

MINUTES OF THE 44TH GOVERNING BODY MEETING
OF THE
FORUM OF INDIAN REGULATORS (FOIR)

VENUE : **CONFERENCE HALL
3RD FLOOR
CERC
NEW DELHI, INDIA**

DAY / DATE : **FRIDAY, THE 16TH JUNE, 2017**

The meeting was chaired by Shri Gireesh B. Pradhan, Chairperson, Central Electricity Regulatory Commission (CERC) and Hony. Chairman, Forum of Indian Regulators (FOIR). He extended a warm welcome to all members of the Governing Body. He also welcomed the Members of Insolvency and Bankruptcy Board of India (IBBI), who have accepted the invitation of FOIR, to become the member of FOIR. List of participants is **enclosed** at **Annexure-I**.

The Governing Body thereafter took up each of the agenda items for consideration.

Agenda 1: Confirmation of the Minutes of the 43rd Governing Body Meeting of "FOIR" held on 11th January, 2017 at Ahmedabad (Gujarat).

The minutes of the 43rd Governing Body Meeting of "FOIR" held on 11th January, 2017 at Ahmedabad (Gujarat) as circulated were confirmed.

Agenda 2:

- i) Approval & Adoption of the Audited Accounts of "FOIR" for the F.Y. 2016-17 along with the Resolution.**
- ii) Approval of Budget for the F.Y. 2017-18.**
- iii) Resolution for the appointment of the Statutory Auditors for auditing the Accounts of "FOIR" for the F.Y. 2017-18.**
- iv) Appointment of Tax Consultant for filing the Income Tax Return of "FOIR" for the F.Y. 2017-18 along with the Resolution for their appointment.**

- v) **Resolution authorizing the Executive Secretary, FOIR for filing the documents with the Registrar of Societies, Income Tax Authorities and any other Authority/ies.**
- vi) **Resolution for withdrawal and addition of the Authorized Signatories in the bank account of "FOIR" maintained with Corporation Bank, K.G. Marg Branch, New Delhi.**

FOIR Secretariat explained the salient features of the Balance Sheet and Income & Expenditure Account for the financial year 2016-17. After discussion, the Annual Accounts of FOIR for the financial year 2016-17 were considered and adopted.

The budget for the FY 2017-18 (as circulated), was also discussed in detail. The GB approved the budget and advised to retain the Member's subscription fee of Rs.4.00 lacs for Regulatory Authorities/Bodies and @ Rs. 2.00 lacs for Regulatory Authorities of NE States & Academic/Research Institutions.

The GB authorized Hony. Chairman, FOIR / Chairperson, CERC for the following :-

- Appointment of the Statutory Auditors for auditing the Accounts of "FOIR" for the year 2017-18 and their remuneration.
- Appointment of Tax Consultant for filing the Income Tax Return of "FOIR" for the F.Y. 2017-18 along with the Resolution for their appointment.

The GB also approved the following :

- The Executive Secretary to be authorized for filing the documents with the Registrar of Societies, Income Tax Authorities and any other Authority/ies.
- The list of Authorized Signatories for withdrawal and addition in the bank account of "FOIR" maintained with Corporation Bank, K.G. Marg Branch, New Delhi.

Agenda 3: New membership in FOIR - “Insolvency and Bankruptcy Board of India (IBBI)”.

The GB was apprised of the consent conveyed by "Insolvency and Bankruptcy Board of India (IBBI) to become a member of "FOIR". The GB endorsed to include IBBI as an Institutional Member (Central Infrastructure sector) and Dr. M.S. Sahoo, Chairperson, IBBI as Hony. Vice-Chairman – Central Infrastructure Sector.

Agenda 4: Reconstitution of Governing Body of "FOIR".

As regards constitution of new Governing Body, Shri Anand Kumar, Chairperson, Gujarat Electricity Regulatory Commission (GERC) mentioned that he had taken over charge to the post of Chairperson, Gujarat Electricity Regulatory Commission (his current organization) in April, 2016. Further, Shri Narayan Singh, Chairperson of Chhattisgarh State Electricity Regulatory Commission is due to retire in July, 2018. Accordingly, the name of Shri S. Machendranathan, Chairperson, Airport Economic Regulatory Authority (who has a long tenure upto March, 2019) was proposed for the post of Hony. Chairman, FOIR and unanimously endorsed by the Governing Body. The proposed constitution of Governing Body of "FOIR" for 2017-18 is **enclosed at Annexure II**.

