Evaluating sustainability impacts of sharing cities

Sharing Cities Summit

Dr. Jagdeep Singh
10 October 2019
BUSINESS MODELS

SUSTAINABILITY

INSTITUTIONALISATION
SHARING ECONOMY

Tension Between Potential & Practice
Sharing economy growth

Economic discourse

Source: http://www.catalystcompanies.co/infographic-a-day-in-the-life-of-the-collaborative-economy/
Implications of the sharing economy

India finally drafts regulations for ride-hailing apps

US & Canadian companies
Sydney joins Airbnb crackdown to ease rental concerns

EU says banning Uber and Airbnb should be 'last resort'

Will new China rules strangle Uber or legalize it?

Analysis
Bike-sharing backpedal puts China's makers in a spin

Hub near Tianjin is latest victim of new economy's boom-and-bust cycle
IMPLICATIONS OF SHARING ECONOMY

Sharing economy impacts

- Economic benefits from idling resources
- Asset depreciation
- Resource productivity
- Consumption rebounds
- Direct savings
- Indirect rebounds
- Flexible working hours
- Exploitation of labour
- Tax collection
- Non-compliance
- Low cost of goods and services
- Workforce vulnerability
- Economic independence
- Loss of pension contribution
- Job creation
- Re-allocation of jobs
IMPLICATIONS OF SHARING ECONOMY

Environmental impacts
- Economic benefits from idling resources
- Asset depreciation

Economic impacts
- Economic independence
- Low cost of goods and services
- Low labor force
- Consumption rebounds
- Exploitation of labor
- Resource productivity
- Job creation
- Re-allocation of jobs
- Re-allocation of time

Social impacts
- Resource productivity
- Consumption rebounds
- Labor force
- Exploitation of labor
- Economic independence
- Low labor force
APPROACH

Sharing as a practice
SUSTAINABILITY IMPACTS OF SHARING ECONOMY AT A MACRO-LEVEL
ASSESSING THE IMPACTS AT A MACRO LEVEL

• We will develop a hybrid life-cycle assessment model (input and output based)

• The unit of analysis is going to be a city, but using this model global impacts can be analysed

• Bottom-up approach in order to build the data sets
**UNIT OF ANALYSIS**

**SOCIETAL INSTITUTIONS**

**URBAN SHARING FIELD**

**PLATFORM**
Accommodation, Mobility & Physical goods

**CITIES**

**URBAN SHARING ORGANISATIONS**

**RESOURCE OWNER**

**RESOURCE USER**

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IMPLICATIONS OF SHARING ECONOMY

Macro-economic level (Indirect and rebound effects)

Organisational level (Direct impacts)

Assessment approaches

- Narrow focus on SEO and direct impacts:
  - LCA,
  - bottom-up case data

- Wider focus, direct and indirect impacts of SEO being part of city economy:
  - hybrid I/O-LCA, top-down and bottom-up data
  - scaling up from platform case to sector
CITY CONTEXT

To understand:

- the role of cities in driving the sharing practices
- the nature of their sustainability implications in cities

**CITY CONTEXT**
City specific factors affecting the sharing economy

**SUSTAINABILITY**
Nature of social, economic and environmental impacts of the sharing economy in a city

**INSTITUTIONALISATION**
Regulatory and institutional development of the sharing economy in a city (e.g. drivers, barriers, business models)
CITY CONTEXT

To compare different cities with the same lens
3. CITY CONTEXT

1. Governance
   a. City governance structure
   b. City regulatory policies for sharing
   c. Power to enforce regulations

2. Geography & demographics
   a. Topography
   b. Level of urban sprawl
   c. Tourism in the city
   d. Socio-demographics

3. Economy
   a. GDP of the city
   b. Economic structure of the city

4. Infrastructure
   a. Technology readiness
   b. Mobility infrastructure
   c. Accommodation
   d. Physical assets

5. Innovation
   a. Innovation cities index
   b. City’s innovation agenda

6. Socio-cultural conditions
   6 dimensions of Hofstede’s Cultural Theory model: Power distance, Individualism, Masculinity, Uncertainty avoidance, Long term orientation, Indulgence
Sharing dynamics

**URBAN SHARING**
Sustainability & Institutionalisation

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**REGULATORY SYSTEMS**
- Governmental structure (units, interactions, bureaucracy, etc.)
- National/municipal regulatory regime openness for business growth
- Regulations for vehicles (congestion fees, etc.)
- Climate change policy regime

**DRIVERS/BARRIERS**
1. **Population** (density) of city
2. **Economic level of the city**
3. **Consumer’s utility function for shared mobility**
4. **Quality of IT infrastructure**
5. **Price per unit of service (shared car)**
6. **Car-sharing practice**
7. **Commuter spending on other products and services**
8. **Production of other products and services**

**SUSTAINABILITY IMPACTS**
- **Economic growth**
- **Economic impacts**
- **Employment**
- **Cost of public transport use**
- **Public transport use**
- **Jobs in manufacturing sector (regional/global)**
- **Mobility rise (trans, public bikes, scooters, bicycle lanes etc.)**
- **Production of new cars (shared)**
- **Demand for new cars (shared)**
- **Demand for repair and insurance services for shared cars (local/regional)**

**IMPACTS ON INCUMBENT SYSTEMS**
- **Power of trade unions**
- **Business investments**
- **Innovation capacity** (presence of universities, R&D actors)
- **Incumbent business for mobility services (taxis, etc.)**
- **Sharing business growth**

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(3) KEY CAUSAL DYNAMICS

Causal dynamics for:

1. Drivers/barriers for sharing in the city
2. Sustainability impacts
3. Impacts on incumbent businesses
4. Regulatory/Institutional developments
INDICATORS FOR SOCIAL SUSTAINABILITY IN SHARING ECONOMY

A systematic framework to measure the social impacts of sustainability
LITERATURE ON SOCIAL IMPACT EVALUATION

- Continuous economic growth
- Job provisioning
- Reduces income inequalities
- Empowerment
- Trust
- Social capita
- Open and Inclusive
- Democratic

- Public safety
- Individual privacy
- Labour laws
- Precarious employment
- Unequal gain distribution
- Social exclusion
- Limited liabilities
SOCIAL SUSTAINABILITY ASPECTS

• Distinct and least overlapping

1. Empowerment
2. Trust among strangers
3. Inclusivity
4. Social justice
STAKEHOLDER WORKSHOP
INDICATORS FOR SOCIAL IMPACTS
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PUBLICATIONS


THANK YOU!

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www.urbansharing.org/