Track 1
Limitless Cities and Urban Futures

Shaping Compact Cities for Liveability, Affordability and Sustainability (L-A-S)
A Comparative Assessment of TODs in Jakarta and Auckland

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Dushko Bogunovich
Aim of research

**OBJECTIVE**
To assess the achievements and hurdles of comparable TODs in two rather different cities – Auckland, New Zealand, and Jakarta, Indonesia – towards Liveability, Affordability and Sustainability (L-A-S) criteria.

**FOCUS**
TOD strategies in Jakarta, IND: Dukuh Atas and Lebak Bulus
TOD strategies in Auckland, NZ: New Lynn and Onehunga

**RELEVANCE**
The research is particularly relevant in the planning of metropolises and megacities as they struggle to overcome excessive sprawl, congestion and GHG emissions with the TOD concept, but so far too often with mixed L-A-S outcomes.
Low density development on top of high density development?
One of high-density development in Auckland that was refused resource consent due to objections from the local community.
TOD and Compact City

Three characteristic of compact city:
(1) density;
(2) connectivity; and
(3) accessibility.
In contemporary urban context, the three characteristics of compact city can be attained by transit-oriented development (TOD) strategies.
The prominent urban challenges in JKT—due to rapid population and spatial growth in the city—include traffic congestion, air pollution, and housing shortages. TOD was introduced into Jakarta planning policy in the 1990s. The TOD development sites are planned around five existing train stations and 13 new MRT stations with mixed-use development comprising of housing, business, and commercial.

TOD in Auckland has been the strategy to accommodate the population growth since two decades ago. However, the urban intensification started in 2003, since the concept is quite new. Auckland Council has been promoting high density and mixed-use living options within a close proximity to reliable and frequent public transport. There are at least 21 locations where the TOD is being, or will be, applied. Including New Lynn, Onehunga and Avondale.
Singapore as the Benchmark of L-A-S criteria

The city-state of Singapore is widely regarded as one of the best managed cities in the world, with consistent vision and planning policy aiming for a high level of liveability, affordability, and sustainability (L-A-S). This can be seen in its planning policies: Liveable and Sustainable Cities Framework, and the 10 Principles for Liveable High-Density Cities of Singapore development.
Keywords

LIVEABILITY  AFFORDABILITY  SUSTAINABILITY

TOD  JAKARTA  AUCKLAND
Methodology

CASE STUDY SELECTION

The choice of JAKARTA and AUCKLAND as a pair offers a good mix of differences and similarities. The differences probably amplify the global relevance of the results; the similarities should enhance the reliability and accuracy of the results.

<table>
<thead>
<tr>
<th></th>
<th>Jakarta</th>
<th>Auckland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>661.5 sq km</td>
<td>1,086 sq km</td>
</tr>
<tr>
<td>Population</td>
<td>10,638 million</td>
<td>1,657 million</td>
</tr>
<tr>
<td>Population Density</td>
<td>4,383 people/sq km</td>
<td>1,210 people/sq km</td>
</tr>
<tr>
<td>Urban form</td>
<td>Radial-concentric</td>
<td>Linear conurbation</td>
</tr>
<tr>
<td>Climate</td>
<td>Tropical</td>
<td>Temperate</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>$10,641</td>
<td>$35,152</td>
</tr>
<tr>
<td>City government</td>
<td>Ministry of Land and Spatial Planning</td>
<td>Auckland Council</td>
</tr>
<tr>
<td></td>
<td>Ministry of Public Works and Public Housing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ministry of Transport</td>
<td></td>
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<tr>
<td>Planning system</td>
<td>DKI Jakarta Provincial Spatial Plan No 1/2014</td>
<td>Resource Management Act</td>
</tr>
<tr>
<td>Long term plan</td>
<td>DKI Jakarta Spatial Planning 2030</td>
<td>Unitary Plan</td>
</tr>
</tbody>
</table>
Jakarta and Auckland in same scale
Methodology

DATA COLLECTION

(1) Government Documents such as policies, regulations, reports, plans and maps; (2) Professional And Commercial Documents such as planning publications, property development plans, company annual reports; (3) Research Literature such as books, journals and conference; and (4) Public News/general media; (5) Site Visits/field observations.

