An Empirical Research on the Penetration Levels for a Call-a-Cab Service in Mumbai

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ABSTRACT – To replace taxi services in Mumbai is difficult as we are all dependent on it. We use them to get around town comfortably and conveniently. Taxis made an appearance on Mumbai’s roads when the population was on the rise and there was a demand for a comfortable mode of travel. The yellow and black colors are synonymous with the Mumbai taxi. Even if your taxis may not be up to safety standards, people in the city have a strong emotional connect with them. Taxi drivers have over the years provided excellent service, with their honesty and politeness, which can’t be seen in any other part of the country. New taxis are replacing the old, as people seek improvements where safety and comfort are concerned. But taxis are an indispensable part of the public transport system.

Key words: Call-a-Cab, Services, Transportation, Safety


INTRODUCTION:

The number of Call-a-cab taxis in Mumbai has touched the 5,000-mark for the first time. Out of nearly 500 new ones were added in the last two months. Meru Cabs heads with a service of 2,050 vehicles in Mumbai but its nearest competitor, TabCab, is inching closer 1,700 taxis. "Plans are afoot to add more vehicles to the service. The growth of Call-a-cab taxi services is good news for Mumbaikars. "The demand is moving faster than supply. At least 10,000 Call-a-cab services are needed in the island city, suburbs, Thane, Kalyan and Navi Mumbai, There is no rivalry or "stiff competition" between operators in Mumbai. Every operator gets double the number of calls for bookings daily and their cabs are always busy. They need not market aggressively to poach customers. Meru Cabs and TabCab receive an average of 5,000 to 6,000 calls daily from commuters and on several occasions, sometimes the bookings are cancelled due to "shortage of cabs". Mumbai also have the women taxi drivers to ensure safe transport of women commuters. At the same time TabCab has permits to launch 2,300
additional taxis and passengers have demanded that the operator should induct luxury vehicles with better amenities for passengers. Currently, the Call-a-cab operator has launched the Toyota Etios and Maruti SX4 sedans that are in great demand.

HISTORY

Taxicabs arrived in 1911 to complement horse wagons. The black and yellow Fiat taxis in Mumbai are integral part of the city's heritage and have been depicted in numerous Bollywood movies. These metered taxis play throughout Mumbai and have monopoly. A mechanical meter decides the fare and is proportional to the distance traveled.

LITERATURE REVIEW

Rajendra Aklekar (Oct 27, 2010)
With the increasing number of private vehicles on the roads the demand for yellow and black taxis has reduced. In 20th century there were no crowds, no one was in hurry. The roads were wider and no traffic jams at all. Today, it the scenario is total opposite to the one before. The fares top the list of complaints, followed by drivers’ rude behavior, charging excess luggage fare, and taking longer routes to reach a destination.

Saritha Rai (Jan 15, 2015).
Cabs growth in India is tremendous, the case of Delhi Rape in the cab which resulted in booming the market for its competitors (OLA and TaxiForSure). Data reveals that Ola was offering 60,000 cabs in 52 Indian cities and has aggressively announced that it plans to touch 200 cities by end-2015. Of the 52 cities Ola currently operates in, 34 new cities were added in the past three months, assuming the pace of its expansion. On an average 200,000 rides daily, offers 60,000 cabs and says it has made “entrepreneurs” out of 70% of its drivers. In other words, 70% of its drivers are cab owners who operate as independent businessmen, unlike many large-fleet Indian cab firms like Meru which operate their own taxis with hired drivers.

RESEARCH OBJECTIVES

The primary objective of this study was to evaluate the penetration levels of the Cab services in Mumbai.
Secondary objective was to determine the number of people using such services, frequency of trip taken, monthly amount spent on such services, whether the services availed depend on profession and income level.
PROPOSED HYPOTHESIS

1. Less than 25% of females use OLA Cab services.
2. More than 70% of professionals use Meru Cab services.
3. Less than 20% of people use this Tab Cab services for their Daily Work.
4. Average monthly expenditure on Uber Cab services is less than Rs.3000/-. 
5. Choices of service providers are Independent of Profession.
6. Choices of service providers are Independent of Income Class.

