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Data Article

E-scooter sharing schemes operational zones in Poland: Dataset on voivodeship capital cities

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ABSTRACT

In this paper, we present the vector dataset of the operational zones of e-scooter shared mobility services in the voivodeship capital cities in Poland. The data were acquired manually from the applications of a single provider of e-scooters for each city. The dataset contains not only the size and the position of the geographic service areas, or geofences of e-scooter sharing schemes, but also the size and position of no-parking zones, parking zones and low-speed zones, if applicable. The data can be used for various researches which cover the topic of micro-mobility, accessibility and broader issues connected with urban development and spatial management. The dataset captures the state of the e-scooter sharing scheme in the voivodeship capital cities in Poland at the beginning of August 2020. Additionally, the data are accompanied by the table of cities with identified providers of e-scooter sharing systems.

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Specifications Table

Subject	Geography, Planning and Development
Specific subject area	Geography, Urban Geography, Transport Geography, Spatial Management, Transport Planning
Type of data	Polygon vector data layer Table
How data were acquired	Data were acquired by manual vectorisation from the mobile application of e-scooter sharing schemes providers.
Data format	Raw data Geodatabase Shapefile Xls. table
Parameters for data collection	Data were collected for five main categories of the operational zones of e-scooter sharing schemes if applicable.
Description of data collection	Manual vectorisation of the operational zones of e-scooter sharing schemes providers of voivodeship capitals in Poland. The raw data were collected from the phone application of e-scooter sharing schemes providers.
Data source location	Voivodeship capitals: Wroclaw, Bydgoszcz, Toruń, Lublin, Gorzów Wielkopolski, Łodź, Cracow, Warsaw, Opole, Rzeszów, Białystok, Gdańsk, Katowice, Kielce, Poznań, Szczecin; Poland
Data accessibility	Repository name: Mendeley Data Data identification number: 10.17632/m3dx24g6bw.1 Direct URL to data: http://dx.doi.org/10.17632/m3dx24g6bw.2

Value of the Data

- E-scooter sharing schemes are being recently implemented in many municipalities in Poland in order to improve the transport variability and offer individual means of transport as an alternative to public transport or car to support sustainable development. However, the data on spatial coverage of operational zones of e-scooter sharing schemes is unknown. This dataset provides important insight into the size and spatial coverage of operational zones of e-scooter sharing schemes which could be used by various scientists, public authorities and policy planners to understand this new development.
- Data can be of high value for transport and urban scientists studying, e.g. transport accessibility, micro-mobility solutions, transport sharing schemes, urban planning and spatial management. Data could be also beneficial for policymakers and public authorities.
  The question of accessibility is crucial for the transport planning authorities to, for example, prevent from social exclusion or to understand the transport options in a given area. Currently, there are no publicly available data on the size and geographical position of e-scooter sharing schemes in Poland. This dataset could help in challenging this issue.
- The additional value of this dataset could be in exploring the relationship of new micro-mobility shared solutions with current transport options in the given transport system. It can be used to answer the questions if e-scooter sharing schemes are used to substitute or complement other means of transport (e.g. public transport).
- By knowing the geographical locations and the size of operational zones of e-scooter sharing schemes, the dataset can address the issue of fundamental aims of e-scooter sharing schemes operators. For example, are they implementing the e-scooter sharing schemes all over the city as a last-mile solution or are they instead focused on highly exposed locations at the cities like old towns, centres and similar alike?

1. Data Description

Adoption of new solutions of personalized transportation such as shared-bikes or electric shared-scooters is gaining popularity over the globe as those solutions offers a convenient alternative to public transport or car [1, 2, 3]. To understand how e-scooter shared schemes work standalone and interact with other transport options or how to manage them, it is crucial to

