

# Case Study: How Does a Bike-Share Navigate Speedy Success?

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**CAPSTONE PROJECT – GOOGLE DATA ANALYTICS COURSE**

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# Bike Share

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## Drivers of Success & Customer Behaviour

- Goal of the Analysis: What do we want to achieve?
- Data story: The difference in customer behaviour
- Conclusion
- Appendix

What do we want  
to achieve?

# Objective

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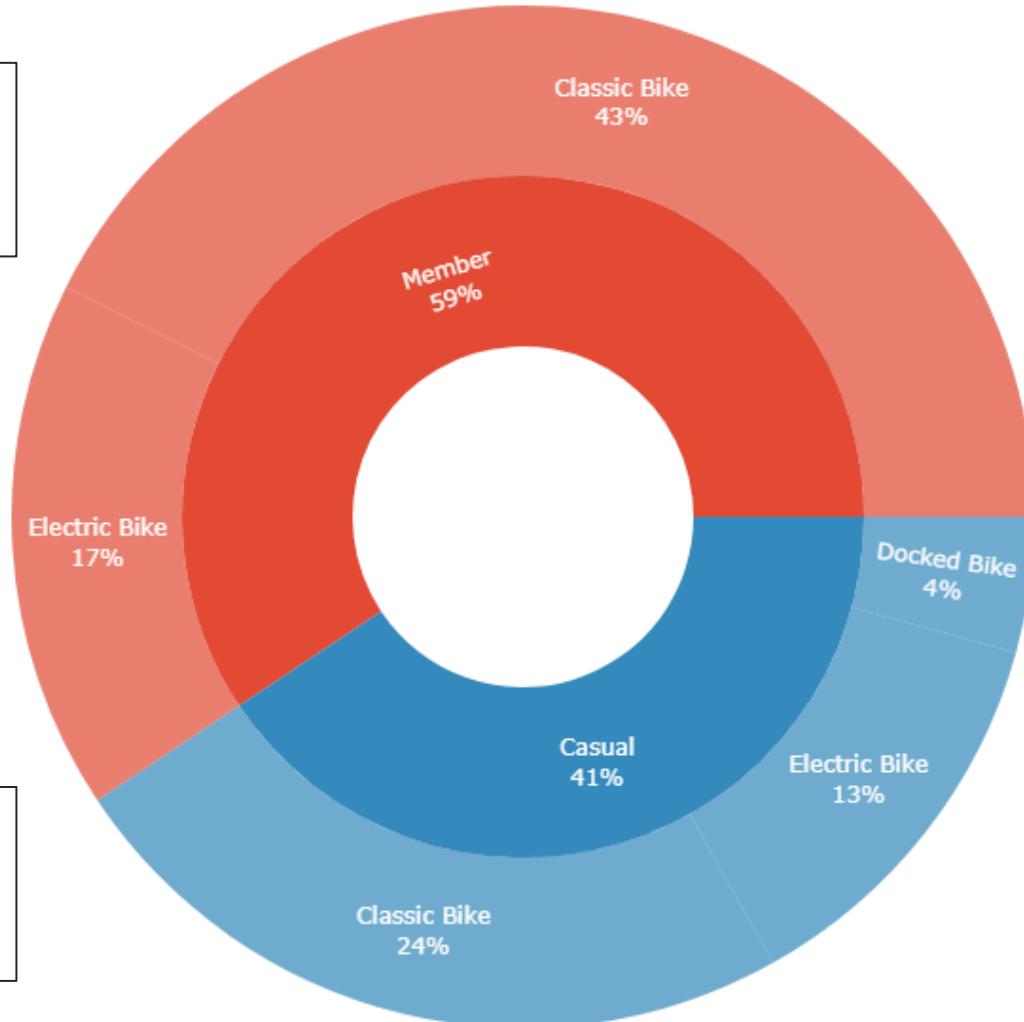
Identify if there is a **difference** in user **behaviour**  
between Cyclistic **members** and **casual** customers.

