Bike Sharing Equity in Taiwan – A Docked System Research on Six Cities

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Abstract. Public bike sharing system (PBSS), has spread all over the world due to its economic, health, traffic, environmental and public values. However, research has shown that public bike sharing system disproportionally serves wealthy, younger and racially skewed population. In another word, the equity side of the bike system has been neglect in most of the discussion. For docked system, which has physical docks for parking and locking, often encounter more concern on its social equity challenge by the spatial preference and constraint of bike station selections than its counterpart, the dockless public bike system. Station selection solely based on economic and demand might undermine the social and public values especially on equity for disadvantage population and areas. With this concern in mind, this research evaluates equity in this spatial distribution of public bike sharing system in six cities in Taiwan: Taipei City, New Taipei City, Taoyuan City, Taichung City, Kaohsiung City and Hsinchu City. This research uses quantitative approach, by applying Lorenz curve and Gini index to evaluate spatial equity. Income and education also assessed by comparing these populations are included in bike-share service areas versus the total populations. Cross-sectional comparison is used by numbers and per capita bases. The result shows Taoyuan has the most equitable bike station placement among six cities, Higher-income and better-educated populations were constantly encompassed in service area with greater density. To shrink this divide, after considering further expansion in locations and density should address more on disadvantage populations and social groups to create public values.

Keywords. Bike equity, Public bike sharing, Bike sharing, Equity, Public values, Gini coefficient
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1. Introduction

Public bicycle, or public bike in short, expands across cities in the world. Research have shown that cycling is associated with cardiorespiratory fitness, reduces mortality and incidence of overweight and obesity in general. (Liao, 2016) Riding bicycle has been linked to numerous health benefits, such as commuter cycling and inverse relationship with all-cause mortality, and cancer morbidity among middle-aged to elderly subjects. (Oja et al., 2011) Also, in London's bicycle sharing system research, the result shows overall positive health impact, benefits are clear for men than for women, and for older user than younger users. (Woodcock et al., 2014) Study also shows the value of policy-based intervention on city bike infrastructure expansion policy to influence healthy behaviors and population health. Policy on improving biking infrastructure were associated with lower prevalence of leisure-time physical inactivity, obesity and CHD. (shen et al., 2025)

However, bicycling and health is not a straight forward line toward the ultimate health utopia. The most frequent identified threat to health in bicycling are injuries and air pollution. Götschi et al. (2015) review generalizable epidemiological and specific impact modeling to assess the true benefits and risks of day-to-day cycling. The result shows, for injuries, only smaller impact on population level, but affect crash victims disproportionately and deter potential users with perceived risk. Crash risk data exists, local affect dominates and the determinants of

risks is limited. About the risk of air pollution, it is assumed to be small and limited evidence with cycling. So the overall benefit is worth pursuing for policy makers, planner and health professionals. Using three scientific databases (Web of Science, Scopus, and Google Scholar) using the PRISMA guideline on systematic literature review, Ahmed et al.(2025) shows the infrastructure studies focus on four aspects: vibration or roughness index, Bicycle Level of Service (BLOS), Bikeability Index (BI), and Bicycle Safety Index (BSI). Use different subject and objective data, various aspect of bicycling has been identified with their developed methodologies to evaluate different aspects. However, the importance of choosing methods that fit the specific context cannot be overstated. This shows existing literature have already established multiple methodological approaches on bicycle related research.

In public bike sharing system, or bike sharing system (BSS), chooses and establishes station is crucial on docked bicycle system. In comparison to dockless or free-floating bike sharing system (FFBSS), docked system, or station-based system (SBBSS) has docks that contains the distance in using bikes. It definitely not saying that dockless bike has unlimited range, because dockless bikes also has designated zones to confine its use. (Giuffrida et al., 2023) For example, in Dublin, Ireland, it has three different bike sharing programs: ublinbikes, Moby e-bikes and Bleeper bikes (FFBSS). Bleeper bikes can only park within the 100 square kilometer zone called "Purple Zone" and can only allowed to park by locking a chain around a public bike rack.

