Transport in the aftermath of COVID-19: lessons learned and future directions: a case of Japan

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Content 1

What have happened in Transport under COVID-19?
Modal shifts
(subjective observations, multiple choices)

<WCTRS Taskforce Survey 2020>

PT to Car, 35.0%
PT to Motorcycle, 10.2%
PT to Bicycle, 19.6%
PT to Walking, 23.1%
Others, 12.1%
PT to Low Carbon Mode (42.7%)
PT to High Carbon Mode (45.2%)
Modal shifts
(subjective observations, multiple choices)

<WCTRS Taskforce Survey 2020>

11 November 2020
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Where did people go/stay during the pandemic?

- **Japan**
  - No Lock-down
  - Emergency declaration
  - Little difference between week/weekend
  - Lock-down
  - People cannot come back to work
  - Poor people cannot get income

- **India**
  - No Lock-down
  - Emergency declaration
  - Little difference between week/weekend
  - Lock-down
  - People cannot come back to work
  - Poor people cannot get income

- **Thailand**
  - No Lock-down
  - Emergency declaration
  - Little difference between week/weekend
  - Lock-down
  - People cannot come back to work
  - Poor people cannot get income

- **Italy**
  - No Lock-down
  - Emergency declaration
  - Little difference between week/weekend
  - Lock-down
  - People cannot come back to work
  - Poor people cannot get income

Reference: Google Community Mobility Report
Content 2

Recommended Measures and Actions
Recommended actions during COVID-19 pandemic (multiple choices)

<WCTRS Taskforce Survey 2020>

- Increasing Emission Factor → Contribute to CO2 Increase from PT
- Decreasing Passenger Volume → Contribute to CO2 Reduction

- Online Meeting, 16.3%
- Avoid Gathering Event, 15.6%
- Online Lecture, 15.3%
- Telework, 15.4%
- Online Booking, 3.9%
- PT Passenger Restriction, 9.4%
- Physical Exercise Alone/Few People, 9.9%
- Avoid Eating out, 13.3%
- Avoid, 0.9%
- Others, 0.9%

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Experts’ opinions on long-term changes (1)

More and more inter-city **business trips for meetings** will be replaced by **online meeting**.

**Online services** of government, bank, ticket purchase, etc. will become a standard service.

More and more intra-city **business trips for meetings** will be replaced by **online meeting**.

**Online shopping** will become the most popular shopping activity.

The society will become **more isolated** due to the progress of **online activities and smart technologies** (AI, IoT, robotics, etc.).

**Online education** will be a standard model of education.

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Effects to CO2 Emission

- Fully agree
- Agree
Experts’ opinions on long-term changes (2)

The **car dependence** will become more obvious due to adverse reactions to **crowded public transport** during the COVID-19 pandemic.

**Online shopping** will become the most popular shopping activity.

More and more people will **out-migrate from populated cities**.

More and more people will choose to **live far from city center**.
Content 3

Japan
General measures taken by the Japanese government (+ major events)

- Jan 16: 1st infected case
- Feb 13: 1st death in Japan. [Gd: 1,383]
- Feb 28: 1st declaration of a state of emergency in Hokkaido [Gd: 2,923]
- Mar 2: Elementary, secondary, high schools suspended [Gd: 3,117]
- Mar 19: Recommendations of behavioral changes by a governmental task force [Gd: 10,077]
- Apr 7: Emergent antional budget of 108.2 trillion yen
- Apr 16: Go. declared a state of emergence for the whole country
Impacts of COVID-19 on railways in Japan: examples

Shinkansen (compared with last year)

Conventional Railway (compared with last year)

Express trains at major lines


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Japanese railways were hit hard by the COVID-19 pandemic, with ridership on both the Shinkansen and conventional railways significantly reduced compared to the previous year. The graphs show the percentage decline in ridership for each railway company, withJR Hokkaido, JR East, JR Tokai, JR West, JR Shikoku, and JR Kyusyu. The Shinkansen, which connects major cities in Japan, showed a more moderate decline than the conventional railway, which includes local and regional lines. The ridership data is based on the number of passengers at major lines.
Impacts of COVID-19 on railways in Japan: examples

Urban railways

• In March, Tokyo: -21.4% ~ -35.8% [commuter pass ÷ -50%]
• Effects of self-restraint requests (April):
  • Target: 70-80% reduction; Reality: -60% even during rush hours

During the Golden Week: declaration of a state of emergence

• JR East, JR Tokai, JR West (Shinkansen + Express trains of conventional railways): - 90% or more [max: -97%] {in normal GW: very crowded}

https://www.bcnretail.com/market/detail/20200512_172995.html
https://toyokeizai.net/articles/-/350639?page=2
Measures taken by the railway sector in Japan, in sequence

