



5 Results and discussion

5.2 LDA topic model

The **main factors** that cause consumers' negative attitudes are the **inconvenience and cost increase** of charging caused by using high-power sockets at home or public charging piles outside the community when private charging piles cannot be installed due to factors such as property obstructions and no fixed parking spaces.

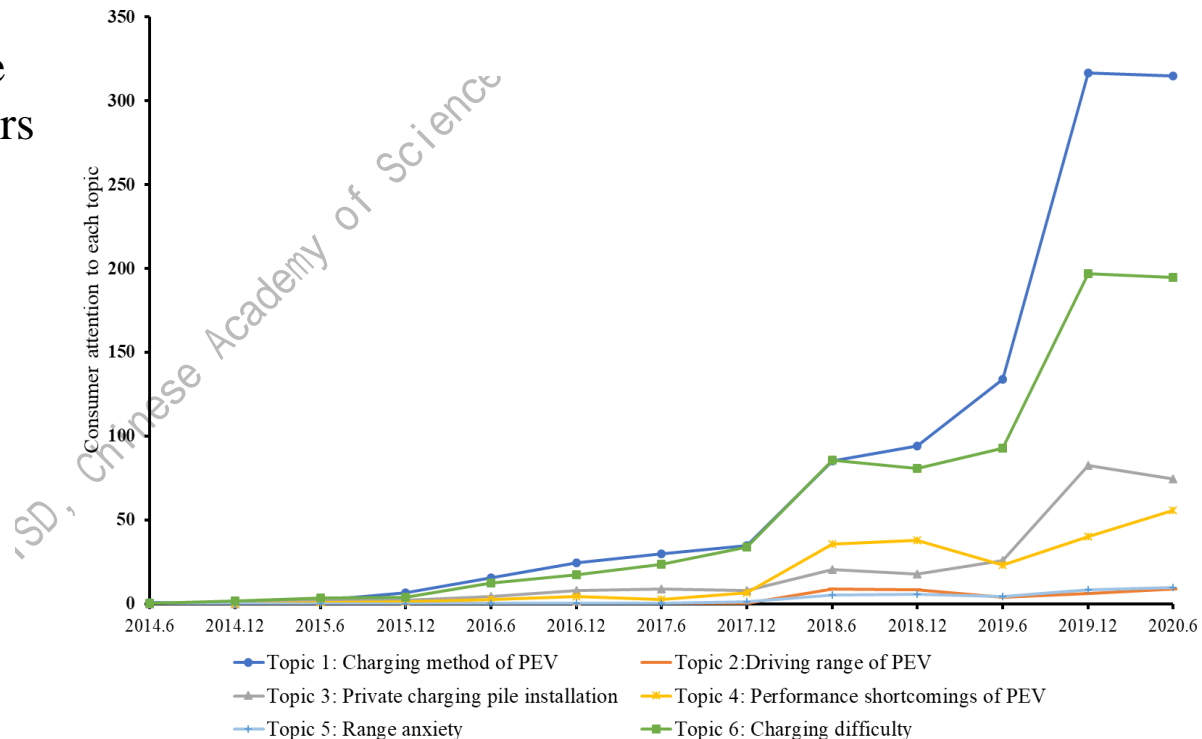
In addition, factors that cause consumers' negative attitudes also include **charging inconvenience and range anxiety** caused by long-distance travel and turning on the air conditioner.



5 Results and discussion

5.3 Topic evolution characteristics

- **Convenient charging** is the biggest demand of consumers for charging infrastructure