However, without concerning the public values in equity, equality and justice, public bike cannot succeed to its maximum. Previous studies have shown bike sharing systems, especially docked bike systems, are disproportionally placed in wealthier neighborhoods. (Hosford & Winters2018; Cerutti et al., 2019; Duran-Rodas et al., 2021) Also, income, race, population and age are all aspects have been used to quantify the equity of bike sharing systems. (Ursaki & Aultman-Hall, 2015)

In Taiwan, public bicycles starts in 2008, as Youbike 1.0 started in the capital city of Taipei. Initially it has only a few thousand bikes and less than a dozen stations around city government area. It expands to the whole country, currently there are 15 zones, including 13 city/ county, one industrial park and one township adapt the current Youbike 2.0 system, which is the evolved system from Youbike 1.0. (Wang et al., 2024) However, limited research investigates about the equity and public values in Taiwn on bike equity.

This research questions are:

Q1: What is the current status in Taiwan's bike sharing system in population and overall distribution?

Q2: What is the current status of Taiwan's bike sharing system in terms of horizontal equity?

Q3: What is the current status of Taiwan's bike sharing system in terms of vertical equity?

The following sections will start by literature review on bike equity/public values. Then, a brief introduction of Taiwan's public bicycle system will be discussed. Lorenz Curve and Gini index for assessing vertical equity, income and education on horizontal equity are presented in the result. Finally, conclusions, underlines limitation of the study and paves the way for future research.

2. Literature review

2.1 Equity, Public values and public bike sharing system

Public value, or public values in a more detailed and sophisticated narrative, are the recent debate on public administration literature. (Ojasalo & Kauppinen, 2024) Public value framework also used on the evaluation of public bike sharing system. (Podgórniak-Krzykacz et al., 2022) The result shows four factors affect bike sharing users' satisfaction: 1) impact on health, environment, mobility and traffic in the city, 2) reliability, and comfort, 3) intramodality 4) price and technical availability. Also, other than the private interest (i.e. the bicycle company's profit for stakeholders), public value is crucial in evaluating the total value of public bike sharing system. (Janmaat, Y, 2019)

Public bike systems have impacts on traffic, the environment and social. Specifically, share bike systems find economy, energy use, the environment, and public health impact on significant positive externalities. It is time saving, traffic decreasing, energy consumption reducing, harmful gas emissions decreasing and promotes economic growth. (Qiu & He, 2018) Also, digital divide is yet another concern on public bike sharing, since the majority, if not all such systems relies on smart phone and results in market-driven shared bicycle industry and limited regulation are address such inequity. (Liu et al., 2025) Share economies in fact further exacerbates the inequality embedded in the transport system by making citizens with structural vulnerability face more challenges than the wealthier from smart transportation technology.

2.2 Public Bike in Taiwan

Taiwan's public bike started in 2008, with the system names Youbike, a stationed public bicycle sharing system with smart card and/or smart phone in Taipei City, the nation's capital in response to the environmental and convenience demand from the public. The whole system helped from bicycle manufacturing company, Giant Bicycles, started from merely 500 bikes and 11 bike rental stations. (Lin et al., 2013) The original bike sharing system with control panel on each station was replaced by newer bikes equipped with control system on the bike itself and several new features. The older system then named "Youbike 1.0", as the newer and undated system was named "Youbike 2.0".

The Youbike 2.0 system is built all over Taiwan's jurisdictions. There are 13 cities/counties adopt Youbike 2.0 system in Taiwan out of 22 in the main island, station numbers range from over 1700 in Taipei City to just 115 stations in Taitung, a county at Southeast Taiwan. (Youbike, 2026) In the Taipei metropolitan area, namely Taipei City, New Taipei City and Taoyouan City, all bikes are interconnected, which means Taipei's YouBike and Taoyuan's YouBike systems are interconnected and allow for seamless transfers. You can rent a bike in Taipei City and return to either Taoyuan or New Taipei City without any problem or extra fee.

Public bike has drawn attention on the pricing and system usage conflict all over the world, and certainly this happens in Taiwan. For example, a case study for Taipei City, the National Capital, shows irregular users are more price sensitive on basic fee than regular users. (Lin et al., 2017) Also, case study in Taipei also shows the first and last mile usage for Mass Rapid Transit (MRT, basically subway) network. (Yen et al., 2023) Also, shortage of bike, especially in small stations, is positive correlated with negative user perspectives using natural language processing and deep learning techniques. (Chung et al., 2025)

2.3 Lorenz Curve and Gini index

The equity issue in public bike system in cities has been examined before. For example, Jin & Sui (2024) use non-parametric generalized additive mixed model (GAMM) to assess bikesharing equity at the census block group If the authors have different in 73 U.S. cities, the result shows gender, minorities, youth and senior needs more attention on the equity issue, but for zero car tracts, it is equitable as they experience higher accessibility.

