Demographics And Passenger Satisfaction In Case Of Three Wheeler Auto Rickshaw Passengers- A Case Of Asella City, Ethiopia

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Abstract: Ethiopia is a land locked fast developing nation in the horn of Africa. The use of passenger auto rickshaws in Ethiopia has increased multifold in the last decade. This phenomenal increase in this mode of transport has made it necessary to understand passenger characteristics. This study is therefore focused on the demographic characteristics of three wheeler auto rickshaw passengers in case of asella city. The primary objective is to understand the relationship between demographic characteristics and satisfaction of passengers with respect to service of three wheeler auto rickshaw in Asella city of Ethiopia. A sample of 384 customers was selected from Asella city by using purposive sampling technique and questionnaire was administered. 324 duly filled questionnaire were received and was analyzed by using descriptive statistics. In this study mean, standard deviation, chi square were used to test association between demographic characteristics and passenger satisfaction. It was found that there is no association between age and marital status of the passenger and level of satisfaction while there is association between income, educational level, occupation and gender of the passenger and level of satisfaction

Index Terms:*Passenger satisfaction, three wheeler, auto rickshaw, demographic profile*, Ethiopia, safety, drivers behavior

1 INTRODUCTION

Ethiopia is a landlocked country and mostly imports the goods from other countries. Ethiopia was ruled by Italian for five years approximately (1935-41) and this brief period resulted in laying down of the road and railway line. Currently Ethiopia is developing its infrastructure very fast and modernizing the road and railway mode of transport. In line with the infrastructure development, automobile industry too started to develop yet these are assembling units with no manufacturing. The three-wheeler taxis, made in India, first came to Ethiopia in 2005. They have become very popular as a convenient method of transport commonly referred as Bajaj. It is observed that apart from the capital city Addis Ababa, these bajaj are increasing their reach to all the major cities, and rural parts of Ethiopia, At the same time they are overtaking traditional transportation systems such as carriages which are horse-drawn. As there are different brands available, both price and demand are increasing tremendously. At the same time it is found that both the environment of market as well as competition are speedily changing. The immense popularity of this means of transport has brought out the need to understand passengers response to the service offered. Passengers are using auto rickshaws as a means of transport due to its easy availability and affordability.

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2. PROBLEM STATEMENT

It is Imperative to understand the demographic profile of the passengers and its relationship with passenger satisfaction towards the use of three wheeler auto rickshaws so as to understand the changing pattern of customer behavior. Behavior of the customers/ passengers are changing very fast due to the fact that a number of similar products and brands are available in the market, at the same time customer are even confused about the brand that they prefer. Even for the manufacture it is necessary to understand the profile of the customers and identify and ways of satisfying the passengers needs. The three wheeler auto rickshaw industry is very much competitive and understand the demographic profile of the passengers and its relationship with passenger satisfaction will assist the manufacturers in providing more satisfactory product and service. In this geographical area there is no study conducted in understanding the relationship between demographic profile of the passengers and their satisfaction towards service provided

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3. OBJECTIVES AND HYPOTHESIS OF THE STUDY

To primary objective is to study the demographic profile of the passengers of three wheeler auto rickshaw in Asella city, Ethiopia. The specific objectives is to assess the association between demographic factors and satisfaction of passenger towards three wheeler passenger auto service. On the basis of this objective the following hypothesis are raised. H1a: There is no association between age of the passenger and level of satisfaction H1b : There is association between age of the passenger and level of satisfaction H2a: There is no association between income of the passenger and level of satisfaction H2b: There is association between income of the passenger and level of satisfaction H3a: There is no association between education level of the passenger and level of satisfaction H3b: There is association between of the passenger and level of satisfaction H4a:. There is no association between occupational back ground of the passenger and level of satisfaction H4b There is association between occupational of the passenger and level of satisfaction H5a: There is no association between gender of the passenger and level of satisfaction H5b There is

association between gender of the passenger and level of satisfaction $H6_a$: There is no association between marital status of the passenger and level of satisfaction $H6_b$ There is association between marital status of the passenger and level of satisfaction

3. METHODOLOGY USED IN THIS STUDY

This is a descriptive research that is intended to study the association between demographic profile and level of satisfaction of three wheeler auto rickshaw passengers in Asella city.

4.1 Population and sample of the study

The relevant population of this study is all passengers commuting in auto rickshaws in Asella city. It is not possible to approximate the number of commuters. This study randomly selected 384 respondents for data collection. As per Saunders (2005) a sample size of 384 respondents is necessary to draw valid conclusions. Accordingly auto rickshaw passengers were purposively selected and a pilot tested questionnaire was administered. A total of 324 duly filled questionnaires were received back.

