

# Analysis of the Popularity of Disc Golf in Estonia

Malin Püttsepp  
Karmo Saviauk

## Introduction

Disc golf has become very popular lately and we wanted to analyze its growth in Estonia. Our goals were to analyze the player base growth and the correlation between players ranking and training courses and also between players ranking and competitions played.

## Data

We got four datasets from Disc Golf Metrix (<https://discgolfmatrix.com/>): player accounts (player information), trainings (how many training courses has user done), competitions (how many competitions has player competed in) and courses information. Databases have data starting from 2012 and we could use information based ~20 000 player accounts in Estonia.

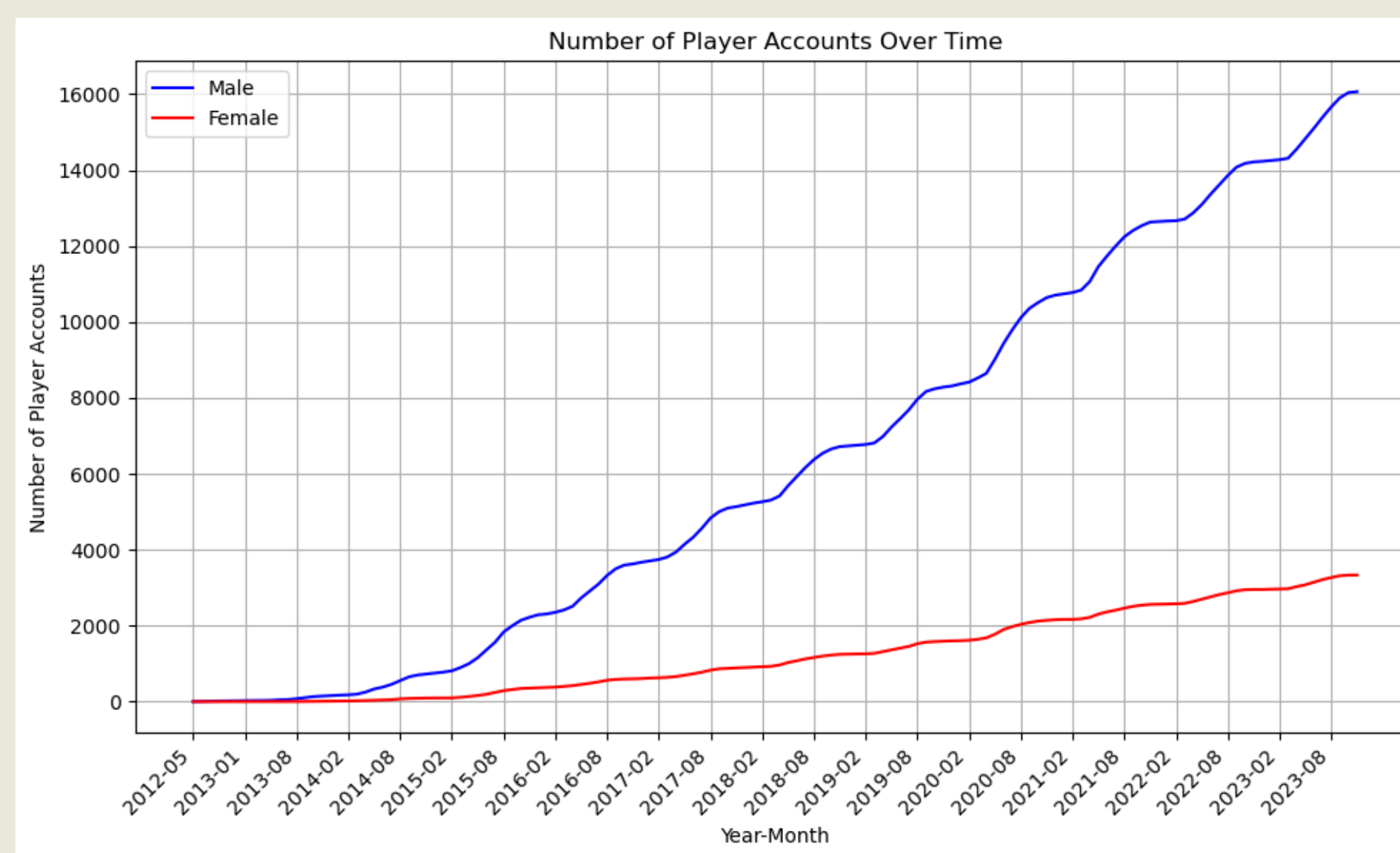
## Methods

- Plotting data using matplotlib.
- Constructing heat maps using folium and geopandas library.
- Finding correlation between attributes using Spearman correlation.