Gini index also use for calculating the inequality about public bike sharing system of the stations with fixed bike sharing system. Wang & Lindsey (2017) use Gini coefficient and the loss of accessibility to jobs via bikeways to access the equity from 2010 to 2014 in Minneapolis, Minnesota with 2015 data that included 190 stations. The result shows both vertical and horizontal inequities within subgroup. Kosmidis et al. (2025) also use Gini index to find horizontal equity on four travle options: car, public transport, bicycle, and bike-transit synergy to access horizontal equity in a mid-sized urban region in Norway. Chen et al. (2019) also use Gini coefficient to map horizontal differnces and descriptive statistics by group, perform analysis of variance to access vertical equity in southern Tampa. Meng & Brown (2021) also use Gini index to evaluate docked and dockless bike system in all 32 cities with both systems, bikeshare and e-scooter programs in 2020. The result shows the distribution of docked system is extremly unequal in comprison to dockless system. Ricciardi et al. (2015) use elderly, low-income and no-car household in Perth, Western Australia with Gini index to explore the equity distribution of public transport for these three target populations. The result shows a relatively unequal spatial distribution of services to the population with 0.52 Gini coefficient.

3. Research Methods

In this section, data and map source are provided, followed by research method used. This research considers bike equity in horizontal and vertical forms. For horizontal equity, Gini index and Lorenzo Curve will be calculated and explained; for horizontal equity, tax revenue data (income) and education data (percentage with college degree) will be used for each of the study areas.

3.1 Data and maps

Data were compiled for six cities in Taiwan: five "capitals" or "Special Municipality", Taipei City, New Taipei City, Taoyuan City, Taichung City and Kaohsiung City, and Hsinchu City. There is yet another "Special Municipality" in Taiwan, namely Tainan City, was excluded in this research because their open data portal provides invalid Youbike station data (with dead link) and the freedom of information request did not get response from the City government. Other than the six capitals, out of all seven cities/counties with Youbike 2.0 system, only Hsinchu City provides public bike system map on their open data portal. All six cities (it happens to be all cities, though out of 13 municipalities, five of them are counties) has public bike station location in longitude/ latitude format on their respective open data portal which is public available to download. They also provide real time station/bike availability data using either API service or JSON format. Taipei has the densest population at around 9000 per square kilometers; while Kaohsiung has only less than 1000 people per square kilometers. The second densest city is Hsinchu, due to its booming technologic and academic development, but the land area is

the smallest among the five, only about 100 square kilometers.

The basic population, land area and density data for six included cities, all in square kilometers, are in Table 1.

Tab. 1 - Population, land area and density of six cities

City name	Total Population as of Dec. 2025	Land Area (km^2)	Density (people/km^2)
Taipei City	2,439,507	271.8	9,004
New Taipei City	4,044,831	2,052.60	1,971
Taoyuan City	2,355,106	1,220.95	1,750
Taichung City	2,868,465	2,214.90	1,295
Kaohsiung City	2,718,545	2,952	922
Hsinchu City	455,740	104.15	4,188
Total	-	-	-

This research uses cross-sectional map data on January 2026 on all six cities, because there is no public available data for previous years. Even with request before but to no avail, the central government's open data site simply states no such data in their responses from local government. (data.gov.tw, 2022) The city names, total numbers of "Li"s, number of "Li"s with public bike station and number of stations in each city is shown in Table 2.

Tab. 2 - Demographic and Bike station information for six cities.

City name	Total Population as of Dec. 2025	Number of "Li"s	Number of Stations
Taipei City	2,439,507	456	1612
New Taipei City	4,044,831	1032	1516
Taoyuan City	2,355,106	504	627
Taichung City	2,868,465	625	1729
Kaohsiung City	2,718,545	891	1473
Hsinchu City	455,740	122	119
Total	-	3630	7076

This research uses income and education data at "Li" (village) level from ministry of Interior (MOI Taiwan, 2026) in Taiwan. Li is similar to village in Taiwan, the difference between the two roughly as Li is used in city and village is used in county. The income data came from income tax data from Ministry of Finance in Taiwan, with the latest public available year in 2022. Education data comes from Ministry of Education; the latest data is in 2024.