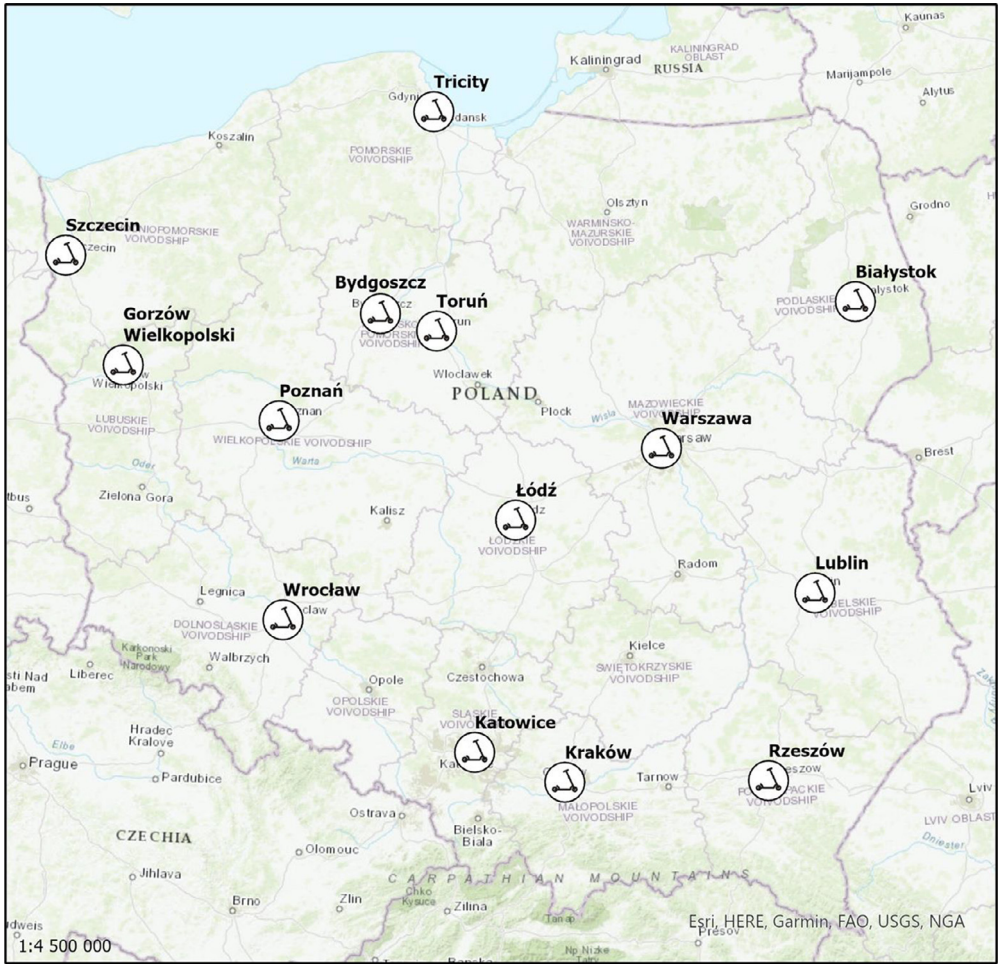

Fig. 1. Map of the voivodeship capitals with e-scooter sharing schemes at disposal.

know not only if such an option is available in the given municipality, but also to know the geographical size and location of zones where e-scooter sharing schemes operate. The raw data presented in this dataset contain not only the information in which voivodeship capitals are e-scooter sharing schemes at disposal (Fig. 1) and which providers of e-scooter sharing scheme are in operation in voivodeship capitals in Poland (Table 1) but also the size and the position of the geographic service areas, so-called geofences of e-scooter sharing schemes in the form of GIS layers and geodatabase (Fig. 2). Additionally, the raw data in the dataset contain also the size and position of no parking zones, parking zones, low-speed zones and no go zones, if applicable, as demonstrated on Fig. 3.

The size and the position of the geographic service areas of e-scooter sharing schemes which also includes the size and position of no-parking zones, parking zones and low-speed zones are saved in the repository as shape files stored in the geodatabase (Fig. 2). The name of the shape file was created according to the key which goes as a following:

"**name of the city + name of the company + type of the zone"**

(example: Cracow_Bird_OZ)

Table 1
E-scooter shared schemes in voivodeship capitals, Poland 2020.

