Market Feasibility (Quantifying market attractiveness)

I’ve focused on 15 major UK cities for this initial analysis. If needed, I can easily expand the dataset to include additional location, this selection is mainly to give a clear overview. The analysis is based on seven key factors, which I’ll outline here before going into more detail later. I can also incorporate further factors if you feel something important is missing.

* **Competitors (score 0–2):** 0 = no competition, 1 = one established scheme, 2 = more than one established scheme.
* **Average Annual Rainfall (mm):** Measures how much rainfall the city receives annually. Poorer weather conditions are generally associated with lower usage of rental bikes.
* **Cycle Commute Ratio:** The average cycle commute time in minutes relative to the average of all commuting methods. This indicates how feasible cycling is as a commuting option in that city.
* **Population:** The total population of the city, representing the potential user base.
* **Cycle Infrastructure to Main Roads Ratio:** The proportion of cycle infrastructure relative to main roads. This controls for city size, as larger cities may naturally have more kilometres of cycle lanes, but the ratio better reflects how well cycling is accommodated.
* **Average Gross Disposable Income:** Indicates residents’ financial capacity to spend on commuting, including rental bike schemes.
* **No-Car Household Percentage:** The proportion of households without a car. Since around [66%](https://www.gov.uk/government/statistics/transport-statistics-great-britain-2024/transport-statistics-great-britain-2023-domestic-travel#:~:text=The%203%20most%20common%20methods,rail%20and%20tram%20(10%25)) of UK workers commute by car, a higher percentage of car-free households suggests greater potential demand for rental bikes.

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These factors were scored relative to one another across the selected cities, in order to determine which locations, appear most attractive for a rental bike scheme. The results of this scoring are shown below.

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This analysis assumes all factors are weighted equally, which I will refine further. Based on the equal-weight approach, London emerges as the most attractive market to enter, with Brighton ranking fifth.

*\* Note that it is important to consider the local councils when planning on entering a market as you will have to work closely with them to discuss infrastructure to support your bikes such as docking bays and whether they want another rental bike scheme. Although a more modern adaption which have been incorporated in lime bikes do not require docking bays, which would save on costs, but they have received a lot of backlash as they are just left anywhere.*

A pie chart with a scooter and numbers

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AI-generated content may be incorrect.Below is a breakdown of how the different factors contribute to each city’s overall score. For example, London’s strong performance is largely driven by its significantly larger population, which translates into more potential users, and its higher Gross Disposable Household Income. Looking back at rental bike market statistics, we see that more affluent individuals make up the majority of users, so this factor is also likely to have a considerable impact.

**Justifying the factors**

*\*Note regression was attempted as the first means of determining the weights of each factor but the necessary data was not available for all the cities rendering it unreliable. So, determining the weights of each factor using logic backed up by research is the next best option.*

**Table: Summary Justification of Market Score Factors**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Factor** | **Why It Matters** | **Evidence / Source** | **Importance (High / Medium / Low)** | **Preliminary Weight** |
| Population | Larger populations → more potential users | <https://nacto.org/wp-content/uploads/City-Bike-Hire-Schemes-Emerging-Trends-in-Europe-Parkes-et-al-12-1579.pdf> | Medium | 0.118 |
| No Car Households (%) | More households without cars → higher likelihood to use rentals | <https://doi.org/10.3390/su10082720> | High | 0.176 |
| Cycle Commute Ratio | Indicates cycling feasibility relative to other modes | <https://www.washington.edu/news/2020/05/14/bike-commuting-accelerated-when-bike-share-systems-rolled-into-town/> | High | 0.176 |
| Cycle Infrastructure to Main Roads | Better infrastructure → safer & more attractive to cycle | Pucher, J., & Buehler, R. (2012). City Cycling. Transport Reviews, 32(1), 19–42.  Shaheen, S., Guzman, S., & Zhang, H. (2014). Bikesharing in North America: Past, Present, and Future. Transportation Research Record, 2387(1), 83–92. | High | 0.176 |
| Average Rainfall | Poor weather → less cycling | Winters, M., Brauer, M., Setton, E., & Teschke, K. (2011). Built Environment Influences on Healthy Transportation Choices: Bicycling versus Driving. Journal of Urban Health, 88(6), 940–957. | Low | 0.059 |
| Competitors | Fewer competitors → better market opportunity | Fishman, E., Washington, S., & Haworth, N. (2013). Bike Share: A Review of Recent Literature. Transport Reviews, 33(2), 148–165. | high | 0.176 |
| GDHI / Affluence | Wealthier areas → more potential to pay for rentals | Shaheen, S., Guzman, S., & Zhang, H. (2014). Bikesharing in North America: Past, Present, and Future. Transportation Research Record, 2387(1), 83–92. | Medium | 0.118 |