# Difference in customer behaviour

Do members and  
casual riders use  
*different bike types?*

# Ride type

**Members** comprise **59%** of rides and chose the **Classic Bike 72%**

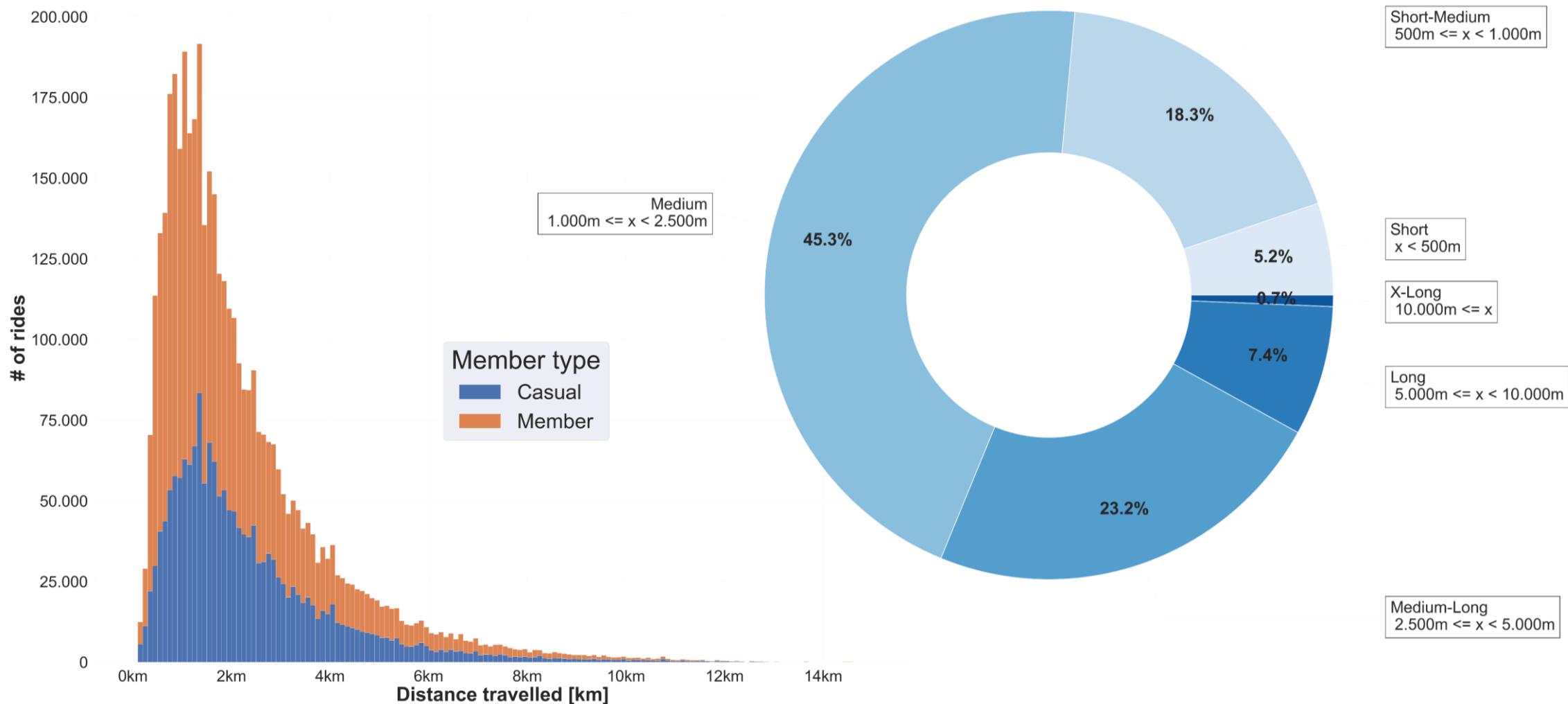


**Casual** riders make up **41% of rides** and chose the **Classic Bike 59%**

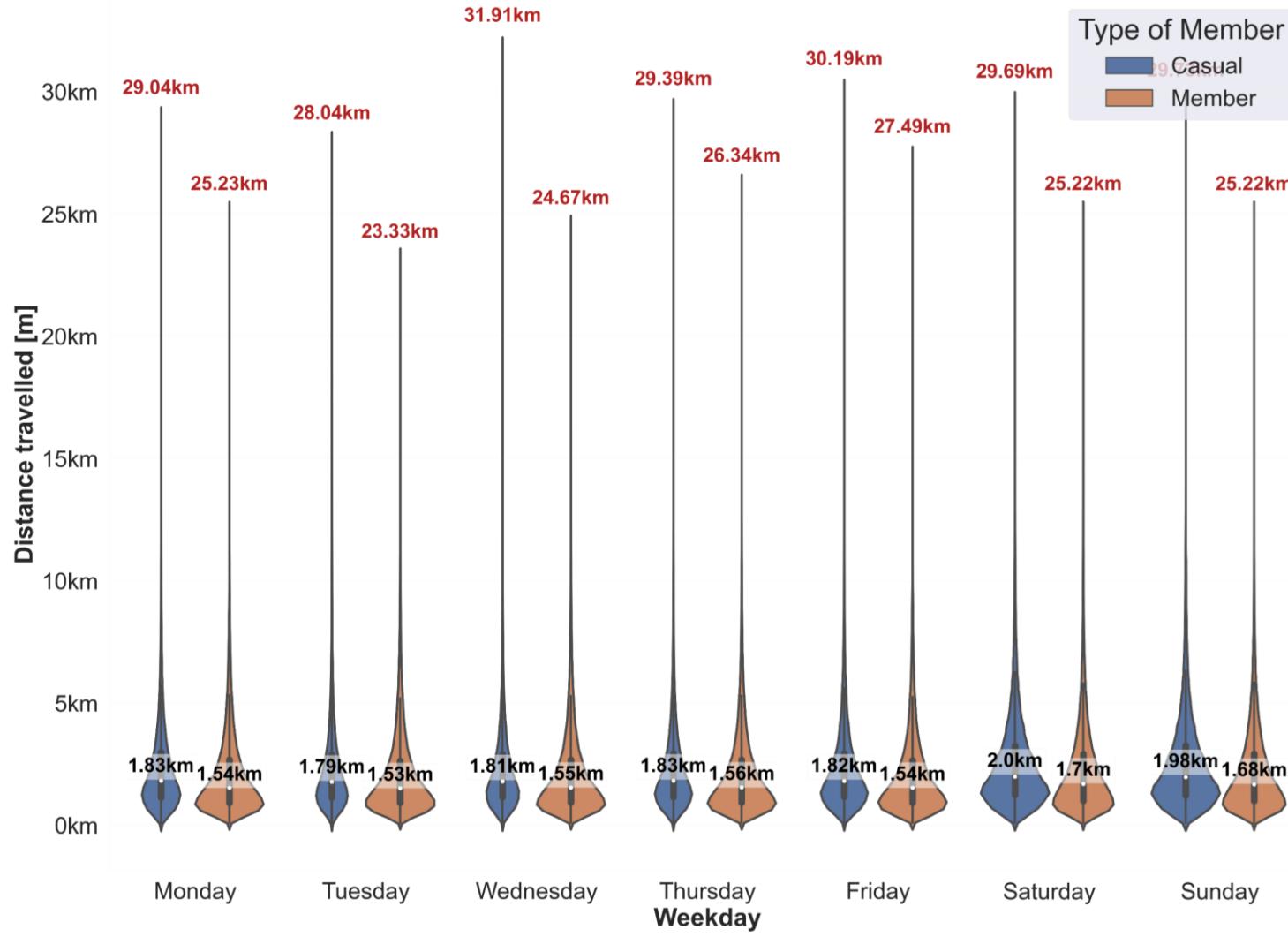
- Take-Away:**
- **Docked Bike only** used by **Casual** riders
  - **Casual** riders **use** the **Classic Bike less often than Members**

How *far* do people ride? Is there a difference between the two groups?

