



How to Design a Town

Friendly for Everyone and the Environment



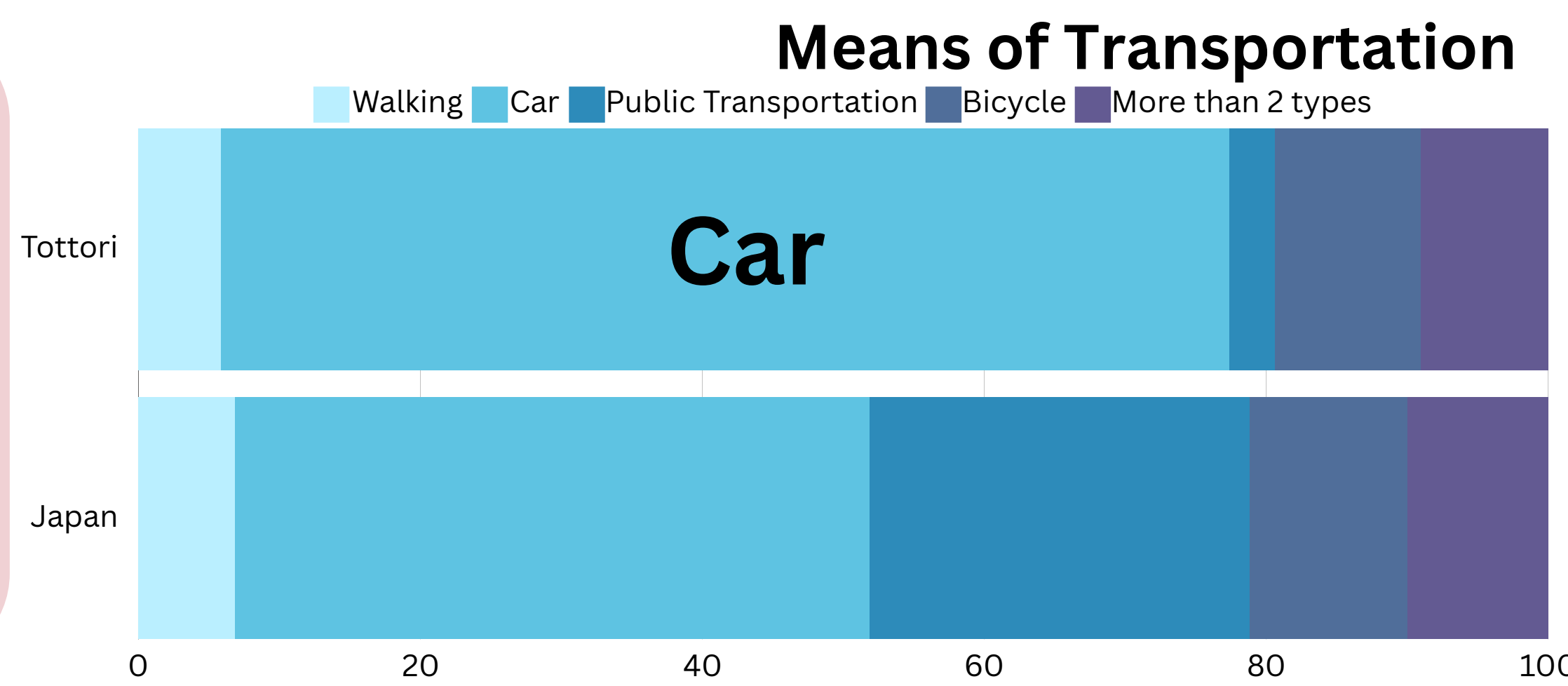
INTRODUCTION

In regions like Tottori, people usually have to use cars because of the lack of frequent public transportation. So-called “vulnerable road users” such as elderly people or physically challenged people have difficulty going out by themselves.