Agenda 5: Discussion on the Context and Proposed Guest Speakers in the 1st Executive Management Workshop to be Conducted Under the Aegis of RRTI.

The GB was apprised that a proposal had been received from Indian Institute of Corporate Affairs (IICA) to organize a Two-Day Training Programme under the aegis of Regulatory Research and Training Institute (RRTI) and that the course content and speakers need to be finalized. After discussion the GB authorized Hony. Chairman, FOIR to take a decision on the course content and the proposed speakers for the Training Programme.

The GB was also informed that Andhra Pradesh Electricity Regulatory Commission submitted their views on the topics / subjects for inclusion in the activities of Regulatory Research and Training Institute RRTI. The GB advised FOIR Secretariat to consider the same while framing the course content.

Agenda 6: Proposal to conduct new study under “FOIR”.

Chairperson, CCI discussed a proposal to conduct research on the Aggregator Model in the Radio Taxi Industry, with special focus on the issue of Surge Pricing. The proposal for conducting the study is placed at Annexure III. The study is proposed to be conducted by team constituted by the experts from Delhi University. He also informed that quantitative and qualitative research will be conducted comprising of review of existing literature and collection of primary data through surveys. The proposed time frame of the project is around 6 months. The projected cost of conducting the research study is approximately Rs.25 Lakh and the project would be relevant to regulatory bodies as well as to the end-consumers. Chairperson, CCI sought support of "FOIR" to conduct the study.

The GB was apprised that the current budget of 2017-18 has allocated Rs.15 lakh for conducting a study. Therefore, the GB directed FOIR Secretariat to form a small group comprising of members of FOIR (including an official from CCI) to examine the proposal as also ‘provisions & rules’ for conducting the study. The GB authorized Hony. Chairman, FOIR to take decision on this matter.

At the end of the meeting, Shri Gireesh B. Pradhan, Chairman, CERC/ Hony. Chairman, FOIR conveyed his sincere thanks to all the dignitaries present in the meeting. He also thanked the FOIR Secretariat for their sincere efforts in organizing the meeting.

The meeting ended with vote of thanks to the Chair.

LIST OF PARTICIPANTS

S. No.	NAME	DESIGNATION	ORGANISATION
01.	Shri Gireesh B. Pradhan	Chairperson	Central Electricity Regulatory Commission
02.	Shri S. Machendranathan	Chairperson	Airports Economic Regulatory Authority of India
03.	Shri Devender Kumar Sikri	Chairperson	Competition Commission of India
04.	Shri Anand Kumar	Chairperson	Gujarat Electricity Regulatory Commission
05.	Shri Narayan Singh	Chairperson	Chhattisgarh State Electricity Regulatory Commission
06.	Shri A.K. Singhal	Member	Central Electricity Regulatory Commission
07.	Shri A. S. Bakshi	Member	Central Electricity Regulatory Commission
08.	Dr. M.K. Iyer	Member	Central Electricity Regulatory Commission
09.	Shri A. B. Bajpai	Member	Madhya Pradesh Electricity Regulatory Commission
10.	Shri G. Rajagopal	Member	Tamil Nadu Electricity Regulatory Commission
11.	Shri M.S. Puri	Member	Haryana Electricity Regulatory Commission
12.	Dr. Navrang Saini	Member	Insolvency and Bankruptcy Board of India
13.	Dr. (Ms) Mukulita Vijayawargiya	Member	Insolvency and Bankruptcy Board of India
14.	Shri Sanoj Kumar Jha	Secretary	Central Electricity Regulatory Commission
15.	Dr. S.K. Chatterjee	Joint Chief (Regulatory Affairs)	Central Electricity Regulatory Commission
16.	Mrs. Rashmi Nair	Deputy Chief (Regulatory Affairs)	Central Electricity Regulatory Commission

