

TAP TO GO
BACK TO
KIOSK MENU

SAS[®] GLOBAL FORUM 2020

MARCH 29 - APRIL 1
WASHINGTON, DC



USERS PROGRAM



Kazuma Bannai

Abstract

Introduction

Methods

Results

Conclusion

In recent years, along with the development of information technology, means of transmitting information have evolved from uniform to individually customized. However, in the case of flyers that many Japanese firms made, there is a reality that they provide same contents for their consumers in chain stores nationwide.

This time, we focused on a drugstore chain "W" with the second largest sales in the drugstore industry. This firm has about 2000 stores in Japan. The problem with this company is that although it aims at store management rooted in local residents, it distributes flyers with the same product and layout all over Japan.

Using population data from Tsukuba, Ibaraki Prefecture, a Huff-model will be created to identify the characteristics of each store in the city. In this city, the area where young people live and the area where elderly people live are relatively separated. Using SAS, the company will analyze whether there is a difference in sales between stores categorized into different categories based on store characteristics and POS data.

We were able to find what seemed to be regional characteristics in a certain product group.



筑波大学
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Classification of regional characteristics using population composition data and POS data

Kazuma Bannai , Yutaka Ishibashi , Yuki Ukeba

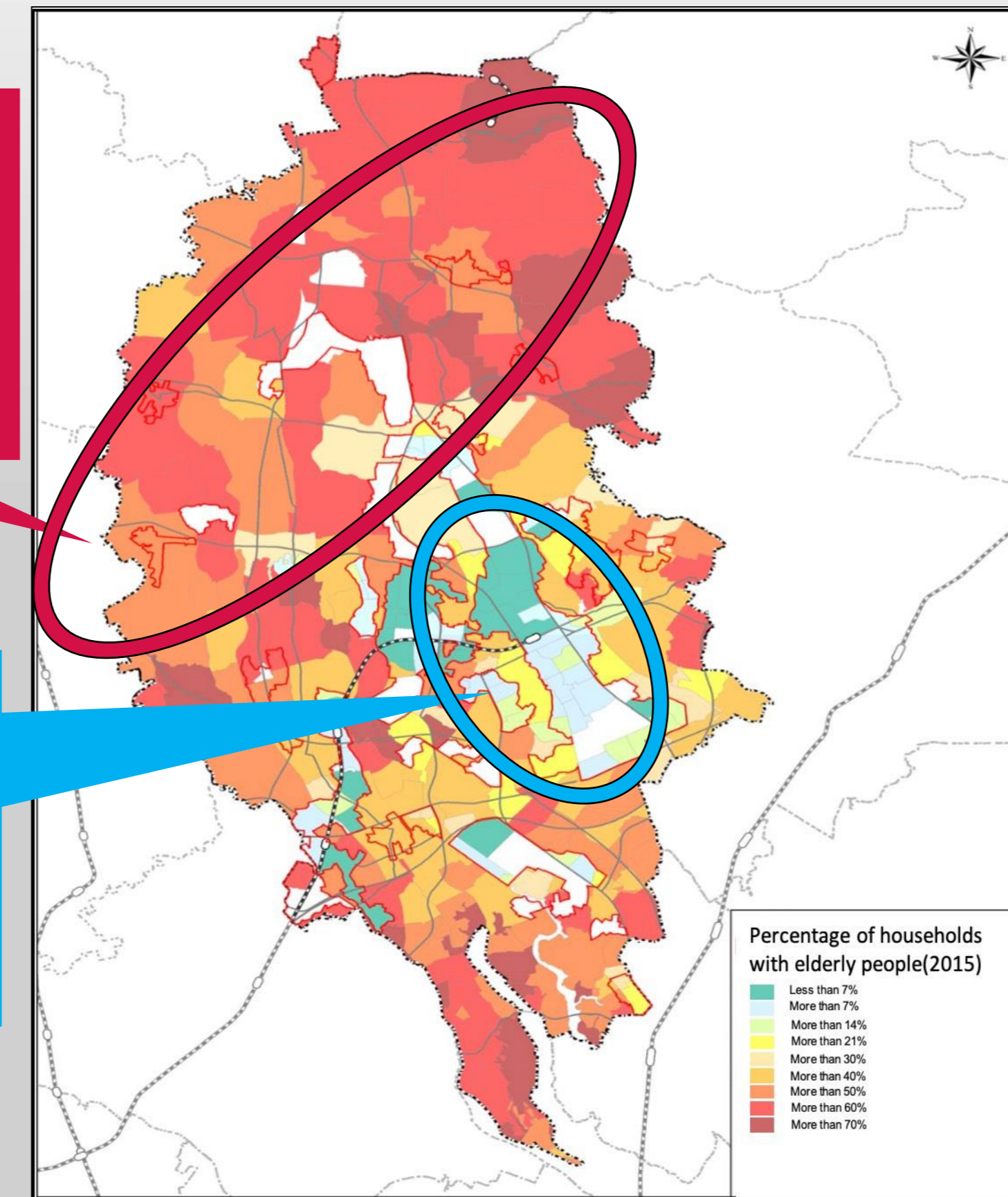
University of Tsukuba

Intro

Japan have the characteristic that the population structure varies greatly depending on the region.

High proportion area of the elderly people

Low proportion area of the elderly people



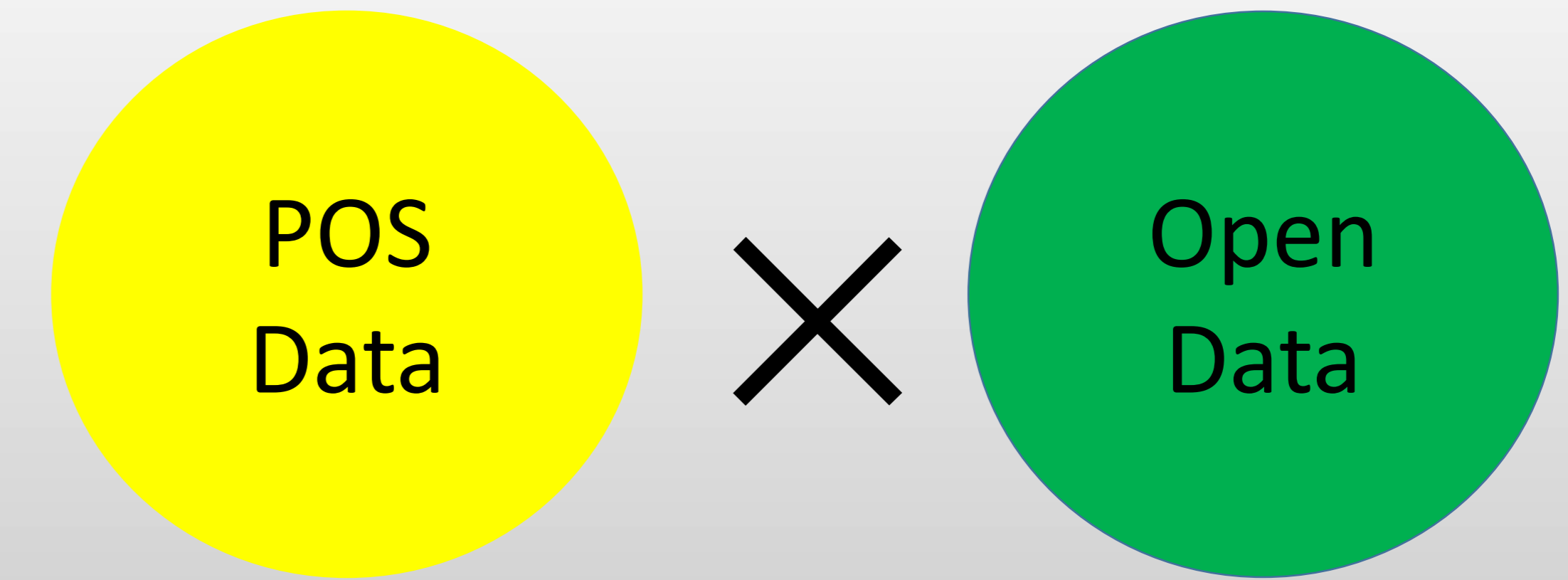
The 5th Committee Of Planning Location Optimization In Tsukuba City
[Translated from Japanese]

Japanese retailers seem to need to change sales strategies depending on the region.

