Pakistan Journal of Life and Social Sciences
www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2024-22.2.00449

RESEARCH ARTICLE

Intention to Utilize Bike Sharing from 2014 to 2022 Using Bibliometric Analysis

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ARTICLE INFO

Received: Jun 26, 2024

Accepted: Sep 11, 2024

Keywords

Bike-sharing

Intention

Bibliometric analysis

Trend

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ABSTRACT

Bike-sharing is one of the well-known means of transportation that numerous nations around the world, including Hangzhou, China, Washington, DC, Paris, and London, have adopted. Currently, bike-sharing programs are available in more than 600 locations worldwide, and new initiatives have been established each year. A technique used to assess and examine academic publications is bibliometric analysis. It entails the use of statistical and mathematical methods on bibliographic data to reveal patterns, trends, and the significance of research papers. The humanities, social sciences, engineering, and medical sciences have all made extensive use of the mapping knowledge domain (MKD) technique, which is an essential tool for bibliometric analysis. It can display the state and trends of a study area's progress right away. In the present study, researchers use the MKD software tool VOS viewer to conduct a systematic analysis of the development trend in the bike-sharing intention to consume using papers in the Scopus database published between 2014 and 2022. Less is known about bike-sharing as an exclusive platform for publication among academic publishers who offer open access. Because of this, there is only one Scopus-indexed publication devoted completely to bike-sharing, despite their phenomenal population rise. To understand the expanding usefulness of bibliometric analysis, a wider research area has been conducted in this work.

1. INTRODUCTION

Bike sharing, usually referred to as a public cycling program, is a kind of environmentally friendly mode of transport that is becoming more and more popular, with new programs springing up every year (Caulfield et al., 2017). Bike-sharing facilitates first- and last-mile connections to other sustainable modes of transportation (DeMaio, 2009). There has been a trio of bike-sharing programs in the previous 45 years. Witte Fietsen, often known as White Bikes, was the name of the first generation of bike-sharing, which began on July 28, 1965, in Amsterdam. Farso and Grena in Denmark gave birth to the second generation of bike-sharing in the year 1993, while Portsmouth University in England launched the third generation of bike-sharing programs in the year 1996 (DeMaio, 2009).

For short-distance urban travel, bicycles have several advantages over other modes of public transportation including the ability to reach underserved areas, the need for less infrastructure, the affordability of acquisition and maintenance, the lack of environmental impact when in use, and the possibility of bike-sharing increasing trips on other forms of public transportation by extending the reach of trains and buses (DeMaio & Gifford, 2004). However, compared to other forms of transportation, bike-sharing has drawbacks, such as being unpleasant inclement weather. Its use in some terrains may be challenging, and the user must be an accomplished rider.

The desire to engage in particular activities is driven by the person's purpose, which is a part of them (Fayolle & Liñán, 2014). According to Krueger et al. (2000), strong and consistent intentions can predict a person's behavior. According to Fishbein and Ajzen's Theory of Reason Action, published in 1975, purpose is a factor in the effectiveness of a behaviour since it is a complementary complement to attitude and behaviour. Bandura (1997) defined intention as a strong determination to carry out a particular activity or forecast a particular circumstance in the future. According to him, drive to perform has a significant impact on intention, which is a key component of personality. According to Morrison (1979), intentions to utilize bike sharing refer to the probability that a person will make use of a Bike Sharing program because of their particular needs or objectives in terms of sustainability. The goal of this research is to provide a bibliometric analysis in intended to consume Bike Sharing.

2. METHODOLOGY

The use of bibliometric data in reviews is widespread. The use of statistical approaches to evaluate books, journals, and other publications is known as bibliometrics. The goal of bibliometric analysis is to establish the academic quality of a publication as well as its authors through quantitative methods such as citation rates.

The documents were searched and evaluated using a defined and reproducible approach for bibliometric analysis. First, the Scopus database was chosen since it is now the largest collection of peer-reviewed publications available (Elsevier, 2019). The keyword "intention to utilize bike sharing" was searched in the title of the paper in the Scopus database. Because the current research focused primarily on journal publications, only journal papers were included. This means that sources other than journals, such as books, were ignored. All authors, subject categories, source titles, affiliations, and countries were included in order to cover as many journal articles as feasible. This final sample 68 document from the years 2014-2022 was used in the assessment of the broader domain of bike sharing and its evolution over time.