**Population**

**A graph of a number of people with a number of numbers

AI-generated content may be incorrect.**A key determinant of the potential scale of a rental bike scheme. Research shows that larger cities are generally able to accommodate and support more bicycles, as a greater population provides a wider user base and higher potential demand. Evidence from European comparisons demonstrates a clear relationship between population size and the number of bicycles in operation, although there is variation between cities of similar size due to additional influencing factors such as infrastructure, cultural attitudes towards cycling, and policy support. This highlights that while population is a strong predictor of scheme viability, it must be considered alongside other variables to give a fuller picture of market feasibility. Therefore, justifying it of medium importance.

*\*Figure is taken from Parkes and Marsden (2011)* [*https://nacto.org/wp-content/uploads/City-Bike-Hire-Schemes-Emerging-Trends-in-Europe-Parkes-et-al-12-1579.pdf*](https://nacto.org/wp-content/uploads/City-Bike-Hire-Schemes-Emerging-Trends-in-Europe-Parkes-et-al-12-1579.pdf)

**Percentage of households without a car**

Higher proportions of car-free households are strongly associated with greater uptake of bike-sharing services. Studies show that households without cars are significantly more likely to use ride-sharing and active modes like cycling—up to 42% more than households with cars. In low-income, car-free populations, bicycle trips can increase by as much as 33%. Additionally, cargo bike use has been linked to households giving up car ownership altogether. This evidence demonstrates that the ‘No Car Households %’ factor is a predictor not just of potential demand, but transformational modal shift away from car dependence. With the strength of the evidence and direct affects a high importance is justified.

Sources:

Zhang, Y., & Zhang, Y. (2018). <https://doi.org/10.3390/su10082720>

Ghimire & Bardaka, Transportation Research, April 2023 <https://doi.org/10.1016/j.trd.2023.103627>

**The Commuting ratio**

Defined as the average cycling commute time divided by the average commute time across all modes, serves as a crucial indicator of how competitive cycling is as a mode of transport in each city. A lower ratio suggests that cycling is a relatively efficient alternative to other transport options, making it more attractive for a bike-share scheme. Research indicates that cities with established bike-share systems have experienced significant increases in bike commuting rates. For instance, a study found that in bike-share cities, the rate of bike commuting increased, while car commuting decreased, from 2008 to 2016. Specifically, in 2008, about 1% of commuters in bike-share cities biked to work, and by 2016, this had increased to 1.7%, while car commuting decreased from 66% to 59%. This demonstrates that the introduction of bike-share systems can effectively shift commuting patterns towards more sustainable modes of transport. Therefore, the commuting ratio serves as a high-importance factor in assessing the potential success of a bike-share program, as it directly reflects the competitiveness of cycling compared to other transport modes.