Isn't it necessary to capture the characteristics of the area around each store?

This analysis uses population data from Tsukuba City, Ibaraki Prefecture, and uses a Huff Model to identify the age characteristics of customers at each drug store "W" in the city. Based on store characteristics and point-of-sale(POS) data, we analyze whether sales differ between stores in different regions.

Use unique data and open data



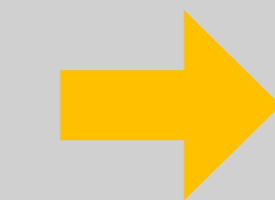
- Find out which products are likely to sell using POS data owned by companies and population structure data that is open data managed by the country.
- we provide the simplest model in order for you to can analyze if you have POS data.

Objective

We analyze the relationship between sales and regional differences of each stores. we use open data which can specified regional characteristics.

So this analysis can be carried out by any company with POS data.

• We need to know what products are selling due to regional characteristics.

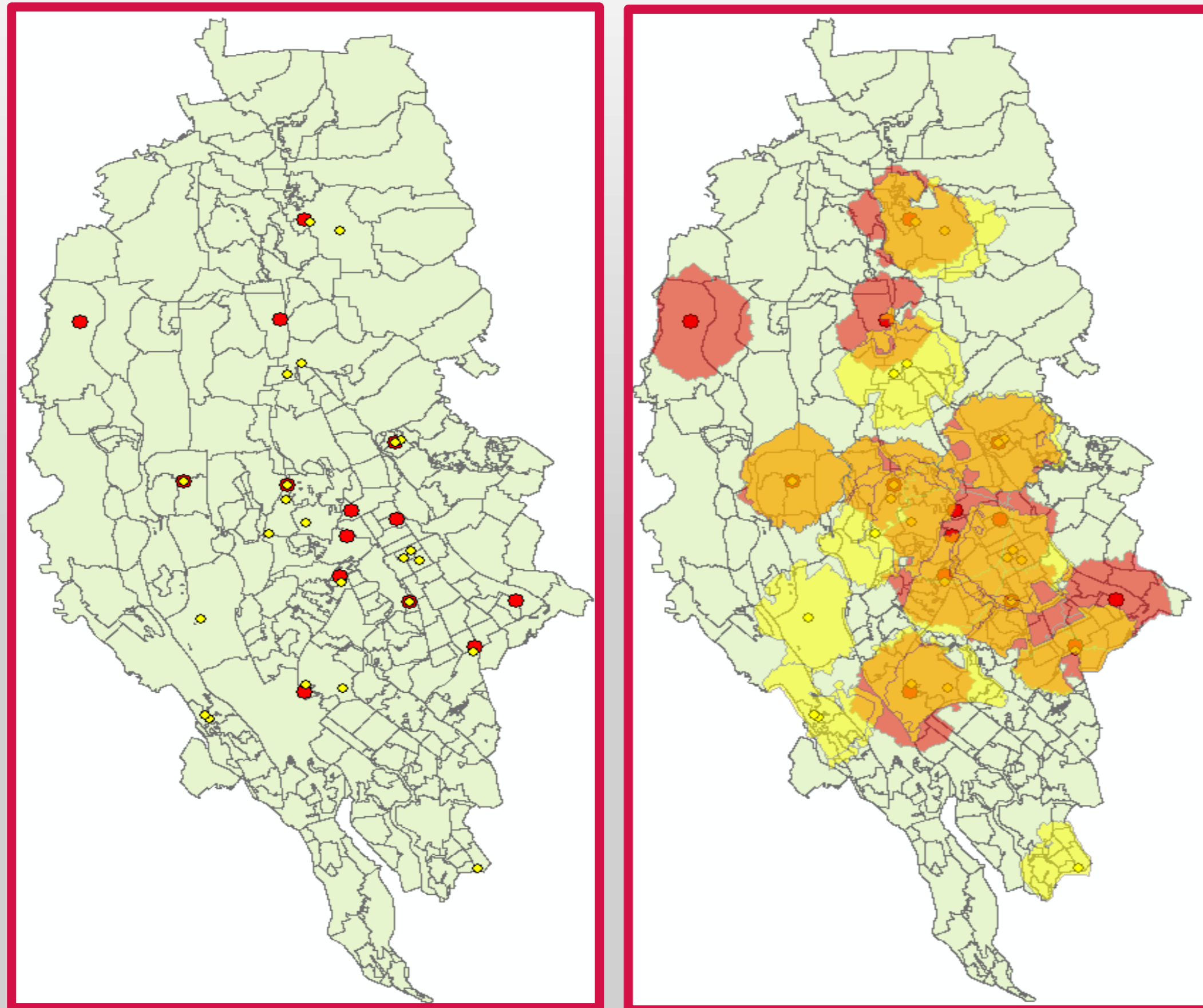


- regional characteristics we focus on are population structure.
- We analyzed the relationship between regional characteristics and sales.

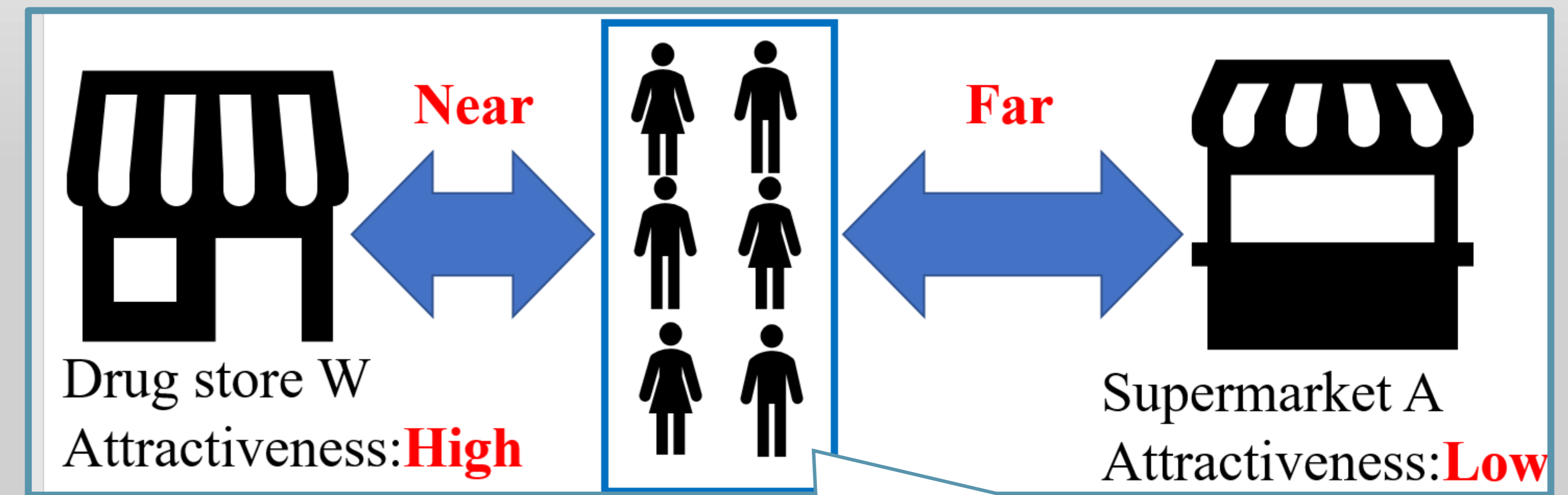
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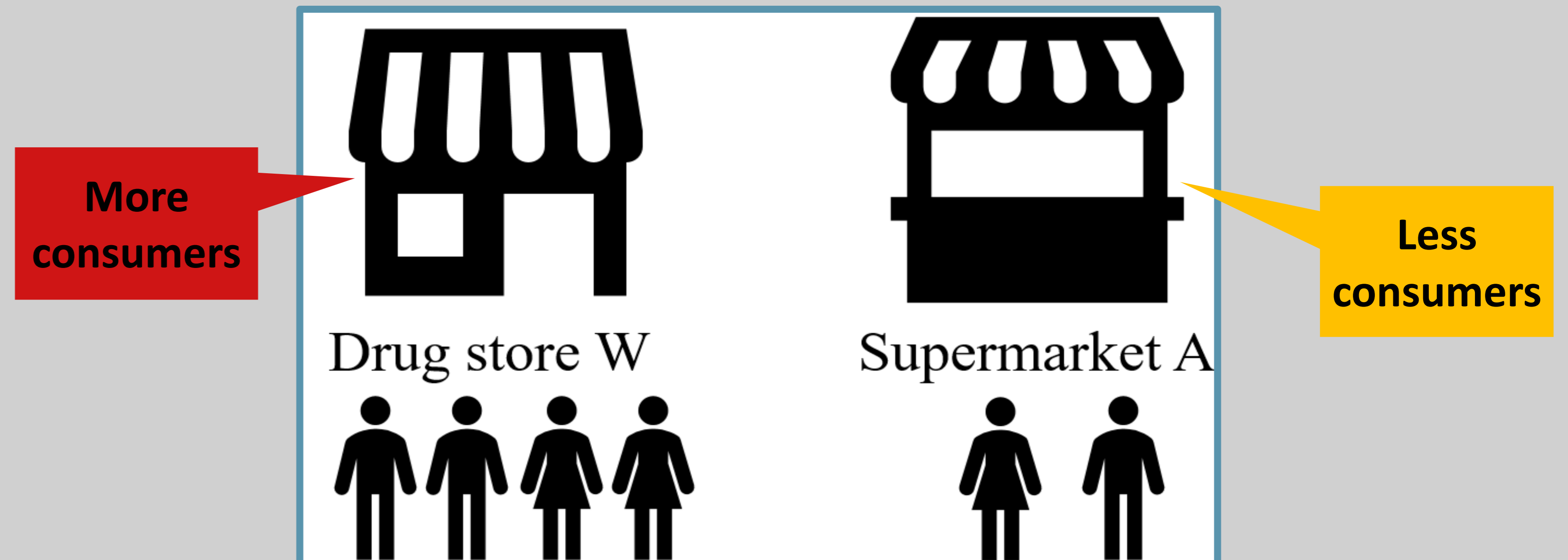
Distribution of the drug store "W" and other store



