**Does Weather impact Food sales?**

**Discussion:**

Weather is a major factor in food chain, Food production requires sunlight, rain, wind and natural manure to be sufficient for the crops to be grown. This is where weather plays a major role in the quantity of food product during the phase of a year. These changes in the climate can be a significant factor involved in contribution to the quantity produced and this in turn reflects on the price of the food. The cheaper the price the more it will be sold, the quantity and the quality of the products produced makes the cost of the product.

Weather models very commonly used on a day-to-day basis. Using the past and the current weather data observed, forecast the future movement of the weather. Weather forecast concentrates on taking current perceptions of climate and handle these information with the help of computer models to calculate the future condition of climate. There are various factors affecting the change in weather few of which is as follows Temperature, Humidity, Pressure, Dew point, Wind speed, Wind direction, Visibility. All the above mentioned variables serve as input for the model.

When a product comes to market the demand and supply of the product determines the price of the product, this can be determined in two types; Processed and un-processed food. Processed food are something which isn’t grown directly or it is a derived product of the un-processed food. Un-processed food are grown from the field and should be directly taken in the raw form.

Environmental change is probably going to influence nourishment security at the worldwide, provincial, and nearby level. Climate change can disrupt food availability, reduce access to food, and affect food quality. For instance, anticipated increments in temperatures, changes in precipitation designs, changes in outrageous climate occasions, and decreases in water accessibility may all result in reduced agricultural productivity. Increments in the recurrence and seriousness outrageous climate occasions can likewise intrude on sustenance conveyance, and coming about spikes in nourishment costs after extraordinary occasions are relied upon to be more regular later on. Increasing temperatures can contribute to spoilage and contamination.

Food and weather are the unavoidable sources and it manifests the human senses in different kinds according to the different regions. Food and the seasons have different impact on the human body. Food becomes part of the body after being consumed but the seasons (that is the environmental factor) always impacts externally on the body. Different regions are also identified with the climatic conditions and the food habit. Food and weather are proportional to each other and humans are affected with any changes in weather and food. There are five main weather conditions namely, Rainy, Stormy, Sunny, Hot, Cold. And there are five main taste of food namely bitter, salty, sweet, sour, and savory. Weather has distinct relation with the taste of the food. In rainy and stormy season, People like to take little spicy and hot food. In sunny and hot climate, people like to take sweet, cold food. In cold climate, people like to take hot, bitter, sweet. The tastes vary according to the climatic changes.

Agriculture and weather, agriculture is the base of everything we are now and which is commonly influenced by the weather conditions. Agriculture land, area of cultivation, types of crops, yielding process, and quality of crops varies with the weather. Lack of rain affects the agriculture and lead to lack of cultivation, when production is low the distribution is also less and which is again an affect of scarcity of raw materials for food. If it is more rainy and stormy again the agriculture land will be flooded and crops would be driven by the storm. The changing climate would affect the length and quality of the growing season and farmers could experience increasing damage to their crops, caused by a rising intensity of droughts, flooding or fires. Moreover, some crops are specially can be grown in particular climate. For example, Carrot grown in cold regions.

Water resources and weather, water is a main source and water scarcity is a big deal now in many places. Underground water is very less in the summer season without rain. In dry weather, the droughts affect people and leave them in scarcity of water. With heavy rain, it leads to flood and overflows with water. It affects the common people as well as the farmers in cultivation. People intake of water and usage of water is also more in hot weather than other weather conditions.

Food, weather and Human; weather affects the food and the weather affects the human also by the food taken in. weather takes a vital role in the digestion of food in human. In hot climate, people consume more water and more food because their digestion system works vastly due to the external temperature affecting the internal temperature of the body. In cold weather the intake of water and food is less, the digestion process is slow. Here the external cold temperature and internal temperature works for the digestion process which is slower than the hot climate.

Weather changes leading to disaster affects the food, people get scarcity of food and water where they cannot go out to buy the food material, a normal needed things like milk, bread and water. Even the shops will be out of stocks or closed during the heavy storms, rain and flood. Food and weather are always correlated.

**Conclusion:**

All the techniques are properly measured to assess climate and atmosphere extremes in atmosphere display recreations. The mix of atmosphere model with observational and reanalysis items requires creative examinations and measurements of execution that make utilization of data identified with procedures producing inside atmosphere changeability and opening up climate and atmosphere extremes.

The methods above might reflect the same result as the competitor, but the method implied through this process is made in such way that the application interacts with the system periodicaly and live dashboards are generated as a result from the analysis, This gives the users the possibility to work with the data real time and understand and forecast the result real time to predict the sales on a particular day based on the weather data and it will give the competitor an edge to their competitors to work on the promotions. The results from the above methods shows the correlation between every variables and its sizeable impact on the food sales. The key variables identified by performing various techniques and the graphs below identifies the correlation between them.

The competitor used the methods carefully and designed the techniques in such a way that the system gives the best result over the course and the model doesn’t over fit the requirement. But to outperform the methodology used by my competitor I have improvised the ETL (Extract Transfer Load) to the optimized situation that it pulls all the data periodically and displays the result real time situation, Spotfire has been used as a dashboard tool to visualize the graph real time to provide filters for the variables (independent variables) and summarize the results to the end users to simplify the process and act to the needs.

For future research we can try to build a mobile application to give the customers an really time feeling of giving notifications about the situation of the market demand and price the products accordingly to satisfy the customers through promotions and mainly concentrate on the holiday season to give higher discounts to capture the market and make online market survey to understand the customer needs and perform a sentiment analysis to the reviews to improve the business further. The dashboard produced are real time and this will give our customer the experience of a real time understanding of the customers. To further the understanding the research can even look into the sentiment analysis on the reviews.