RESEARCH METHODOLOGY

At the outset a thorough review of the literature paper and articles were carried out. Internet based resources and magazines such as Forbes were utilized for this purpose. The variables to be considered for the study were shortlisted. The variables are listed below.

Demographics Variables
Age, Family type and size, Educational qualifications, Employment, Income, and Professions.

Independent Variables
Mostly which service provider preferred frequency of usage, Monthly Expenditure, Service Quality levels, and Service Features.

After the initial secondary data search, a primary survey was undertaken. The survey comprised 85 respondents and was limited in the western suburbs of Mumbai. The survey instrument was the questionnaire. A probabilistic sampling technique was preferred in order to minimize bias in sample selection.

The questionnaire was administered through Google Forms. Out of 85 respondents, 35 respondents’ data were incomplete and 18 respondents do not have the services at their places. The data collected through the survey was analyzed using inferential statistical tests of mean, proportion and dependency such as t-test, p-test and Chi-squared.

DATA ANALYSIS

Major Findings:
Among all cab services, nearly 35% of the market share is covered by Meru. As the usage of this service is high it is due to easily avail, low cost and quality service.
A sizable majority (77%) of the users of cab services belonged to the lower income categories. In fact, the number of user increase progressively as the annual family income increased.

Greater than 60% of the entire user who uses this service was found to be a graduate. Also marketing professionals uses the services for their field work.
TESTING OF HYPOTHESIS

Hypothesis 1: Less than 25% of females use OLA Cab services.

<table>
<thead>
<tr>
<th>n</th>
<th>p'</th>
<th>q</th>
<th>alpha</th>
<th>p*q</th>
<th>p*q/n</th>
<th>SQRT (p*q/n)</th>
<th>p' - p</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0.3</td>
<td>0.70</td>
<td>0.01</td>
<td>0.175</td>
<td>0.01</td>
<td>0.08</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Ho : 25% or more of females use this service
Ha : Less than 25% of females use this service

Null Hypothesis  Ho: p ≥ 0.25
Alternate Hypothesis Ha: p < 0.25
Type of Test Proportion Test
Type of Tail Left Tail Test
Alpha 0.01
Probability 0.01
Critical value -2.33
Observed value 0.65
P- value 0.26
Alpha 0.01
Decision P-value is greater than alpha, accept the Null

OLA cab service is more popular than other services in Mumbai. It is used by all the peoples in Mumbai irrespective of the gender. It is because of comfortable ride, easily available, good vehicle condition, etc.
Hypothesis 2: More than 70% of professionals use Meru Cab services.

<table>
<thead>
<tr>
<th>n</th>
<th>p'</th>
<th>q</th>
<th>alpha</th>
<th>p*q</th>
<th>p*q/n</th>
<th>SQRT (p*q/n)</th>
<th>p' - p</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0.83</td>
<td>0.17</td>
<td>0.1</td>
<td>0.119</td>
<td>0.00</td>
<td>0.06</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Ho : Less than or equal to 70% of professionals use this service.
Ha : More than 70% of professionals use this service.

Null Hypothesis Ho: p ≤ 0.70
Alternate Hypothesis Ha: p > 0.70
Type of Test Proportion Test
Type of Tail Right Tail Test
Alpha 0.1
Probability 0.9
Critical value 1.28
Observed value 2.06
P- value 0.0

Decision P-value is less than alpha , reject the Null

Meru cab service is low cost ride for the people in Mumbai, so it is most popular among the Marketing Professionals as they use the services frequently. Also it is the majorly find services around whole Mumbai.

Hypothesis 3: Less than 20% of people use this Tab Cab services for their Daily Work

<table>
<thead>
<tr>
<th>n</th>
<th>p'</th>
<th>q</th>
<th>alpha</th>
<th>p*q</th>
<th>p*q/n</th>
<th>SQRT (p*q/n)</th>
<th>p' - p</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0.07</td>
<td>0.93</td>
<td>0.1</td>
<td>0.186</td>
<td>0.01</td>
<td>0.08</td>
<td>-0.13</td>
</tr>
</tbody>
</table>

Ho 20% or more of people use this services for their Daily Work
Ha Less than 20% of people use this services for their Daily Work