- **Red points** are drug stores "W" and **yellow points** are other drug stores and supermarkets.
- **Red zone** and **yellow zone** are trading area of each store.
- Trade area of each store is 2000m(calculated from road data).



Considering about each **distance** and each **attractiveness**,
people stochastically decide which store to visit.



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Huff model

- Huff model is the model that leads to the probability of a consumer visiting a store.
- Consumer determines the store to visit according to the distance to the store and the degree of attractiveness.
- Attractiveness is decided by sales floor , usage time , fresh food sales, dispensing and membership system.
- By leading to the probability of a consumer visiting a store , the population of the store is calculated.



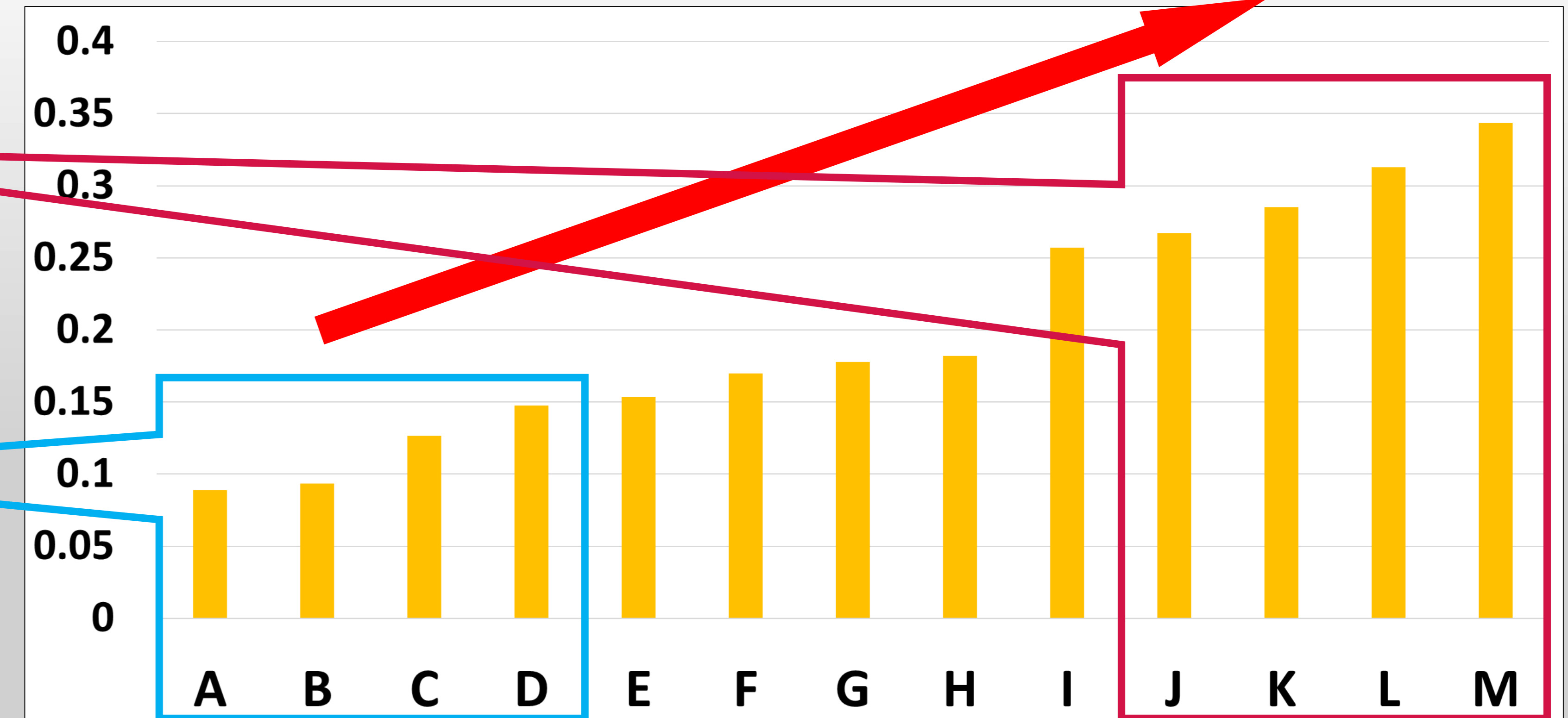
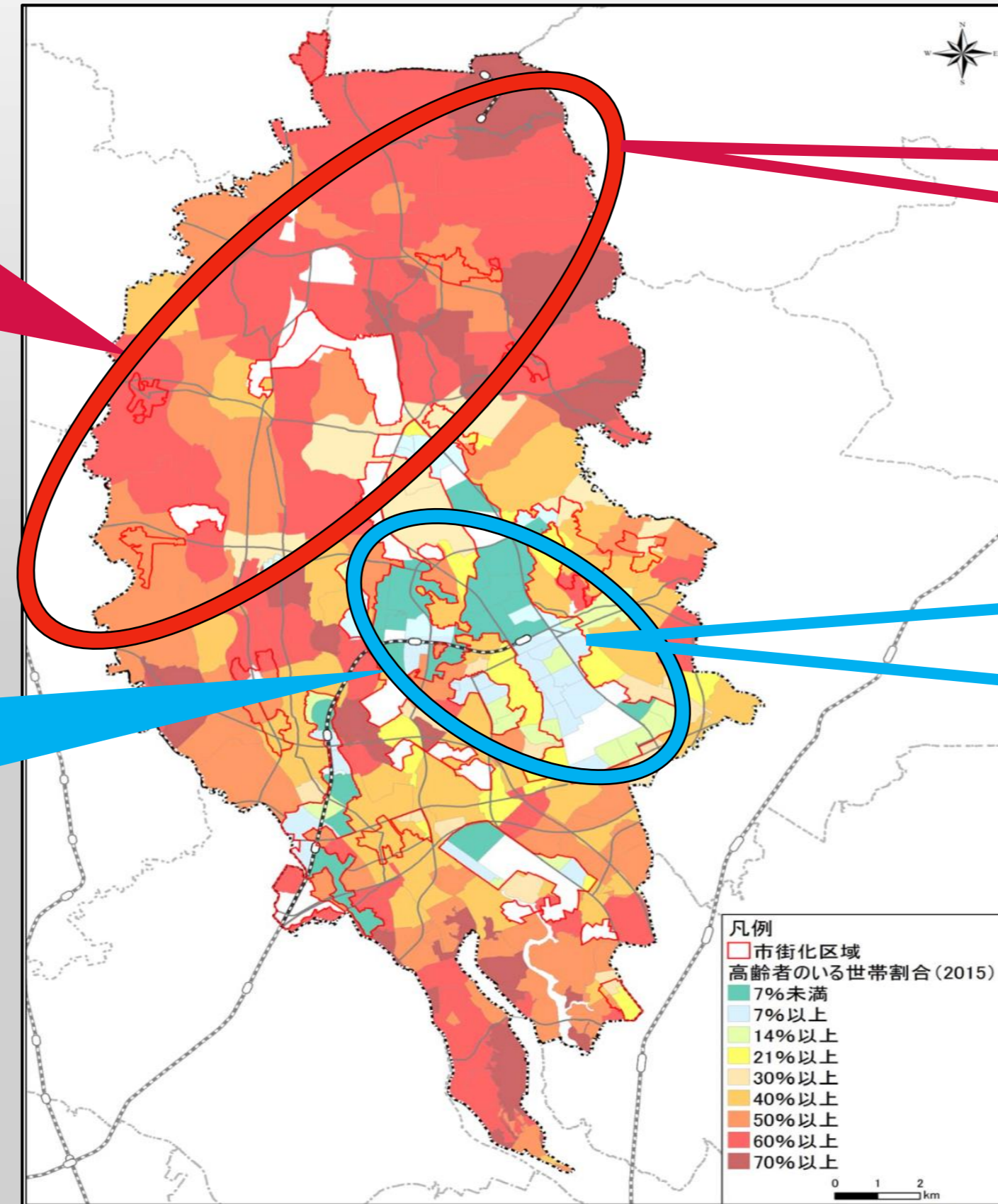
Age classification of Tsukuba City

