A Short Study on the Perspective of Coffee Drinkers' Attribute

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ABSTRACT

Everything in our day-to-day life follows pattern. If we look closely, we can find correlation between every single task of our life, from waking up to sleeping. In this paper, we put a bit effort to find pattern between food and other everyday tasks. To say more specifically, we tried to find pattern between coffee drinkers and other everyday tasks.

Introduction

Every now and then, we come to know about various researches on food where we can see various types of correlation between our daily lives and food habits. In our paper, we tried to correlate between people who tend to drink coffee and their habits. Further, we also tried to find the accuracy between the correlations.

In our day to day life, drinking coffee is becoming more and more useful. Now-a-days, people tend to stay up more than they used to do. Mostly, students stay up the most. They need to stay awake for studies, projects, labs etc. For that to happen, drinking coffee has become an important rule for them. If we can research more on it it will be really useful.

With these researches, the most benefits will go to the coffee dealers of our country. They will be able to target specific cluster of people based on the researcch. One such example is coffee drinking habit based on location. From our study, we have seen that coffee drinkers' from Barisal tend to be the highest with respect to the percentage they have in our university, Ahsanullah University of Science and Technology.

For accuracy purpose, we used *Neural Network* algorithm where we used a 2-layer model. On the other hand for correlation purpose, we used Sickit learn, pandas and matplotlib to find correlation between evey element with coffee drinking attribute.

Methods

We divided our tasks in *two* steps. First of all, we predicted whether a person drinks coffee or not based on waking up time, day planning and CGPA. And later, we found out correlation between various types of habits which will be discussed on 0.2.

0.1 Prediction

As mentioned previously, we predicted whether a person drinks coffee or not based on waking up time, day planning and CGPA. To our knowledge, after checking up on various machine learning methods, we noticed that, *Neural Network* gives the best accuracy on our result. It gives 67% accuracy. We used the following tools:

1. **TensorFlow:** This is deep learning based framework for python.
2. **Keras:** This is an independent deep learning framework for python. However, we used it from TensorFlow. We used it to initiate layers of our model.

We used a 2-layer neural network where first layer is of 100 neurons, 2nd layer has 64 neurons and the last layer is the prediction layer. We used Rectified Linear Unit for first two layers and Sigmoid function for the last layer for prediction.

0.2 Correlation

We checked 6 types of correlation between coffee drinkers and their various habits. These are discussed below:

1. Firstly we people's coffee drinking habit with their respective coding hours. Here, we found out that people who drink more coffee tend to code more. It is justifiable as we know that coders tend to drink more coffee.

2. We checked people's sleeping habit with their coffee drinking habit. It is noticed that people who sleep less than 6 hours tend to drink more coffee than people who sleep more which is also justifiable as coffee has more caffeine which prevents sleepiness.

3. Next, we compared weight and coffee drinking habit. Basically we compared BMI(Body Mass Index) with coffee drinking habit. It shows that, people who drink more coffee tend to have higher BMI.

4. Later, we compared coffee drinking habit based on males and females. We found out that more males are addicted to coffee than females. 25% male drink coffee whereas 37% female don't drink coffee.

5. When compared coffee drinking with healthy food eating habit, it is seen that more regular food eaters drink coffee.

6. Lastly, we checked people's coffee drinking habits with their hometown. We categorized everyone's hometown based on division. We found out that, people whose hometown are in Barisal tend to drink the highest amount of coffee. On the other hand, people who are from Rangpur tend to drink less coffee.

On the other hand we used following tools for finding correlation:

1. **Pandas:** This is a python library which is written for various data analysis and data manipulation tasks. We used this library for reading our dataset named as "Extended_1.csv" and manipulate our data by preprocessing.

2. **MatPlotlib:** Matplotlib is a plotting library of Python. It can be used to show correlation between various data for which we used this library.