- **Jan 30**: Established a government response headquarter at MLIT
- **Jan 31, Feb 24**: Measures for employees and users (masks, hand washing, installation of antiseptic solution); Requested prompt report of employee infection.
- **Feb 24/26**: Requests to railway users/operators >>> Telework or staggered commuting
- **Feb 24**: Requests on strict health check of crew and station attendants
- **Mar 12, May 5**: Requests to users >>> ventilation, telework, cough etiquette
- **Mar 16**: Gov. announcement of financial support to railway operators
- **Apr 3/17/27**: Requests to the designated public transport operators >>> to continue the operation
- **May 4**: To publicize a guideline “About how railways should be operated against COVID-19 by MLIT”
Measures taken by the JR East, Based on Guidelines of Measures against COVID-19 for Rail Operators

Main measures for users

<table>
<thead>
<tr>
<th>条項</th>
<th>分 類</th>
<th>項目</th>
<th>内容</th>
</tr>
</thead>
<tbody>
<tr>
<td>air-tight</td>
<td>换気の強化</td>
<td>車内換気</td>
<td>空調装置や窓開けによる車内換気を行っています。</td>
</tr>
<tr>
<td>Crowdedness</td>
<td>情報提供</td>
<td>混雑状況の緩和</td>
<td>JR東日本アプリにて、山手線車内や一部駅における混雑情報を提供しています。</td>
</tr>
<tr>
<td></td>
<td>客様への呼びかけ</td>
<td>客様への呼びかけ</td>
<td>駅構内放送や車内放送、デジタルサイネージ等を活用し、時刻出勤やテレワーク等へのご協力の呼びかけを行っています。</td>
</tr>
<tr>
<td>Closeness</td>
<td>発売時の取扱い</td>
<td>ビニールシート等の設置</td>
<td>シートマップを活用し、可能な限り隔間を空けて、座席は販売するよう取組んでいます。</td>
</tr>
<tr>
<td></td>
<td>お割り位置の明示</td>
<td>仮設シート等の設置</td>
<td>シートマップを活用し、可能な限り隔間を空けて、座席は販売するよう取組んでいます。</td>
</tr>
<tr>
<td>Other</td>
<td>消毒液の設置</td>
<td>消毒液の設置</td>
<td>改札口等に、アルコール消毒液を設置しています。</td>
</tr>
<tr>
<td></td>
<td>駅・車両の清掃</td>
<td>駅・車両の清掃</td>
<td>駅の売場や階段、エスカレーターの手すり及び車内のドア革等は消毒液を用いて、定期的に清掃しています。</td>
</tr>
</tbody>
</table>

Main measures for employees

<table>
<thead>
<tr>
<th>項目</th>
<th>内容</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear masks</td>
<td>全乗客にマスク着用を指示しています。</td>
</tr>
<tr>
<td>Hand washing, gargling</td>
<td>石鹸を使用した手洗い、うがいを徹底しています。</td>
</tr>
<tr>
<td>Protect employees’ health</td>
<td>出勤前に体温確認等を実施しています。</td>
</tr>
</tbody>
</table>

From the JR East website

Ventilation

Information Seat selection map

Antiseptic solution

Prevention of splash infection
Summary: railways

• Preparedness: for example,
  ✓ Action Plan for novel influenza (prepared by MLIT in 2008)
  ✓ Survey and Research on measures against novel influenza in Tokyo Metropolitan Area by MLIT in 2011

• During the COVID-19 pandemic
  ✓ Establish a headquarter in MLIT, following central gov.
  ✓ PASS approach  [named by the speaker, not by MLIT]
    - Step 1: (P)rotect Measures for employees and users
    - Step 2: (A)void Telework
    - Step 3: (S)hift Staggered commuting
    - Step 4: (S)top Stop unnecessary and unurgent trips

• After the COVID-19 pandemic
  ✓ Financial measures for compensating losses and recovery
  ✓ “Go to Travel” campaign (cross-sectoral)
  ✓ Deregulation for new transport/logistics businesses (e.g., online order and food delivery, freight transport by taxi)
  ✓ Improvements of public transport for international tourists
  ✓ Large-scale promotion for inbound tourism
  ✓ Reform of supply chain
  ✓ Society 5.0
Content 4

Conclusion
New Normal in Transport

• Down sized equilibrium of sales and cost to maximize profit
• Peak-cut merits: less per hour demand intensity with lower cost for Infrastructure ➔ Do not be afraid of downsizing!
• Resilience: Reversible Society, Redundancy of Infrastructure, Contingency Plan
• Transport small [not make unnecessary trips], Benefit large
• Not transport all at peak hours/seasons, but select passengers and freights.
• Clear policy of congestion charge & off-peak hour discount to realize non-congested transport and cities
What does COVID-19 suggest to Human Society? How to live in Anthropocene?

• Healthier life (QOL, GNH) as an outcome of social activity appreciated in 21st century rather than higher economic prosperity (Income, GDP) as an input to the life sought in 20th century

• Less income with less passengers but even less cost to maintain infrastructure by peak-cut → seeking for Higher net income and increased personal time

• Resilient Society
  • Emergency adaptive life-work style
    • 20th century: Climate Emergency → Excessive Extreme Weather
    • 21st century: Future: Reversible Society → Infrastructure with Rooms and Redundance

• Never-coming chance to mindset for human beings

  <https://clubofrome.org/>