Role of local government in promoting innovations in transportation sector: an organizational legitimacy perspective

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Outline

- Introduction
- Literature review
- Analytical framework
- Method and data
- Case: Low speed electric vehicle in Shandong
- Discussion
- Conclusion
Introduction

Transforming Transportation: Toward sustainable mobility

- Background
  - Fossil fuel based automobile, air pollution
  - Low carbon transition, green transportation
  - Role of the government, supportive policy

- A distinctive case: Low speed electric vehicle (LSEV) in China
  - No subsidy, in face of waves of restrictive regulatory measures
  - Has increased quickly, Chinese consumers own 4 million LSEVs in 2017

- Question: Confronted with considerable resistance from regulatory agencies, why has LSEV survived and grown so quickly in China?

Introduction to Transforming Transportation: Toward sustainable mobility.
Literature framework

- Legitimacy is necessary for new industries
- Strategies for gaining legitimacy
- Role of local government in enterprises’ legitimization

The government has the right to rule
The enterprise has the right to exist
Legitimacy is precisely what new enterprises usually lack

- Define legitimacy (organizational theory)
  - "A generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman 1995)

- Legitimacy is a resource that is necessary for
  - Acquisition of other resources (capital, competent employees, customers, networks, and government support) - and thus a key factor influencing growth (Zimmerman and Zeitz 2002; Aldrich & Fiol 1994; Meyer & Rowan, 1977)
Legitimacy process model

Casual loop: Legitimacy as a mediator and result

Strategies
- Conformance
- Selection
- Manipulation
- Creation

Legitimacy
- Regulative
- Normative
- Cognitive

Resources
- Incremental accumulation of
  - Human
  - Financial
  - Intellectual

Survival
- Cross survival threshold

Growth
- Sales
- Members
- Technology

Positive feedback

Casual power

Zimmerman & Zeitz 2002
# Strategies for gaining legitimacy

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulative legitimization</td>
<td>Lobby government officials</td>
</tr>
<tr>
<td></td>
<td>Hire former government employee</td>
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<tr>
<td></td>
<td>Run joint venture with local government</td>
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<tr>
<td></td>
<td>Develop industry association and network</td>
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<tr>
<td></td>
<td>Earn certifications</td>
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<td></td>
<td>Create group standards</td>
</tr>
<tr>
<td>Normative legitimization</td>
<td>Charity activities</td>
</tr>
<tr>
<td></td>
<td>Respond to emergent event</td>
</tr>
<tr>
<td></td>
<td>Intra-industry coordination and cooperation</td>
</tr>
<tr>
<td></td>
<td>Imitate successful business model</td>
</tr>
<tr>
<td>Cognitive legitimization</td>
<td>Utilize encompassing symbolic language</td>
</tr>
<tr>
<td></td>
<td>Consistent story</td>
</tr>
<tr>
<td></td>
<td>Advertisement</td>
</tr>
<tr>
<td></td>
<td>Promote through third-party actor</td>
</tr>
</tbody>
</table>

*Deephouse 1996; Zimmerman & Zeitz 2002; Wujie Li 2010; Suchman 1995*
Literature review

Literature framework

- Legitimacy is necessary for new industries
- Strategies for gaining legitimacy
- Role of local government in enterprises’ legitimization

The government has the right to rule
The enterprise has the right to exist
Revisit: Literature on the role of local government in China

- In initial market-oriented reform, private company is sensitive ➔
  - **Entrepreneurial state**: the Local government was evolved in operation, by investing new business registered as “collectives”; as to the rural industry, local government accompany factory managers to the higher-level bureaus to get more information and resources. (Duckett 1996; Oi 1995)

- Rapid development (1990s-), new emerging things, Policy vacuum ➔
  - **Policy Experiment**: Legitimize local initiative by getting formal central approval (Heilmann 2008)
  - **Managerial behaviors** in methanol business development (Kostka & Hobbs 2010)
  - **State corporatist** for electric bike (Ruan et al. 2014)
Driving forces of local government’s proactive action in China

Why do local governments proactively provide new industry with regulatory legitimacy?

- Revenue and self-interests (Tao & Yang 2012; Oi 1995)
- Economic growth and political promotion (Zhou 2004)

Issues in local initiatives

- China in transition, laggard law and policy system, local experiments
- Fragmented central authorities create opportunities (Kostka & Hobbs 2010)
- Unitary or decentralized
  - China’s geographic size and substantial social diversity (Tao & Yang 2012)
  - “principles of giving full scope to initiative and enthusiasm of local authorities under the unified leadership of central authorities” (Constitution of the PRC)
Analytical framework

Legitimization with the help of local government (agency-based)

Enterprise → Enterprise → New Industry

Legitimation Failed

Restrictive regulation

Threaten

Central Government

Grant

Local Government

Legitimate strategies

Legitimacy resources
Legitimization with the help of local government (process-based)

