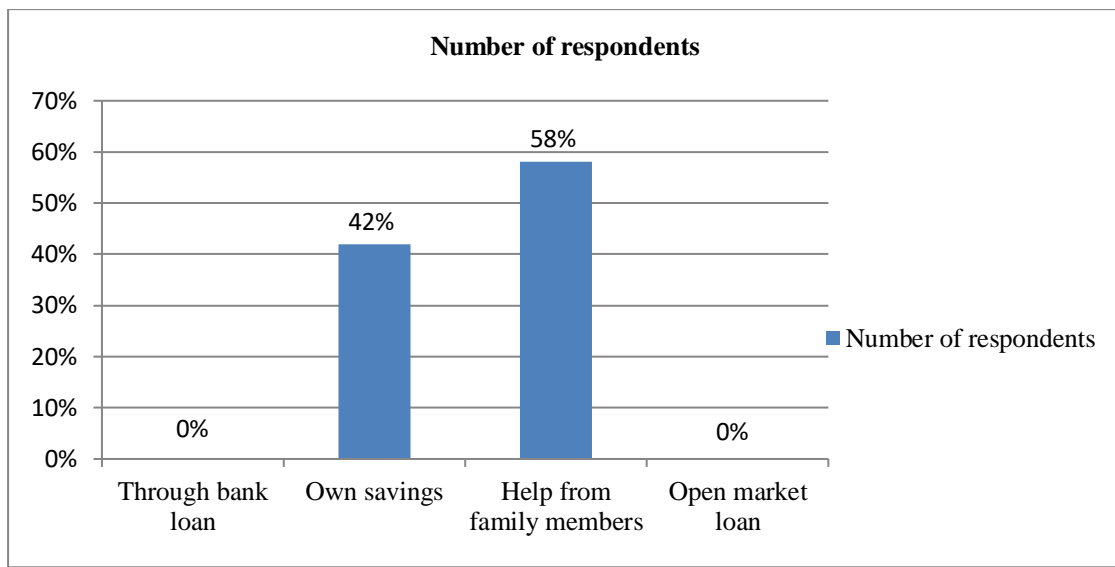


Fig. 2.2 Purchasing of e-rickshaw

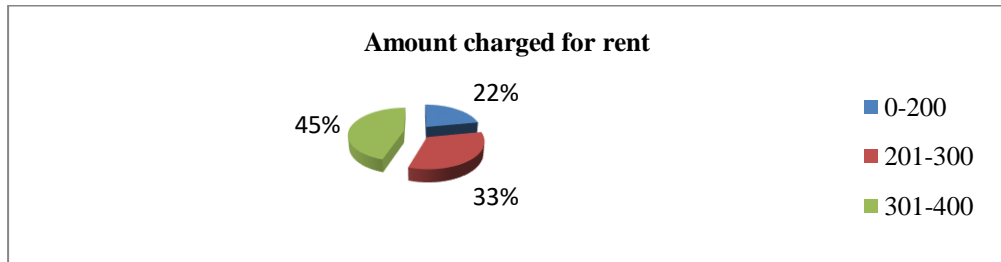
Interpretation: In table 2.2 and figure 2.2, the purchasing process of e-rickshaws is given. Most of the respondents' i.e.58% of the respondents, purchase the e-rickshaws by taking financial help from their family members. 42% of them purchase their rickshaws from their own savings. It was found from the data that there is no availability of loans for the e-rickshaws from banks or from the open market like various self-help groups, money lenders, etc.

**R. Amount Charged on Rental Rickshaw**

**Table 2.3 Amount charged on a rental rickshaw**

The amount has to give per day	Number of respondents
0-200	2
201-300	3
301-400	4
Total	9