Low-income ratio/poverty rate, race/ethnicity and age data are not included in this research due to the unique demographic features and statistic in Taiwan. The government in Taiwan has a relatively strict screening mechanism, poverty rate in Taiwan is very low. Only around 2.6% of people are are count toward "low income" population. (Li, 2022) In comparison to United States, for example, the overall poverty rate is about 10.6 percent in 2024, according to Census Bureau. (Census Bureau, 2025) For Japan, the poverty ratio is around 15.4%, which is third among OECD countries following Israel and the United States in 2023. (Imaeda, 2025) Low-income ratio are not commonly used in Taiwan's demographic features. Taiwan also has a relatively low racing/ethnictity difference, as most people identify as Han ethnicity, statistics about indigenous peoples is avaible but since they are relatively few, about only 2.5% of total population (Chi & Simon, 2024), especially in Western part of Taiwan, this research does not use ethnicity as one of the indicators to socioeconomic status like other bike share research did. (Ursaki & Aultman-Hall, 2015)

3.2 Methods

This research uses two main quantitative methods to measure bike equity, horizontal and vertical (Giuffrida et al., 2023). First, Gini index and Lorenz curves are used to evaluate the horizontal equity, by the methods used on previous works about bike and transportation equity. (Delbosc & Currie, 2011; Giuffrida et al., 2023; Hamidi et al., 2019; Harmony, 2024) Second, demographic groups, namely income and education that serves bike-share networks is used to quantify the vertical equity of bike share system in Taiwan.

The concepts of "service areas" is the same as, but the use of "study areas" is slightly different from Berke et al.'s (2024) work. The five cities in Berke et al.'s (2024) paper "study area" is defined as entire cities and/or boroughs are included within the study boundaries. In this study, since 1) different Youbike 2.0 operates independently (even if bikes are interconnected and returnable in Taipei metropolitan area); and 2) there are large percentage of mountain areas in all cities - basically Taipei is in the middle of Taipei Basin, the city is surrounded by mountains and has a total area of 271.8 squared km (Li et al., 2016), the "study areas" is served as a comparison to service areas.

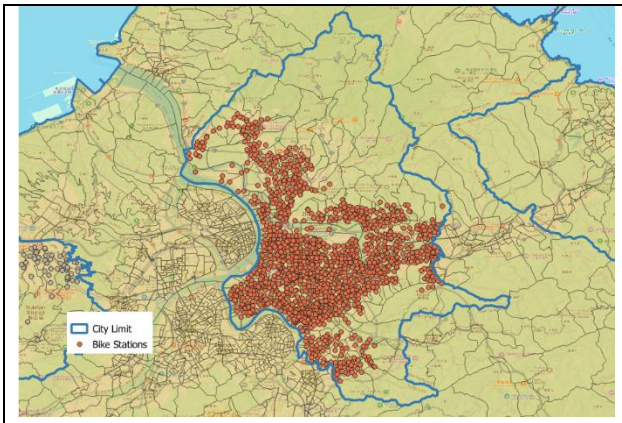
Service areas is defined as the "Li"s which contains at least one bike-sharing station in their geographic area. Since the open governemnt data in Taiwan do not have year-to-year data as in Berke et al.'s (2024) paper comparing five U.S. cities, this research uses cross-sectional data in 2026 for each city.

In order explore the horizontal equity for public bike system in Taiwan, this research deploys three different calculations including Gini index and Lorenz curve. First, by percentage of the numbers of "Li"s with at least one bike station divided by all "Li"s in the respective cities (i.e. service areas divided by research areas). Second, by the number of stations in all "Li"s in service areas. Third, by the number of bike-sharing station per 1000 capita, spacifically, it is calculated for each "Li"s as the number of total bike-share stations in this "Li" divided by the number of people in this "Li" in service.