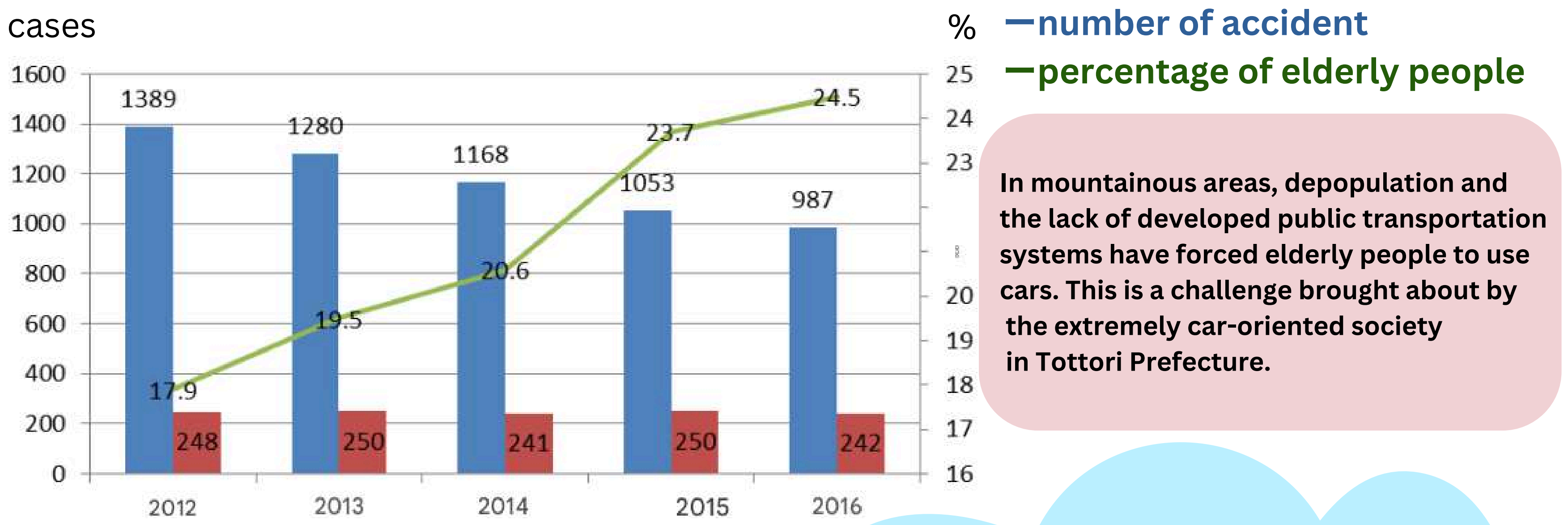
On the other hand, motor vehicle emissions have a great impact on the environment, accelerating global warming. This is a global issue. Considering those problems, we researched a way to design a town with an efficient and convenient public transportation system to make the town friendly for everyone and the environment, which will eventually lead to a “car-free society”.

CURRENT SITUATION

The percentage of the elderly in is expected to exceed 40% by 2050. Tottori has a 30% higher rate of automobile use in daily life than the rest of Japan. So, people without cars find it difficult to go shopping. An increasing number of elderly people are hesitant to return their driver's licenses.



