

OPTIMIZING PRICING, APPOINTMENTS, AND INVENTORY IN AN EYE CLINIC

A Proposal report for the BDM capstone Project

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DECLARATION STATEMENT

I, **Shriyanshi Parashari**, am excited to present my project titled "**Optimizing Pricing, Appointments, and Inventory in an Eye Clinic**". I extend my sincere thanks to **City Optics and Eye Care Centre** for providing the necessary resources that made this project possible.

I confirm that the data presented in this report is **accurate, genuine**, and based on reliable **primary sources**. All the data has been carefully analyzed to ensure its authenticity.

The methods used for data collection and analysis are clearly explained in the report. I am confident that the findings and recommendations reflect an honest and thorough analysis of the data.

I am committed to **academic integrity** and **honesty**, and I welcome any review or validation of the data presented. This project has been completed independently, without any collaboration, and all work is my own.

I understand the importance of maintaining originality, and I am fully aware of the consequences of plagiarism. In case of any issues, I am prepared to accept the necessary actions as per the guidelines.

The recommendations in this report are specifically for this project and should not be used for any other purpose associated with **IIT Madras**.

Signature of Candidate:

A handwritten signature in blue ink, appearing to read "Shriyanshi", is written over a blue diagonal line on a white rectangular background.

Name: Shriyanshi Parashari

Date: 04-02-2025

1. Executive Summary and Title :-

Title: Optimizing Pricing, Appointments, and Inventory in an Eye Clinic

Executive Summary:

This project is focused on improving the overall operations of an eye clinic that offers vision checkups, glasses prescriptions, and sells lenses and frames. The clinic currently faces three main challenges: high pricing pressure from competitors, inefficient appointment scheduling, and inventory management problems.

With competitors like chain optical stores and online retailers offering lower prices, the clinic struggles to maintain its customer base. Additionally, frequent appointment cancellations and missed appointments lead to lost revenue. Furthermore, the clinic faces difficulties managing its stock of lenses and frames, resulting in either overstocking or shortages.

The primary goals of this project are to address these challenges by:

1. **Improving appointment scheduling:** Streamlining the process to reduce cancellations and no-shows, ensuring better utilization of appointment slots.
2. **Optimizing inventory management:** Implementing a more efficient way to track stock levels, ensuring the clinic has the right amount of lenses and frames available when needed.
3. **Developing competitive pricing strategies:** Offering prices that are attractive to customers while still allowing the clinic to remain profitable.

By achieving these objectives, the project aims to improve the clinic's efficiency, increase customer satisfaction, and enhance its profitability.

2. Organization Background :-

Clinic Name: City Optics And Eye Care Centre

Location: Near Women District Hospital, Budaun, Uttar Pradesh

Specialization: Eye diagnosis, prescription of glasses, and sale of frames and lenses.

City Optics and Eye Care Centre has been serving the local community for several years, providing comprehensive eye care services. The clinic offers thorough eye exams, prescriptions for glasses, and a wide selection of frames and lenses for customers. The clinic has built a reputation for its commitment to quality and customer satisfaction, ensuring that each patient receives personalized care.

Despite its strong track record in patient care, the clinic faces increasing competition from large optical chains and online retailers that offer lower prices on similar products. As a result, the clinic is looking to enhance its operations, stay competitive, and continue to provide excellent service while adapting to changing market dynamics.

3. Problem Statements :-

❖ Problem Statement 1 :-

Pricing Pressure from Competitors: The clinic struggles to compete with chain optical stores and online retailers that offer lower prices on lenses and frames.

❖ Problem Statement 2 :-

Appointment Scheduling Inefficiencies: Frequent patient cancellations and missed appointments lead to revenue loss and idle time in the clinic.

❖ Problem Statement 3 :-

Inventory Management Issues: The clinic faces challenges in managing stock levels for lenses and frames, resulting in overstocking or short.

4. Background of the Problem :-

City Optics and Eye Care Centre is facing several operational challenges that are impacting its ability to maintain profitability and efficiency.

Firstly, **competitive pricing issues** have become a significant concern. The clinic is under pressure from online retailers and large chain optical stores, which offer substantial discounts on lenses and frames. These competitors have attracted a large portion of the clinic's customer base, leading to a decline in revenue. The clinic struggles to match these lower prices without compromising the quality of service, creating a dilemma between maintaining profitability and staying competitive in the market.

