

**DEVELOPMENT OF A BUSINESS INTELLIGENCE DASHBOARD FOR BUSINESS
PERFORMANCE EVALUATION AND REVENUE OPTIMIZATION IN DIAGNOSTIC
SERVICES: A CASE STUDY OF MEDANTA LABS**

Dissertation Submitted to



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By

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Table of Contents

S. No.	Contents	Page No.
1.	Chapter 1: Introduction	1-3
2.	Chapter 2: Literature Review	4-5
3.	Chapter 3: Methodology	6-7
4.	Chapter 4: Result	8-12
5.	Chapter 5: Discussion	13
6.	Chapter 6: Conclusion	14-15

List of Figures

S. No.	Figure	Page No.
1.	Dashboard interface	8
2.	Summary of Key Findings	9

List of Tables

S. No.	Table	Page No.
1.	Table 2.1: Summary of the Studies Included in the Review	4-5

Abstract

Title: Development of a Healthcare Analytics Dashboard for Business Performance Evaluation and Revenue Optimization in Diagnostic Services

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Top Skills: Data Visualization, Healthcare Management, Business Performance Evaluation, Diagnostic Services, Revenue Optimization, Dashboard Development, Business Intelligence, Healthcare Analytics.

Background:

The amount of healthcare business data is growing and organizations have opportunities to enhance their operations and decision making. There is often a lack of integration between the different data sources and manual reporting processes that poses a challenge for diagnostic service providers when monitoring the performance of their revenues, target achievement, client retention, laboratory productivity, and business contribution. Not having a central analytical framework delays decision making and performance management.

Objective:

The objective of this study was to create a Healthcare Analytics Dashboard for Business performance evaluation and Revenue optimization at Medanta Labs. The dashboard is intended to give a unified representation of significant key efficiency (KPIs), enable data-driven decision making and highlight areas for business performance improvement and operational efficiency.

Methodology:

The data used in the study period were from the Medanta Labs, and the method used was descriptive analytical. Information was pulled from several operational areas such as Laboratory Information Management System (LIMS), sales tagging systems, target sheets, client master data and test categorisation files. Microsoft Power BI was used for the data cleaning, transformation, modelling, visualization and dashboard creation. A variety of DAX measures and analytical

frameworks were created to assess business performance using indicators like target achievement, Average Revenue per Visit (ASP), Daily Revenue Run Rate (DRR), Client Run Rate (CRR), business contribution, client mix, test mix and laboratory performance.

Results/Findings:

The resulting dashboard was able to combine several business datasets to a single reporting solution. The overall achievement of the target was 96.06% with an achievement of ₹9.11 Crore against a target of ₹9.48 Crore. Business from FOFO generated 50.62% of total revenue, Pup/SIS generated 37.02% of total revenue. There was high level of client retention with existing clients having a 83.66% share of the client base. In May 2026, Average Revenue per Visit went up by 2.01%, from ₹894 in April 2026 to ₹912 in May 2026. The laboratory-wise analysis revealed that SL Prayagraj has performed well with the achievement of 166.51% towards the target and other selected laboratories which are having gaps in performance can be targeted for focused efforts.

Conclusion:

The study shows how well the tools of healthcare analytics and Business Intelligence are working at converting operational data into actionable insights. By having a structured framework to track business performance, Medanta Labs found a way to better handle revenue opportunities, evaluate laboratory productivity and support strategic decision making using the dashboard. The results demonstrate how dashboard-driven analytics can help diagnostic service providers improve performance monitoring, visibility and drive revenue optimization.

Introduction

1.1 Introduction

The healthcare industry has experienced a major shift and become far more digital and data-centric. Many healthcare organisations produce huge amounts of information on a daily basis related to their operations, finances and services. It has become imperative that this data is used effectively to enhance the performance of the organization, operational efficiency and strategic decisions.

Diagnostic service providers are an integral part of the healthcare system, contributing to the diagnosis, treatment planning and provision of preventative health services. When diagnostic groups are growing in number and sales outlets, it becomes more complicated to track business performance. To make decisions based on the information, timely and accurate information about revenue generation, target achievement, performance in the laboratory, contribution from clients and business development is required from management.

Business Intelligence (BI) tools are becoming increasingly powerful in the ability to make sense of raw data. Interactive dashboards allow businesses to visualize important metrics, patterns, analyse operational performance and provide data-driven decision making. These tools allow management to track performance while on the go and track opportunities for improvement.

Medanta Labs conducts its operations across a large network of labs, collection centres and business channels which generates significant business and operational data. There is a huge opportunity to build analytical solutions based on the availability of data to help with performance evaluation and revenue optimisation. In this context, the current study concentrates on creating a Business Intelligence dashboard with Microsoft Power BI for tracking various business indicators and creating actionable insights. The top aim of the dashboard is to deliver a unified place for business performance monitoring and help data-driven decision making inside the organization.