COMPARATIVE ASSESSMENT

This research focuses on L-A-S goals from Singapore planning policies to assess the TOD projects in Jakarta and Auckland including (1) Liveability – walkability, density, diversity and public facilities; (2) Affordability – long-term planning and housing supply; and (3) Sustainability – green open space, carbon reduction, and resilient infrastructure.
Findings / TOD in Jakarta, IND

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ISOCARP World Planning Congress Jakarta-Bogor 2019
The significant **transformation** from the **densification** can be seen on the **verticalization along the transit corridor** in both areas.
Will the city be for the people or for the cars?
Pedestrianisation in both areas will be focused on providing different types of pedestrian movement and activity, with cycleways, a pedestrian bridge, a pedestrian tunnel, and street-level pedestrian facilities.
No direct crossing?
Long waiting time?
Shelther?
Pedestrianisation = People enjoy the walk
Are they enjoying it now?
The preservation of green open space is combined with the creation of public space.
A promising beginning?
What about the river?
Findings / TOD in Auckland, NZ
Findings / TOD in Auckland, NZ

The **densification strategy** starts with planning **priority sites** for development and **dividing them into precincts** according to the **timeline**, such as high priority sites, medium-term opportunities, and longer-term opportunities.

The densification aims to create **New Lynn as a town centre around a transit interchange**, accommodating 20,000 residents and 14,000 workers by 2030.
In Onehunga, the densification is planned to address the growth projection and the changing market demand from predominantly conventional freestanding family housing into medium-density housing.

Also providing various mixed-used developments integrated with public transport and concentrated in town centre core precinct for short to medium term.
Findings / TOD in Auckland, NZ

- The power of ten
- Green blue loops
- Green streets
Findings / TOD in Auckland, NZ

NEW LYNN

ONEHUNGA

PEDESTRIAN ENHANCEMENTS ON KEY CITY STREETS (Nelson or Princes Street)

IMPROVE LEGIBILITY OF HOPUA TUFF RING

MAXIMISE LIGHT RAIL OPPORTUNITY (Work with AT)

NEW AND ENHANCED FORESHORE LINKS (Strengthen visual & physical water connections)

NORTH-SOUTH WALKING/CYCLING SPINE (Connecting Mangere to Onahunga)

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Strong economic base is also the critical part of the successful TOD in New Lynn and this is planned to be achieved with the creation of new employment and commercial hub focused on precincts close to transit interchange: Merchant Quarter and Crown Lynn.
“Walk2Ride” programme
Walking and Cycling Plan (WCP) for every new development
Public housing Renewable programme
1966 Land Acquisition Act
Design guidelines for vertical housing
Easy access to public spaces
## Comparative Assessment - **LIVEABILITY**

<table>
<thead>
<tr>
<th>Jakarta (JKT)</th>
<th>Auckland (AKL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Late development of pedestrian network</td>
<td>· Robust planning of walking and cycling</td>
</tr>
<tr>
<td>· Need detailed planning for cycling facilities supporting pedestrian</td>
<td>· Large amount of existing public space to be improved</td>
</tr>
<tr>
<td>· Segregated land-use leads to slum problems</td>
<td>· Dividing areas into precincts according to the timeline</td>
</tr>
<tr>
<td>· Successful civic plaza in Dukuh Atas Garden</td>
<td>· Special Housing Area (SHA)</td>
</tr>
<tr>
<td>· Land acquisition causing slow development</td>
<td>· Land-use is planned with the right amount of diversity but constrains by land acquisition</td>
</tr>
<tr>
<td>· Verticalization constraints by current culture &amp; lifestyle preference</td>
<td>· Verticalization constraints by current suburban-lifestyle</td>
</tr>
</tbody>
</table>

**Recommendation:**  
· More detailed planning for walking and cycling;  
· Integration of land ownership under the government for future developments;  
· Providing vertical housing guidelines to preserve the liveability

**Recommendation:**  
Integration of land ownership under the government for future developments
AFFORDABILITY (A)
long term planning | housing supply