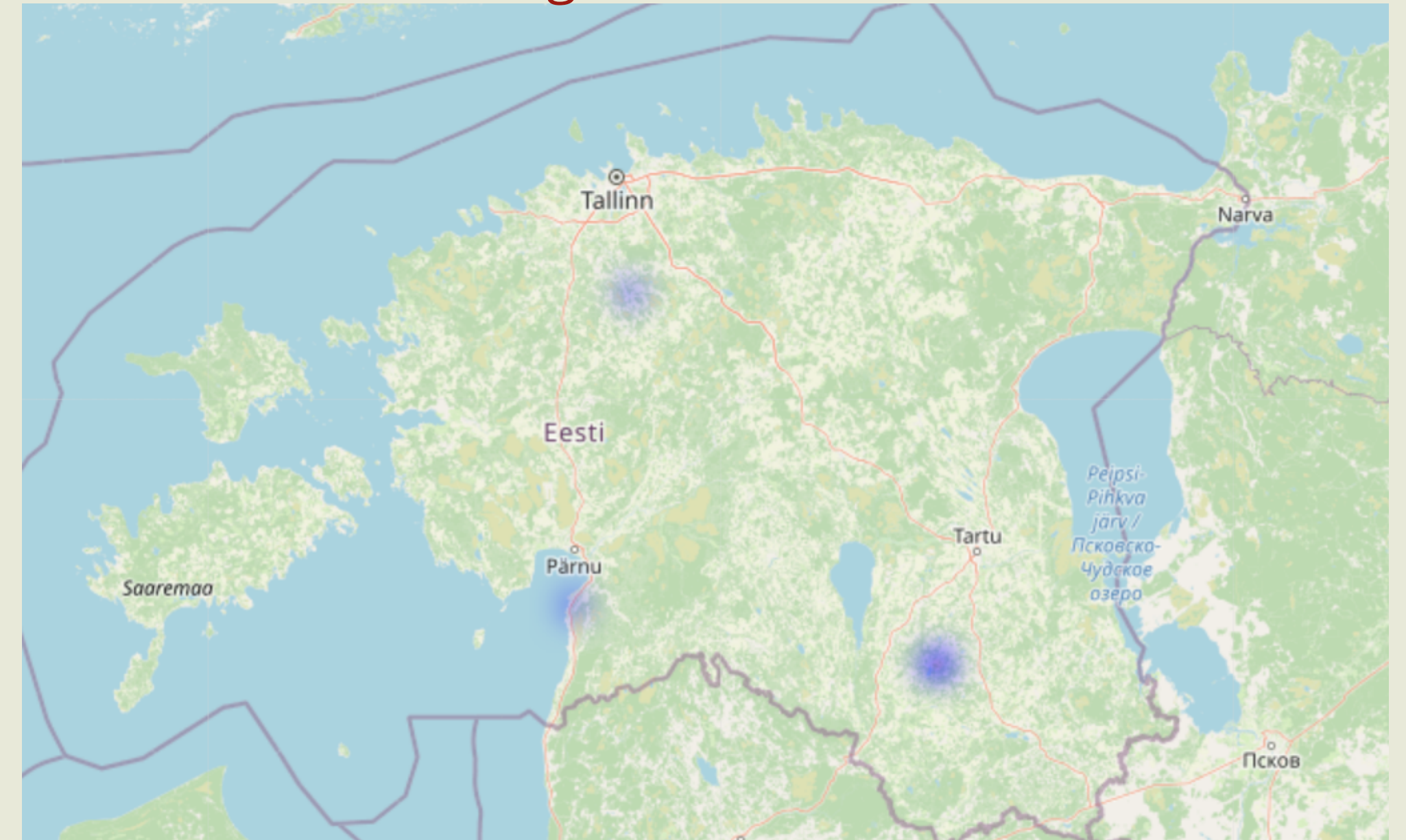
## Results

On the plot below we can see that Estonian disc golf player base has increased almost linearly over time. Although we can see that newcomers register mostly in spring and summer, in autumn and winter on the contrary the growth of new players decreases. The month with the most registered accounts is June of 2020, when 541 new accounts were registered, we think that this is because after the lockdown people were looking for new outside activities.