3. **Numpy:** It is a python library for scientific computation. Using this instead of list or any other array based data structure can make the code run faster. We used this library for making our code run smoothly and faster.

Results

From our experiment, we found out some specific correlation between personalities and coffee drinking habit.

From 1, we can see that male tend to drink more coffee than female. From 2, people who eat regular food are more addicted to coffee. From 3, people of Barisal love more coffe than people from any other district. On the other hand, people from Rangpur drink the least coffee.

Discussion

From my research on various types of correlation, coffee dealers can be benefitted. They can target a search group of people based on the categorical result observation of my research. How they can do it, is described more in detail in following paragraph:

From the result section, we can see that male people tend to drink more coffee. When a coffee dealer advertises their products, they can apply this research to target more female people so that they like coffee too. Thus, their amount of coffee selling will increase which wouldn't be possible without this type of research.

From 3, we can see that people from Rangpur and Rajshahi possess the least number of coffee drinkers. If they can find out the reason why it is the way it is and work on it, they can work on the problem and might be able to increase their coffee selling.

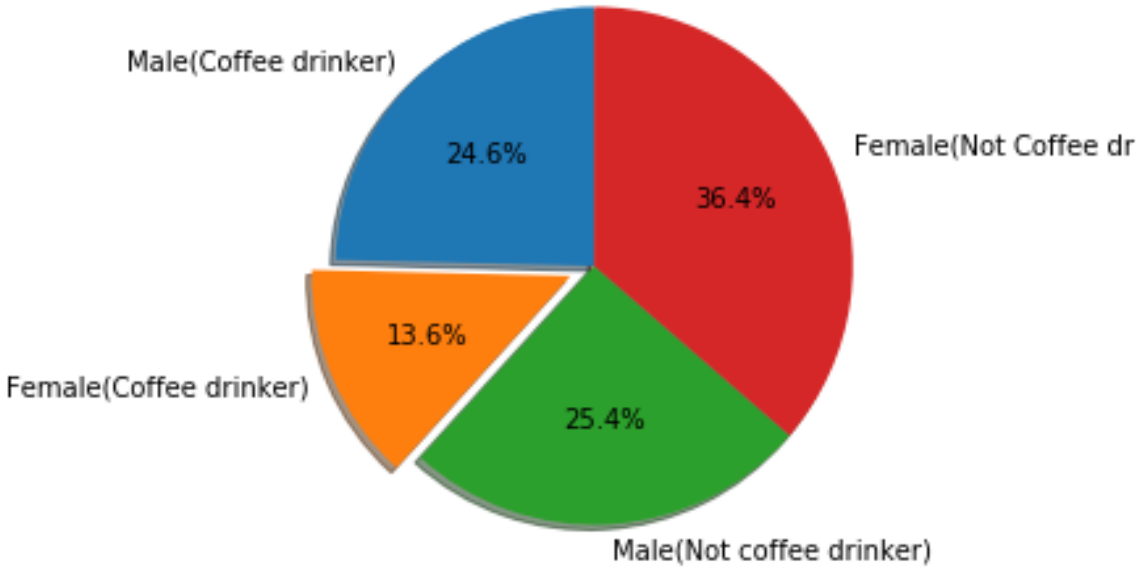

Figure 1. Pie Chart for Coffee Drinkers based on gender.