# Distribution of ride distance



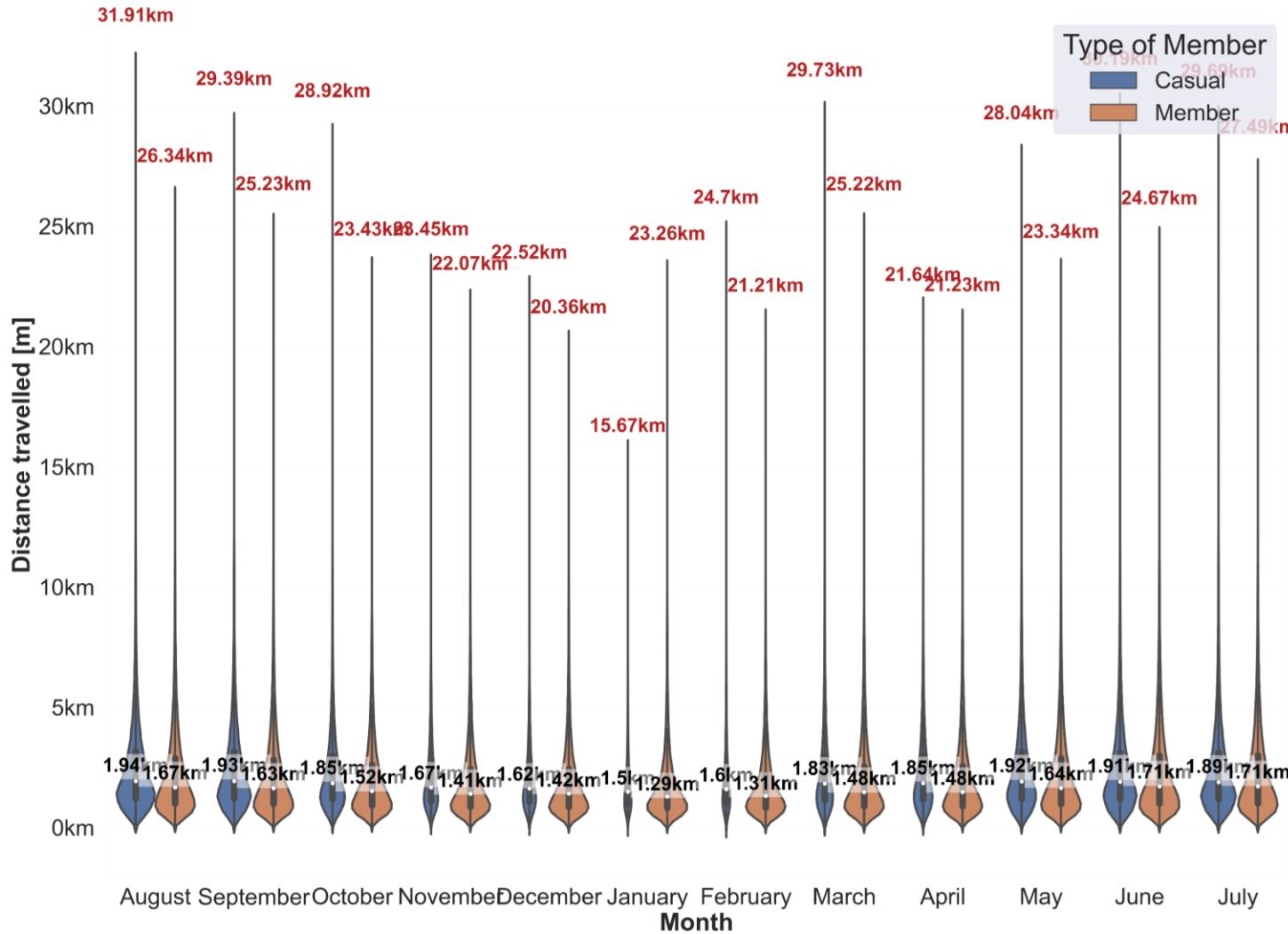
# Ride distance by Day



## Take-Away:

- **Casual** riders ride **longer distances**
- **Members** ride **constantly throughout the week**,
- **Casual** riders **concentrate** on the **weekend**
- **Both** parties ride **longer distances** on the **weekend**