Source: washington.edu: <https://www.washington.edu/news/2020/05/14/bike-commuting-accelerated-when-bike-share-systems-rolled-into-town/>

**Cycle Infrastructure Ratio**

The ratio of cycle infrastructure to main roads provides a normalized measure of how well a city supports cycling relative to its overall street network, making it especially useful for comparing cities of different sizes. Cities with higher ratios typically offer safer, more direct, and more convenient routes for cyclists, which encourages regular use and increases the likelihood of successful bike-share adoption. Research consistently shows that cycling uptake is strongly influenced by the availability and connectivity of dedicated infrastructure. For example, Pucher and Buehler (2012) found that European cities with more extensive cycling infrastructure experienced higher cycling rates, while Shaheen et al. (2014) demonstrated that bike-share stations located along dedicated cycling routes had significantly higher trip counts. By focusing on the ratio rather than absolute infrastructure length, this metric captures the relative accessibility and practicality of cycling in each city, making it a high-importance factor in assessing potential market attractiveness for a bike-share scheme.

Sources:

Pucher, J., & Buehler, R. (2012). City Cycling. Transport Reviews, 32(1), 19–42.

Shaheen, S., Guzman, S., & Zhang, H. (2014). Bikesharing in North America: Past, Present, and Future. Transportation Research Record, 2387(1), 83–92.

**Average Annual Rainfall**

Average annual rainfall can influence cycling uptake, as wet conditions may reduce comfort and safety for cyclists. However, across U.K. cities, the variation in rainfall is relatively limited, meaning its effect on bike-share feasibility is minor compared with other factors such as commuting feasibility or cycling infrastructure. Empirical studies confirm that precipitation can affect cycling behaviour (Winters et al., 2011; Pucher & Buehler, 2012), but in the context of U.K. urban areas, it is reasonable to consider rainfall a low-importance factor when assessing potential bike-share success.

Sources:

Pucher, J., & Buehler, R. (2012). City Cycling. Transport Reviews, 32(1), 19–42.

Winters, M., Brauer, M., Setton, E., & Teschke, K. (2011). Built Environment Influences on Healthy Transportation Choices: Bicycling versus Driving. Journal of Urban Health, 88(6), 940–957.

**Competitors**

The number of existing bike-share providers or competitors in a city is a critical factor in assessing market attractiveness. Fewer competitors generally indicate greater market opportunity, as there is less risk of saturation and more potential users available for a new scheme. Conversely, cities with multiple established operators may already have captured the core demand, making it harder for a new entrant to achieve sufficient uptake. Research on shared mobility markets supports this: studies have shown that market entry success for bike-share schemes is highly sensitive to existing competition, with new programs performing best in areas with unmet demand (Fishman et al., 2013; Shaheen et al., 2014). Given this, the number of competitors is considered a high-importance factor for determining the potential success of a bike-share scheme, as it directly affects the size of the accessible user base and revenue potential.

Sources:

Fishman, E., Washington, S., & Haworth, N. (2013). Bike Share: A Review of Recent Literature. Transport Reviews, 33(2), 148–165.

Shaheen, S., Guzman, S., & Zhang, H. (2014). Bikesharing in North America: Past, Present, and Future. Transportation Research Record, 2387(1), 83–92.

**Gross Disposable Household Income (GDHI)**

Gross Disposable Household Income (GDHI) is often used as a proxy for a city’s potential spending power, which can influence uptake of mobility services such as bike-share programs. Traditionally, higher-income areas are seen as more attractive because residents may be more willing to pay for convenience and flexibility (Shaheen et al., 2014). However, for a low-cost rental bike scheme, the influence of GDHI may be less straightforward. Cheaper pricing structures can make bike-share programs accessible to a wider range of households, including lower-income groups, potentially unlocking untapped demand that would not normally participate in premium schemes. As a result, while GDHI remains a relevant factor in assessing market potential, its importance may be medium rather than high, and the relationship may be less linear than in conventional programs.

This nuance needs to be considered when weighting GDHI in the Market attractiveness score, because the scheme aims to prioritize affordability and broad access.

References:

Shaheen, S., Guzman, S., & Zhang, H. (2014). Bikesharing in North America: Past, Present, and Future. Transportation Research Record, 2387(1), 83–92.