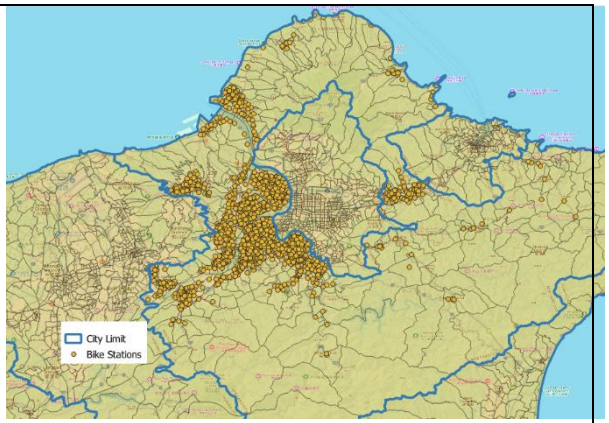
For vertical equity, this paper uses Berke et al.'s (2024) methods, uses 1) number of stations 2) stations per 1000 capita in service areas in each city. For income (tax revenu) the average income is calculated as the mean of median household income in the included "Li"s. For education, the percentage of population with above (including) college degree and population with doctoral degree in each population are calculated. This paper also calculate 1) average top 50% in terms of numbers of bike station in service area, 2) average in service area and 3)average in study area, which is the entire city for this research.

QGIS 3.40.1 version is used for locating bike stations, processing shape files and drawing maps. The ineq package in R statistical software are used in calculating the Gini index. (Zeileis and Kleiber, 2014; Chen et al, 2019)

