

Restaurant Analytics and DSS for Strategic Planning in Indian Cities

Literature Survey

1. Association between full-service & fast food restaurant density and dietary intake & overweight in Delhi, India

Outcome: Evaluates how density of Indian-style restaurants (not just Western fast food) within 1 km buffers correlates with dietary intake and overweight/obesity in adults across Delhi.

Key Learnings:

- Higher restaurant density was linked to lower fruit intake and higher refined grain consumption.
- After adjusting for socioeconomic status, the positive link to overweight/obesity became non-significant.
- Highlights importance of controlling for income and education.

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4598-8>

2. Restaurant analytics: Emerging practice and research opportunities

Outcome: Provides a survey of practical areas in restaurant operations where data analytics and DSS can improve decision-making (e.g., location, menu, queue, demand forecasting).

Key Learnings:

- Shows how operations and strategic domains can leverage BI and analytics.
- Can be applied to market-gap and cuisine-popularity analysis in Indian cities.
- Suggests methodological approaches for spatio-temporal DSS.

Link:

[https://www.researchgate.net/publication/362179630 Restaurant analytics Emerging practice and research opportunities](https://www.researchgate.net/publication/362179630_Restaurant_analytics_Emerging_practice_and_research_opportunities)

3. Predicting restaurant ratings using regression models: Bengaluru dataset

Outcome: Proposes a predictive DSS framework that uses regression and ML models (e.g. XGBoost, decision trees) to estimate restaurant ratings from features like location, price, online presence.

Key Learnings:

- Enables scenario-based design: owners/investors can model “what-if” before opening.
- Useful for price sensitivity, rating improvement interventions in your DSS.

Link: https://www.itm-conferences.org/articles/itmconf/pdf/2025/05/itmconf_iccp-ci2024_03003.pdf

4. 4. Developing a restaurant analytics dashboard for operational insights

Outcome: Describes building an operational BI dashboard that visualizes large datasets into actionable insights for restaurant management.

Key Learnings:

- Demonstrates how dashboards enhance productivity and decision effectiveness.
- Useful template for implementing your DSS visualizations (e.g., sales trends, footfall).

Link: <https://www.sciencedirect.com/science/article/abs/pii/S0167923621000944>

5. 5. Modeling food popularity using geo-tagged social media data

Outcome: Uses spatial analytics and Bayesian networks with geo-tagged food images/text to detect cuisine popularity trends.

Key Learnings:

- Captures spatial-temporal cuisine trends—valuable for identifying popular cuisines per area.
- Based on social media, can complement your Kaggle dataset (Zomato-like).

Link: <https://arxiv.org/abs/1906.12331>

6. 6. GIS and public health: spatial DSS application

Outcome: Reviews applications of Geographic Information Systems (GIS) in public health, including spatial decision support systems.

Key Learnings:

- Demonstrates how GIS can support mapping of health-risk zones using restaurant density.
- Useful conceptual framework for your 'public health insights' section in DSS.

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4598-8>