Source: Primary Data collected from Field Survey



**Fig. 2.3 Amount charged on rent**

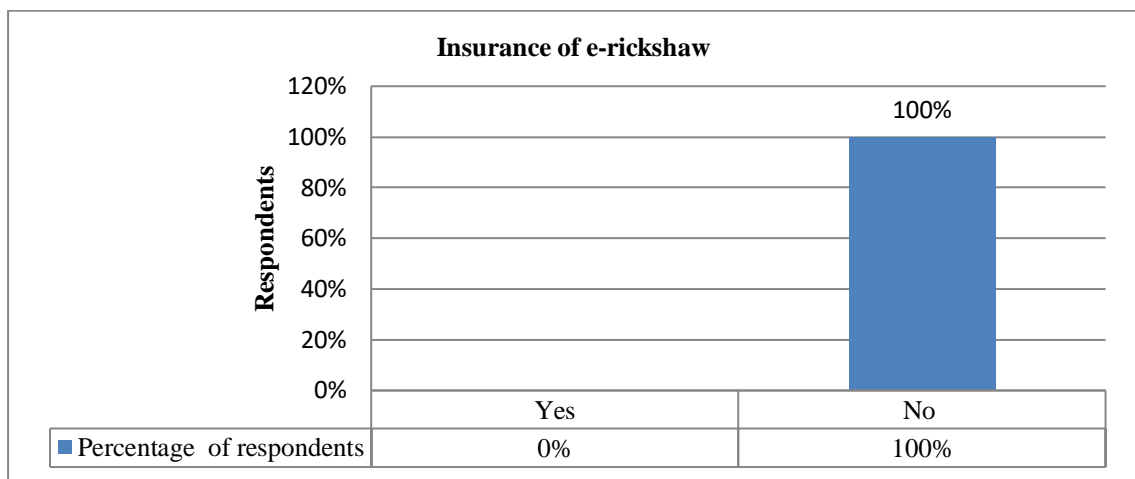
Interpretation: The above table 2.3 and figure 2.3 show the amount of rent that e-rickshaw drivers pay to their owners. The amount that covers up to rupees 200 forms 22% of the total amount of the respondents; among 9 persons, 3 have to pay from 201-300 rupees to their owners, and most of them, i.e., 45% of them have to pay 301-400 rupees to their e-rickshaw owners.

**S: Insurance of e-rickshaw**

**Table 2.4 Insurance of e-rickshaw**

Insurance of e-rickshaw	Number of respondents
Yes	0
No	45
Total	45

Source: Primary Data collected from Field Survey



**Fig. 2.4 Insurance of e-rickshaw**

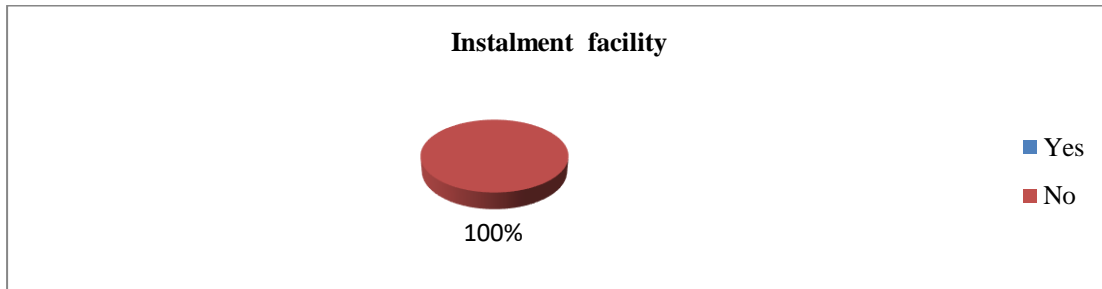
Interpretation: In table 2.4 and figure 2.4, the data are given on the availability of insurance facilities to e-rickshaws. From the data, it is clear that there is no insurance facility for the e-rickshaw drivers.

**T. Instalment Facility**

**Table 2.5 Instalment facility**

Installment facility	Respondents
Yes	0
No	5
Total	5

Source: Primary Data collected from Field Survey



**Fig. 2.5 Instalment facility**

Interpretation: The above table 2.5 and diagram 2.5 show the provision of an installment facility to the e-rickshaw drivers. The data was collected from the e-rickshaw dealers. The dealer survey shows that there is no provision of an installment facility for the e-rickshaw buyers. The e-rickshaw drivers have to pay the full amount of money when they purchase it.

Objective 3: To know the sustainability level of the e-rickshaw occupation.

Business sustainability is calculated through three different aspects-

- a. Current market demand for e-rickshaws (from dealer survey)
- b. The further plan of the e-rickshaw drivers regarding the occupation
- c. Satisfaction level of the e-rickshaw drivers

**U. Current Market Demand for e-rickshaw:**

The information regarding the current market demand for e-rickshaws was collected from 5 dealers