Traffic Accidents by the Elderly in Tottori

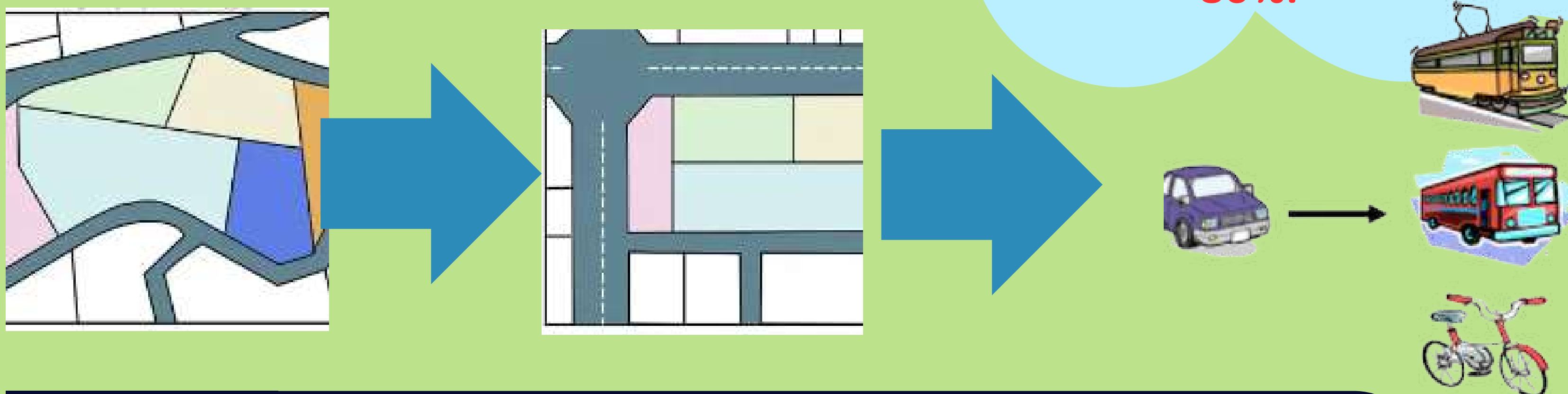


— Number of accidents by elderly
— number of accident
— percentage of elderly people

In mountainous areas, depopulation and the lack of developed public transportation systems have forced elderly people to use cars. This is a challenge brought about by the extremely car-oriented society in Tottori Prefecture.

Automobile CO₂ emissions account for 16.5% of all CO₂ emissions. Of these, car emissions account for 80%.