- Public housing developed by the government
- Flexibility of housing types and tenure
- Variations of purchasing method with low interest
- Affordable rental price
- Quota for racial diversity
- “White sites” policy
### Findings / Comparative Assessment - **AFFORDABILITY**

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<tr>
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</tr>
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<tbody>
<tr>
<td>· Lack of housing options of types and tenures</td>
<td>· Housing development planning already provides housing options with variations of types and tenures</td>
</tr>
<tr>
<td>· Low percentage of affordable housing development</td>
<td>· Land-use accommodating long-term plan</td>
</tr>
<tr>
<td>· Affordable housing development by private developers in town centre areas resulted in unaffordability</td>
<td>· Affordable housing crisis due to lack of land supply, private land ownership &amp; densification restriction</td>
</tr>
<tr>
<td>· TOD masterplans need to consider the long-term planning outside TOD area</td>
<td>· Housing developments constraint by expensive construction and long consenting process</td>
</tr>
</tbody>
</table>

**Recommendation:**
- Providing flexibility of housing types and tenures
- Consider increasing the ratio for affordable units provided in TOD housing development and enforce them
- TOD housing development under government monitoring
- Providing long-term planning for areas affected by TOD projects

**Recommendation:**
- Allowing more high-density housing development near PT and public amenities to reduce the high PIR
- Considering planning policies to maintain land values and encouraging new developments in addition to SHA
- ‘Pervasive green’ approach allocating half of the area for green space
- Green building regulation
- Sustainable mobility
- Policy restricting car usage and ownership
- Resilient and multi-functional infrastructure integrated with disaster management
Findings / Comparative Assessment – **SUSTAINABILITY**

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</tr>
</thead>
<tbody>
<tr>
<td>· Open space strategy can be optimized to solve the lack of green surface area</td>
<td>· Low Carbon Strategic Action Plan to maintain existing natural assets</td>
</tr>
<tr>
<td>· Renewable river corridor has potential for resilient infrastructure addressing flood problems</td>
<td>· High auto-dependency due to poor patronage of PT</td>
</tr>
<tr>
<td>· Large amount of Park and Ride facilities tend to support car-oriented travel mode and discourage the use of PT</td>
<td>· Limiting park and ride facilities (1:4 ratio)</td>
</tr>
<tr>
<td>· No policy to reduce car usage</td>
<td>· No policy to reduce car usage</td>
</tr>
</tbody>
</table>

**Recommendation:**

- Optimization of open space to encourage public activities in the TOD area
- Space allocation for Park and Ride can be used for other facilities, like multi-function public open spaces
- Considering planning policies to reduce car usage and encouraging the use of PT

- Improve the patronage of PT
- Considering planning policies to reduce car usage in addition to limited park and ride facilities
Conclusions

• **L-A-S in Jakarta TOD** subject to these following conditions: that the *extensive transit system* is complemented with robust planning of *walking and cycling; land integration* under the government enabling *long-term planning*; verticalization framed by *vertical housing guidelines* providing variations of types and tenures; open spaces optimised for human comfort while also creating *resilient infrastructure*; and the *limitation of car usage* to encourage the use of PT.

• **L-A-S in Auckland TOD** subject to these following conditions: that the *transit interchange* is supported by extensive *walking and cycling networks; integration of land ownership* for long-term developments; *high-density housing* and *mixed-use developments*; improved *patronage of PT*; and planning policies to *reduce car usage*.
Conclusions

• Other factors influencing the success of TOD:

1. the **synergy** between **planning policies** and **design strategies**;

2. active **public-private partnership** for TOD developments;
   community engagement;

3. government support for the **vision stability**
Pending Issues / Future Research/Questions

• To assess comprehensively the L-A-S outcomes of the implementation of TOD concept policy in a bigger sample of projects

• To investigate the completed, post-occupancy outcomes of TOD projects

• To assess the urban design, landscape and architectural solutions at the level at which they actually touch the lives of residents

• Is there a universal prescription for a 'good TOD’, or each city and nation must find their formula?

• Are TODs (i.e. increasing density and concentration of people) a good idea at the time of deepening climate crisis?
Thank you/Terima kasih!

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Atmadja & Bogunovich
ISOCARP, Jakarta, September 2019