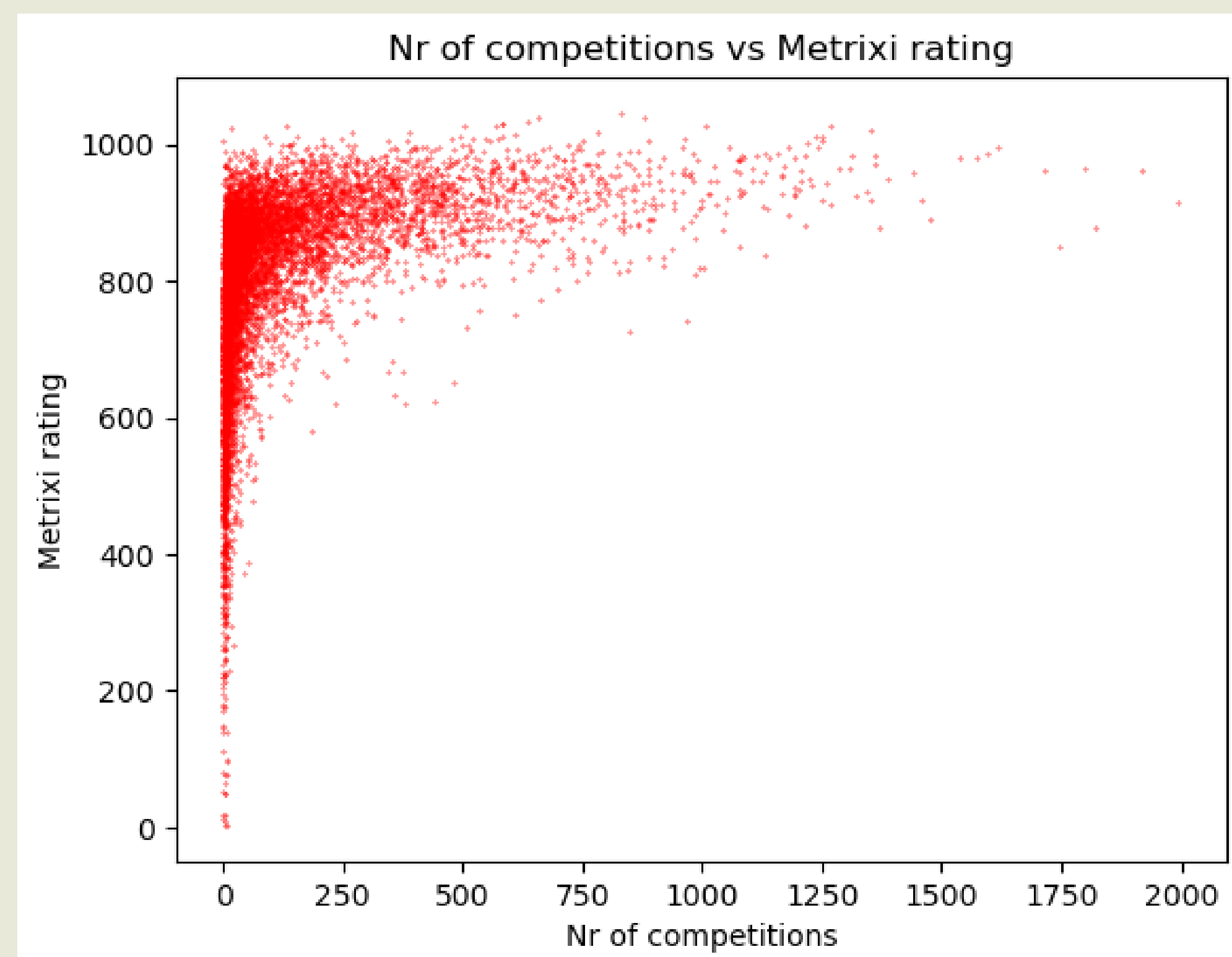
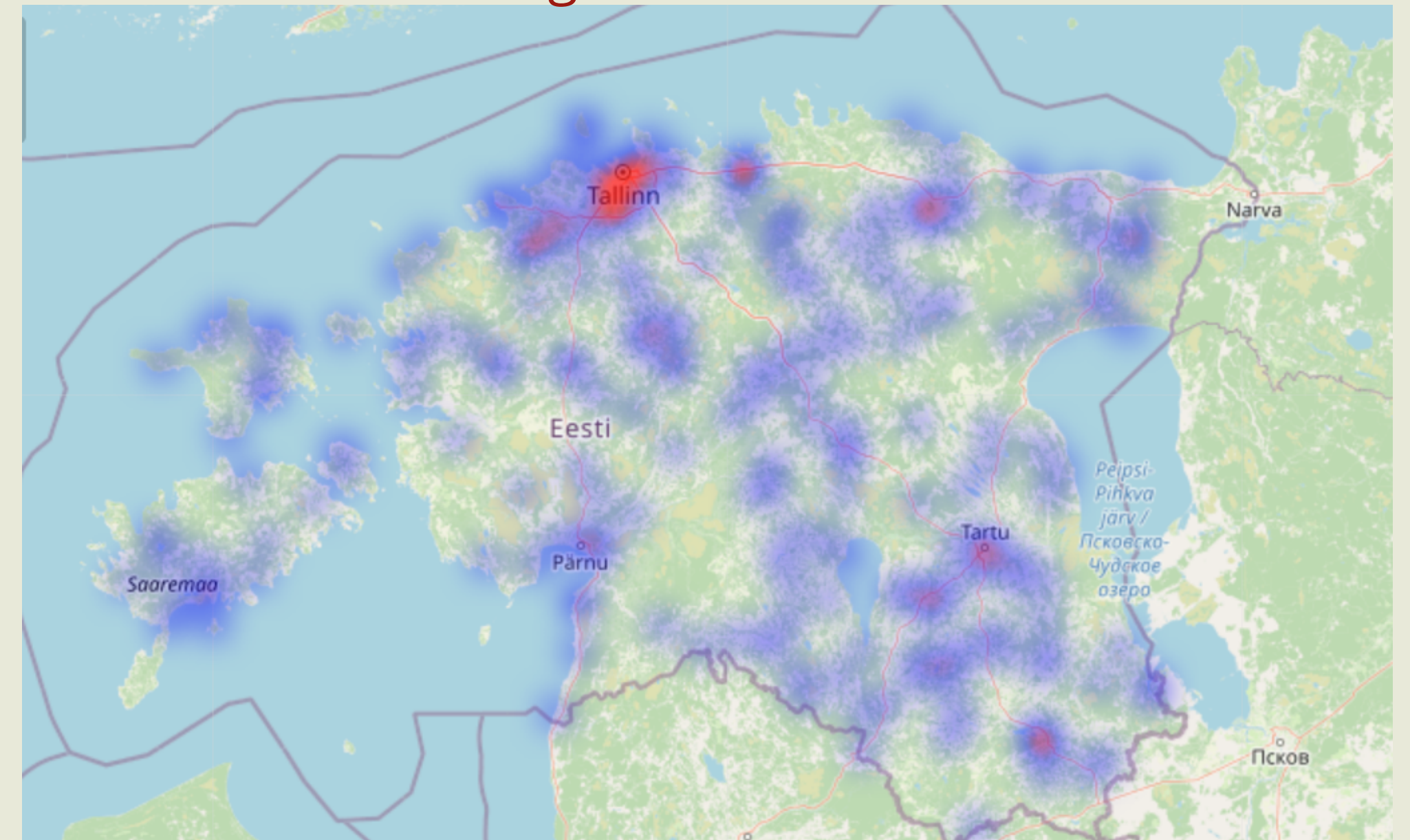
From the maps on the right, we see the density of courses around Estonia in 2013 and 2023. In 2013 there were only 4 courses in the entire country, but now there is a course in almost every corner of Estonia. Discgolf has become more accessible over time, which contributes to the growth of player base in Estonia. Now everyone who wants can play disc golf near home.



Disc golf courses in 2013



Disc golf courses in 2023



From first plot on the left and second one the right we can see the relation between Metrix rating and participated competitions and between Matrix rating and number of training courses. From the first look at the plots, it's unclear if there is a correlation between these attributes or not.

In the first plot the Spearman's correlation coefficient is 0.698 and p value is 0.0, which means there is an extremely strong correlation between these two attributes. In the second plot Spearman's correlation coefficient is 0.501 and p value is 0.0, which also means there is strong relationship between attributes. In short the more you train or compete the higher ranking you will get.



## Conclusion

- The player base is increasing and probably will continue growing.
- Disc golf is a season-oriented sport.
- Disc golf has become more accessible to people.
- The more you train and participate in competitions the higher ranking you will get