# Ride Distance by Month

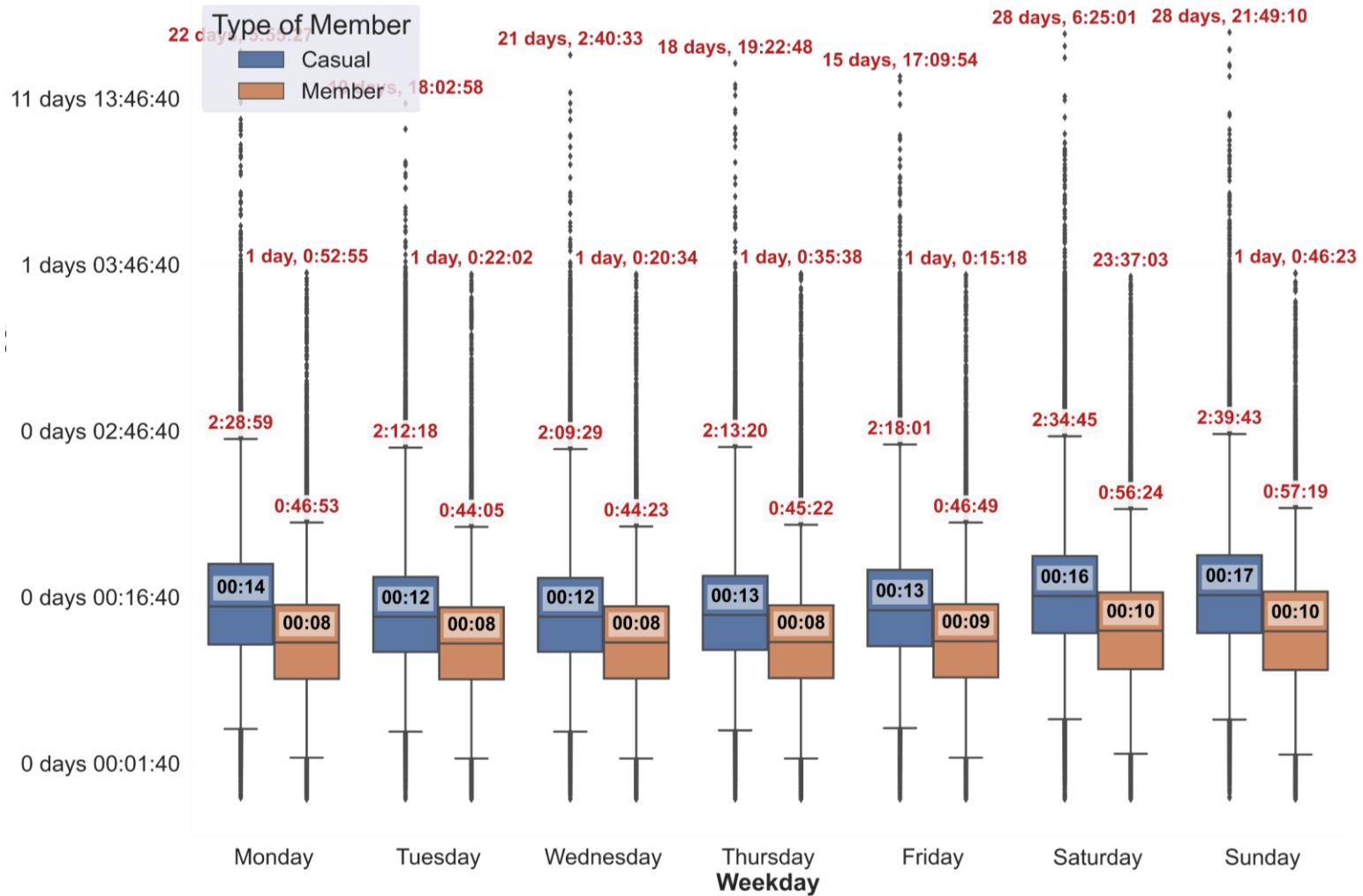


## Take-Away:

- Members** ride **constantly throughout the year**,
- Casual** riders **concentrate on non winter months**
- Both** parties ride **less during winter**

How *long* do people ride? Is there a difference between the two groups?

