(DRAFT) CREW Research Methodology (Measuring Benefits of Market Reforms)

I. *BUS TRANSPORT MARKET*

Structure of the Matrix

The matrix on bus transport has two following section:

1) **Reforms across the project countries**
   The project countries have a presence of transport liberalisation policy and legislation for regulating road traffic. The objectives of both, Transport Liberalisation Policy and the Road Traffic Act, are similar. Therefore the elements of investigation in terms of primary and secondary data would be similar across the countries.

2) **Country specific reforms**
   The reform measures specific to each of the project country is covered under this section.
   a) The Philippines : Moratorium on issuance of certificate (2000)
      The moratorium aims to reduce congestion of bus operators and regulate the number of buses on the roads.
   b) India: Bus Rapid Transport System (BRTS)
      BRTS aims to provide an efficient and cost effective mode of intra-city transport with the cities. This system is run under Public Private Partnership (PPP).
   c) Ghana:
      i) Sector Medium-term Development Plan (SMTDP): 2012-14, Section 4.2.12 : It mandates the establishment of Metro Mass Transit (MMT). The objective is to mainly provide social benefits in terms of affordability which is important to most transport users targeting the most vulnerable and excluded groups in the country.
      ii) Policy statement 4.2.4.1 of NTP (2008): The private sector will be encouraged to invest in transport infrastructure and services (PPP promotion).
   d) Zambia: Markets and Bus Stations Act No. 7 of 2002
      The objective is to designate, build and maintain markets, bus stations and bus stops.

__NB__: i) The secondary and primary data elements captured in the matrix are the components of investigation and would be the focus of assessment in the perception survey and the in-depth interviews.
ii) The bus transport sector has not been divided in inter – city and intra- city subsectors. The investigation / collection of data in both the subsectors would be similar.

Sl. No.	Reform	Impact on Consumers OR Producers	Variables	Data Source	
	Policy, Law, Programme			Secondary Data	Primary Data
1.	**Transport Liberalisation policy** (a) Phils (1992) (b) India (MP -2005; Gujarat – N.A.) (c) Ghana (2008) (d) Zambia (2002)	Impact on Consumers	Price/Cost	- Household expenditure allocated to bus transportation (decomposing CPI data, over the years since policy introduction) - Price changes vis-à-vis input cost changes (fuel cost) - Bus fare - Input costs—fuel, bus, licenses, etc - Price of substitutes vis-à-vis bus fare - Number of route-types over time (classification based on quality, use, rural/urban/sub-urban, etc.)	- Allocation of household expenses to bus transportation [1] - Frequency of price rise - Method of communication of price rise - Length of 'Notice' Period
			Quality	- Regulation to ensure good quality (including safe) vehicles are imported/ acquired - Safety norms (regulatory check for drivers and vehicles)[2] - Accident/Fatality data - Insight into Capacity and capacity utilization/overcrowding (if no quantitative data available) - Number of, or percentage of, different categories of buses - Capacity and capacity utilization - Average age of buses in fleet	- Consumer experience at bus station, bus stop and inside bus (E.g.: choice of bus travel as compared to other modes, availability of facilities, over-crowded, etc.) - Roadworthiness[3] - Predictability of service[4] - Travel time - Increase / decrease in the quality of service over the years
			Access	- Route concentration mapping - Number of operators in both inter-city and intra-city sectors (separately)	- Distance to bus stand / station - Waiting time in bus stand/station - Availability of seat to user (as an indicator

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[1] This can also refer to any drastic change in the fares leading to household expense allocation towards bus transportation.

[2] The presence of an agency / regulatory body to undertake periodic check on the fitness of vehicles and the licenses of bus drivers.

[3] Roadworthiness refers to the suitable operating condition for a vehicle to ply on the roads or meeting acceptable standards (set or prescribed by the relevant authority) for safe driving and transport of people.

[4] Predictability of service refers to the surety of the bus plying on the designated route at the time mentioned in the time table.

