**LITERATURE SURVEY**

**Title:**AI Powered Food Demand Forecaster

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| S.NO | TITLE | YEAR | AUTHOR | JOURNAL | METHODOLOGY | LIMITATIONS |
| --- | --- | --- | --- | --- | --- | --- |
| 1. | Demand Forecasting using Long Short-Term Memory Neural Networks. | 2020 | Marta Golabek, Robin Senge, Rainer Neumann. | ARXIV | Short-term memory neural networks (LSTMs) are suitable for demand forecasting in the e-grocery retail sector. | The performance seen from the evaluations based on a data set that unfortunately has not been publicly available to date. |
| 2. | Analysis of the demand status and forecast of the food cold chain in Beijing. | 2013 | Lan, Hongjie  Tian, Yongbin | JIEM | Analysis of demand status of food cold chain from two aspects, then according to the status, we forecast the demand of refrigerated cars and warehouse for food cold chain in Beijing with the multivariate statistics. | Only suitable for supply sectors in particular regions. |
| 3. | Forecasting future global food demand: A systematic review and meta-analysis of model complexity. | 2018 | Emily J.FliesaBarry,W.Brooka LinusBlomqvist,Jessie C.Buettelac | Envint | Estimates of future global kilocalorie demand have a broad range, they are not consistently dependent on model complexity or form. | Reporting of model accuracy and uncertainty was uncommon, leading to difficulties in making evidence-based decisions about which forecasts to trust. |
| 4. | Demand Forecasting : Literature Review On Various Methodologies | 2021 | Chaitanya Ingle,Dev Bakliwal,Jayesh Jain,Preeyesh Singh,Preeti Kale,Vaibhav Chhajed | IEEE | Research in demand forecasting using traditional statistical models, machine learning, deep learning models and hybrid models.  Models are classified on the basis of characteristics of data and forecasting time periods. | Individual models do not always work efficiently with all kinds of data and therefore an integrated approach |
| 5. | Flexible Demand Forecasting in Intelligent Food Supply Chain Management | 2022 | Srimathi Ravisankar,  Kanimozhi Mahendra,  Srilakshmi Arulmurugan,  M.R. Sumalatha. | SSRN | A Food Tracing System(Find my Food) which uses Nakamoto Consensus method for participants to agree in a network which will address the issues of traditional data invisibility, data manipulation, and sensitive information exposure and the Information sharing module. | Current demand forecasting methods can handle general trend in the historical data, but SARIMA is limited in  predicting extremes. |
| 6. | Enhanced Demand Forecasting System For Food and Raw Materials Using Ensemble Learning | 2021 | K. Harshini, P. K. Madhira, S. Chaitra G. P. Reddy | IEEE | An ensemble can make better predictions and achieve better performance than any single contributing model.Stacking technique is used in the proposed model for making the predictions. | Ensembling is expensive in terms of both time and space. |
| 7. | Food Demand Prediction Using the Nonlinear Autoregressive Exogenous Neural Network | 2021 | K. Lutoslawski, M. Hernes, J. Radomska, M. Hajdas, E. Walaszczyk and A. Kozina | IEEE | NARXNN,  ARIMA, supervised regression and classification models. | lack of the possibility of analysing small datasets |
| 8. | Food Demand Prediction using Machine Learning | 2020 | K.Aishwarya, Aishwarya.N.Rao, Nikita Kumari, Akshit Mishra, Mrs.Rashmi M R | IRJET | Bayesian Linear Regression, Boosted Decision Tree Regression, and Decision Forest Regression,  XGboost is a decision-based boosting algorithm which is used for increasing the accuracy rate. | Shortage of  refined prediction based on factors like cultural habits, religious holiday, consumer preferences etc. |
| 9. | Predicting food demand in food courts by decision tree approaches | 2011 | [Ahmet Selman](https://www.sciencedirect.com/science/article/pii/S1877050910005004#!)  [Bozkir](https://www.sciencedirect.com/science/article/pii/S1877050910005004#!),  [Ebru Akcapinar](https://www.sciencedirect.com/science/article/pii/S1877050910005004#!)  [Seze](https://www.sciencedirect.com/science/article/pii/S1877050910005004#!) | Elsevier | Three decision tree methods (CART, CHAID and Microsoft Decision Trees) are utilized. | A small change in the data can result in a major change in the structure of the decision tree. |
| 10. | Demand Forecasting for Food-Rations at the United Nations Darfur Mission | 2021 | Langdon (Landon) Hollingsworth,Junlin (Shawn) Xiang | IRJET | Holt-Winters Forecasting model and optimized the parameters using non-linear optimization to maximize statistical accuracy | Study based solely on the historical order quantity data which leads to lower accuracy and increased cost penalties. |
| 11. | Demand forecasting in restaurants usingmachine learning and statistical analysis | 2018 | Takashi Tanizakia,\*,Tomohiro Hoshinoa,Takeshi Shimmurab,Takeshi Takenaka | Elsevier | Bayesian Linear Regression, Boosted Decision Tree Regression, Decision Forest Regression and Stepwise method. | The inference of the model can be time-consuming. Stepwise regression often has many potential predictor variables but too little data to estimate coefficients meaningfully. |
| 12. | Demand forecasting in food retail: a comparison between the HoltWinters and ARIMA models | 2014 | Claudimar pereira da veiga, Cássia rita pereira da veiga, Anderson catapan, Ubiratã tortato, Wesley vieira da silva | Research Gate | HW and ARIMA models | The ARIMA forecasting model does not always have the desired accuracy for a given range. the predictions with a larger horizon tend to have reduced accuracy. |
| 13. | A hybrid seasonal autoregressive integrated moving average and quantile regression for daily food sales forecasting | 2015 | Nari Sivanandam, Arunraj, Diane Ahrens | Elsevier | ARIMA, generalized autoregressive conditional heteroskedasticity (GARCH)) and artificial neural networks (ANN) (BPNN, Generalized BPNN) models, SARIMA model, Quantile regression | The SARIMA model produces only the point forecast, i.e., the mean forecast. Hence, the estimation of prediction intervals from the point forecast is not going to reflect the reality. |
| 14. | Demand forecasting for production planning in a food company | 2014 | N. de P. Barbosa, E.da S.Christo, and K. A. Costa | ARPN Journal of Engineering and Applied Sciences | Exponential Smoothing Models, Simple Exponential Smoothing, ABC Analysis | The short perishability of products is not taken into account when evaluating the results obtained by the quantitative methods. |
| 15. | Reducing fresh fish waste while ensuring availability: Demand forecast using censored data and machine learning | 2022 | Vera Lucia, Miguéis, André Pereira, João Pereira, Gonçalo Figueira | Elsevier | Long Short-Term Memory networks, Feedforward neural networks, Support Vector Regression, and Random Forests | large number of trees can make the algorithm too slow and ineffective for real-time predictions.  There is high loss of neighborhood information |