PROPOSED CONSTITUTION OF GOVERNING BODY OF "FOIR"
FOR THE YEAR 2017 - 18

Name & Designation	Date of Appointment in Regulatory Commission / Authority	Date of Retirement in Regulatory Commission / Authority
Hony. Chairman (One Post)		
Mr. Gireesh B. Pradhan Chairperson, CERC	22.10.2013	19.12.2017*
Hony. Vice-Chairman (Existing Six Post)	Nine proposed Member against Six, Rule will be amended in this regard	
Mr. S. Machendranathan Chairperson, AERA	09.03.2015	06.03.2019
Mr. R.S. Sharma Chairperson, TRAI	10.08.2015	09.08.2018
Mr. G.C. Chaturvedi Chairperson, WDRA	25.08.2015	16.01.2018
Mr. Devender Kumar Sikri Chairperson, CCI	11.01.2016	12.07.2018
Dr. M.S. Sahoo Chairperson, IBBI	01.10.2016	30.09.2021
Mr. Anand Kumar Chairperson, GERC	02.08.2011	04.04.2021
Mr. Narayan Singh Chairperson, CSERC	15.07.2013	14.07.2018
Mr. Desh Deepak Verma Chairperson, UPERC	28.09.2013	25.06.2018
Chairperson, TAMP		
Hony. Members (Eight Posts)		
Mr. A.B. Bajpai, Member, MPERC	11.12.2012	10.12.2017**
Mr. Alok Gupta, Member, MPERC	02.01.2013	01.01.2018***
Mr. G. Rajagopal, Member, TNERC	10.01.2014	09.01.2019
Mr. M.S. Puri, Member, HERC	27.02.2014	09.09.2018
Vacant, Central Infrastructure Sector		-
Vacant, Financial Sector		-
Hony. Secretary		
Mr. A.K. Singhal, Member, CERC	09.10.2013	08.10.2018

Hony. Treasurer		
Mr. A.S. Bakshi, Member, CERC	05.08.2014	23.07.2018

***Mr. S. Machendranathan, Chairperson, AERA will replace Shri Gireesh B. Pradhan, Chairperson, CERC and will serve as Hony. Chairman (from 20.12.2017 – 06.03.2019).**

****Mr. D.B. Manival Raju, Member, KERC will replace Mr. A.B. Bajpai, Member, MPERC and will serve as Hony. Member (from 11.12.2017 – 22.12.2018).**

*****Mr. H.D. Arun Kumar, Member, KERC will replace Mr. Alok Gupta, Member, MPERC and will serve as Hony. Member (from 02.01.2018 – 04.03.2019).**

Research Proposal prepared for Competition Commission of India

by

Simrit Kaur

Professor of Economics and Public Policy, Faculty of Management Studies, University of Delhi

Competition and Regulatory Issues related to the Taxi and Cab Aggregator Industry: With special reference to Surge Pricing in the Indian Context

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1. Research Proposal

Competition and Regulatory Issues related to the Taxi and Cab Aggregator Industry: With special reference to Surge Pricing in the Indian Context

Prepared By:

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Regulation in the Taxi and Cab Aggregator Industry: Background

In the more specialized literature of transportation economics, a long-standing debate has raged over whether the Taxi industry ought or needs to be regulated by concerned authorities. While few economists have argued in favour of deregulation (Tullock 1975; Coffman, 1977; Williams 1980), there are others, who have argued for deregulation of entry while retaining regulated fares (Douglas, 1972; Beesley, 1973, 1979; De Vany 1975; Abe and Brush, 1976; Manski and Wright, 1976). Still further, few have argued for both fare and entry regulation (Shrieber 1975, 1977, 1981; Schroeter, 1983; Gallick and Sisk, 1987; Teal and Berglund, 1987). Moore and Balaker (2006), provide a rich survey of literature on Regulation in the Taxi Industry and why economists do not often reach a conclusion on the merits and demerits of the same. Few economists (Dempsey, 1996; Motala, 2016; Orr, 1969) have tried to provide a solution to the problem of regulation in the Taxi Industry as well. Case studies on Taxi Cab regulations are also available (Saponaro, 2013).

However, the arrival of innovative app-based ride services generically referred to as Cab Aggregators (CAs) have challenged established rules. The growing popularity of these services has caught authorities off-guard, as CAs typically do not fall under established regulatory structures. Moreover, the uptake of similar technologies amongst traditional for-hire operators blurs the line between existing regulatory categories, and in some cases obviates it. In response, regulators have adapted existing regulations to address the specificities of CAs. How this regulatory challenge will be met in the face of fast-growing CAs and strong resistance from traditional for-hire passenger transport providers, is still an open question. In this context, it is important for regulatory authorities to reflect on regulating for-hire ride services and identify persistent tensions that should be addressed in the changing scenario of innovation amidst uncertainty (OECD, 2016).

With respect to Surge Pricing by cab aggregators, some jurisdictions have sought to limit variable pricing in cases of natural or man-made emergencies. For example, in response to surge pricing during Hurricane Sandy, Uber reached an agreement with the New York Attorney General to cap price increases at 3.5 times the base fare for UberX, and 2.5 times the base price for Uber Black when a state of emergency has been declared. Outside of emergencies, surge pricing can lead to very high multipliers and is now used as a competitive differentiator amongst CAs.