4.2 Data requirements and methods of data collection

This study utilizes both Primary data and secondary data while the primary data is collected using a pilot tested questionnaire. Questionnaire consisted of 30 questions related to passenger satisfaction apart from defining profile of the passengers. The responses related to passenger satisfaction were collected using a likert like scale of 1 to 5 corresponding from strongly disagree to strongly agree. Further demographic profile of the respondents was also obtained to validate responses. Secondary data sources such as regional transport authority reports were also used.

4.3 Analysis of data - Data from the questionnaire is analyzed using IBM SPSS 23 software. Data analysis is performed using descriptive statistics namely the mean, std deviation, and chi square to test association between demographic characteristics and passenger satisfaction

5. BRIEF REVIEW OF LITERATURE

There are several studies conducted on customer satisfaction related to different products and services. Some of these studies are discussed in the following sections. First of all satisfaction is defined as an approach or assessment that is formed by a consumer or user by comparing expectation about a product with what they actually receive (Oliver, 1989). Many studies have identified that satisfaction is one of the leading factors that determine customer satisfaction, some such studies are those conducted by Garbarino(1999), Anderson(1994). Customer satisfaction is a conclusion by the user that a product/service has given or is giving a fulfillment or a feeling of fulfillment with relation nto that product or service (Oliver, 1997). There are several travel behavior studies that discuss factors such as, fare, frequency of service, waiting time, and travel time etc such as Ben-Akiva and Morikawa(1990), Koppelman & Wen (1998). Geeta Kesavaraj (2013), state that in this new environment, enterprises should place their strategy, energy, processes and budgets focussed to improve their knowledge and commitment towards customers. Further there are many models that are used for studying travel behavior focusing on utility such as McFadden (1974), Domencich &McFadden (1975), Manski (1977), De Dios Ortuza & Willumsen (2001) These studies are focused on decision making which is laid on the basis of alternatives in the set of choices that are most satisfying for the customer. A major literature gap identified is the lack of studies on passenger satisfaction in the three wheeler sector, especially three wheeler passenger auto in Ethiopia. There are no studies conducted on passenger satisfaction of service provided in Asella city and having identified this major lacuna, the researcher focused on investigating the association between passenger demographics and level of satisfaction in three wheeler passenger auto rickshaws.

6. ANALYSIS OF DATA

6.1 Demographic profile of the respondent

There is no exact estimation of number of three wheeler passengers in Asella city, Thus this study intended to use a typical sample of 384 respondents who were randomly selected . This decision was made on the basis of K & M sample estimation where in when the size of the population is not known, a sample of 384 respondents is sufficient to draw suggestions. Accordingly questionnaire was administered to this sample of 384 respondents. However as only 324 questionnaires were duly filled, the sample size remained at 324 respondents and a response rate of 84.37 %.

Table 1: *Table showing Demographic Profile of the Passengers*

N = 324	Frequency	Percentage
Gender		
Male	224	69.1
Female	100	30.1
Age		
18 to 25	196	60.5
26 to 35	91	28.1
36 to 45	23	7.1
46 to 55	7	2.2
56 and above	7	2.2
Educational Qualification		
No education	24	7.4
Diploma or below	148	45.7
Graduate	106	32.7
Post graduate and above	46	14.2
Marital status		
Single	224	70.1
Married	96	29.9
Income(Birr)		
100 - 2000	57	17.6
2001 - 5000	100	30.9
5001 - 10000	77	23.8
10001 - 20000	55	17.0
20001 and above	35	10.8
Occupation of the respondent		
Govt. employee	117	36.1
Pvt employee	146	45.1
Student	23	7.1
House wife	12	3.7
Job less	26	8.0

Source : Researchers own computation from primary data sources

Table 1 shows that 69.1% of the respondents are male while 30.9 % are female, while 60.5 % of the passengers are below the age of 25% and 39.5% above 25 years of age. Similarly 92.6 % are with diploma and above educational qualification.70.1% of the respondents are single while 29.9 % are married. 51.6% earn income of more than 5000 birr while 48.4 earn less than this amount. 81.2% of the respondents are in either government or private sector while 18.8 are engaged in other activities like education, house responsibility etc. This clearly shows that the respondents are young, educated and employed and able to provide valuable information for further analysis.

6.1 Descriptives with respect to use, frequency, distance, time and usage

Table 2 provides details with respect to use, frequency, distance and other factors. It is observed that 49.4 % of respondents use three wheeler for work and education purpose while 42.6 % use for shopping. 86.3% of the respondents use three wheeler either daily or three to four times a week. 77.5% of the respondents use for travel of more than 2 kilometers. 62% use it during night while 79.6 use it on shared basis. This shows that the respondents use Bajaj on a daily basis for work and education and travel more than 2 kilometers at a time mostly during night on a sharing basis.