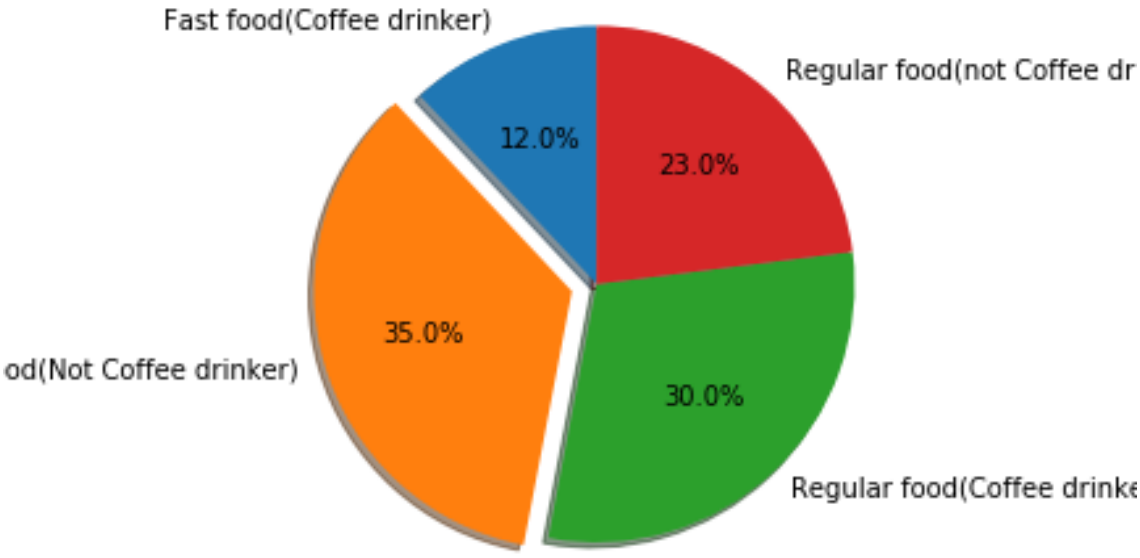

Figure 2. Pie Chart for Coffee Drinkers based on Food habit.

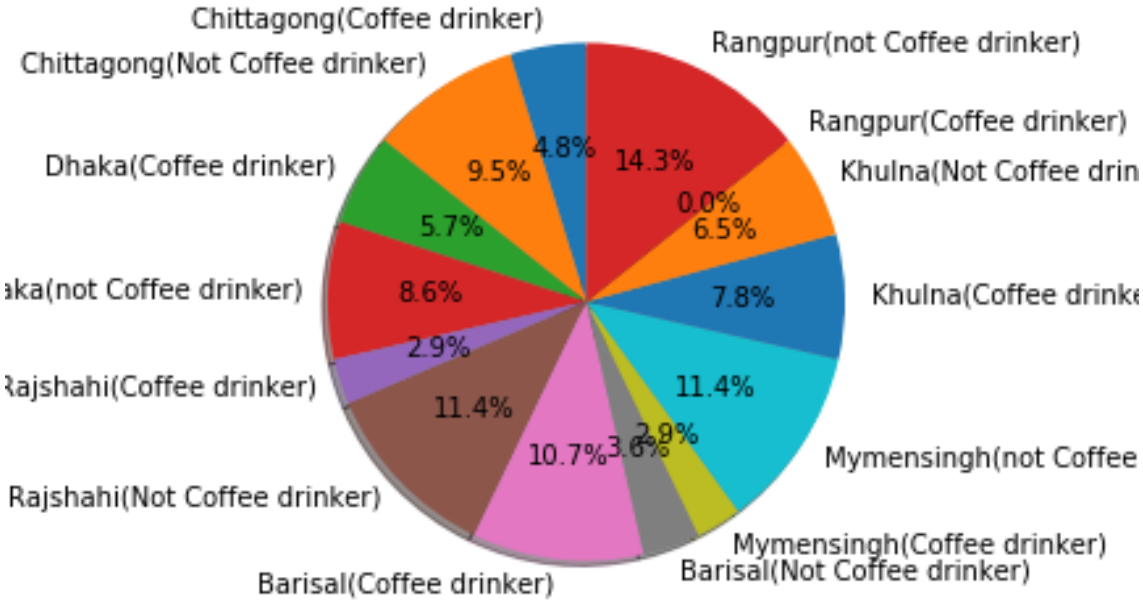

Figure 3. Pie Chart for Coffee Drinkers based on Location.