Indian Taxi Industry and Cab Aggregators

Taxi industry, which functions on provision of private transport vehicle on demand by consumers, has been running under different regulations of Central, State and local governments. These are regulated to ensure that taxi services are provided to passengers in a safe and predictable manner with quality assurance. Often, the scope of regulations has been on licensing of taxi drivers and operators, insurance and stable pricing approach adopted by them.

The onset of Cab Aggregators (CAs) in the Indian taxi industry began with the start of companies such as Taxi For Sure and Ola Cabs in 2010. This competition further intensified with the arrival of US-based cab aggregator Uber in 2013. Using digital technology platforms, these companies started offering ride services to passengers on request by tap from a smartphone app. They do not own cars, but sign up private drivers willing to provide rides to paying passengers, passing the request to them via its platform. Contrary to taxis which are sought at a distance or from taxi stand, such cabs can come to location of passenger on demand and drop precisely at the location guided by Global Positioning System (GPS). As such they seem to provide more convenience in their point-to-point transportation objective. To bring more cab drivers on-board in peak traffic times, the cab aggregators started with 'Surge Pricing', a dynamic approach to fare charged from passengers depending upon day/night and traffic conditions. Sometimes, they are also alleged to be following predatory pricing techniques at the same time, charging at below-cost prices to bring passengers on their platform. Their rapid growth and expansion has shown an innovative trend, disrupting the existing passenger transport ecosystem.

The CA companies have been able to bypass local rules and regulations by calling themselves as platforms that only offer technological solutions. However, since these cabs also take passengers to their destination for a metered fare, competition between them and erstwhile taxis remains intense. The existing taxi industry is voicing its concern over lack of a level playing field between them and the CAs. Therefore, they seek regulatory intervention. Further, infrequent price fluctuations have proven to be sensitive among Indian consumers, forcing authorities to put a cap on surge pricing.

The Basic Problem: Online Cab Aggregators/Radio Taxi Operators primarily provide a platform that connects riders to independent drivers (driver-partners). Potential riders book a cab through say, Uber or Ola app. If a rider chooses to request a ride, the app calculates the fare based on time and distance traveled. The bill is paid electronically. In case demand for rides exceeds the supply of driver-partners, Cab Aggregators (CAs) employ 'surge pricing'. Surge pricing reduces demand and enhances supply of driver partners, thereby helping markets to clear. The algorithm that calculates the 'surge price' assigns a simple "multiplier" that multiplies the standard fare in order to derive the 'surged' fare. Often, the rider is informed of the 'surge' multiplier. Thereafter, the rider acknowledges the higher price explicitly, before cab aggregator passes on the ride request to nearby drivers.

However, 'surge pricing' has often annoyed some of its customers and policy makers, so much so that it is facing legal and political challenges around the world, including India. Cab Aggregators dynamic pricing has raised antitrust concerns in India as well.

With this background, the basic objective of the research proposal is to analyze the competition and regulatory issues pertaining to the Taxi Industry and Cab Aggregators. Focus of the study would be on addressing the issue of Surge Pricing in the Indian Context.

Regulatory Issues pertaining to Taxi Industry and CAs:

1. Legal Status: A primary point being debated is whether the CA companies should be treated as traditional taxi operating companies or as "intermediary" information technology companies. While most states/UTs (eg. Karnataka, Maharashtra, and Delhi) in India are trying to regulate CAs as taxi operators, the police in one of the suburbs in West Bengal have passed orders recognizing an "on demand transportation technology aggregator" as a technology company.
2. Resolving regulatory issues involving licensing and safety.
3. Regulatory framework related to Environmental issues: These presently pertain to conversion of diesel vehicles to CNG to improve air quality. Primarily, the concerns are:
 - Should there be planned phase out of diesel taxi cabs, or
 - An immediate ban on them, or
 - Allowing existing taxis to operate until their permit expires, but ban new registrations of diesel vehicles with immediate effect.
4. Surge Pricing: The practice of automatically increasing fare prices during periods of high demand has been looked upon with skepticism. Some have countered that surges in prices can be excessive (as in the case of emergencies and exceptional events) and that these pricing models allow CAs to extract quasi-monopolistic rents. This is a contestable assertion since other services (public transport, own vehicle, etc.) are often also available and that, over the long run, the app platform market is not a closed one with the only real barrier to entry being achieving sufficient scale to disrupt incumbent CAs.