Null Hypothesis Ho: p ≥ 0.2
Alternate Hypothesis Ha: p < 0.2
Type of Test Proportion Test
Type of Tail Left Tail Test
Alpha 0.1
Probability 0.1
Critical value -1.28
Observed value -1.65
P- value 0.05

Decision P-value is less than alpha , reject the Null

Tab Cab services provide good class service for the people of Mumbai, which results in higher pricing. So people cannot afford to use the service daily as public transport is available at cheaper cost.
Hypothesis 4: Average monthly expenditure on Uber Cab services is less than Rs.3000/-

<table>
<thead>
<tr>
<th>n</th>
<th>s</th>
<th>X'</th>
<th>alpha</th>
<th>SQRT (n)</th>
<th>s / SQRT n</th>
<th>X' - µ</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.00</td>
<td>1138.34</td>
<td>2026.67</td>
<td>0.01</td>
<td>5.48</td>
<td>207.83</td>
<td>-973.33</td>
</tr>
</tbody>
</table>

Ho: Average monthly expenditure on this services is more than or equal to Rs.3000/-.  
Ha: Average monthly expenditure on this services is less than Rs.3000/-.  

Null Hypothesis  
Ho: µ ≥ 3000  
Alternate Hypothesis  
Ha: µ < 3000  

Type of Test  
T - Test  

Type of Tail  
Left - tailed Test  

Alpha  
0.01  

Probability  
0.01  

Critical value  
2.46  

Observed value  
-4.68  

P- value  
0.00  

Alpha  
0.01  

Decision  
P-value is less than alpha , reject the Null  

Monthly expenditure on this service depends upon the usage, people finds public transport crowded so they opt for Cab service more rather than Public Transport.

Hypothesis 5: Choices of service providers is Independent of Profession

Observed Data (Fo)

<table>
<thead>
<tr>
<th>Profession</th>
<th>Meru</th>
<th>Ola</th>
<th>TabCab</th>
<th>Total</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>14%</td>
</tr>
<tr>
<td>Human Resource</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Marketing</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>24%</td>
</tr>
<tr>
<td>Self Employed</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>21%</td>
</tr>
<tr>
<td>Student</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>11</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10</td>
<td>5</td>
<td>14</td>
<td>29</td>
<td>100%</td>
</tr>
</tbody>
</table>

Expected Data (Fe)

<table>
<thead>
<tr>
<th>Profession</th>
<th>Meru</th>
<th>Ola</th>
<th>TabCab</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>1.38</td>
<td>0.69</td>
<td>1.93</td>
<td>4.00</td>
</tr>
<tr>
<td>Human Resource</td>
<td>0.34</td>
<td>0.17</td>
<td>0.48</td>
<td>1.00</td>
</tr>
<tr>
<td>Marketing</td>
<td>2.41</td>
<td>1.21</td>
<td>3.38</td>
<td>7.00</td>
</tr>
<tr>
<td>Self Employed</td>
<td>2.07</td>
<td>1.03</td>
<td>2.90</td>
<td>6.00</td>
</tr>
<tr>
<td>Student</td>
<td>3.79</td>
<td>1.90</td>
<td>5.31</td>
<td>11.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10.00</td>
<td>5.00</td>
<td>14.00</td>
<td>29.00</td>
</tr>
</tbody>
</table>
Null Hypothesis Choices of service providers is Independent of Profession
Alternate Hypothesis Choices of service providers is Not Independent of Profession
Type of Test Chi square test

Type of Tail Right Tailed Test
Alpha 0.01

Probability 0.99
Critical value 20.09
Observed value 8.00
P-value 0.43

Alpha 0.01
Decision P-value is greater than alpha accept the Null

Choices of service providers are Independent of profession, as professionals choose the service by means of quality provided, cleanliness & Vehicle condition.