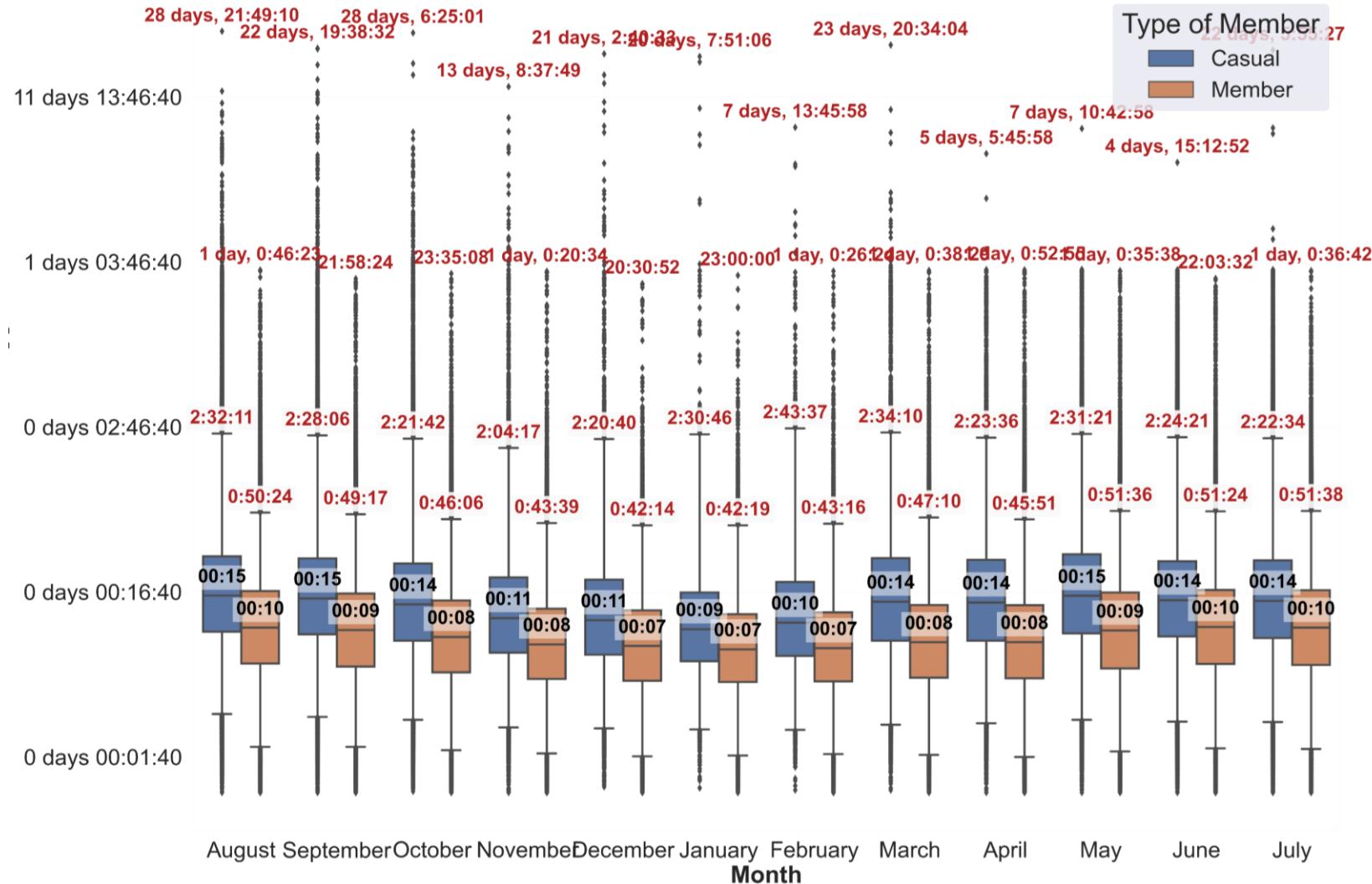
# Ride Length by Day



## Take-Away:

- **Casual** riders have **50% longer median times**
- **Both** parties ride **longer times** on the **weekend** (approx + 20%)

# Ride Length by Day

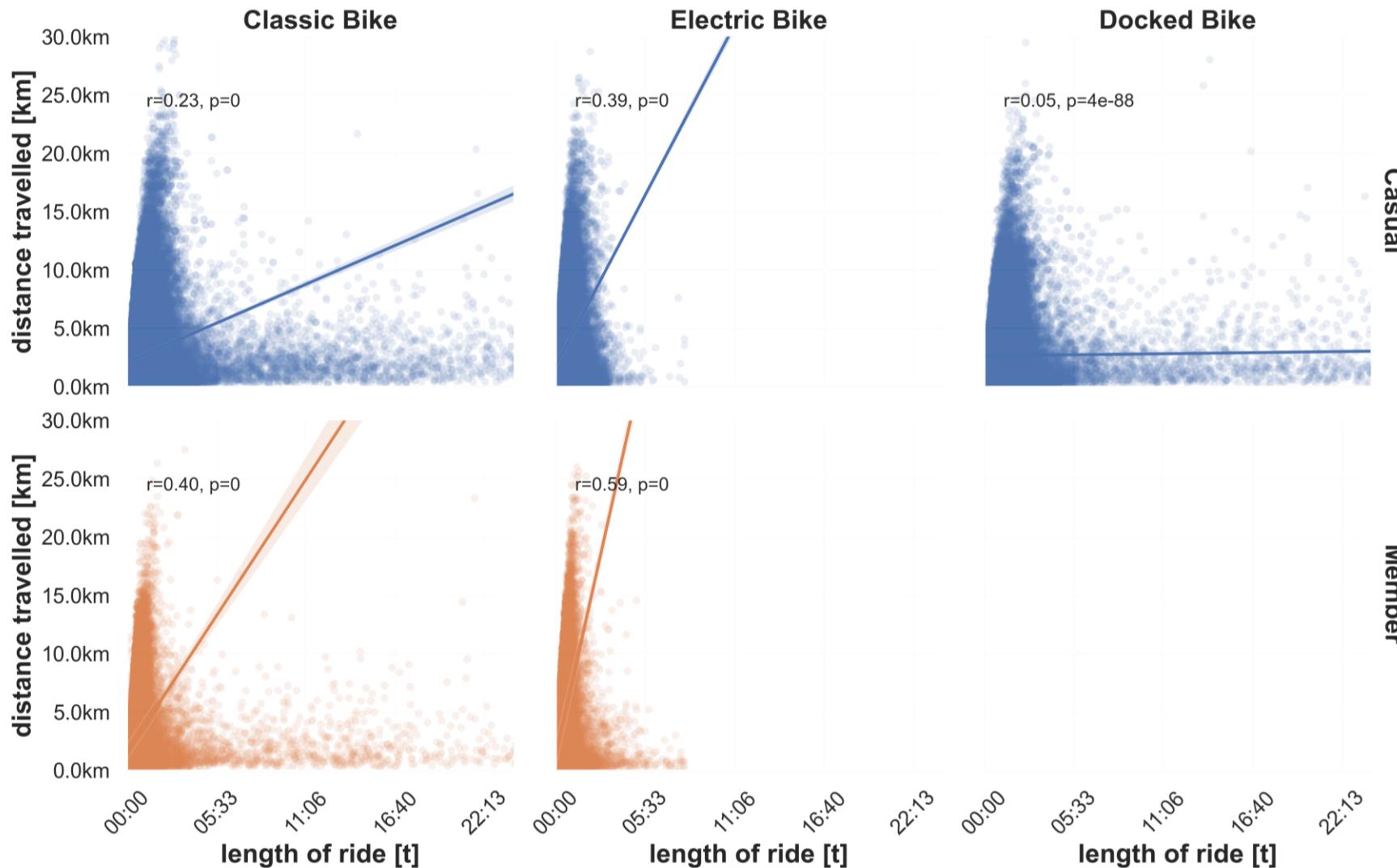


## Take-Away:

- **Both** parties ride **shorter times** in the winter months
- **Casual** riders have a stronger drop in ride times: **35%** vs **20%** for **Members**

Is there a relationship  
between time and  
distance?  
Is it different for each  
group?