The visiting ratio of elderly people

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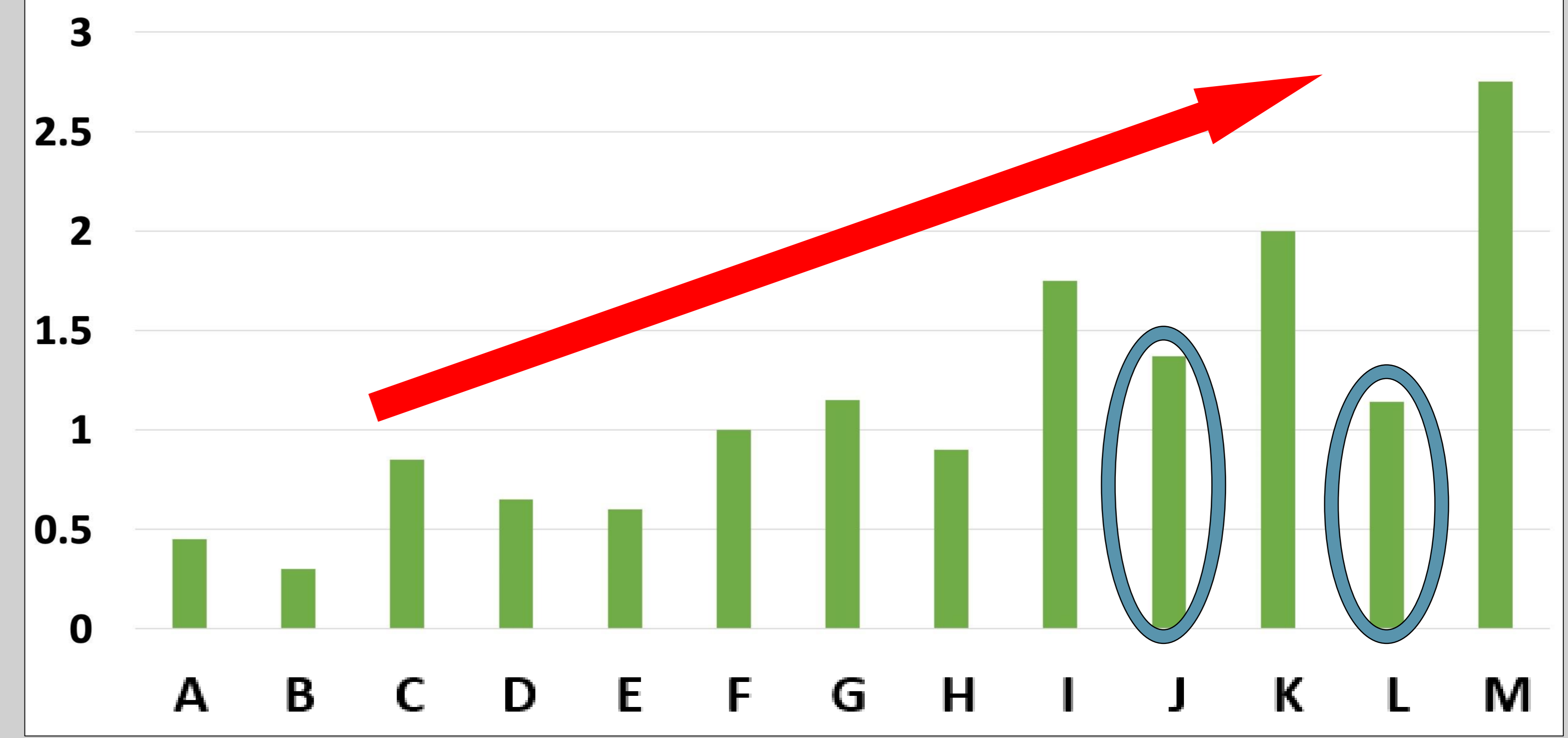
High proportion area of the elderly people

Low proportion area of the elderly people



- High proportion area of the elderly people tends to be higher than the percentage of places where the percentage of elderly people is low in total sales of nursing care products.
- However, as can be seen from the diagram on the right, there are stores where the sales of nursing care products are low even among stores where the elderly are expected to visit a lot.
- Stores with the same characteristics but poor sales of nursing care products may have their sales increased by specific campaigns (advertising strategies such as flyers).

Percentage of care products in total sales





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By using POS data and open data, We analyzed the relationship between sales and regional differences (population structure) around each drug stores “W”.

As a result of analysis, we found that the sales of nursing care products were high at stores where many elderly people visited.

Any company which have POS data can reveal relationship between sales and regional difference around each company. If they use our research method , they may find out the characteristics around them. Doing specific campaigns (for example, changing flyer from a uniform to a local one) based on the results of their analysis ,they may increase sales.

We provide the simplest model. So Further studies on how to reveal the regional characteristics are needed.

References

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2020.2.20 access

The background of the banner is a scenic view of the Washington Monument at dusk, reflected in the water of the Tidal Basin. The sky is a mix of blue, purple, and orange. In the foreground, there are cherry blossom trees with pink and white flowers, and a stone walkway. A dark blue rectangular box is centered over the image, containing the event title in white and teal text.

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