City	Voivodeship	Operator	Year date accessed
Wroclaw	Lower Silesian	Free Now (former Hive)	04/08/2020
		Lime	04/08/2020
		Bolt	04/08/2020
Bydgoszcz	Kuyavian-Pomeranian	Blinkee.city	04/08/2020
Toruń	Kuyavian-Pomeranian	Blinkee.city	04/08/2020
		Volt	04/08/2020
Lublin	Lublin	Blinkee.city	04/08/2020
		Volt	04/08/2020
		Bolt	04/08/2020
Gorzów Wielkopolski	Lubusz	Blinkee.city	04/08/2020
Zielona Gora	Lubusz	–	–
Łodź	Łodź	Blinkee.city	04/08/2020
		Volt	04/08/2020
		Slide	04/08/2020
Cracow	Lesser Poland	Blinkee.city	04/08/2020
		Free Now (former Hive)	04/08/2020
		Bird	04/08/2020
		Hulaj	04/08/2020
		Lime	04/08/2020
		Bolt	04/08/2020
Warsaw	Masovian	Free Now (former Hive)	04/08/2020
		Blinkee.city	04/08/2020
		Bolt	04/08/2020
		Dott	04/08/2020
		Lime	04/08/2020
Opole	Opole	–	–
Rzeszów	Subcarpathian	Blinkee.city	04/08/2020
Białystok	Podlaskie	Blinkee.city	04/08/2020
Gdańsk	Pomeranian	Blinkee.city	04/08/2020
		Free Now (former Hive)	04/08/2020
		Quick	04/08/2020
		Logo	04/08/2020
Katowice	Silesian	Blinkee.city	04/08/2020
		Free Now (former Hive)	04/08/2020
Kielce	Holy Cross	Blinkee.city	04/08/2020
Olsztyn	Warmian-Masurian	–	–
Poznań	Greater Poland	Blinkee.city	04/08/2020
		Lime	04/08/2020
		Bolt	04/08/2020
Szczecin	West Pomeranian	Volt	04/08/2020
		Quick	04/08/2020

The type of zone represents the category of the e-scooter sharing zone. In total, the dataset distinguishes five categories:

1) Operational zone (OZ)
2) No parking zone (NPZ)
3) Special parking zone (SPZ)
4) Low-speed zone (LSZ)
5) No go zone (NGZ)

Operational zone (OZ) is the area where the user could use and park the e-scooter of giving e-scooter sharing scheme. No parking zone (NPZ) is the area where it is forbidden to park the e-scooter. Special parking zone (SPZ) is the area where users are encouraged to park the e-scooter. Low-speed zone (LSZ) is the area where is required to follow speed regulations of the particular zone. No go zone (NGZ) is an area where it is forbidden to use the e-scooter. Operational zones are to be found in each city where the e-scooter sharing schemes are. The special zones are vectorised only if applicable.

OBJECTID *	Shape *	filename	City	Operator	Zone_type
1	Polygon Z	Warsaw_Dott_SPZ	Warsaw	Dott	Special parking zone
2	Polygon Z	Warsaw_Dott_OZ	Warsaw	Dott	Operational zone
3	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
4	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
5	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
6	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
7	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
8	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
9	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
10	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
11	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
12	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
13	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
14	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
15	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
16	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
17	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
18	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
19	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
20	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
21	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone
22	Polygon Z	Warsaw_Dott_NPZ	Warsaw	Dott	No parking zone

Fig. 2. Screenshot of the geodatabase attribute table.

2. Experimental Design, Materials and Methods

The operational zones of e-scooter shared mobility services were manually vectorised from the mobile applications of the providers of the e-scooter sharing schemes. Before the vectorisation, it was necessary to conduct research to identify providers of e-scooter sharing schemes (Fig. 1, Table 1). As mentioned in the chapter above, the dataset contains the geographical extent and locations of the e-scooter sharing schemes of those providers who at the time of the research period were in operation. All the zones were re-sketched on the base map layer the on-screen according to the zones from the mobile applications. Manual vectorisation of the e-scooter sharing schemes was based on street-by-street and feature-by-feature (lakes, parks, rivers) constructions of matching perimeters with the geofences in the mobile application. For example, after downloading and opening the mobile application of Blinkee.city, voivodeship capitals, where the Blinkee.city operates were selected and zoomed to the resolution, which allows street-to-street or feature-to-feature vectorisation (Fig. 4). This practice was applied for each voivodeship capital and e-scooter sharing scheme operator until obtaining the final dataset. The vectorised polygons of the operational zones of e-scooter sharing schemes thus represent the exact copy of the operational zones of e-scooter sharing scheme provided by the provider of the e-scooter sharing service via a mobile application which is actual for the 04.08.2020. It has to be thus noticed, that the geographical size and location of the zones might have changed from that time since the development of the sharing scheme is very dynamic.