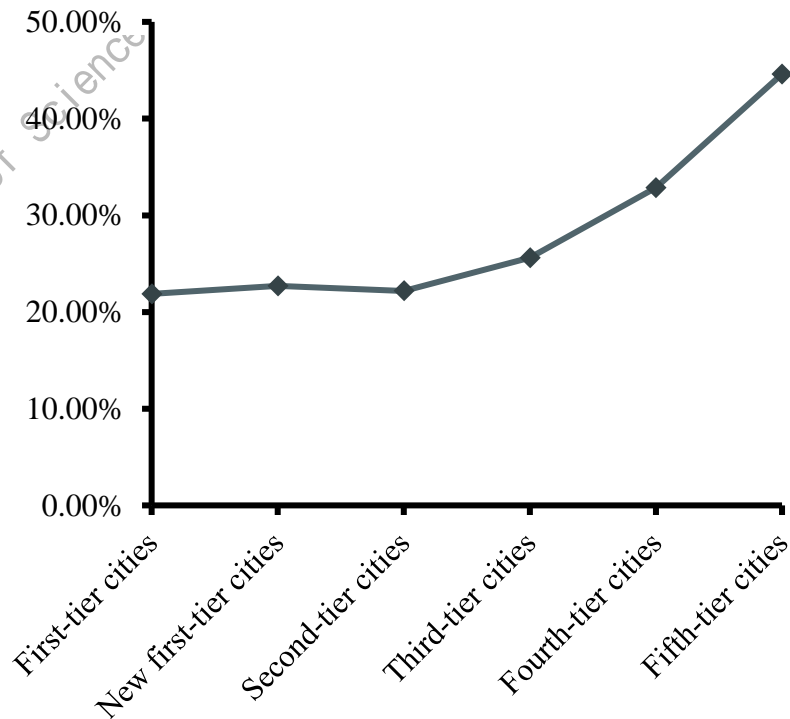




5 Results and discussion

5.4 Analysis on the differences in attitudes of cities with different development level

- ❑ Consumers in cities of different development levels have **different sentiment** with charging infrastructure.
- ❑ Consumers' sentiment with charging infrastructure is **inversely proportional** to the degree of urban development.
- ❑ Consumer sentiment in **first-tier cities is the lowest**, and consumer sentiment in **fifth-tier cities is the highest**.

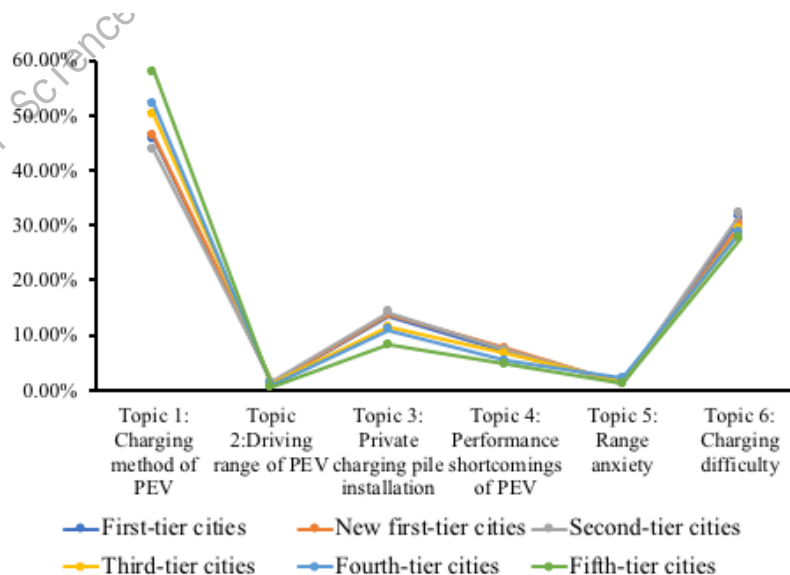




5 Results and discussion

5.4 Analysis on the differences in attitudes of cities with different development level

- ❑ The main factor that caused the negative attitudes in **first-tier cities, new first-tier cities and second-tier cities** was the **installation of private charging piles**.
- ❑ The main factor that caused the negative attitudes in **third-tier and fourth-tier cities** was the problem of **charging methods**.
- ❑ The main factor in the negative attitude in **fifth-tier cities** is the **price of charging piles and charging time**





6 Conclusion

- This paper uses text mining technology to analyze consumers' emotional attitudes towards charging infrastructure, and analyzes the reasons for the negative attitudes, as well as the differences in the attitudes of consumers in cities with different development levels.
- The results show that, first, **the vast majority of consumers have a positive attitude towards charging infrastructure**. Only in the four months before 2017, there were more negative attitudes than positive attitudes. This shows that after 2017, with the construction of charging infrastructure, most consumers' charging demand can be met.
- Second, **for consumers with negative attitudes, they mainly focus on: charging methods, driving range, installation of private charging piles, performance shortcomings of electric vehicles, range anxiety, and charging difficulty**.
- Third, **the main factors that cause consumers' negative attitudes are the inconvenience and cost increase of charging caused** by using high-power sockets at home or public charging piles outside the community when private charging piles cannot be installed due to factors such as property obstructions and no fixed parking spaces.



Many thanks

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