An important point to note is that if prices are capped, while it may provide relief in the short term to consumers, there is also the associated possibility of adversely affecting the availability of cabs in a particular area, the earnings of taxi drivers, and, of course, the bottom lines of technology companies, thereby harming consumers in the long run. If economic productivity is enhanced by technologies, regulations should not have the unintended consequence of limiting their availability. At the same time, leaving technology companies unregulated can induce market distortions and anti-competitive practices, which affects the consumer.

Some jurisdictions have nonetheless sought to limit variable pricing in cases of natural or man-made emergencies. For example, in response to surge pricing during Hurricane Sandy, Uber reached an agreement with the New York Attorney General to cap price increases at 3.5 times the base fare for Uber X and 2.5 times the base price for Uber

Black when a state of emergency has been declared. This cap policy, according to Uber, is now operative throughout the United States. Outside of emergencies, surge pricing can lead to very high multipliers (historically up to approximately 10 times the base fare) and is used as a competitive differentiator amongst CAs. In the United States, Uber caps its surge multiplier at eight times the base fare and Lyft caps its Prime Time multiplier at three times the base fare (OECD, 2016).

Important issues in the context of Surge Pricing are:

- i. *Is consumer perception to surge pricing city specific?:* Perception on prices or caps on prices is often dependent on urban congestion, personal vehicles owned, availability of alternate modes of public transportation, mapping of user demand and consumption patterns, household income and city specific law and order situation.
- ii. *Should the private sector share data with regulators:* This is especially relevant as the CAs state that surge pricing motivates drivers to increase their supply. However, with the surge algorithm not being shared with either the public or regulators, policy makers remain clueless of impact of surge pricing on matching supply of cars with enhanced demand. As such, pertinent concerns have been raised as to what the algorithm really is and whether it can facilitate implicit collusion among drivers? Further, lack of information means that consumers' cannot tell whether the quoted fare is reasonable or not. On the positive side, profiling of each driver and a rating chart lets the consumer see their drivers profile, the exact surge multiplier beforehand, enabling them to make informed decision. Also, if city-based users are willing to pay more for safer rides, a question that arises is whether surge pricing should necessarily be regulated?
- iii. *Regulating anti-competitive practices:* Rather than targeting prices alone, should not policymakers also be assessing their impact on the entry of new operators into the market? If surge pricing does indeed follow market-based models, they should attract more investors to the sector, and facilitate the entry of cab-aggregator start-ups. If the spike in prices, however, ends up consolidating the monopolistic positions of established players, then role of regulators would be different.

It may be mentioned that surge pricing has been curbed in the Southern state of India, namely Karnataka and the capital of India, viz. Delhi. Both announced a ban on surge pricing putting a ceiling on the maximum price that cannot be higher than the fare fixed by the respective governments from time to time. Since there are both sides of opinions on Surge Pricing and Competition limits on cab aggregators, it is important to understand its larger impact on taxi industry, income of drivers, and change in life of users. It is also important to study the effect of market regulation that may hinder innovation and take away convenience, from passengers.

Since it is premature to push for caps on surge prices when their effects on the market remain under-studied, the importance of the present study cannot be negated.

Research Objective

The objective of the study is to analyze competition and regulatory issues pertaining to online Cab Aggregators, with special reference to its policy of 'surge pricing'. This is proposed to be undertaken from the perspectives of price theory, transaction cost theory, institutional economics, and behavioral economics and law. The outcome of the study is expected to guide policy-makers in regulatory re-design.

Methodology:

The project proposes to undertake the following;

- i. Review Existing Literature
- ii. Collect primary data through formal questionnaires and informal interactions
- iii. Collect existing internal data from CAs

Primary data will be collected from 4 cities (two metropolitan and two Tier II cities). The details are provided in table 1:

Table 1: Sample of Four Cities

Nature of City	Sample Cities	States/UTs
Metropolitan City	Delhi	UT
	Mumbai	Maharashtra
Tier II City	Jaipur	Rajasthan
	Chandigarh	UT

Justification for Multi-city Study: While literature related to cab aggregators exists, it is pertinent to note that the Taxi transportation industry in India is quite unique and diverse when compared to the other countries. The Taxi Industry is basically divided into organized and un-organized sector. Further, the organized business historically can be divided into pre-aggregator era and post-aggregator era. Despite the fact that in the present study, the issue pertains to surge pricing adopted by cab aggregators, the modalities and justification for the same remain specific to a geographic region. This is because availability of intra city public transportation alternatives is expected to impact the multiplier associated with surge pricing. Cities with poor transportation infrastructure, and even poorer public transport system, are often a case in point where the elite and middle income group households avoid use of public transport. India, with its fastest income growth in recent years, has seen a surge in middle income families whose demand for non-public transportation has increased phenomenally. With lack of good quality public transportation, cross price elasticities are expected to be low, thereby granting greater power to cab aggregators for (artificial/unethical?) surge pricing. Law

¹ Final set of four cities will be mutually decided in consultation with CCI.

and order situation, especially with regard to women safety too remains specific to a region within a country necessitating multi-city study. As such, we propose to collect data from 4 cities, two of which are metropolitan; the other two being Tier II cities.