Sl. No.	Reform Policy, Law, Programme	Impact on Consumers OR Producers	Variables	Data Source	
				Secondary Data	Primary Data
				- Number of routes per sector (both inter and intra city) - Types of substitutes and their usage - Variety/categories[5] of buses available - Number of bus operators available for the provision of bus service - (for each variety)	of capacity) - Frequency of usage of substitutes (time taken and the fares of substitutes) - Knowledge and validity of the access to the buses that are available
		Impact on Producers	Entry	- Schemes for Private sector promotion / participation - Quantity of buses imported/acquired (supply) - Standard of vehicles (transparency, method of standardisation, participation) [6] - Exit conditions *(if any)*[7]	- Access to operators to bus stations, parking facilities - Predictability of regulation - Perception of old / new operators on the licensing process
			Investment	- Cost of a bus (purchased locally and imported) - Cost of licensing over time - Cost of fuel over time - Change in fares relative to costs (running cost + O&M costs) over the years - Total number of new investors (including in infrastructure provision, bus manufacturing/ import, associated services, etc.) over the years - Investor promotion scheme	- Perception of investors - Revenue data of the operators - Investment / Re-investments in buses

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[5] Variety (or categories) here pertains to different categories of bus services commonly available and differenciated in terms of size, comfort levels , capacity, speed, etc,

[6] Country specific standards for vehicle maintenance and quality control for the vehicle.

[7] Exit conditions refer to the ease of the operator to exit the market if he is willing to.

Sl. No.	Reform Policy, Law, Programme	Impact on Consumers OR Producers	Variables	Data Source	
				Secondary Data	Primary Data
				- Investor protection mechanism - Total investment (public and/or private) in the sector over the years	
			Growth	- Number of players before and after the reform - Change in number of operators over the years - Total change in the number of passengers over the years - Total revenue in the sector over the years	- Revenue integrity[8] - Number of passengers per trip or passengers per day - Total increase / decrease in the number of passengers over the years (operators' inputs) - Total revenue in the sector over the years (operators' inputs)
2	**Road Traffic Act** (a) Phils (1992) (b) India (1988) (c) Ghana (2004) (d) Zambia (2002)	Impact on Consumers	Price/Cost	- Price-setting mechanism[9] - Price change (%) vis-à-vis fuel cost change (%)	- Household expense - Frequency of price rise - Method of communication of price rise - Length of 'Notice' Period
			Access	- Route allocation - Number / nature of routes per sector - Provision of information of bus routes and timetable - Types of substitutes and their usage - Variety/categories of buses available - Frequency of buses (number of buses per day, week or month) per route	- Distance to bus stand - Waiting time
			Quality	- Existence of Quality standards for buses and their enforcement experience Quality of vehicles - Safety norms (regulatory check for	- Consumer experience at bus station, bus stop and inside bus (Eg: choice of bus travel as compared to other modes, availability of facilities, overcrowded, etc.)

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[8] Revenue integrity refers to the credibility of the drivers to handover / disclose the correct amount of revenue per day to the operators. This would focus on the revenue leakage incurred per operator per day.
[9] Refers to the method of setting the fares. The data would include 1) stakeholders involved in the process, 2) presence of a scientific formula / method for deciding the fares, 3) important variables that most effect the determination of fares and 4) Process of fare revision if any.

Sl. No.	Reform Policy, Law, Programme	Impact on Consumers OR Producers	Variables	Data Source	
				Secondary Data	Primary Data
				drivers and vehicles) - Accident/Fatality data over the years - Reliability of buses—timeliness, stopping at all stops etc - Percent of buses that are on time	- Increase / decrease in the quality of service over the years
		Impact on Producers	Cost	- Fare-setting mechanism - Fare changes vis-à-vis input cost changes (fuel cost) - Cost (and time spent) in obtaining the licenses over the years	- Discussions during fare setting process (cartelisation?)
			Entry	- Import of buses (supply) - Licensing process (terms and condition, time taken, tariffs) - Route-allocation mechanism - Route concentration mapping	- Access to operators to bus stations, parking facilities - Predictability of regulation
			Growth	- Change in number of operators over the years - Number of licenses approved - Fleet size (number of buses)/operator - Route concentration mapping[10] - Total change in the number of passengers over the years - Total revenue (for operators) in the sector over the years	- Revenue integrity - Total increase / decrease in the number of passengers over the years (operator's inputs) - Total revenue in the sector over the years (operator's inputs)
3	**Country-specific Reforms**				
3.1	The Philippines – Moratorium on issuance of certificate (2000)	Producers	Entry	- Number of players before and after the reform - Route rationalisation	- Effectiveness of Implementation of regulation

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[10] Route concentration mapping refers to the fleet size per operator on various routes