Besides the zones of where the e-scooter sharing scheme operates (operational zone – OZ), another four categories of special zones within the e-scooter operational zones were created (Fig. 3). Those categories cover 1. no parking zones (NPZ), 2. Special parking zones (SPZ), 3.

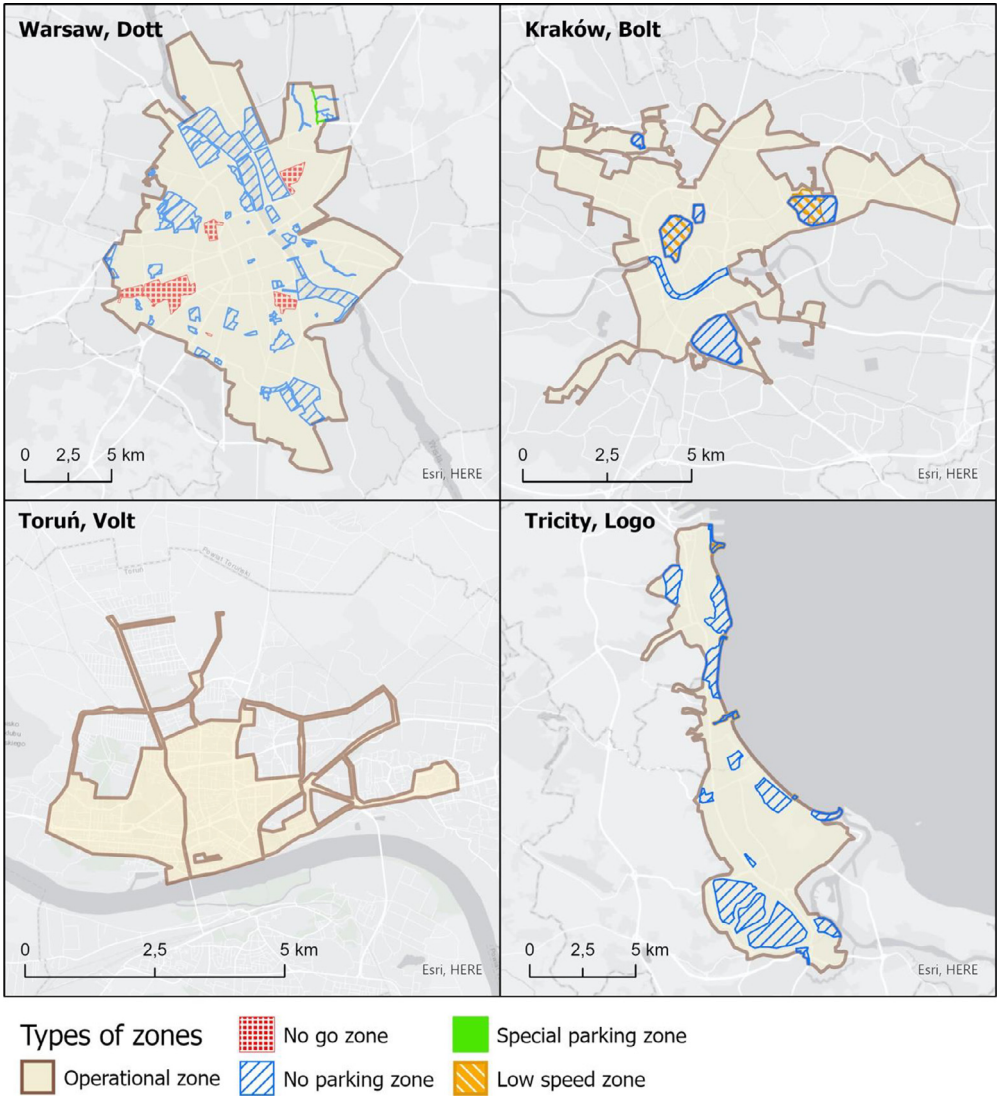

Fig. 3. Examples of the geographical size and location of the e-scooter sharing schemes operational zones.

low-speed zones (LSZ) and 4. no go zones (NGZ). At this place, it is essential to say that the additional categories are applicable only for few e-scooter sharing scheme providers.

