LITERATURE SURVEY

ABSTRACT

This study set out to determine the best strategy for estimating meal counts for an institutional food service operation. Simple models, moving averages, and exponential smoothing were used in the forecasting process.

It approaches, linear and multiple regressions, as well as Holt's and Winter's techniques. The findings of this investigation indicated that multiple regression was the most reliable method.

PROJECT DESCRIPTION

A lot of perishable raw ingredients must be handled by a food delivery business. Therefore, it is crucial for such a corporation to predict daily and weekly demand precisely. In the food delivery sector, there is a demand and supply imbalance that is an issue. We've always wanted to find a solution to this issue, so now is our time to do so.

WHAT IT DOES

In order to estimate the quantity of orders and obtain raw materials for the upcoming few weeks, we developed a website utilising the proper machine learning model. Because the prediction model is a generalised model, it may be rebuilt using data from other businesses or services. Restaurants can log in or register and access a different area of the online programme called "inventory management" where they can keep track of their available inventory as well as manage their customers and orders.

REGRESSION MODELS

The authors predicted weekly sales at a small campus restaurant using a number of regressions and Box-Jenkins models. According to the tests, the best forecasting model was a multiple regression model with two predictors, a dummy variable, and sales that were lagged by one week.Poisson Regression can be used to forecast how many patrons will be served at a restaurant over a specific period of time.

CASE STUDY

THE BUSINESS CHALLENGE

The customer is a food manufacturing business with headquarters in the US. Stock shortages were a continuous problem for the client.

As a result, they had to manage unforeseen production shifts in order to maintain corporate operations. Additionally, the client was experiencing trouble organising labour and inventory activities. The company saw a decline in their sales rate as a result of these difficulties. As a result, the customer contacted Infinity Research to take advantage of their knowledge and experience in providing demand forecasting solutions. The food manufacturing company intended to address supply chain issues, accelerate the production cycle, and increase sales with Infiniti's demand forecasting solution.

THE EXISTING SOLUTION

The specialists at Infiniti Research carried out qualitative and quantitative market research, examined sales data from clients over the previous five years, and also looked at rivals in the US food manufacturing sector. The client was able to estimate sales demand and manage inventories with accuracy because to Infiniti's demand forecasting technology.

This decreased product stock-outs. This also assisted them in improving labour management. Additionally, the customer was able to better manage warehouse and cash flows thanks to Infiniti's demand forecasting technology.

CONCLUSION

The primary goal of this project is to decrease food waste. The availability of food products improves civilization. Our suggested methodology would undoubtedly be useful to a business in estimating the volume of food orders and assisting them in providing better customer service.