- i. *Review of Existing Literature*: Primarily, the following tasks shall be undertaken:
 - a. Academic research papers, as well as, popular daily papers will be extensively reviewed to identify the competition issues of the taxi industry in general, and 'surge pricing' in particular.
 - b. Thereafter, the study shall report and analyze how the same were addressed internationally and nationally.
- ii. Using economic concepts and research findings, to analyze:
 - The economic characteristics of the Taxi industry in terms of size, structure and costs.
 - The existence of economies of scale and scope in taxi industry.
 - Justification of 'surge pricing'.
 - Whether Cab Aggregator's business model impacts level playing field with conventional black-yellow taxi services, AND
 - Dynamic pricing by industries (airlines/hotels) other than CAs
- iii. *Questionnaire and Interaction Based Analysis*: Having reviewed the literature on regulatory and competition issues pertaining to the Taxi industry data will be collected through 'formal questionnaires and informal interactions' with several stakeholders. This part of the project will be *intensive in data-driven verification* of theoretical aspects explored and hypothesized earlier. This will ensure that proposed regulatory policy is substantiated with empirical evidence.

For this, the following stakeholders will be approached to understand:

- ❖ Commuters: Commuter perceptions with respect to surge pricing, safety, comfort, reliability, and price elasticity. Cab users to be disaggregated on appropriate parameters such as Age and Gender.
- ❖ Drivers: Drivers working for cab aggregators, as well as, others and their perception with respect to CAs and its associated surge pricing.
- ❖ Impact on incumbents (permit, diesel /CNG)
- ❖ Cab Agencies/stakeholders under Partnership Model/stakeholders under Ownership Model (Meru)
- ❖ Owners/Drivers/Managers of alternate modes of transport, say auto rickshaws and employees of Delhi Metro.
- ❖ Views of senior government officials

The methodology includes:

- ❖ In addition to intensive interactions with several stakeholders, the study also proposes to collect data using Structured Questionnaires (Separate Questionnaires for (a) commuters and (b) drivers. For Commuters, these shall be distributed and

collected through both online and offline methods. For drivers, it shall be through offline method)

- ❖ Open ended interviews and interactions from all other stakeholders, for understanding
 - i. Driver perception: Both for aggregator's and non-aggregator's
 - ii. Impact on incumbents, and
- ❖ Cab Agencies/stakeholders under Partnership Model/stakeholders under Ownership Model (Meru)

Specifically, the following shall be examined:

- a) Is price discrimination in cab industry necessarily a rent-seeking behaviour, or can the consumer's satisfaction on account of availability of technology backed cab services counter-balance the potential damage associated with dynamic pricing?
- b) To what extent do the price and cross price elasticities (sensitivity) of consumers help in identifying the rationale for surge pricing? Does availability of substitutes, such as hailing a taxi, walking or utilizing public transport impact commuter's perception of surge pricing significantly?
- c) The views of other stakeholders to CAs in general, and surge pricing in particular.

The proposed **sample size** for Structured Questionnaire is:

Commuters: 500 each in the 4 cities²
Drivers : 50 each in the 4 cities³

The study proposes to use **two-way cluster sampling**, which is a sampling method that involves separating the population into clusters, then selecting random/convenient samples from each of the clusters.

² Sample size of 500 represents clean and complete questionnaires as filled by the respondents. To get a clear set of 500 completed questionnaires, a much larger number of potential respondents shall be contacted (either in person or online). Commuter Sample, as of now, has been restricted to 500 per city for the following reasons:

- i. We expect the characteristic features of the population within a city to be fairly homogenous and as such the marginal benefit of increasing the sample beyond a particular size may substantially exceed the cost (in terms of time and budget constraints).
- ii. Roscoe (1975) proposes a rule of thumb that the sample size should be several times (preferably 10 times or more) as large as the number of variables in multivariate study (including multiple regression analysis). For the purposes of our analysis this method of sample selection suffices.
- iii. However, in case Pilot Testing of Questionnaire (in Delhi) reveals the need for larger sample size, it shall be done.

