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THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

Scholars at the University of Auckland study human mobility to suggest urban design and architecture improvements

CUSTOMER SUCCESS STORY

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ABOUT UNIVERSITY OF AUCKLAND

Website: www.auckland.ac.nz
Industry: Higher Education and Research
Headquarters: Auckland, New Zealand

PROFILE

Established in 1883, the University of Auckland is a public research university based in Auckland, New Zealand. As the largest and highest-ranked university in the country, it has become a flagship, research-led school known for its excellence in teaching and service to local, national, and international communities. The School of Architecture and Planning is New Zealand's leading tertiary institution for architecture and built environment studies. It is a highly regarded center for advanced multidisciplinary research in design-based and professional education in architecture, urban planning, and heritage conservation.

HIGHLIGHTS - GOALS

- Perform visitation analysis for urban spaces
- Study changes in mobility during Covid-19
- Understand relationships between people and POIs
- Inform strategies for urban redevelopment

HIGHLIGHTS - RESULTS

- Consumable data with minimal preparation
- Competitive pricing with timely delivery
- Actionable insights for urban design and planning
- Tailored datasets to provide coverage in NZ

OVERVIEW

The department of urban design at the School of Architecture and Planning (University of Auckland) wanted to understand urban spaces in the context of their popularity and usage. As part of their master's program and doctoral study, researchers from the university sought Quadrant's data to perform their analyses and inform strategies with the aims of improving the quality of urban spaces in major cities of New Zealand.

Along with their colleagues from the University of Buffalo, NY, USA, researchers at the University of Auckland built models to study human mobility in Singapore, New Zealand, and several cities in the United States. For this specific project, Dr. I-Ting Chuang (Ph.D. Architecture and Sustainable Design) and her fellow scholars partnered with Quadrant to procure mobile location data for Auckland and surrounding areas. They wanted to observe mobility patterns around specific spaces and study people's interactions and relationships with them. The analysis of historical data was fruitful in assessing the changes in the usage of urban spaces and public services during the Covid-19 pandemic.

CHALLENGES AND GOALS

The department of urban design at the University of Auckland led an initiative and research project in the most populous metropolitan area of New Zealand. They wanted to expand their success with similar studies they had previously done in Singapore.

The researchers needed expansive coverage of location data to support their analysis of the city's temporal granularity. Their goal was to use mobile location data as an indicator to identify vibrant spaces in the city, and improve the infrastructure, accessibility, and public safety of those spaces to attract and engage more visitors.

Finding a reliable data partner was key to their efforts, and time was of the essence as the research team........

...needed to add and submit a quote with the research proposal to be approved for a grant. Usually, location data providers have generic data feeds that cannot cater to research projects. In addition, there are no out-of-the-box or straightforward solutions in terms of customization, volumes, or pricing. Sometimes grants are expansive, but often when the scope of the research is smaller, the funds granted are limited. Thus, the challenge for the research team was to find a provider that would accommodate their needs while offering competitive pricing.

SOLUTIONS

The team at the University of Auckland evaluated several data providers and chose Quadrant based on our promptness and ability to customize the data and pricing to fit their needs. Using Quadrant's mobile location data and their expertise in urban geography, architecture, and planning, the researchers developed models to inform the betterment of public spaces and their spatial quality.

Studying the data and comparing it with historical trends fulfilled the customer's goal of building a non-traditional system for observing and monitoring mobility patterns in a region of interest. Due to the timing of this project, the analysis was also beneficial in observing how people's movement patterns changed during Covid-19, identifying essential POIs in the urban structure, and investigating visitation patterns for them.