Table 2: *Table showing use, frequency, distance, time and usage*

N = 324	Frequency	Percentage
Purpose of use		
Work	93	28.7
Education(college/school)	67	20.7
Shopping	138	42.6
Health care	4	1.2
Recreation/ entertainment	15	4.6
Others	7	2.2
Frequency of travel		
Daily once	40	12.3
Daily twice	155	47.8
Three or four times in a Week	85	26.2
Once in a week	28	8.6
Rarely	11	3.4
Emergency	5	1.5
Distance of travel		
Less then 2 km	73	22.5
Between 2.1 to 5 km	180	55.6
5.1 to 10 km	68	21.0
More than 10 km	3	.9
Time of travel		
Day time	105	32.4
Evening time	18	5.6
Night time	201	62.0
Type of usage		
Contract(hire)	7	2.2
Shared	258	79.6
Both	59	18.2

Source :Researchers own computation from primary data sources

6.1 Descriptives with respect to the extent of satisfaction

A simple descriptive analysis of passenger satisfaction variables are shown in table 3. Accordingly the mean and std. deviation of each question is presented below. However in order to understand the association between demographic profile of the respondents and passenger satisfaction, a chi square analysis is done and presented in the following sections.

Table 3 *: Descriptive statistics of Passenger satisfaction*

Satisfaction Parameter (N = 324)	Parameter description	Mean	S. D
Appearance	Three wheeler look clean and neat from outside	2.97	1.202
	Three wheeler are well decorated from inside	3.15	1.130
	I like three wheeler which is having music system	3.10	1.274
Drivers behavior	Drivers behave good with me	3.38	1.154
	Driver looks for your comfort while on the road	3.11	1.170
	Drivers help you to locate your location/ destination	3.71	1.147
	Driver blows the horn too much	2.93	1.020
	Drivers drive too fast	2.67	1.239
	Drives overtake other vehicle dangerously	2.81	1.244
	Drive plays music loudly which I don't like	2.90	1.305
	Drivers ask more money than what they agreed upon reaching to the destination (overcharging)	2.88	1.210
	Drivers are rude	3.15	1.190
	Drivers refuse to go to the destination and ask more money	2.99	1.175
	driver engages in conversation with me	2.96	1.272
Convenience	Travelling in three wheeler saves my time	3.97	1.210
	Three wheeler travelling is convenient for me	3.93	1.029
	Three wheeler is convenient to get in and get out	3.69	1.075
	Sitting is comfortable in three wheeler	3.64	1.018
	Travelling Cost is minimized due to sharing	3.24	1.268
	Three wheeler (Bajaj) is easily available	3.50	1.208
	Three wheeler (Bajaj) easy to contract	3.13	1.266
	There is Good ventilation in three wheeler (Bajaj)	3.38	1.133
	Three wheeler (Bajaj)can be found anywhere in the city	3.48	1.248
Safety	I feel safe while travelling in three wheeler	3.63	1.084
	I like the three wheeler closed body	3.71	1.027
	Male driver is safe	3.40	1.137
	Female drive is safe	3.18	1.023
Over all Satisfaction	I would recommend others to travel with three wheeler	3.79	1.017
	My experience with the three wheeler on the whole is very good	3.72	.964
	Three wheeler transport is very useful and satisfying	3.83	1.125

Source :Researchers own computation from primary data sources

6.4 Chi square results and hypothesis testing

Table 4 *showing Chi square results and test of hypothesis*

Dem-factors	χ^2	df	P value LoS(5%)	Hypothesis test result	
Age	15.525	16	487	H1a is accepted	There is no association between age of the passenger and level of satisfaction
Income	56.370	16	.000	H2a is rejected	There is association between income of the passenger and level of satisfaction
Edu Qual	25.079	12	.014	H3a is rejected	There is association between educational level of the passenger and level of satisfaction
Occup	41.013	16	.001	H4a is rejected	There is association between occupation of the passenger and level of satisfaction
Gender	20.865	4	.000	H5a is rejected	There is association between gender of the passenger and level of satisfaction
Marital status	6.345	8	.609	H6 a is accepted	There is no association between marital status of the passenger and level of satisfaction

Source :Researchers own computation from primary data sources

Table 4 shows chi square results and hypothesis testing. It is observed that in case of Hypothesis 1 and Hypothesis 6, p value is >0.05, therefore H1a and H6a are accepted. While in the case of H2, H3, H4 and H5, p value is < 0.05, therefore H2a, H3a, H4a and H5a are rejected.

7. CONCLUSIONS

On the basis of testing of hypothesis testing it is concluded that There is no association between the age of the passenger and level of satisfaction There is association between income of the passenger and level of satisfaction There is association between educational level of the passenger and level of satisfaction There is association between occupation of the passenger and level of satisfaction There is association between gender of the passenger and level of satisfaction There is no association between marital status of the passenger and level of satisfaction

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