Strategies
- Conformance
- Selection
- Manipulation
- Creation

Resources
Incremental accumulation of
- Human
- Financial
- Intellectual

Survival
Cross survival threshold

Growth
- Sales
- Members
- Technology

Casual loop: reinforcing legitimacy

Zimmerman & Zeitz 2002
**Analytical framework**

**Legitimization with the help of local government (process-based)**

**Strategies**
- Conformance
- Selection
- Manipulation
- Creation

**Legitimacy at national level**

**Legitimacy at the local level**

**Resources**
- Incremental accumulation of
  - Human
  - Financial
  - Intellectual

**Survival**
- Cross survival threshold

**Growth**
- Sales
- Members
- Technology

**Target:** Increase the legitimacy at the national level, to get acceptance from the central government

*Zimmerman & Zeitz 2002*
Method and data

**Case study**

- LSEVs industry and local polices in Shandong province, and (policy) interactions between the local government and the central government

**Data**

- Interviews: experts, local government officials, traffic policemen, employees of LSEV company, dealers, consumers
- Secondhand data: published reports and literatures
- Conferences on electric vehicles
- Laws, policies, and other official documents
Case

Framework

1. What is LSEV?
2. Different attitudes between the central and the local
3. Legitimacy process
   - Local initiatives
   - Protracted campaign: central pressure and local action
   - Interactions proceed role setting
1. Product Characteristics and multiple demands

- **Characteristics:** small size, short range (< 100 km), low speed (50~70km/h) – thus much lower price, smaller battery, crash test requirements relaxed

  1. Multiple demands: the elders, commuters, “get kids to school”, “last mile” (car sharing)
     
     Used in: countryside, small cities, and suburban, especially in less developed areas

  2. Micro short-range vehicles are more energy-efficient *(Rinderknecht 2018)*
1. The Industry chain in Shandong

- **Shandong: Industry transformation and upgrading**
  - Electric bike, electric tricycle ("比德文" in Weifang Shandong) → Safer
  - Agricultural automobile ("时风” in Liaocheng Shandong)
  - Motorcycle ("富路” in Dezhou Shandong)
  - Electrical machine ("新大洋” invested in Linyi Shandong)
  - Other supporting industries in Shandong

Note: big companies have access to top leaders at local level, e.g. top leaders visit their companies and offer preferential policies
## 2. Interests between the central and the local

### Incentive Incompatibility: Order and safety vs. economy and convenience

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Regional air pollution</td>
<td>1. Threats to high-end electric vehicles</td>
</tr>
<tr>
<td>2. Economic growth</td>
<td>2. Accidents and life loss</td>
</tr>
<tr>
<td>3. Tax revenue and public finance</td>
<td>3. Traffic congestion</td>
</tr>
<tr>
<td>4. More jobs</td>
<td>4. Pollution from battery disposal</td>
</tr>
<tr>
<td>5. Citizen’s happiness and welfare</td>
<td>5. The appearance of a city</td>
</tr>
<tr>
<td></td>
<td>6. Shortage of electricity sometimes</td>
</tr>
</tbody>
</table>

**“energy saving and environmental friendly”, “strategic emerging industry”, “basic demand and necessary product”, “peoples’ car (国民车)”**

**VS.**

**“accidents maker”, “disorder”, “polluter”, “illegal”, “low quality”**

### Opposition at the central level

1. Police and transportation management sector: safety and congestion
2. Commission of Development and Reform: national plan of new energy vehicles
3. State Own Enterprises, e.g. major oil companies
3. A defined “law vacuum”

- Since 2007, LSEVs initiated in Shandong and other provinces in China, while most of them are not registered, thus becoming a blind spot in traffic regulation system.

  - Creating legitimacy for LSEVs on the one hand, and distinguishing LSEVs from automobiles, which is highly regulated in China

- In 2009, Shandong provincial government enacted a administrative measures on LSEVs, and industry policies for promoting LSEVs

- At the central level: the LSEV are not in the list of government procurement, not applicable to subsidy policy

- A child abandoned at the central level

- Shandong defined a “law and regulation vacuum at the central level”

- According to national road traffic law, LSEVs should be regulated as automobile vehicles from automobiles, which is highly regulated in China

As rules, central government own the following powers: the registration of automobile vehicle, Production qualification certification, product standard and certifications
## 4. Protracted campaign: central pressures and local actions