Quadrant's data is excellent for extrapolation and is ideal for simulation models that help expand studies and enable assumptions for a larger population that existing datasets do not cover.
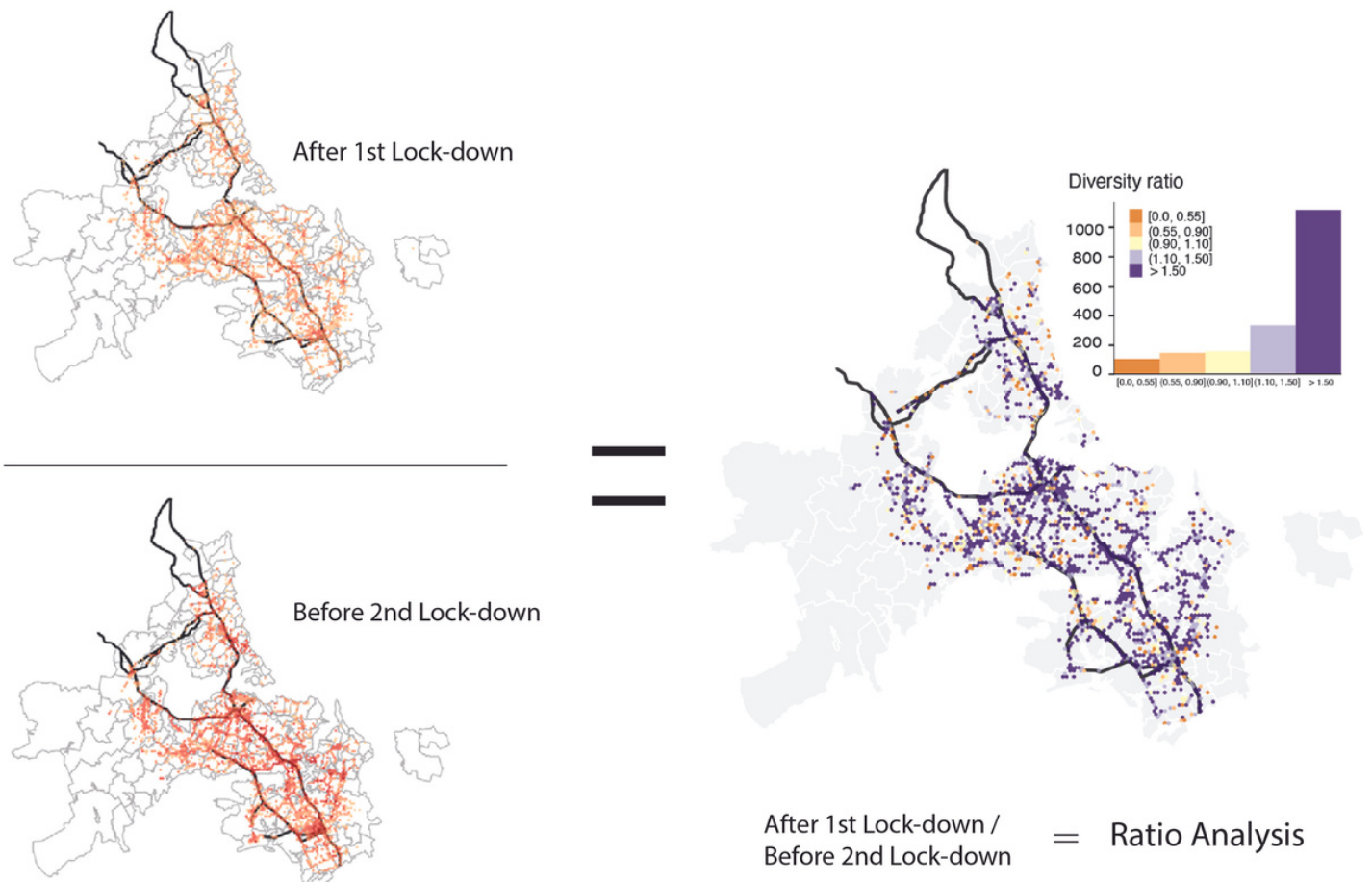
Graphical representation: The images here show few of many visuals built by researchers using R to understand the frequency and density of visitors to specific POIs during various phases of Covid-19 lockdown.

BENEFITS

The studies performed by the researchers can solve a myriad of challenges for various agencies. The insights derived by the team can serve as cues to make changes in the social policies and infrastructure and move forward as the cities recover from the impacts of the pandemic. A few applications of these analyses include,

FOR URBAN DESIGNERS

Design better urban spaces, improve the quality of infrastructure, usability, & safety of existing urban spaces.

FOR POLICYMAKERS

Enforce social distancing, reduce the spread of Covid-19 & allow people to safely enjoy public spaces like before.

FOR TRANSIT MANAGEMENT

Understand the accessibility of urban spaces & improve transit facilities to address commuters' changing needs.

Urban "Hotspots"

https://heartofthecity.co.nz/attractions/parks/albert-park

https://www.totstoteens.co.nz/event/ellen-melville-centre-community-open-day/

https://www.mphsfoundation.org/

https://www.aucklandmuseum.com/

http://www.stuff.co.nz/auckland/

Auckland CBD

Graphical representation: A visualisation showing how people move around public attractions, facilities and public services. These insights can allow urban designers and developers to make well-informed improvement decisions and high quality architecture. Credits: Dr. I-Ting Chuang and Qingqing Chen (PhD Scholar University of Buffalo NY).

Quadrant performs in-house overlap analysis with a proprietary algorithm to provide customers with a unique stream of data. This allows us to maintain competitive pricing, unlike other data providers who base their pricing on volumes alone. Quadrant can customize data based on region and adjust costs. Based on first-hand feedback from the researchers at the University of Auckland, our data is tidy, attributes are clear, and volumes/coverage are comprehensive with minimal overlap and duplicate values.

Quadrant's data was also cleared by the school's ethics review board responsible for monitoring and protecting the data used in their research projects. Quadrant is determined to establish a standard of data privacy and user-centricity for research purposes.

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"Quadrant offers excellent coverage of data resources and services supporting education and research institutions, not always found with many data providers. The Quadrant consultant team is efficient and accommodating to ensure the needed support is met. We are pleased to have found a great provider and are looking forward to future collaborations with Quadrant."

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~Dr. I-Ting Chuang (PhD) – Lecturer, School of Architecture and Planning, University of Auckland

Quadrant (An Appen Company) is a global leader in mobile location data, POI data, and corresponding compliance services. Our data is verified, trustworthy, and ready to use, allowing businesses, organisations, and innovators to build tailored solutions for a myriad of real-world problems. Since September 2021, we are part of Appen, the global leader in AI training data that helps build and improve the world's most innovative artificial intelligence systems. To learn more about Quadrant's mobile location data, **talk to a data consultant today**!

Reach us at:

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