**Table 3.1 Current market demand for e-rickshaw**

Current demand	Respondents
High	4
Low	0
Can't determine	1
Total	5

Source: Primary Data collected from Field Survey

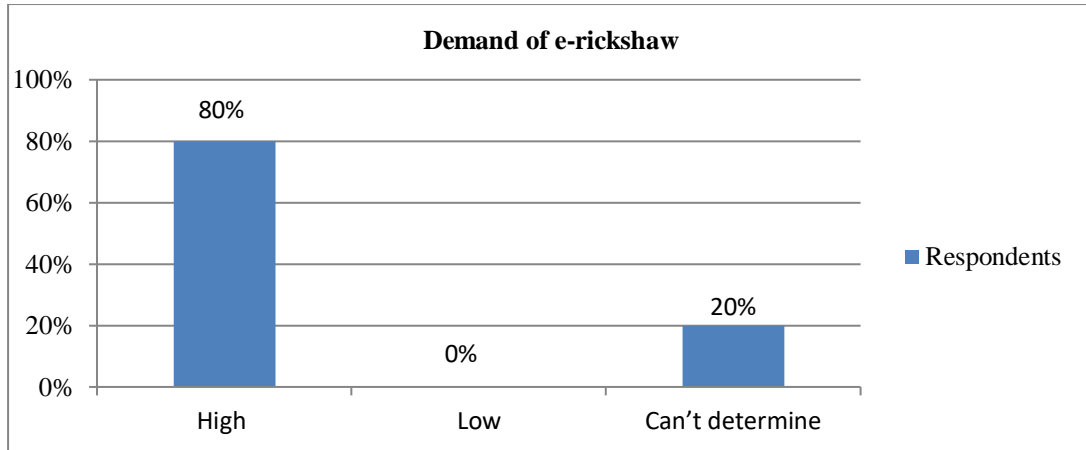


Fig. 3.1 Demand of e-rickshaw

Interpretation: The above table 3.1 and diagram 3.1 show the demand for the e-rickshaw taken from the dealer survey. Out of 5 respondents, four say that there is a high demand for e-rickshaw in Guwahati city. 1 respondent could not determine the demand for e-rickshaw. This data shows that there is a high requirement of e-rickshaw for taking it as a new means of livelihood.

**V. Future plan of occupation**

Table 3.2 Future plan of business

Future plan	Respondents
Continue of e-rickshaw business	28
Change the business	7
Quit the business	0
Can't say	10
Total	45

Source: Primary Data collected from Field Survey

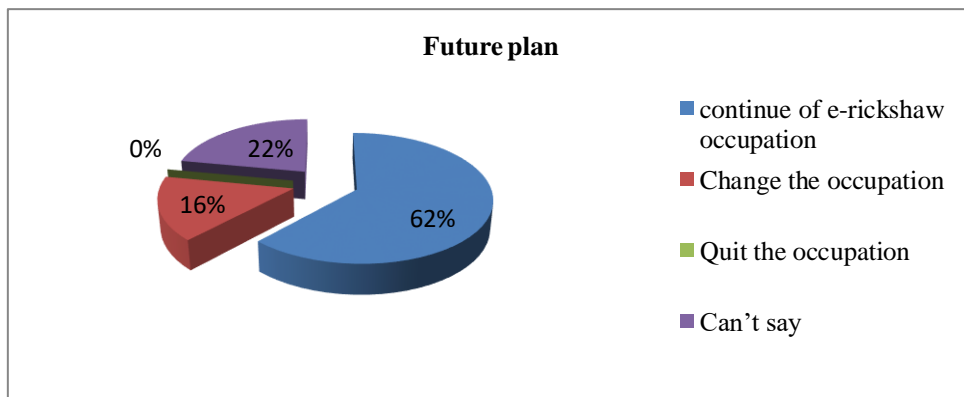


Fig. 3.2 Future plan

Interpretation: In the above table 3.2 and figure 3.2, the future plan of the e-rickshaw drivers are shown. It was found that 55% of the respondents were interested in the continuation of the e-rickshaw business, 22% of them are not clear regarding their future plans. 16% of them will change the business due to getting a better opportunity, and no one wants to quit this occupation.

### 3.3 Satisfaction from the occupation

Table 3.3 Satisfaction from the occupation

Satisfaction from occupation	Number of respondents
Highly satisfied	12
Satisfied	28
Average satisfaction	5
Dissatisfied	0
Highly dissatisfied	0
Total	45