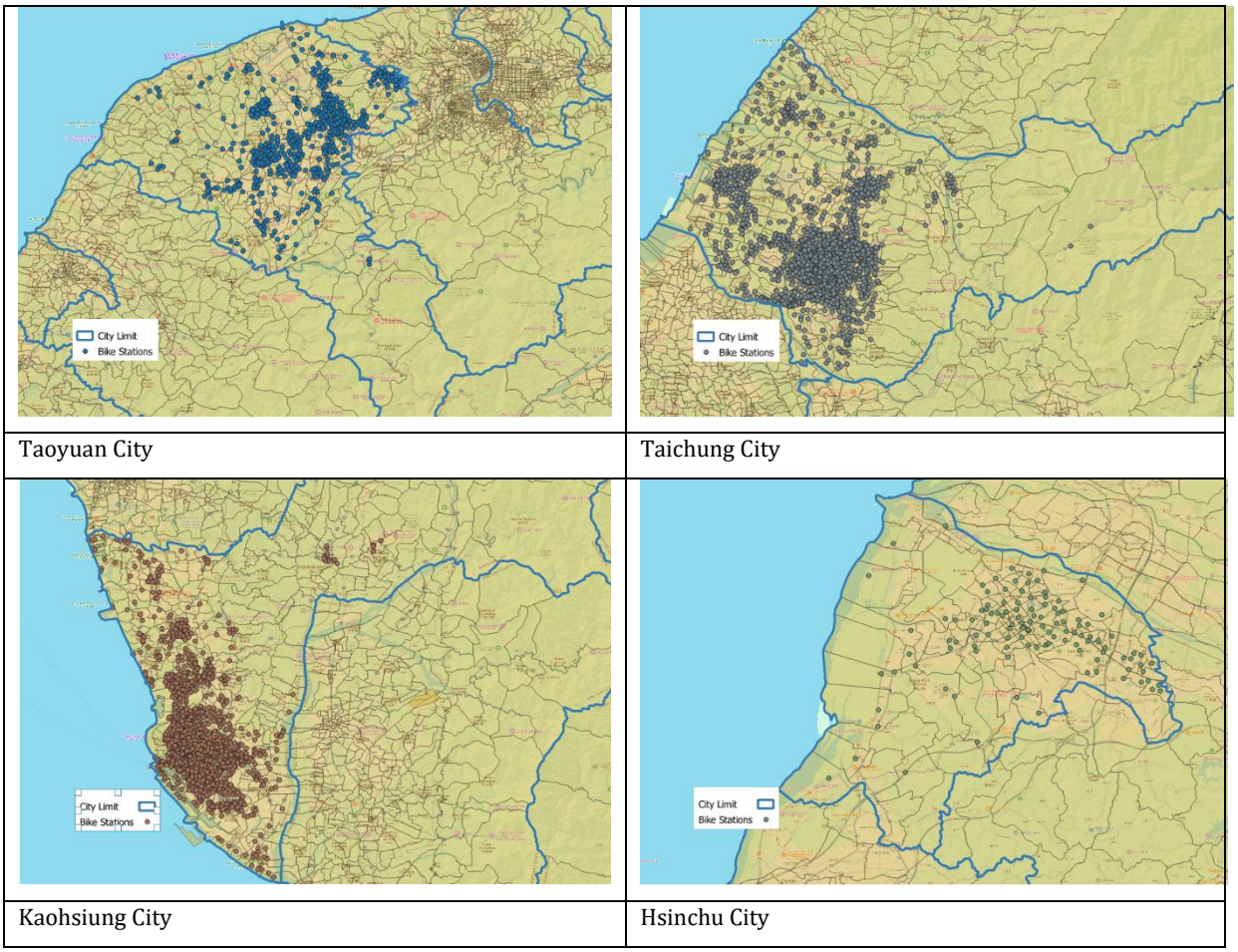
3.3 Visualization



Taipei City



New Taipei City



Taoyuan City	Taichung City
Kaohsiung City	Hsinchu City

Fig. 1 – Each city's bike distribution

Figure 1 shows the docked public bike location for all six cities. Each city has its own unique geographic and demographic features that serve as the result of bike station distribution from the initial setting. For example, Kaohsiung City, which is at the bottom right in Figure 1, combined Kaohsiung County on December 2010. The area that formerly constituted Kaohsiung County has a significant amount of mountainous area, which is unpractical to ride bicycle in such a steep terrain. Therefore, only some scattered distribution of stations are located in the relatively flatter plain in the mountainous area. Taipei City, in contrary, has much denser and concentrated placement of bike stations, for its prosperous economy, schools and denser population. New Taipei City is more of "cluster" of bike station locations On the west side, northwest and west side of New Taipei City, where the population clustered, and connect to Taipei City, are places with denser bike stations. Taichung City's bike clustered in the southern part of city, while Taoyuan's bike stations gather at the main artillery (road) and major districts.

4. Result

The number of "Li"s with station(s) divided by the total number of "Li"s is shown in Table 2. Not surprisingly, Taipei has the highest percentage of "Li"s with at least one Youbike Station, due to the high urbanization and almost non-existence of agriculture sector. New Taipei City, which has large proportion of mountain area and clusters of bike stations, has the lowest percentage of "Li"s with bike station. Table 3 shows the numbers of "Li"s and percentage with stations.

New Taipei City, Hsinchu City and Kaohsiung City have almost the same proportion of "Li"s with bikes stations at around 62%. As aforementioned, due to the geographic, industrial and agricultural differences among cities, these number and statistics are more for referencing, direct comparison is lacking fairness for all cities.

Tab. 3 - Service Area by Research Area

City name	Number of "Li"s	Number of "Li"s with bike station(s)	% of "Li" with station(s)
Taipei City	456	426	93.42
New Taipei City	1032	640	62.02
Taoyuan City	504	331	65.67
Taichung City	625	544	87.04
Kaohsiung City	891	558	62.63
Hsinchu City	122	76	62.30
Total			93.42

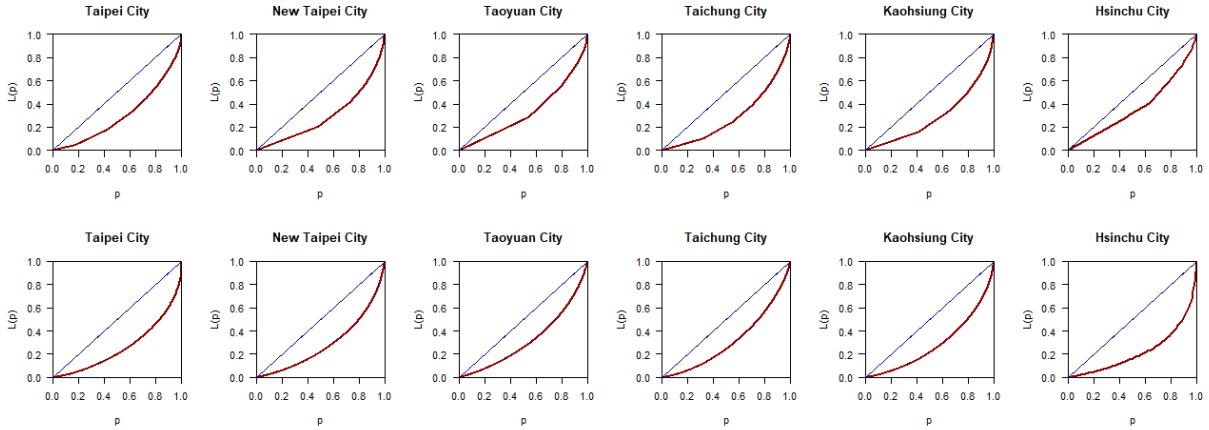


Fig. 2 - Lorenz Curves for stations and stations per 1000 capita. Top: Lorenz curves computed with numbers of bike stations in service area. Bottom: Lorenz curves computed with the per 1000 capita bikes in service area. All data in 2026.