3. RESULTS AND DISCUSSION

Figure 1 illustrates the total number of documents collected by year to follow the evolution of the bike-sharing research. There are sixty-six (66) documents in the Scopus database for the intention to utilize bike-sharing. The document covers the years 2014 through 2022. Figure 2 shows a document in the Scopus database organized by year:

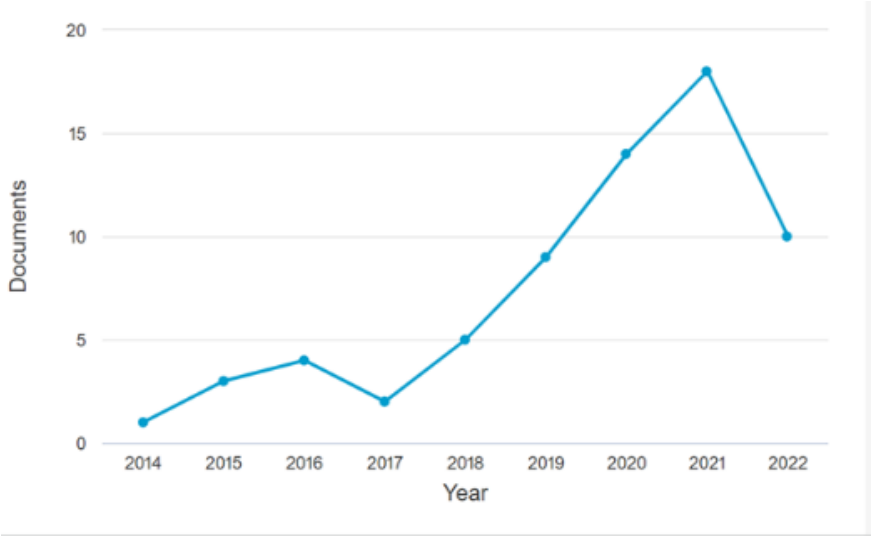

Figure 1: Scopus database documents are organized by year.

According to the graph above, the year 2021 had the most papers published for intention of utilizing bike-sharing, with eighteen (18) papers, followed by the year 2021 with fourteen (14) papers, and the year 2022 with ten (10) papers. Only one (1) paper was published in 2014 for the purpose to implement bike-sharing. People were afraid to use public transportation during the Covid epidemic, therefore demand for bike sharing surged. Many academics do studies on the demand for using bike-sharing from this location, as seen in the graph above for the years 2020 and 2021. Graft decreases in 2022 because the pandemic phase has passed, and the people begins to use vehicles.

Following the discovery of documents by year, it is critical to identify the top author in this researcher area. The researcher discovered fifteen authors who were writing journal papers about their plan for utilizing bike-sharing. Figure 2 depicts several publications published by authors in the Scopus database:

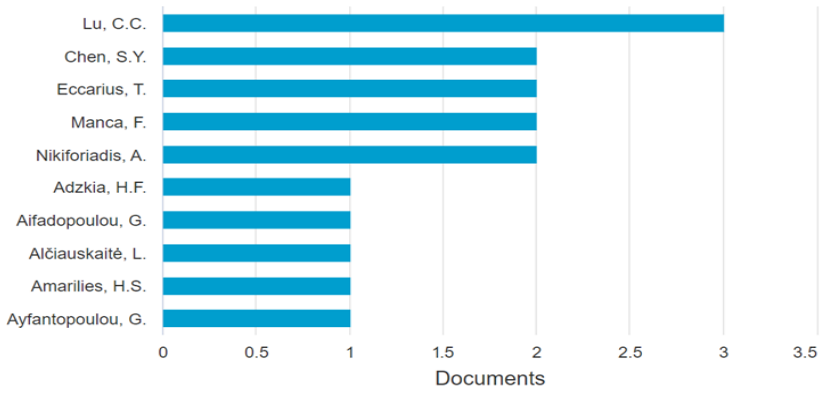

Figure 2: The author of the paper Intention to use Bike Sharing in Scopus database.

According to the graph above, the most papers were published by Lu, Chungcheng from National Yang-Ming Chiao Tung University in Hsinchu, Taiwan. The author has three (3) papers published, followed by another four (4) authors, Chen Shangyu, Eccarius Timo, Manca, Francesco, and Nikiforiadis Andreas, who has two papers published. Another (5) author has produced one paper on the idea to use bike- sharing.

Figure 3 was created during the sample analysis based on the number of studies that have been completed globally and the authors' use of the platform in these institutions to determine the top institute where Intention to utilize bike- sharing has been done out.

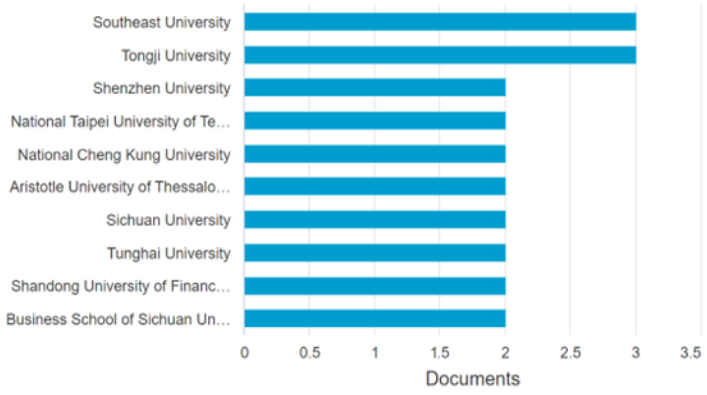

Figure 3: Document Intention to used bike- sharing by affiliations.