³ For Questionnaire for drivers, 50 as sample size per city is justifiable due to expected homogeneity in driver response. All questionnaires filled by drivers would be in-person and not online. However, in case Pilot Testing of Questionnaire (in Delhi) reveals the need for larger sample size, it shall be done.

- iii. *Internal Data collected from CAs:* This will be required to extract data from cab aggregator companies to verify their claims of Surge Pricing in peak traffic hours and to understand their Surge Pricing models on fares to justify fare hike. Specifically, it will be required to:
- ❖ Examine how the driver-partners responded to 'price surge' to match spike in demand.
 - ❖ Estimate efficiency effects associated with 'price surge' that arise on account of *increase in supply* of driver partners on road and from *allocation of supply* to consumers who valued them the most, and
 - ❖ Propose an appropriate regulatory policy for the State in view of the findings.

It may be noted that CAs are unlikely to share the specific formula behind surge algorithm. However, few parameters on which the algorithm is based may be revealed. Our contention would be to validate their justification for surge pricing in terms of matching supply of drivers with demand for cabs⁴.

Statistical Tools: Appropriate Statistical Tools such as Cross Tabs, Correlations and Regressions will be applied to analyze the data.

Policy Relevance of Study: The outcome of the study is expected to guide policy-makers in regulatory re-design pertaining to Cab Aggregators, with special reference to surge pricing.

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⁴ It may be mentioned that as a part of Research Collaboration, Uber allowed access to their internal data to Professor Nosko, an Assistant Professor at the University of Chicago, USA, in order to facilitate research on the workings of surge algorithm.

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2. Modalities, Time Line and Resource Requirement

Mechanism: Research Project Route

Time Frame:

Twenty Two Weeks (Five and half Months) from the day of contract:
Final submission, incorporating comments and observations (Details
appended in Annexure II)

Financial Resource Requirement (Details appended in Annexure I):

INR: 21,54,000/=

(Indian Rupees Twenty One Lakh and Fifty Four Thousand Only)

Man-power Resource Requirement:

- i. One Research Officer for a period of Five Months, with following
requisites:
 - Academic Background: PhD or M Phil. Subject stream
Economics (Highly Preferred)
- ii. One Research Assistant for a period of 5 Months: Post Graduate in
Economics/Commerce
- iii. One Project Assistance for 5 Months to keep project accounts and
undertake coordination work: Qualification would be an Undergraduate in
Commerce

3. Submissions to the Sponsoring Agency

1. *Assistance for Access to Data:* Assistance from CCI shall be appreciated to get access to internal data from CAs such as Uber, for about 5 days to facilitate understanding the way in which surge algorithm works. Primarily, data related to:
 - ❖ Driver-Partner supply with respect to spike in demand will be required for the period when surge pricing was allowed.
 - ❖ Number of App openings during periods of high demand and conversion of App openings to actual requests will be required to understand allocative efficiency effects of dynamic pricing.

It may be mentioned that as a part of Research Collaboration, Uber has allowed access to their internal data in the past. Data was provided to Professor Nosko (an Assistant Professor at the University of Chicago, USA), in order to facilitate research on the workings of surge algorithm.

2. *Fixing Appointments, if required:* Assistance from CCI may be sought to fix appointments with senior government officials in the four cities.
3. *Leave:* Shall request Commission to provide an Official Letter that leave may be granted to Investigator for travel to 3 cities outside of Delhi. This way, duty leave will be granted by the University to the Principal investigator. Else, regrettably, it will be earned leave, which for obvious reasons is not preferable.
4. *Dissemination of Research Work:* Shall appreciate if the Research Study (completed, as well as, while under progress) is disseminated to an appropriate larger group of researchers and policy makers. In this context, the Commission may sponsor the principal investigator to at least two Seminars/Conferences, both national and international.
5. *Academic Publication Rights:* While the copyright of the research project will be with the Commission, the principal investigator should be allowed to publish academic research papers (if any) based on the work submitted (findings of the report and data collected therein). This will be post submission of the Report to CCI. Needless to say, financial assistance provided by the Sponsoring Authority will be duly acknowledged.