WHAT IS A CAR-LESS SOCIETY



A CAR-LESS SOCIETY... ADVANTAGE and DISADVANTAGE

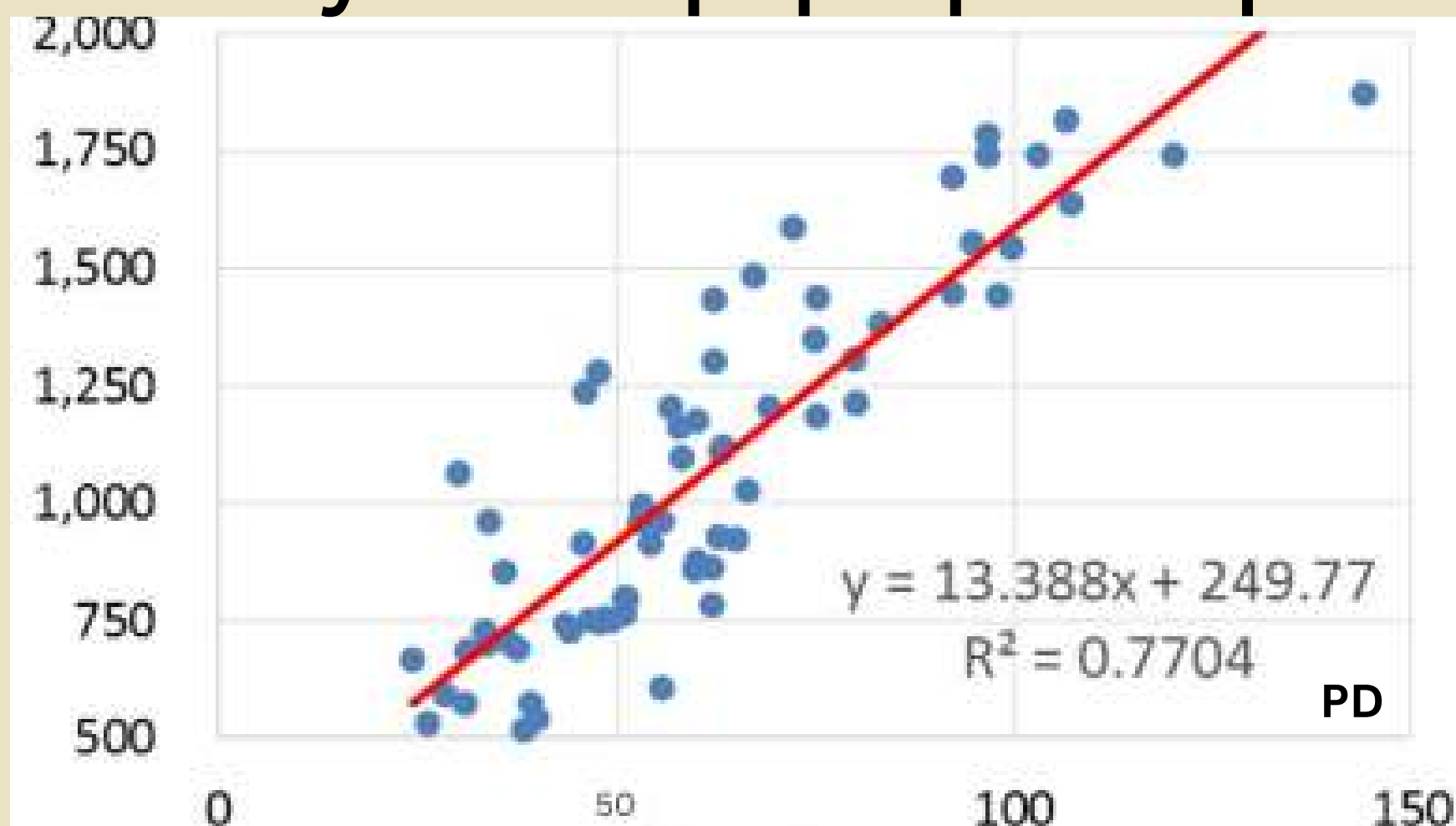
Advantages

- Less impact on the environment (reduction of global warming)
- Decrease in the proportion of elderly people in traffic accidents
- Decrease in the number of isolated vulnerable people

Disadvantages

- Dependent on public transportation
- Limited range of activities

Population Density and Steps per person per day



EXAMPLE OF WALKABLE CITIES

PORTLAND

Driving reduced by about 33%.
Public transportation ridership increased by 80%.
Bicycle commuting has doubled since 1993.

「Most desirable city to live in in the U.S」
「Greenest City in the U.S」
「Most bike-friendly city in the U.S」



Portland's population increased 1.5 times between 1980 and 2017, the second largest increase in the U.S.

INTERVIEW

What kind of city does Yonago City aspire to be?



Yonago City is a compact city with remnants of a castle town, and has developed mainly around Yonago Station.

So, taking advantage of this, we are developing a town where people can continue to live, utilising public transportation such as JR and buses.



THE WAY OF REALISING A CAR-LESS SOCIETY IN TOTTORI

<Urban Areas>

- (1) Improve public transportation (daily buses)
Increase the number of buses, establish public transportation that can accommodate bicycles and wheelchairs
→Extend travel distance
- (2) Hold events on sidewalks
→Promote walking and bicycling
→Developing the local community through the vibrancy of local shopping streets, cafes, etc.



<Mountainous Areas>

- (1) Send mobile market vendors to mountainous areas
- (2) Improved delivery service
→Delivery by truck or drone
→ Increased frequency of shopping, allowing people to shop without traveling
- (3) Regular shuttle bus service
- (4) Provide discounts on public transportation in rural areas
→Enables travel to urban areas
Reduces the financial burden of traveling by public transportation



CONCLUSION

There are many challenges to achieving a car-free society in depopulated areas. Increasing the number of public transportation services and improving delivery services will create new problems such as driver shortages and longer working hours. However, we believe that the use of AI and other technologies, such as drones and the development of Internet-based services, can help solve this problem. In today's society, where cars are deeply ingrained in our daily lives, they have become indispensable, but we should gradually take practical steps to improve the environment on a global scale and create sustainable cities where people can continue to live.

REFERENCES

<https://www.mlit.go.jp/common/001186372.pdf>
https://www2.ngu.ac.jp/uri/syakai/pdf/syakai_vol5601_04.pdf
https://www.pref.tottori.lg.jp/secure/781480/100indices_2012_column-5.pdf

https://www.pref.tottori.lg.jp/secure/239838/keikaku_honn_bunn.pdf
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