Lorenz curves in Fig. 2 illustrate the equity in the spatial distribution of each bike-share network in each city (corresponding to Table 4, both top and bottom row). Lorenz curves for number of stations in all "Li"s in service areas (top row) and per 1000 capita (bottom row) are both included. The result shows difference in terms of Lorenz curve, as Taoyuan has the most smallest Gini index (lower Gini index values mean more equality) in both numbers of stations and stations per 1000 capita in service area, both are lower than .4. All cities, other than Taichung City, has higher per 1000 capita Gini index than number of stations, which means these five cities disproportionally place stations to a certain area, even after counting population differences.

The largest change (increase) in Gini index from numbers of stations to per 1000 capita is Hsinchu City, the Gini index jumps from 0.264 to over .50, 0.558. This indicates after considering population factor, (more people should have more stations) Hsinchu City has even more unequal distribution of bike stations for more populated areas.

Tab. 4 - Gini index for number of stations and stations per 1000 capita

City name	Taipei City	New Taipei City	Taoyuan City	Taichung City	Kaohsiung City	Hsinchu City
# of stations in Li	0.392	0.414	0.335	0.423	0.422	0.264
# of stations per 1000 capita in Li	0.476	0.430	0.356	0.368	0.434	0.558

Income, namely the numbers for average top 50% in service area, average in service area and average in study

area are shown in Table 5.

The result shows for all six cities, the average income is also disproportionally leaning toward service areas and top 50% service areas in bike station numbers (i.e. the top row in Fig 2 and Table 4). Taipei city has the smallest difference, with only about NTD 17,000 differences in between the middle row (service area) and bottom row (top 50%) of Table 5 in annual income; Hsinchu City, has much higher difference at about NTD 170,000, approximately than 10 times more than Taipei City. This demonstrates Hsinchu City has much more concentrated bike stations around wealthier neighborhoods, in comparison to lower income areas.

Tab. 5 - Income (by thousand NTD) x study area, service area and top 50% of "Li"s in the service area

City name	Taipei City	New Taipei City	Taoyuan City	Taichung City	Kaohsiung City	Hsinchu City
Study area	652.633	481.447	511.696	462.82	477.556	709.746
Service area	657.082	498.291	534.682	471.795	498.133	776.605
50% of Service area	674.263	512.908	553.861	502.622	516.05	944.868

The trend of inequality holds the same in education achievements. Taipei City and New Taipei City have just about 1 % differences of college graduated (and above) between service areas and top 50%, but for Hsinchu City, the gap is more than 4.7%. For the percentage of people with doctoral degree, Hsinchu has the largest difference at 0.8%, while all other five cities hold around zero to 0.2%. Largely disproportion placement of bike sites is prevailing in Hsinchu city, either in vertical or horizontal equity. Detailed data is shown in Table 6.

Tab. 6 - Education (above college and doctoral degree) x study area, service area and top 50% of "Li"s in the service area.

City name	Taipei City	New Taipei City	Taoyuan City	Taichung City	Kaohsiung City	Hsinchu City
At least college x Study area	0.528	0.368	0.387	0.38	0.347	0.474
At least college x Service area	0.533	0.389	0.409	0.393	0.381	0.49
At least college x top 50% Service area	0.542	0.399	0.423	0.424	0.4	0.537
Doctoral degree x Study area	0.017	0.006	0.006	0.007	0.007	0.015
Doctoral degree x Service area	0.018	0.006	0.007	0.007	0.008	0.017
Doctoral degree x top 50% Service area	0.019	0.007	0.008	0.009	0.008	0.025

5. Discussion

Taiwan is an island country with around 70% are mountainous terrain, which is impractical to ride bicycle and set Youbike stations, even with the newest e-bike 2.0 – public bike equipped with battery-assisted device to facilitate slope climbing. Therefore, this research primarily uses service areas instead of research areas (Berke et al., 2024) to reckon with this issue. Also, stemmed from the fact that two out of six (Taichung and Kaohsiung)

incorporated namesake county (i.e. Taichung County and Kaohsiung County) into their areas in 2010, which happen to be mountainous and/or agricultural land and developed part of country, using methods primarily for cities might be skewed the overall result.

