Introduction to Data Science Final Project

Leonardo Paiva
09/01/22

Research question

Is there a correlation between how many calories a person can burn vs their weight, while being exposed to the same intensity, excercity type, conditions, and time?

Motivation

My motivation on this research is related that I have been exercising for a year along with other friends, following the same diet strategy, and following a specific training program.

We also have been using smart tracker to record metrics of our body and performance.

After we start to share our results, I noticed that during the same workout the range of burned calorie is very different. I think it matters to others, because if this theory confirms, each person can have personalized workouts to achieve their goals.

Data Source

Description:

This dataset contains the number of calories burned by a person while performing some activity/exercise. It currently contains 248 activities and exercises ranging from running, cycling, calisthenics, etc.

About this file:

This dataset includes 4 different personas across different weights as well as the "Activity, Exercise or Sport (1 hour)"that the personas have been exposed (130 lb, 155 lb, 180 lb, 205 lb).

Analytical process

We use python along with a few additional libraries like panda, matplotlib, and numpy to explore and analyze the data.

In order to answer the research question, I had to manipulate the data to provide a good visualization of the data and being able to answer the initial question.

Results

To talk about the results I will come back to the initial research questions:

- Is there a correlation between how many calories a person can burn vs their weight, while being exposed to the same intensity, excercity type, conditions, and time.

Calories burned by person
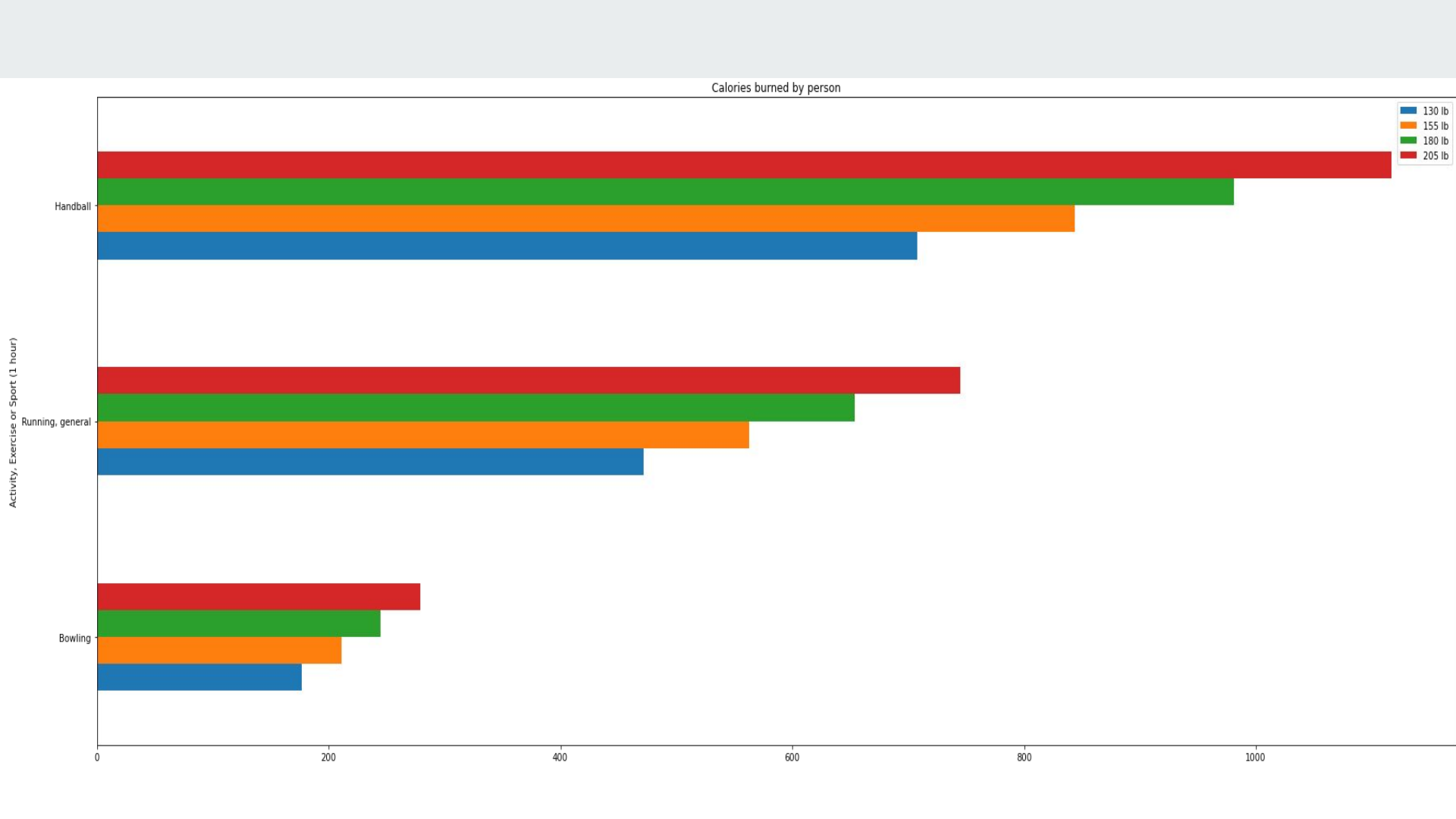
Results

As we can see on the plot, selecting 3 different sport activities, and using the filters to group the 4 different personas, it is clear that there is a difference.

Yes - A person with higher weight burns more calorie than a person with lower weight!

Results

As a conclusion I can tell that this research helped me and my friends to get really good insights of our initial questions. Moreover, we were able to learn that it is also possible to optimize our training and be very intentional with our program, using data science.