Hypothesis 6: Choices of service providers is Independent of Income Class

Observed Data (Fo)

<table>
<thead>
<tr>
<th>Income Class</th>
<th>Meru</th>
<th>Ola</th>
<th>TabCab</th>
<th>Total</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Rs.25,000/-</td>
<td>4</td>
<td>0</td>
<td>8</td>
<td>12</td>
<td>41%</td>
</tr>
<tr>
<td>Rs. 25001 - Rs.50,000/-</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>34%</td>
</tr>
<tr>
<td>Rs. 50001 - Rs.75,000/-</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td>Rs. 75001 - Rs.100,000/-</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>More than Rs. 100,001/-</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>5</td>
<td>14</td>
<td>29</td>
<td>100%</td>
</tr>
</tbody>
</table>

Expected Data (Fe)

<table>
<thead>
<tr>
<th>Income Class</th>
<th>Meru</th>
<th>Ola</th>
<th>TabCab</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Rs.25,000/-</td>
<td>4.14</td>
<td>2.07</td>
<td>5.79</td>
<td>12.00</td>
</tr>
<tr>
<td>Rs. 25001 - Rs.50,000/-</td>
<td>3.45</td>
<td>1.72</td>
<td>4.83</td>
<td>10.00</td>
</tr>
<tr>
<td>Rs. 50001 - Rs.75,000/-</td>
<td>1.72</td>
<td>0.86</td>
<td>2.41</td>
<td>5.00</td>
</tr>
<tr>
<td>Rs. 75001 - Rs.100,000/-</td>
<td>0.34</td>
<td>0.17</td>
<td>0.48</td>
<td>1.00</td>
</tr>
<tr>
<td>More than Rs. 100,001/-</td>
<td>0.34</td>
<td>0.17</td>
<td>0.48</td>
<td>1.00</td>
</tr>
<tr>
<td>Total</td>
<td>10.00</td>
<td>5.00</td>
<td>14.00</td>
<td>29.00</td>
</tr>
</tbody>
</table>
\[(Fo - Fe)^2 / Fe\]

<table>
<thead>
<tr>
<th>Income Class</th>
<th>Meru</th>
<th>Ola</th>
<th>TabCab</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Rs.25,000/-</td>
<td>0.00</td>
<td>2.07</td>
<td>0.84</td>
<td>2.91</td>
</tr>
<tr>
<td>Rs. 25001 - Rs.50,000/-</td>
<td>0.09</td>
<td>0.30</td>
<td>0.01</td>
<td>0.40</td>
</tr>
<tr>
<td>Rs. 50001 - Rs.75,000/-</td>
<td>0.04</td>
<td>1.50</td>
<td>0.83</td>
<td>2.37</td>
</tr>
<tr>
<td>Rs. 75001 - Rs.100,000/-</td>
<td>0.34</td>
<td>3.97</td>
<td>0.48</td>
<td>4.80</td>
</tr>
<tr>
<td>More than Rs. 100,001/-</td>
<td>0.34</td>
<td>3.97</td>
<td>0.48</td>
<td>4.80</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0.83</td>
<td>11.82</td>
<td>2.64</td>
<td><strong>15.29</strong></td>
</tr>
</tbody>
</table>

Null Hypothesis: Choices of service providers is **Independent** of Income Class
Alternate Hypothesis: Choices of service providers is **Not Independent** of Income Class
Type of Test: Chi square test
Type of Tail: Right Tailed Test
Alpha: 0.01
Probability: 0.99
Critical value: **20.09**
Observed value: **15.29**
P- value: 0.05

Alpha: 0.01
Decision: P-value is greater than alpha accept the Null

Choices of services providers are Independent of Income Class as the people in such categories uses their own Vehicle for transport or else they choose the service randomly on basis of Quality and Punctuality.

**LIMITATIONS**

Majority of the respondents, who are in the age group of 20 – 30 years, use these services more.
Also the services are not easily available in rural part of India.
Family of more than 5 peoples doesn’t use this service as the capacity of the Taxi (sedan car) is maximum of 4.
Lower income group ignore this services due to their high fares.
CONCLUSION

The cab services has a tremendous potential for growth in Mumbai as the transport needs of the corporate world and even of middle-class and affluent class is growing day by day. With Mumbai city facing enormous parking problems, many residents would prefer to call up a taxi service for the purpose of visiting a shopping mall, going on special occasion, or even to attend a late-night party. This services scores higher points over wasting time in search of parking space for own vehicle, or negotiating angrily on a leisurely weekend. The study shows that its customer satisfaction level is very high, which is a positive point for its growth and expansion.

REFERENCES


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