

Cycling Environments in Taipei and Tokyo since 2021: Policy Frameworks, Cycling Conditions, and User Experience

Topic and Research Question

This research conducts a comparative study of how the cycling environments in Taipei and Tokyo have evolved since 2021. Examining these two urban contexts allows for a deeper understanding of how different factors influence the improvement of cycling environments. This study is highly relevant as it contributes to the "worlding" of academic discourse, which is often dominated by Western cases, by providing context-sensitive insights for urban planners in assessing policy effectiveness.

This study addresses the research question: *"How have cycling environments in Taipei and Tokyo changed since 2021 in terms of policy frameworks, cycling conditions, and user experience?"* It examines changes across three dimensions: policy frameworks, by analyzing the goals and approaches of Taipei's 2021 Bicycle Path Vision Plan and Tokyo's 2021 Bicycle Utilization Promotion Plan (hereafter: Taipei Plan/Tokyo Plan); cycling conditions, measured through indicators like Bicycle Suitability, Bikeability, and Bicycle Friendliness; and user experience, captured via surveys and interviews on the practical effects of policy implementation.

State of the Art

Urban cycling policies are vital components of sustainable mobility, classified into Physical, Soft, and Knowledge Policies. Strategies should be tailored to the city's cycling maturity level (Starter, Climber, Champion) and often focus on the "Interested but Concerned" demographic, which is the biggest and most easy to convince target group. Core goals of urban cycling policies include increasing mode share, expanding high-quality infrastructure, improving safety, and reducing car dependency.

The literature identifies strong political commitment, dedicated high-quality infrastructure, and embedding cycling in conducive urban design (short distances, mixed-use areas) as key success factors. Conversely, challenges include fragmented governance, physical space constraints, path dependencies rooted in car-centric planning, and lack of systematic data and evaluation. To assess performance of urban cycling policies, three methodological concepts are used: Bicycle Suitability (Micro-level e.g. segment quality), Bikeability (Meso-level e.g. network connectivity), and Bicycle Friendliness (Marco-level e.g. institutional support for cycling).

Methodology and Approach

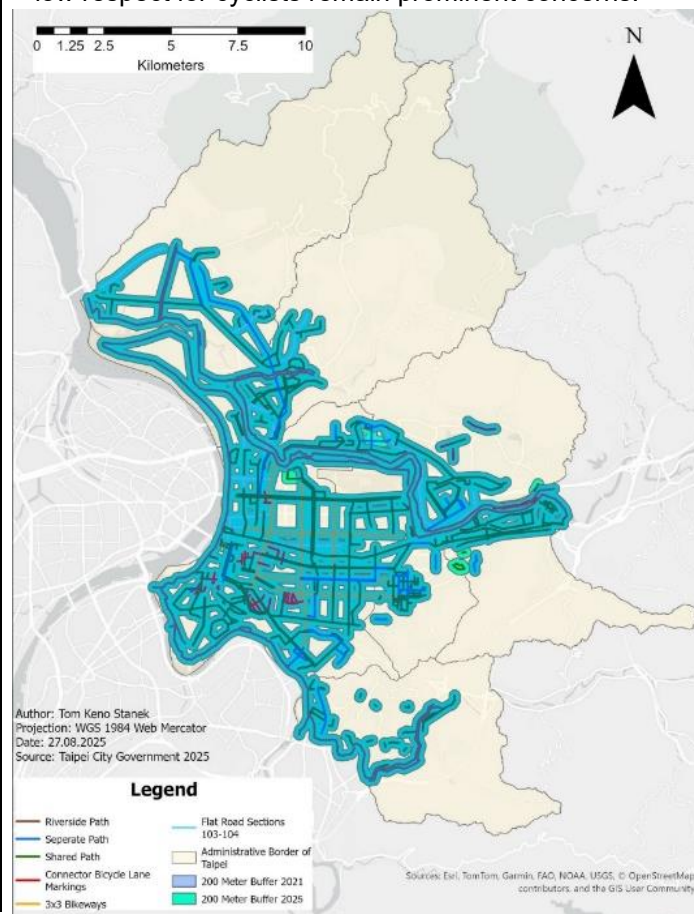
This comparative study employs a three-component, mixed-method analytical framework to assess the evolution of cycling environments since 2021. First, the goals and integration of success factors within the Taipei and Tokyo Plans are compared across eight key policy dimensions. This establishes the intended policy scope and ambition of each city. Second, measurable changes in the physical cycling environment are assessed on three levels: Bicycle Suitability is measured via a customized Level of Traffic Stress analysis on selected street segments; Bikeability is quantified through network length, ambient environment proximity, and accessibility; and Bicycle Friendliness is evaluated by examining governance factors and cultural adoption measures. Third, an exploratory component integrates user experience and implementation dynamics. Online surveys conducted in both cities capture user perceptions of changes, success factors, and challenges, while semi-structured interviews with policymakers in Tokyo provide crucial institutional context. This combined approach links policy intent and physical outcomes with real-world experiences to fully answer the research question.