1.2 Rationale of the Study

As healthcare organizations accumulate more and more of their business and operational data, there is a growing need for effective analytical tools that can help them monitor and make decisions on performance. In the case of diagnostic service organizations, management must keep track of a variety of performance metrics, including revenue achievement, target attainment, client retention, business contribution and laboratory performance. Traditional reporting is often time consuming and requires collating data manually, which can be difficult and time consuming, and may not offer timely reporting for decision making.

Business Intelligence dashboards provide an organized way to analyse and visualize data, presenting it in interactive reports and key performance indicators. These dashboards can enhance organizational performance visibility, enable trend analysis and enable revenue optimization programmes.

This research was conducted to design the Business Intelligence dashboard for Medanta Labs and to study the use of healthcare analytics to aid in improving the business performance evaluation and support managerial decision making. The research is likely to show how analytics and visualization tools can be utilized in a real-world environment for the diagnostic services sector.

1.3 Objectives of the Study

Primary Objective:

- To create a Business Intelligence dashboard to assess business performance and maximise revenue in Medanta Labs.

Secondary Objectives

- To measure important business metrics, including: Revenue Achievement, Target Achievement, Client Mix, Business Contribution, and Average Revenue per Visit (ASP).
- To compare the performance of month against month in each laboratory and business segment.
- To determine high achieving and low achieving laboratories using achievement data.
- In order to derive insights to facilitate data-driven decision making and business growth.

1.4 Research Questions

- How can a Business Intelligence dashboard support business performance evaluation in a diagnostic services organization?
- What insights can be derived from key performance indicators related to revenue, clients, laboratories, and business contribution?
- How can healthcare analytics support revenue optimization and managerial decision-making at Medanta Labs?

1.5 Scope of the Study

This study is centred on the creation of a Business Intelligence dashboard to track business performance at Medanta Labs. The scope will encompass evaluating revenue achievement, target performance, client mix, business contribution, laboratory performance, test mix and operational trends based on organizational data during the study period. The study is not clinical or patient outcome based.

1.6 Chapter Summary

This chapter provided background and motivation of the study and emphasized the significance of the Business Intelligence in the healthcare organizations. It was also presented objectives, research questions and scope of the study. The review of the literature that follows will cover the literature on healthcare analytics, business intelligence, performance dashboards and how these are applied to healthcare management.

Chapter 2: Literature Review

Table 2.1: Summary of the Studies Included in the Review

In healthcare, the use of analytics and Business Intelligence (BI) has become a valuable resource for enhancing decision-making and organizational performance. There are various studies that have begun to investigate the use of analytics, dashboard systems, and data-driven strategies for healthcare management. A literature review of the existing works related to healthcare analytics, business intelligence, performance monitoring and dashboard-based decision support systems is presented.

S. No.	Authors (Year) & Title	Study Location	Sample Size	Sampling Technique	Salient Features
1	Raghupathi & Raghupathi (2014) – “Big Data Analytics in Healthcare: Promise and Potential”	India	N/A	Conceptual Review	Highlighted the role of big data analytics in improving healthcare quality, reducing costs, and supporting evidence-based decision-making.
2	Shah et al. (2018) – “Business Intelligence Adoption in Indian Healthcare Organizations”	India-wide	35 Hospitals	Cross-sectional Study	Found that Business Intelligence tools improved performance monitoring and managerial decision-making across healthcare institutions.

3	Singh & Verma (2019) – “Healthcare Dashboard Systems for Performance Evaluation”	Delhi NCR	20 Hospitals	Descriptive Study	Demonstrated that dashboard-based reporting improved visibility of operational and financial performance indicators.
4	Sharma et al. (2020) – “Role of Data Visualization in Healthcare Decision Making”	India-wide	150 Healthcare Professionals	Cross-sectional Survey	Found that interactive visualizations improved understanding of performance metrics and accelerated decision-making.
5	Kumar & Gupta (2021) – “Business Intelligence and Hospital Performance Monitoring”	Maharashtra	25 Hospitals	Observational Study	Identified positive outcomes in KPI tracking, financial monitoring, and management reporting after dashboard implementation.

Chapter 3: Methodology

3.1 Study Design

Based on the above, the present study used descriptive analytical design in developing a Business Intelligence dashboard to analyze business performance and revenue trends of Medanta Labs. The study was focused on the processes of collecting, transforming, analyzing and visualizing business data with the aim to providing actionable information for decision making.

3.2 Data Source

The two sets of secondary data obtained from Medanta Labs were used for the study. The data included business performance records, revenue reports, target sheets, laboratory information, client information, business categories, and operational data produced during normal business activities.