According to Figure 3, Southeast University and Tongji University have the highest number of published papers on the intention to utilize bike sharing, followed by other universities.Figure 4 depicts the network of researcher area between purpose to use bike-sharing for network visualization. The VOS viewer gives the option of selecting the publishing paper; all of the articles are shown in Figure 4 below. The bubbles or circles represent the researcher area, and the size of the

bubbles represents the number of publications published by that researcher area. This map is divided into twelve coloured groupings.

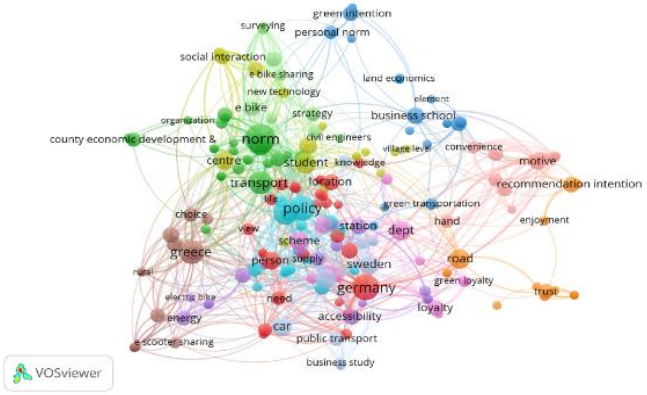

Figure 4: A network visual for intention to utilize bike sharing.

According to Figure 4, twelve colours are visible all around. The big bubbles are found in blue, red, green, and brown. Ideally, the key word in the bubble can be utilized to determine the purpose to use the bike-sharing topic mentioned in previous articles. In the network, the colours green, blue, red, and brown symbolize large circles. This illustrates that numerous researchers work in this field. Figure 5 depicts a colour cluster in a network graphic.

	Location		BS Schemes
	Transportation		Electric Bike
	Bike Sharing Element		Loyalty
	Social Interaction		Bike Sharing norm
	BS Infrastructure		Policy
	Intention		Bike Sharing (BS) Trust

Figure 5: Colour cluster in network visual

Figure 5 depicts the colour of bubbles in bibliometric analysis. Each bubble colour represents a different researcher area. Red colours represent location, dark green colours represent transportation, deep blue colours represent bike-sharing elements, yellow colours represent social networks, dark purple colours represent bike sharing intention, brown colours represent bike sharing scheme, light purple colours represent electric bikes, pink colours represent customer loyalty to bike sharing, light green colours represent bike sharing norms, light blue colours represent

transportation policy, and orange colours represent bike sharing trust. The density graphic Figure 6 below depicts the researcher area:

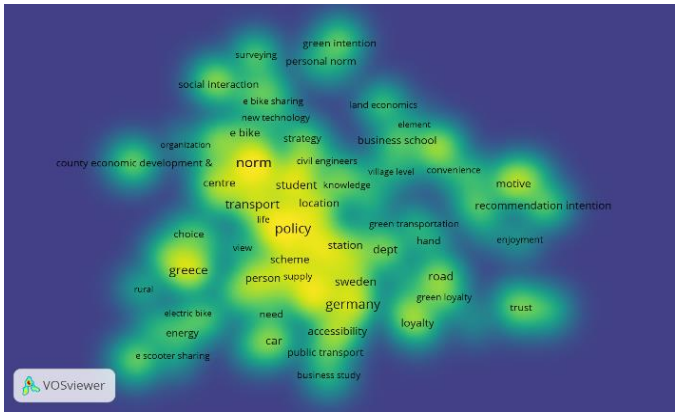

Figure 6: Density visual

4. CONCLUSION

The bibliographic analysis offers a unique viewpoint on a number of journal-related concerns. The goal of the bibliographic analysis is to share the most recent research, new trends, notable practices, and case studies in the researcher's area of desire to use bike- sharing. The researcher first identifies the journal's publication in this analysis, and the results demonstrate a considerable increase in intention to utilize bike sharing over time. According to the findings, National Yang-Ming Chiao Tung University is the most productive affiliation for this researcher area, and Lu Chung Cheng is the researcher with the most papers published in this field. This research will be useful to academics, publishers, and other researchers interested in bike-sharing. It provides a complete overview and acts as a foundation for further study.

Acknowledgement

The author wishes to express her gratitude to UNIKL MITEC for funding this paper.

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