Secondly, there are **appointment scheduling inefficiencies**. The clinic has been experiencing frequent cancellations and no-shows, leading to underutilized appointment slots and lost revenue. The lack of an effective scheduling and reminder system has made it difficult to reduce cancellations, which impacts the clinic's ability to serve as many patients as possible, thus limiting potential income.

Lastly, **inventory management** has been another persistent issue. The clinic often faces difficulties in balancing its stock of lenses and frames, which results in either overstocking or shortages. Both of these scenarios are costly for the business—overstocking ties up valuable resources, while shortages lead to missed sales opportunities and customer dissatisfaction.

Addressing these challenges is crucial for improving the clinic's operational efficiency and ensuring its continued success in a competitive market.

5. Problem Solving Approach :-

Data to be used:

For **City Optics and Eye Care Centre**, data related to pricing, appointments, and inventory will be collected and analyzed. Competitor pricing data will be gathered to compare against the clinic's current pricing structure. Appointment data, including cancellations and no-shows, will be reviewed to understand scheduling inefficiencies. Inventory data from the last year will be analyzed to identify patterns of overstocking and shortages in lenses and frames.

Tools:

We will use **Excel** for data organization, **Tableau** for visualizations, and **SQL** to extract appointment and inventory data for deeper analysis. These tools will help uncover insights to solve the clinic's operational challenges.

Approach:

1. Competitive Pricing Strategy

Problem Statement: Pricing Pressure from Competitors

To address the pricing pressure from competitors, a dynamic pricing strategy will be implemented. By comparing competitor prices for frames and lenses, the clinic can offer customized discount packages and bundle offers to retain customers. Seasonal promotions, such as discounts for multiple purchases (frames and lenses), will be introduced to stay competitive and increase sales volume.

2. Appointment Optimization

Problem Statement: Appointment Scheduling Inefficiencies

The clinic's appointment data will be analyzed to identify trends in cancellations and no-shows. To mitigate this issue, an automated appointment reminder system will be implemented. The system will send reminders through SMS or email, reducing missed appointments and revenue loss. Additionally, the clinic can offer incentives (such as discounts on frames or lenses) for patients who consistently attend appointments on time.

3. Inventory Management Improvement

Problem Statement: Inventory Management Issues

To resolve inventory management challenges, a just-in-time (JIT) inventory system will be implemented. Inventory data will be analyzed to determine optimal stock levels for frames and lenses, reducing the risk of overstocking or shortages. By aligning stock levels with demand patterns and purchasing trends, the clinic can minimize waste and ensure products are available when needed. A digital inventory management system will also be introduced to track inventory levels in real time.

6. Expected Timeline:-

1. Project Planning and Initial Meeting

- **1.1** Meeting with Doctor (15 Dec)
- **1.2** Problem Discussion (16 Dec)

2. Data Collection and Research

- **2.1** Data Collection (17 Dec - 15 Jan)

3. Proposal Creation and Submission

- **3.1** Proposal Creation (16 Jan - 20 Jan)
- **3.2** Proposal Submission (1 Feb - 3 Feb)

4. Data Analysis and Report Creation

- **4.1** Data Analysis (21 Jan - 31 Jan)
- **4.2** Mid-Term Report Creation (31 Jan - 7 Feb)
- **4.3** Mid-Term Report Submission (1 Feb - 3 Feb)
- **4.4** Deep Analysis (6 Feb - 8 Feb)

5. Visualization and Final Report

- **5.1** Data Visualization (7 Feb - 8 Feb)
- **5.2** Final Report Creation (8 Feb - 10 Feb)

6. Final Submission

- **6.1** Final Submission (11 Feb - 13 Feb)

Gantt Chart:



7. Expected Outcome:-

- Improved pricing competitiveness through customized offers.
- Reduced revenue loss by decreasing missed appointments with automated reminders.
- Optimized inventory levels, leading to reduced costs and better product availability.

By implementing these strategies, **City Optics and Eye Care Centre** will be able to address key operational challenges, improve customer retention, and enhance overall profitability.