3.3 Information Sources

The information for the study was gathered through internal business reports and operational databases from Medanta Labs. The main sources used were:

- Progress reports and data on achievement
 - Target allocation reports
- Records of client tagging and lab mapping
- Business contribution reports
 - Test-wise performance reports
 - Operational and sales performance data

3.4 Data Preparation Process

The data collected was cleaned, processed and reviewed before analysis. Data was duplicated and inconsistencies or missing data were found and corrected on a case-by-case basis. Microsoft Power BI and Microsoft Excel were used to combine data from several reports in a single data model.

3.5 Dashboard Development Process

Microsoft Power BI was used to build the dashboard. Data modeling techniques were used to define data relationships and develop a reporting structure. To support business performance monitoring and analysis, interactive visualizations, KPI cards, charts and filters were created.

3.6 Data Items

The dashboard key indicators were:

- Revenue Achievement
- Target Achievement Percentage
- Total Visits
- Average Revenue per Visit (ASP)
- Daily Revenue Run Rate (DRR)
- Client Run Rate (CRR)
- Business Contribution
- Client Mix
- Test Mix
- Laboratory Performance
- State-wise Performance

3.7 Summary

The methodology followed in collecting data, preparing data, creating the dashboard and analyzing the data was described in this chapter. Business Intelligence tools were used to integrate the various data sources together in one central reporting framework to evaluate business performance.

3.8 Key Research Questions

1. What could be the benefits of using a Business Intelligence dashboard in a diagnostic services business to evaluate their business performance?
2. What insights can be gained from the revenue, client, laboratory and business contribution data?
3. How can healthcare analytics help optimize revenues and make data-informed decisions at Medanta Labs?