Other factors that needs take into account including: 1) Park, lake or pond. For example, Taoyuan City used to have once had over 10,000 irrigation ponds, now due to urbanization and advanced irrigation systems (like dam), not only around 3,000 ponds left, but still a significant amount compare to other cities. Moreover, parks and ponds can be both attraction to tourists and scenery for dwelling, which draws the demand for public bike usage. However, a large pond could have only irrigation use, or both recreational and agricultural. This further deepens the difficulty to distinguish parks and ponds as facilitation favor bike or against it.

Schools, especially universities, are the main location for bike stations due to the demand by students. (without less income stability and no driver's license) Specifically, many schools or universities occupied the majority land of "Li"s, which creates confusion in terms of the equity factor of public site distribution. Also, railway stations, high speed railway stations (HSR) and mass rapid transit (MRT) stations often comes with a certain amount of bike stations for the usage of passengers, not the residence nearby. However, the existing literature does not seem to tackle this problem.

6. Contribution, limitation, conclusion

This research contributes to bike equity in three ways. First, it applies and expands the existing methods on public bike equity, both horizontal and vertical, to six cities in Taiwan. Both Gini index and Lorenz curve has been used extensively in transportation equity research, it is broadening to Asia context. Secondly, the result shows, just like all other cities with public bike systems, all six cities in Taiwan has different degree of inequality in terms of public bike station distribution, whether in location or socioeconomic distribution. Third, it paves the way to other cities or place in the world with docked public bike system to cope with the problem of bike equity.

However, the study also recognizes limitations that need to be considered in future research. For example, other 9 service areas, including Tainan City, the only "Special Municipality" that left unstudied could be added to this research. Also, due to the terrain and elevation issue, this research mainly takes "study area" as reference, not result itself. This in turn minimize opportunities for cross-city comparison with other cities and research. Furthermore, ridership data and interview with local officials and corporations can be done to extend the scope of related research.

Future directions include: 1) exclude mountainous "Li"s, or Lis that have steep terrain as study area, to compare the demographic groups. 2) Use the buffer zone (typically 400 meters or 0.25 mile) that covered by public bike stations and percentage of full covered and partially covered and compare different demographic attributions, 400 meter. 3) Several special locations might affect the relation between numbers of stations and population, namely schools (especially university), stations (HSR/railway/MRT) and parks all have influence on it. 4) Creates localized index on bike equity, such as education, population below 15 and above 65, income and household size.

In conclusion, this research contributes to the academia by adding more spatial and socioeconomic disparity analysis in public bike access in six cities in Taiwan. Using evident-based analysis, it calls for a more equable and inclusive public bike service network. As public sharing bike networks proliferating for its economic, health, congestion reducing, environmental and accessibility benefits, social equity issue with docked bike system needs to be continuously evaluated, as well as approaches to siting new and existing public bike-share stations with public value in mind.

Contributor Statement

Hao-En Kao writes everything.

Data/Software Access Statement

All map data (shapefile) acquired from https://data.gov.tw/dataset/7442, the open government data website of Taiwan government. All Youbike station data get from open data website respectively. Taipei City: https://data.gov.tw/dataset/166492; New Taipei City: https://data.gov.tw/dataset/146969; Hsinchu City: https://data.gov.tw/dataset/67781; Taichung City: https://opendata.taichung.gov.tw/search/6e38eb56-0e9a-4b9e-806d-23cd35d44d6b; Taoyuan City : https://opendata.tycg.gov.tw/datalist/5ca2bfc7-9ace-4719-88ae-4034b9a5a55c; Kaohsiung City: https://data.gov.tw/dataset/173477;

Use of AI

During the preparation of this work, the author used perplexity/comet browser in order to check grammar issues. After using this tool/service, the author reviewed, edited, made the content their own and validated the outcome as needed, and takes full responsibility for the content of the publication.

Conflict Of Interest (COI)

There is no conflict of interest

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