Even though the manual vectorisation represents an exact copy of the e-scooter sharing scheme displayed at the mobile application, there might be small errors or inaccuracies in the resulting vectorised data. Such inaccuracies should not be an issue as the purpose of the vectorisation is to explore the spatial variability of the e-scooter sharing schemes (inclusion/exclusion of neighbourhoods) and to compare it within the examined settlements or e-scooter sharing schemes operators.

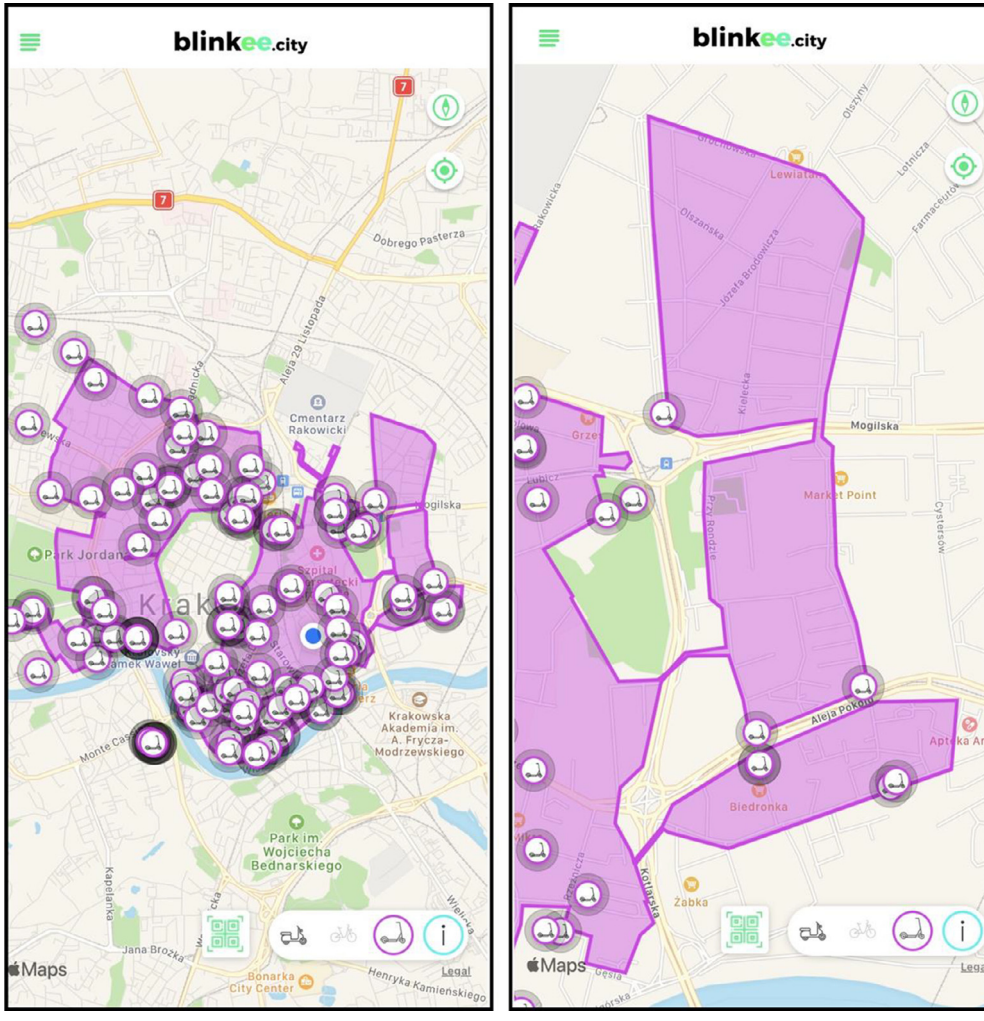

Fig. 4. Screenshots of Blinkee.city mobile application displaying e-scooter sharing scheme and e-scooter availability in Cracow.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have, or could be perceived to have, influenced the work reported in this article.

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