Source: Primary Data collected from Field Survey

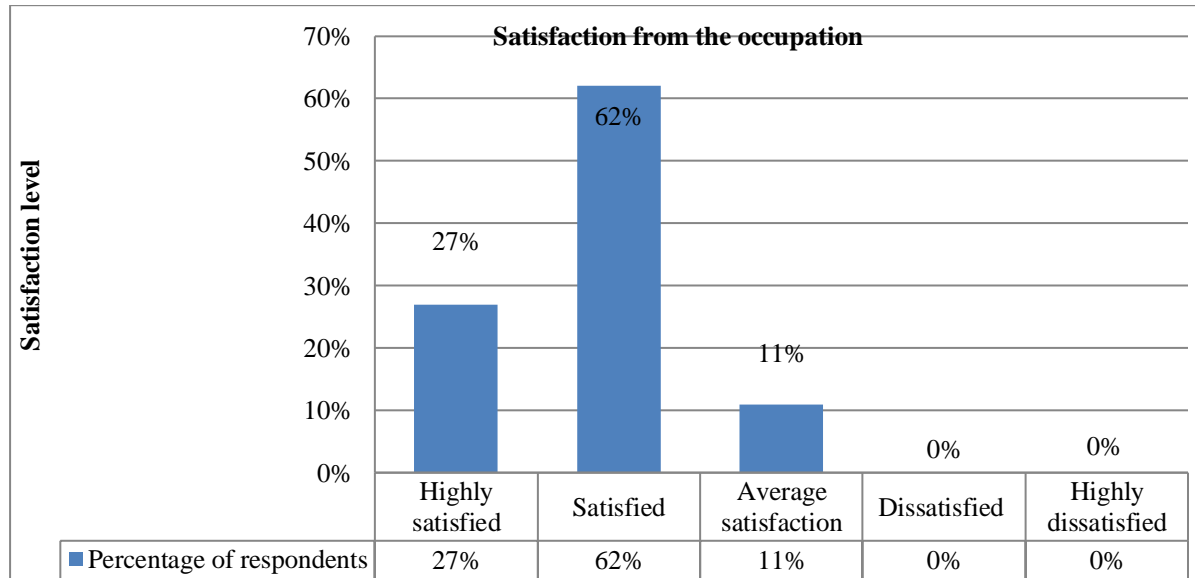


Fig. 3.3 Satisfaction from the occupation

Interpretation: In the above table 3.3 and diagram 3.3, it is seen that out of 45 respondents, 62% are satisfied with their e-rickshaw occupation, 27% of them are highly satisfied with their e-rickshaw occupation, 11% of them have average satisfaction with this e-rickshaw occupation, and none of them are dissatisfied with this occupation.

### V. RESULTS AND DISCUSSION

The findings from the analysis and the interpretation have been discussed to derive relevant information.

It can be observed from the analysis that of the 45 respondents maximum, i.e.61% of them has done initial investment of Rs. 50,001-100,000. For an unemployed or a poor person, it is a high business investment, so if they get help from the government in terms of subsidy or loan, then they can reduce their initial investment and run their e-rickshaw occupation with less burden.

Further, it was found that 56% of the respondents find the e-rickshaw occupation secure for their lives in earning wages; regarding the living condition of the respondents, the majority of them, i.e., 66% of them have a better living condition comparatively their previous occupation. The data regarding the change in the social status of e-rickshaw drivers, majority of the respondents, i.e., 82% of them say that their social status has increased after taking e-rickshaw occupation. All these indicate that the e-rickshaw occupation improves the socio-economic status of the people, so it will be favorable if the government approves the occupation as a viable way of earning the livelihood of the people.

Based on the availability of financial amenities of the e-rickshaw drivers, it was found that the e-rickshaw drivers don't get any Insurance facility for the e-rickshaw. From the unstructured interview, it was found that the e-rickshaw drivers want the insurance facility so that they can run the occupation more effectively and can expand the business, which is a similar finding as researched by Singh, 2014 that Insurance options should be introduced for the e-rickshaws, and the vehicles should be recognized as motor vehicles. This would help the commuters in claiming insurance in case of a mishap or a motor accident (Singh, 2014).

A significant number of e-rickshaw drivers don't get any installment facility for the purchasing of e-rickshaws. They have to make the complete payment of the e-rickshaw at one time. This is a big problem for them because many unemployed people don't have such a high amount of money with them, so it is beneficial for the marketers of e-rickshaws if they sell the e-rickshaws on an installment or EMI basis. It will increase the sale of the e-rickshaw and help unemployed people to adopt the occupation.



## VI. CONCLUSION

The study highlights that within a short period of time, the e-rickshaw occupation has gained popularity, and people have started adopting this as an occupation. For the unemployed people of Guwahati city, it has become an important source of income. This emphasizes that the e-rickshaw occupation is feasible and economically justifiable. Through the structured and unstructured interviews in the research, several limitations in the occupation were also found. The unavailability of financial amenities creates obstacles in purchasing the e-rickshaws, and many people remain unemployed. Therefore, it is necessary to provide financial help to those e-rickshaw drivers and unemployed people so that they could earn their livelihood through this occupation. "Sustainable legislation and a regulated environment will help this pollution-free mode of transport to grow legitimately and more Indian companies to get involved." (The Hindu business line, 2014)

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