Fishman, E., Washington, S., & Haworth, N. (2013). Bike Share: A Review of Recent Literature. Transport Reviews, 33(2), 148–165.

Weighted Scores

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On the left is the original scores, the right is the new weighted scores which account for the importance of each factor when it comes to scoring. Overall scores have only changed marginally with only a few changes such as Brighton moving up to 4th and oxford and Leeds dropping down which we will see why when we look at the breakdown of their scores.

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The charts demonstrate the differences between the raw score at the top and how each city adds up, the bottom chart shows how the cities change after factors have been weighted for importance (see the table on page 4).

**City Breakdown**

**Overall Pattern**

* **Big cities (London, Manchester, Birmingham, Leeds, Liverpool, Glasgow)** generally lose ground under weighting because population mattered less.
* **Smaller/medium cities with strong commute, infrastructure, and weather (Brighton, Oxford, Cambridge, Bristol, Edinburgh, Newcastle, Norwich)** → gain ground.
* **Cardiff & Sheffield** → remain near the bottom, even if they benefit a little from weighting.

Sustainability score:

A graph showing the city market

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The sustainability score combines two measures:

* The percentage of residents willing to make sustainable changes (attitudinal measure).
* The percentage of waste that is recycled (behavioural/infrastructural measure).

This combination accounts for the fact that positive attitudes may exist in an area, but without adequate recycling infrastructure, actual recycling behaviour could remain limited. Recycling rates therefore provide a more direct reflection of sustainable action.

The scatter plot compares each city’s sustainability score (attitudes + recycling behaviour) with its market score (feasibility of business setup) to assess how viable it would be to launch a rental bike scheme made from recycled plastics.

**Top-right quadrant (high sustainability, high market score):**

These cities are the most attractive targets. They combine strong recycling behaviours and attitudes with favourable market conditions, meaning infrastructure and public support are likely to align with business feasibility.

**Top-Left quadrant (low sustainability, high market score):**

These areas have strong market potential but weaker sustainability indicators. While they may provide commercial opportunities, additional investment in public engagement or recycling partnerships might be required to ensure the scheme resonates with local attitudes and infrastructure.

**Bottom-Right quadrant (high sustainability, low market score):**

These cities show strong public support for sustainable behaviours but have weaker market conditions. Implementing a scheme here may require creative business models or partnerships to overcome financial or competitive barriers.

**Bottom-left quadrant (low sustainability, low market score):**

These cities are the least attractive for immediate implementation. Both recycling attitudes/infrastructure and market feasibility are relatively weak, making successful uptake less likely.

Overall, the data demonstrates Norwich to be the most attractive as a combination of the two aspects, but it is open to interpretation and to what sector of the market you are aiming for. It might be of interest to look at an up-and-coming rental bike market with good attitudes but maybe lacks infrastructure such as Cardiff as your scheme could really resonate with the residents and the high competition of the area may not be an issue. Or you may feel as though the sustainable attitudes are of less importance and people just want an affordable, convenient rental bike scheme.

Note: Oxford and Cambridge are excluded due to missing sustainability attitude data. If these locations are of particular strategic interest, further research would be needed before assessing their suitability.

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This scatterplot illustrates how GDHI compares to market feasibility for a cycle scheme, reflecting one of the scheme’s unique aspects: affordability. The cities are divided into four quadrants based on their GDHI and market score relative to each other, providing a clear view of the market breakdown across the 15 cities.

Cities in the top-right quadrant (high GDHI and high market feasibility) are likely less influenced by a more affordable scheme, as residents can already afford existing options. However, there may still be untapped segments within these cities. By further examining income distribution, it would be possible to identify specific areas where the scheme might still succeed or where it would best succeed.

For the affordability USP, the top-left quadrant is likely the most promising target: these cities have lower disposable incomes, are feasible for a rental cycle scheme and offering a cheaper alternative is more likely to drive uptake and engagement.