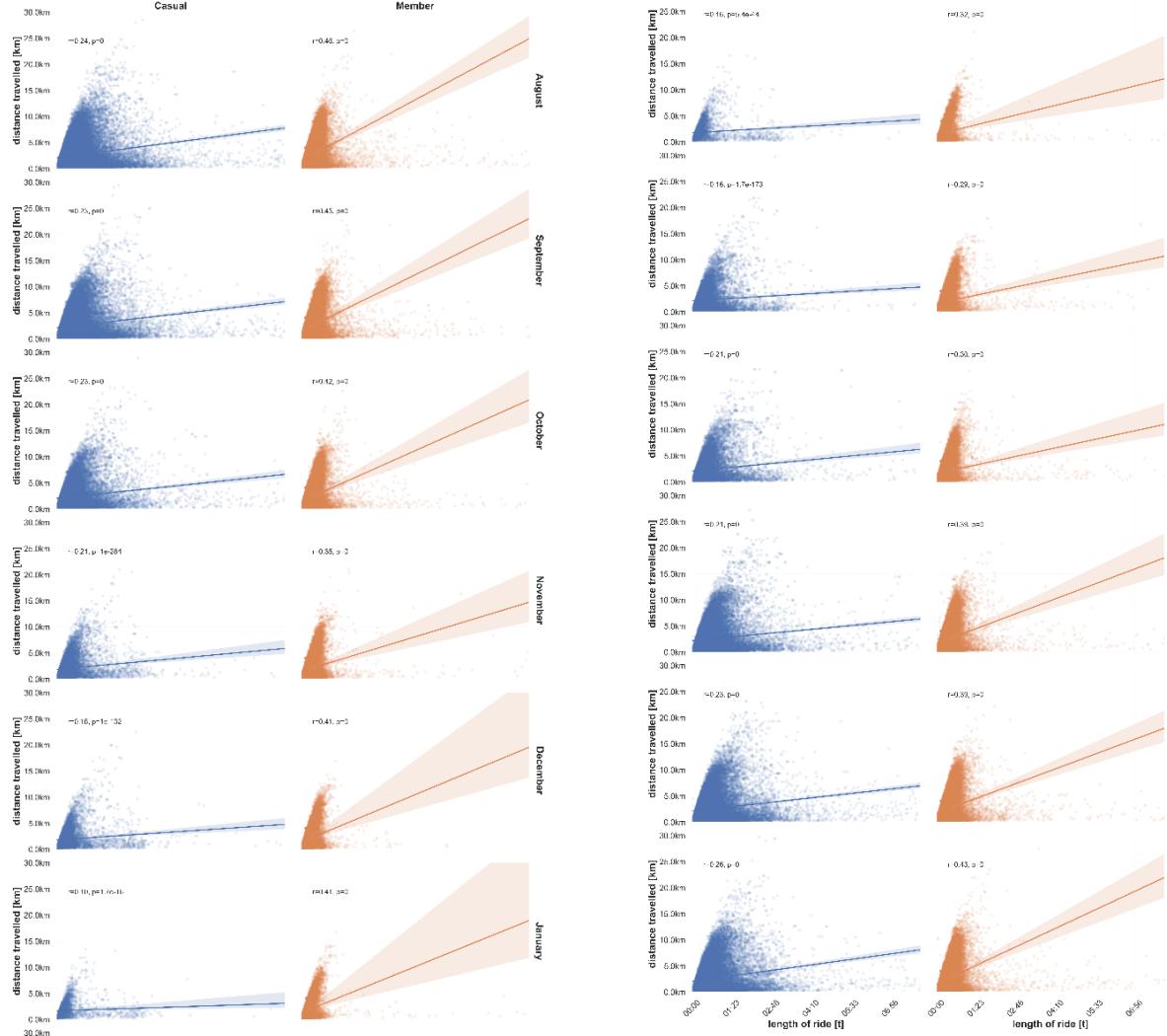
# Relation: ride length vs distance



## Take-Away:

- **Members** ride **faster** and have a **higher correlation**
- **Casual** riders are **slower** and distance is not impacted by the length that much  
→ **hypothesis**: more leisure and breaks inbetween
- Almost **no correlation** for **docked bike**  
→ length of ride does not determine the distance

# Classic bike: ride length vs distance



## Take-Away:

- **Winter** months are **slowest** for both
- **Casual** riders have the lowest correlation in winter months (approx.  $r = 0.1$ )
- Correlation for **Members** almost does not change throughout the year (approx.  $r = 0.4$ )