<table>
<thead>
<tr>
<th>Central actions</th>
<th>Meaning of the actions</th>
<th>Local actions</th>
<th>Meaning of the actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Experiment site” written in Policy proposal cancelled (2010)</td>
<td>No “Trial and error”, the technical route of LSEV is abandoned</td>
<td>Applied but failed; delegated the product-standard-setting to provincial industry association; initiatives at prefecture level</td>
<td>Expect to legitimize local initiatives; policy experiments within the jurisdiction</td>
</tr>
<tr>
<td>National standard for new energy vehicle excluded the LSEV (2012)</td>
<td>Ambiguous identity, no legal status to LSEV, discriminable treatment</td>
<td>LSEV as one of Provincial Strategic Emerging Industries; the industry association made market entry and other standards</td>
<td>Promote and popularize LSEVs; Development in order and continuously; destigmatize</td>
</tr>
<tr>
<td>Proposed to formulate corresponding product standards, policy for market access and supervision (2015)</td>
<td>A conditional offer, but highly restrictive standards and market access</td>
<td>Carry out compliance inspections of enterprises and products; punish violations in production, sale and use</td>
<td>Reduce chaos and seize the chance to promote the national standard setting</td>
</tr>
</tbody>
</table>
Industrial development in the meanwhile

- **Advanced technology**: battery (lithium), motor, and electronic control, as well as the process of stamping, welding, painting, assembly.

- **Safety**: pass crash tests, e.g., Europe's official crash test.

- **Collective actions**: active industry association and innovation alliance.

- **Large enterprises**: annual production capacity (more than 100,000), important exporters and taxpayers.

**Sales**

- LSEV sales in Shandong
- New energy car sales in China

*Source: the First EV*
## 4. Protracted campaign: central pressures and local actions

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<tr>
<td>The minister of public security rejected Shandong’s request for traffic policy experiments as to LSEVs; All related ministers criticized traffic accidents caused by LSEVs (2016)</td>
<td>Clearly pointed out the conflict between LSEVs and the existing laws; the LSEV shall comply with traffic regulations for motor vehicle</td>
<td>Stop issuing local licenses; No highly restrictive measures, Mainly punished illegal operations and low-quality product; LSEV as one of Provincial Strategic Emerging Industries in 2016-2020</td>
<td>Obey the law, but didn’t overreact to criticism; accelerate the technological upgrade, and Boost confidence in the industry</td>
</tr>
</tbody>
</table>

Other choices, e.g. Jinan banned LSEVs, especially the electric tricycle; public resistance and petitions, deputy mayor resigned
5. The war comes to an end

In March 2018, the LSEV was listed in the document named *Key Points for Standardization of New Energy Vehicles*.

In Nov. 2018, a notice approved by 6 central ministers announced that “the provincial government shall formulate measures for the management of LSEVs according to the situations of the region”.

<table>
<thead>
<tr>
<th>Product</th>
<th>Local</th>
<th>Central</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>energy saving, and environmental friendly, a necessity</td>
<td>accidents maker, polluter, illegal</td>
</tr>
</tbody>
</table>

| Industry                      | Strategic Emerging industries                  | Backward techniques                          |

Identity

LSEVs as new energy vehicles

<table>
<thead>
<tr>
<th>Traffic</th>
<th>Local</th>
<th>Central</th>
</tr>
</thead>
<tbody>
<tr>
<td>for LSEV traffic management</td>
<td>Formulated local policies</td>
<td>No specific rules, general rules in the road traffic safety law</td>
</tr>
<tr>
<td>for products, grant license for enterprises</td>
<td>formulated local standards</td>
<td>No specific rules, general rules in the standards and permits for motor vehicles</td>
</tr>
</tbody>
</table>

Allocation of powers

Traffic managed by the local; Standards set by the central;
Legitimization with the help of local government

Strategies:
- Top leaders’ visits
- Earn certification
- Create group standard
- Develop industry association

Legitimacy resources:
- Strategic emerging industry
- Local directives
- Special license plate

Interactions:
- Selective implementation
- Interpreting national laws
- Applying to be experimental site

New Industry

Enterprise

Central Government

Local Government
Revisit: Legitimization with the help of local government

Target: Increase the legitimacy at the national level, to get acceptance from the central government

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Legitimacy at the local level

Legitimacy at national level

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Zimmerman & Zeitz 2002
Discussion

- Rethinking central local relationship in China
  - The strength of the local initiative
    - Policies Implemented at local level
    - The power of provincial official (a former top leader in central departments)

- Rethinking application of green/low-carbon technologies
  - In developing countries: People require robust products with basic functions at ultra-low prices due to their low income levels and relatively harsh living conditions (Dawarand Chattopadhyay, 2002; Prahaladand Lieberthal, 1998).
  - In niche markets: not main-stream, not rich consumers, but still big markets with special requests
Thanks!

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Roadmap towards sustainable mobility

**BEV DOMAIN**
- Small home-delivery vehicles
- Personal mobility
- Electricity

**HEV/PHEV DOMAIN**
- HEV (Short-distance use)
- PHEV (Oil / Biofuel / CNG / Synthetic Fuel etc.)

**FCEV DOMAIN**
- FCEV (BUS)
- Full-size trucks
- Delivery trucks

**Source:** Toyota