Main Facts

The Taipei Plan is not a comprehensive cycling strategy but a compilation of planned street redesign projects. It does not define targets for increasing cycling modal share and proposes a limited network expansion of approximately 7.7 km, mainly through the "Three Horizontal and Three Vertical" grid. Measures focus on infrastructural design improvements such as lane markings and signage, while speed limits, car lane allocations, and parking capacities remain unchanged. Empirically, Bicycle Suitability in Taipei improved modestly, with reductions in traffic stress primarily resulting from wider lanes and improved separation. Changes in Bikeability were limited: the cycling network expanded only marginally but remained dense and largely composed of shared and physically separated paths, many located in scenic environments. Bicycle Friendliness showed little institutional change, as dedicated cycling units, evaluation mechanisms, and ring-fenced budgets remain largely absent. Survey results indicate a slight increase in cycling frequency and highlight the central role of the YouBike system and strong public transport integration, while persistent

challenges include safety concerns, fragmented infrastructure, and conflicts with motorized traffic.

The Tokyo Plan constitutes a multi-layered policy framework embedded in national and metropolitan cycling strategies. It sets extensive quantitative infrastructure targets, defines measurable safety objectives, and combines physical interventions with education, enforcement, and data-driven evaluation. Empirically, this translated into substantial network expansion, predominantly through on-road cycleways implemented at ward level. In terms of Bicycle Suitability, traffic stress decreased where street space was physically reallocated. Bikeability improved mainly through significant gains in accessibility, while comfort and ambient quality increased only marginally. Bicycle Friendliness advanced through the establishment of coordination bodies, recurring evaluation cycles, and expanded promotion and safety programs. Survey findings show that cycling frequency has decreased slightly. Cycling is valued for flexibility and time efficiency, yet safety risks, narrow streets, insufficient parking, and low respect for cyclists remain prominent concerns.



Results

While the two Plans differ in scope, their implementation differs even more. While the Tokyo Plan's implementation is evaluated on an annual basis, the Taipei Plan was quietly discontinued, probably as a result of the Mayoral Elections in the end of 2022.

Taipei shows localized gains in Bicycle Suitability, but limited progress in Bikeability, which is due to the maturity of its network. Bicycle Friendliness has remained low due to weak institutionalization of cycling. Tokyo exhibits measurable improvements across all three dimensions of the Cycling Environment: Bicycle Suitability increased through traffic calming, Bikeability improved via network expansion, and Bicycle Friendliness advanced through governance coordination and data-driven policy adjustment.

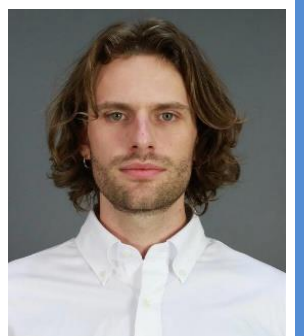
Despite recent decreases in modal shares of both cities, Taipei respondents seem to have increased their cycling frequency, contrary to their Tokyo counterparts. The assessment of the Tokyo Metropolitan Government that the implementation of the Tokyo Plan is proceeding smoothly suggests a disconnect between targets of the Plan and real-life outcomes.

References

All references can be found in the full version of the MA thesis available at <https://theses.univie.ac.at/>

About the Author

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