4. Deliverables

A Research Report of about 80 pages (Times New Roman, Font 12) to be submitted, including:

- i. Executive Summary
- ii. Competition and Regulatory Issues pertaining to Taxi/CA Industry, with special reference to Surge Pricing
- iii. International and national experience with respect to regulatory policies pertaining to the sector, with special reference to Surge Pricing
- iv. Findings of Data collected through personal interviews and structured questionnaires from four cities
- v. Findings based on internal data as collected from CAs, should access be provided
- vi. Implications for regulatory authorities, such as CCI

Annexure 1: Proposed Financial Budget

Agreement for Performance of Work (APW)
BUDGET SHEET

Name of Activity: Competition and Regulatory Issues related to the Taxi and Cab
Aggregator Industry

S. No.	Particulars	Quantity	Rate (INR)	Duration	Total (INR)
A)	Professional fee				
1	Research Officer @INR 75,000 per month for 5 months	1	75,000 per month	5 months	3,75,000
2	Research Assistant @INR 50,000 per month	1	50,000 per month	4 months	2,00,000
3	Project Assistant @INR 20,000 per month	1	20,000 per month	5 months	1,00,000
	Sub Total (A)				6,75,000
B)	Travel Cost# (Domestic) Stakeholder Contact/Consultation visits				
1	Principal Investigator @INR 20,000 per visit (Air/Road/Rail) into 3 cities	3	20,000		60,000
2	2 Research Staff @INR 5,000 into 3 cities (Train II Tier AC)	6	5,000		30,000
3	Local Conveyance in Delhi-Project Office @ INR 1500 into 60 trips	60	1,500		90,000
	Sub Total (B)				1,80,000
C)	Field Work: Stay/Per diem and Local Travel				
1	##Principal Investigator: Field work @9,000 per day (5 days in each city outside of Delhi*3 cities)	3 cities	9,000 per day	5 days	1,35,000
2	##Research Staff @ 7,500 per day (10 man-days in each city into 3 cities)	3 cities	7,500 per day	10 days###	2,25,000
3	Local Field Workers for Additional Questionnaire Filling (INR 100 per Questionnaire*250 Questionnaires*4 cities, including both consumers and drivers: 250*100*4). Plus driver incentive to fill Questionnaire (INR 100*50 drivers*4 cities)	4 cities	100 per Questionnaire (Goes to Field Worker for Filling: 250*100*4 cities=INR1,00,000) 100 per Questionnaire (Driver incentive: =INR 20,000)		1,20,000
4	Services of Networking Institutions and Statistical Data Expert				1,50,000
	Sub Total (C)				6,30,000
D)	Office Management				
1	Office Expenses such as Communication (telephone, fax, internet), Purchase of equipment (Such as: Computers, Printer, Scanner, Air Conditioner)				2,00,000
2	Stationary, printing of Questionnaires, printer toner, Books/Reports, Other Contingency and Miscellaneous Expenses @20,000 per month			5 ^{1/2} Months	1,10,000
	Sub Total (D)				3,10,000
	Total (A+B+C+D)				17,95,000
E	University Administrative Charges				3,59,000

(As per University Rules) @20% of Project Cost as given under A+B+C+D				
Grand Total: A+B+C+D+E				21,54,000
Indian Rupees Twenty One Lakh and Fifty Four Thousand Only				
<p>Notes:</p> <p># All expenses to be claimed as per actuals within approved budget.</p> <p>## Travel expenses for Travel by the most direct and economical route to be reimbursed on actual basis, upon submission of documentary evidence in the form of used tickets/boarding passes.</p> <p>Needless to say, all financial claims will be substantiated with original vouchers, as per rules.</p> <p>### Further, based on Pilot testing of questionnaire in Delhi, up to two more days per city may be added (with no additional financial implication on CCI).</p> <p>#### Unspent Balance, if any, to be refunded to CCI</p>				

Signatories

1	2	3	4
Simrit Kaur (Principal Investigator)	(Prof. in Charge: South Campus)	(University of Delhi)	(CCI: Sponsoring Authority)

Annexure II: Project Schedule Depicted Through Gantt chart

		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6																				
		Week Wise Schedule as Follows:																									
Deliverables		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
1	Signing of Project Contract; Initiation of Project work; Identifying Competition and Regulatory Issues pertaining to Taxi Industry/Cab Aggregators	█																									
2	Desk Based Review of Literature and informal interactions with stakeholders					█																					
3	Questionnaire Formulation: Consumers									█																	
4	Pilot Testing of Questionnaire and Questionnaire Finalization													█													
5	Data Collection from three Cities																	█									
6	Compilation of Data																					█					
7	Analysis of Data																										
8	Report Writing: first Draft																					█					
9	Presentation of Report and Final Report Submission																					█					