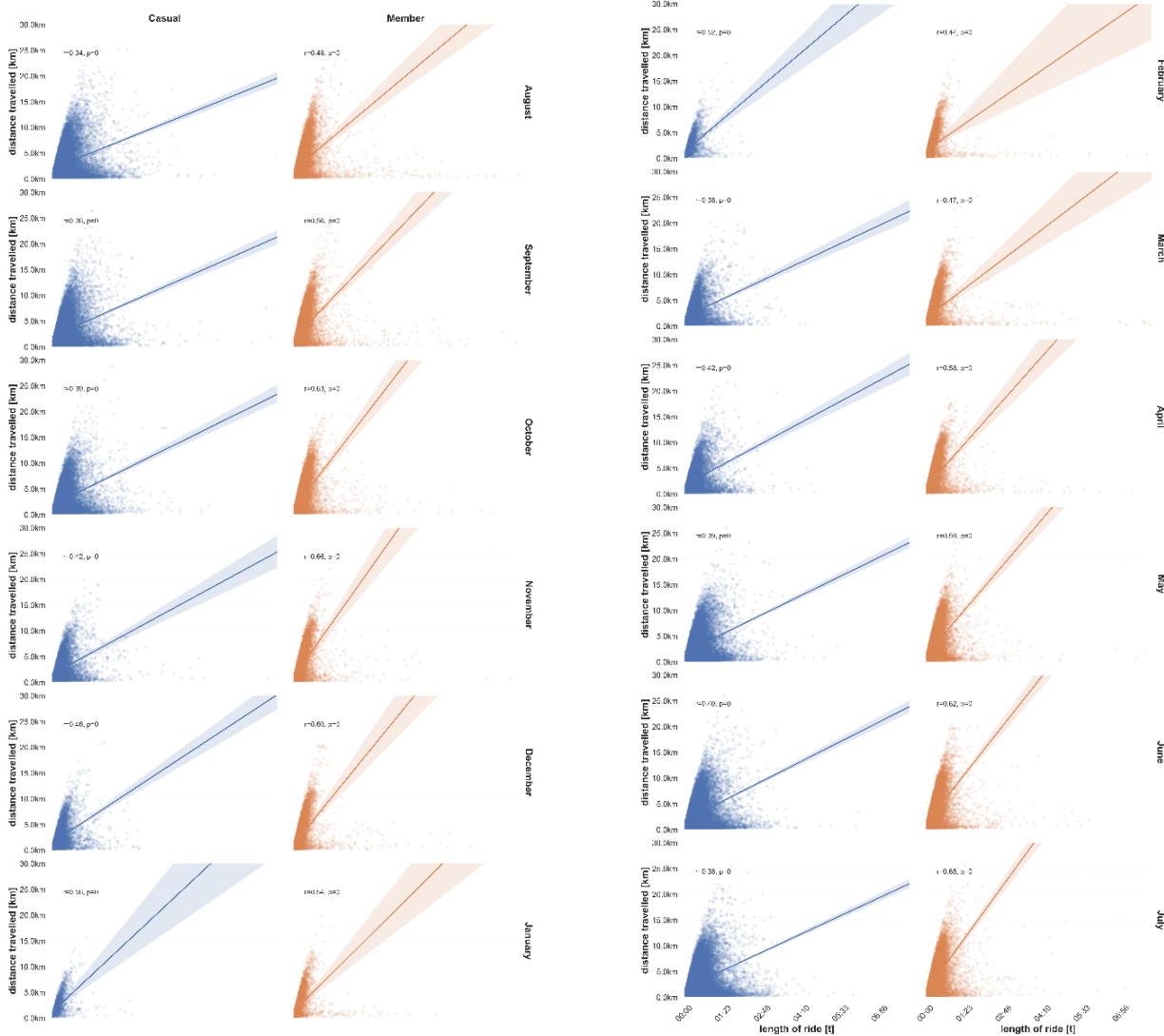
## Hypothesis:

During cold and harsh weather both groups have trouble riding the classic bike

Shorter rides in winter (like shown before) could also lead to more traffic stops and slow down leading to less speed

Casual riders are parking their bikes during their rides.

# Electric bike: ride length vs distance



## Take-Away:

- **Casual** riders have a slightly **higher correlation in winter months and a faster speed**
- In contrary **Members** have a **slower speed during winter while correlation stays mostly same**

## Hypothesis:

Members struggle to keep up their pace in winter due to potentially harsher conditions (snow, wind, rain)

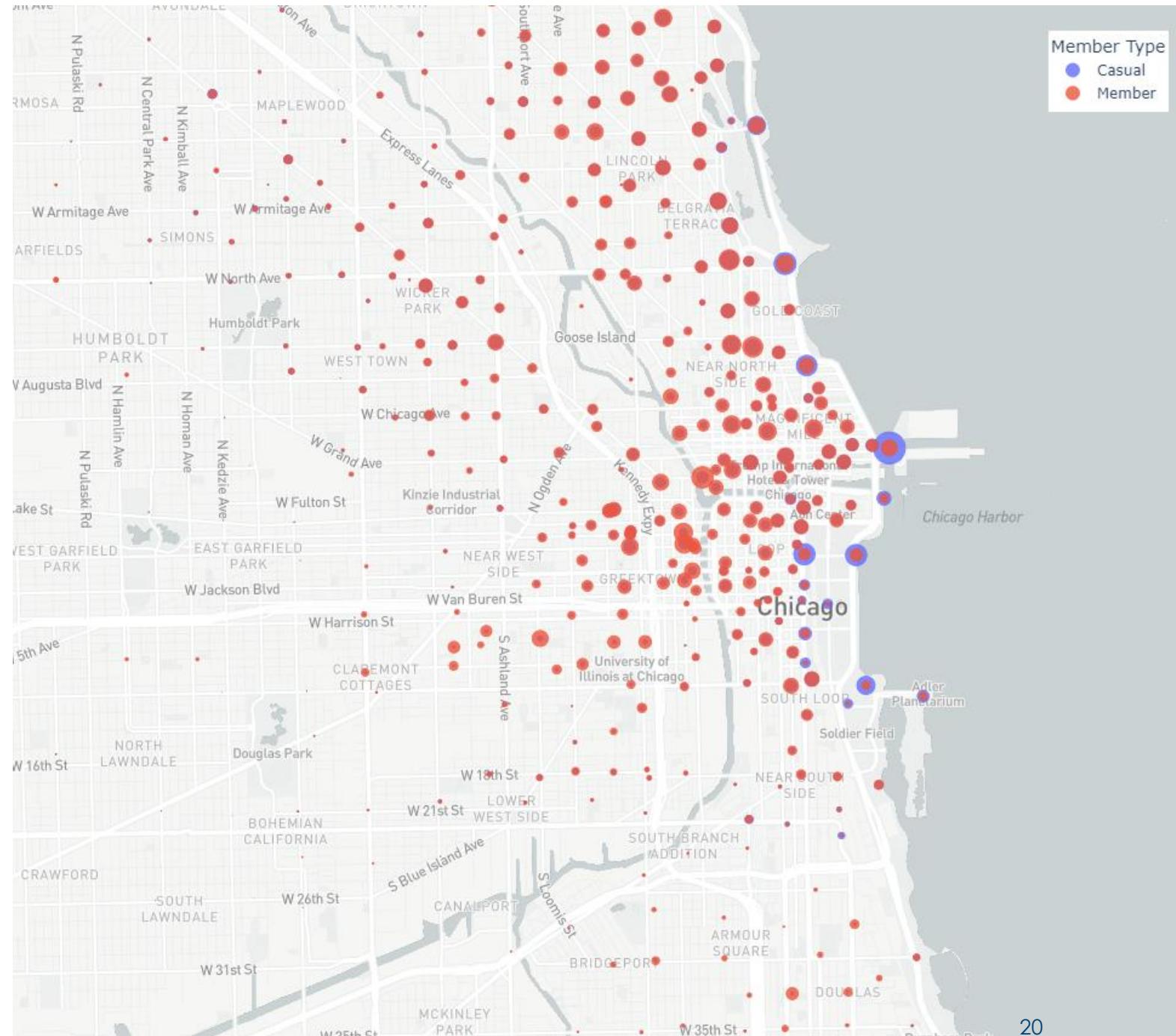
Casual riders are picking up their pace to reach their goal faster

Is there a certain area or routes preferred by the two groups?