Sl. No.	Reform Policy, Law, Programme	Impact on Consumers OR Producers	Variables	Data Source	
				Secondary Data	Primary Data
3.2	India – BRTS a)Ahmedabad, Gujarat (2009) b) Bhopal, Madhya Pradesh (2011)	Producers	Entry	- Terms and conditions for private players in tendering process[11] - No. of operators - Licensing process (terms and condition, time taken, tariffs)	- Regulatory interactions - Ease of entry for player - Ease of obtaining licenses
			Growth	- Fleet size per operator	- Growth prospects for players
			Investment	- Investment; Public-Private share - Amount of re-investment per year - Investment promotion schemes	- Perception of new investor - Investor friendly environment - Return on investment (revenue sharing method and process)
			Cost	- Overheads (maintenance cost, labour cost) - Fare setting mechanism / Fare revision mechanism - Method of revenue sharing[12] - Provision of concessionary fares [13]	- Facilitation fee[14] - Freedom of setting fares - Perception of fare revision - Perception on concessions provided on bus service by government vis-à-vis the effect on revenue
		Consumers	Access	- Connectivity within the city - Usage data per year	- Distance to the nearest bus stops
			Price/Cost	- Fare setting mechanism	- Frequency of price rise - Fares vis-à-vis quality of service - Validity of concessionary fares
			Quality	- Vehicle standards - Timeliness of service - Ticketing mechanism / method[15]	- Frequency of price rise - Fares vis-à-vis the quality of service

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[11] The conditions for the operator to qualify for tenders, minimum investment needed etc

[12] BRTS runs under the PPP scheme. In India there are two methods of revenue sharing i) Gross Cost Model: Under this model, the fares are collected by the government and a percentage of profit as negotiated in the contract is given to the private operator. This model is followed in Ahmedabad, Gujarat. ii) Net Cost Model: Under this model, the fares are collected by the private operator and a percentage of profit / royalty as negotiated in the contract is paid to the government.

[13] Under the BRTS scheme, in order to cater to all sections of the passengers, the fares are subsidized. Also concessions on fares are provided to students etc. therefore it would be useful to identify the recipients and the amount of concession allocated to each group of recipients.

[14] The costs involved apart from the regular taxes and standard payments that maybe charged to the operator but is not explicitly disclosed in the contracts.

Sl. No.	Reform Policy, Law, Programme	Impact on Consumers OR Producers	Variables	Data Source	
				Secondary Data	Primary Data
3.3 (a)	Ghana – SMTD, Section 4.2.12 (2012) [setting up of MMT]	Producers	Entry	- Entry of new players - Licensing process (terms and condition, time taken, tariffs) - Import of buses	- Regulatory barriers for new private player entry - Benefit of union affiliations
			Investment	- Number of investors over the years - Investment promotion scheme for new investors (threshold investments etc.)	- Investor's perception
			Growth	- Increase in vehicles / operators	- Operators' perception
			Cost	- Operational cost	- Facilitation fee
		Consumers	Access	- Vehicle standards - Availability at major routes	- Access to all sections of passengers - Distance to the nearest bus stop
			Quality	- Vehicle standards - Frequency of bus service / station	- Experience of passengers at bus stop / bus station / inside the bus - Perception for introduction of ticketing system
			Price/Cost	- Fare setting mechanism - Concessions for various sections of passengers like students - Change in fares wrt input / maintenance cost	- Frequency of price rise - Fares vis-à-vis the quality of service - Household expense
3.3 (b)	Ghana – NTP, Section 4.2.4.1 (2008) [promoting PPP]	Producers	Entry	- Number of private players	- Perception of new entrant - Perception of unions
			Investment	- Concessionary schemes for investment	- Investor's perception
			Cost	- Revenue sharing	- Additional regulatory costs - Profitability
		Consumers	Access	- Increase in number of buses - Existence of substitutes	- Perception of passengers - Usage of substitutes
			Quality	- Quality of vehicles	- Experience of passengers at bus stop / bus

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[15] As a part of providing services as well economy to the passengers, monthly cards and passes are made available to the passengers. Also proper ticketing systems are provided for quick and efficient provision of tickets. This also aids in monitoring the revenue leakages.

Sl. No.	Reform Policy, Law, Programme	Impact on Consumers OR Producers	Variables	Data Source	
				Secondary Data	**Primary Data**
					station / inside the bus
			Price/Cost	- Data on fares over the years	- Fares vis-à-vis the quality of service
3.4	Zambia – Markets and Bus Stations Act, 2007	Producers	Entry	- Number of private players	- Perception of new entrant - Perception of existing player
			Cost	- Sharing of cost vis-à-vis investments	- Profitability
			Growth	- Increase in the number of bus stations / bus stops	- Perception of stakeholders (private and public)
		Consumers	Quality	- Standardised infrastructure[16]	- Consumer perception
			Price/Cost	- Data on fares over the years	- Implications on fares due to better infrastructure

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[16] Refers to the standards if any for the infrastructure i.e. bus stations / bus stops being constructed under the act.