# Stations and areas used

## Take-Away:

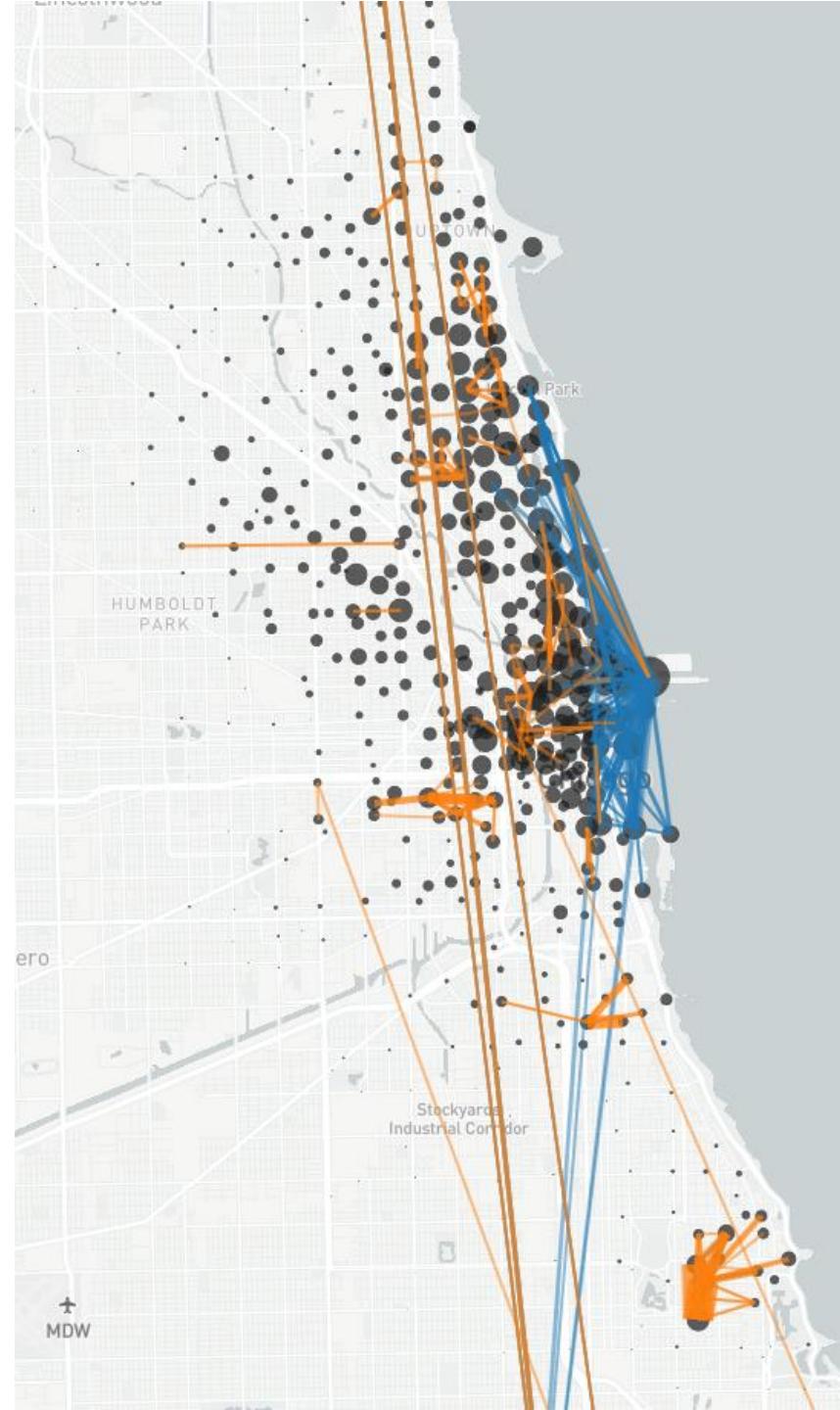
- **Casual** riders have a clear **preference** for **park** stations and stations near the **Lake Michigan**
  - **Members** are **more evenly distributed** but **concentrate** in the **city center** and **around working areas**



# Stations and areas used

## Take-Away:

- **Casual** riders mostly ride in **parks** and **near the lake**
- **Members** use the bike as transportation **throughout the city** and (**long distances**) and in certain **hubs** like work areas or university (**short distances**)



# Conclusion



# Differences in Behavior

## Length [t] and Distance [m]

**Members** ride **slightly shorter** but **faster rides**

**Casual** riders ride **longer**, but **slower** with potentially more breaks

## Time and Season

**Members** ride roughly the **same** during the **week** and during the **year**

**Casual** riders **focus** on **weekends** and **non-winter months**

## Geography

**Members** ride **throughout** the **city** and **around small hubs**

**Casual** riders focus **parks** and **near the Lake Michigan**



# Conclusion

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## **Casual riders use Cyclist for leisure and recreation.**

They are focused on having a good time which is facilitated by free-time (weekends) and good conditions (spring, summer)

## **Members use Cyclist as a means of transportation.**

They want to get from Point A to Point B in as short of time as possible and use it in their everyday life: all days throughout the week and near their main locations like work or university.