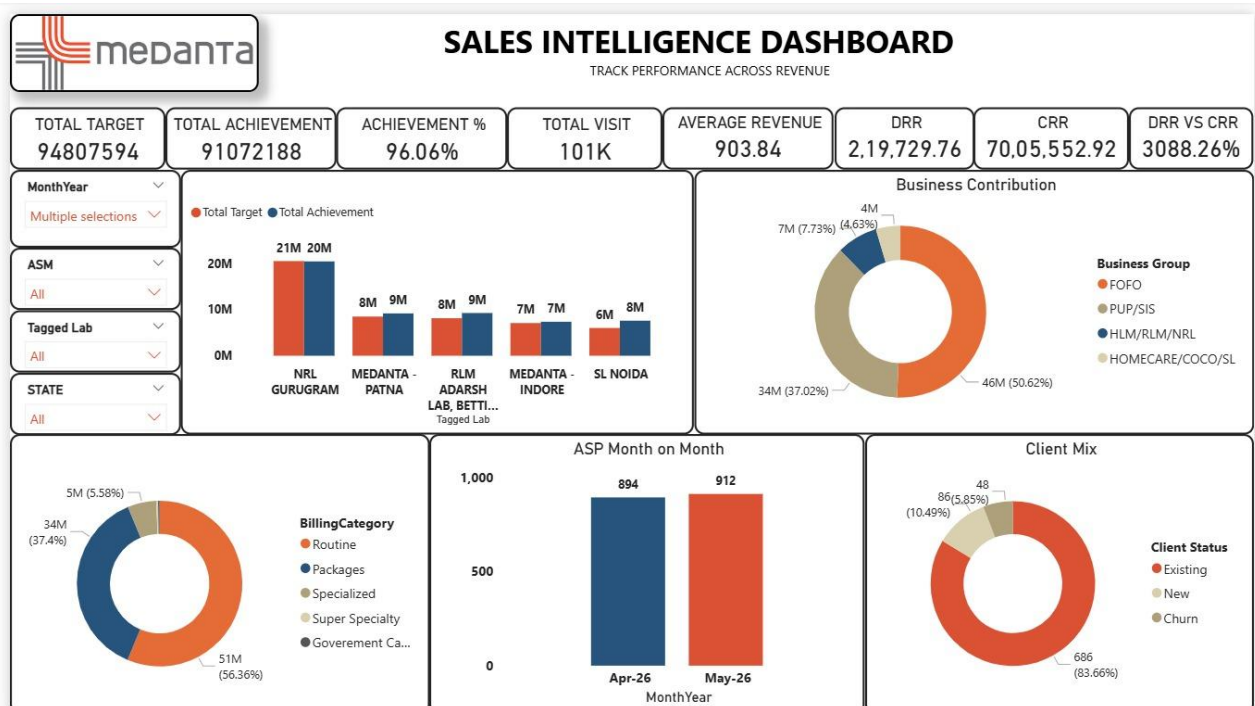
Chapter 4: Results

4.1 Dashboard Overview

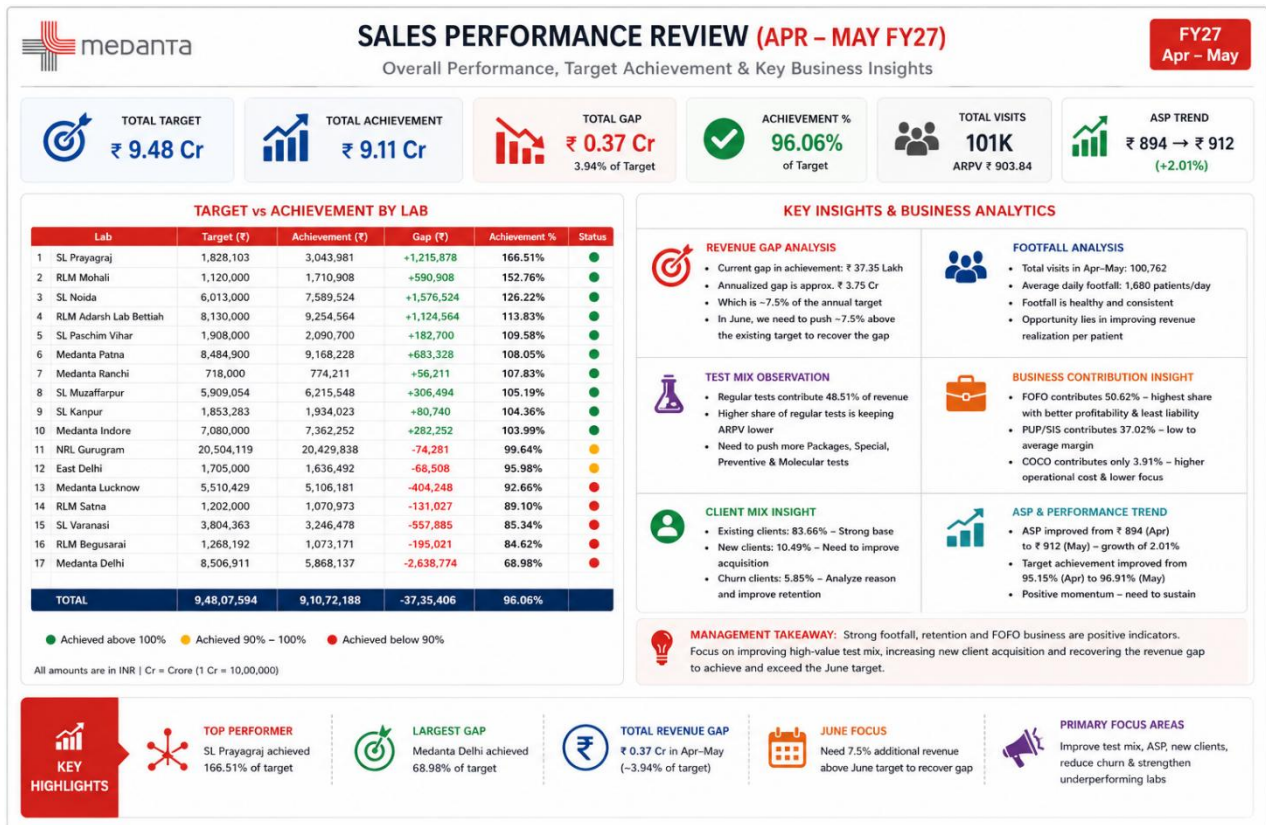
Medanta Labs created a Business Intelligence dashboard with Power BI to give them one place to view business performance. The dashboard merges several operational and business datasets and visualizes the most important KPIs in an interactive manner. With the dashboard, management can track the performance of revenue, targets achieved, client trends, business contribution, laboratory performance, and opportunities for revenue optimization.

The dashboard features KPI cards, trend charts, comparison charts, donut charts, and interactive filters for analysis of business performance in various dimensions.

Dashboard interface



Summary of Key Findings



4.2 Dashboard Components

The dashboard was designed to monitor various aspects of business performance through the following components:

- Revenue Achievement and Target Monitoring
- Achievement Percentage Analysis
- Total Visit Monitoring
- Average Revenue per Visit (ASP)
- Daily Revenue Run Rate (DRR)
- Current Run Rate (CRR)
- Business Contribution Analysis
- Client Mix Analysis
- Test Mix Analysis
- Laboratory Performance Analysis
- State-wise Performance Analysis
- Month-on-Month Trend Analysis

4.3 Revenue Achievement Analysis

Revenue achievement was examined by comparing the revenue in the actual business to targets. The dashboard offered an integrated organization performance overview, and help management determine achievement gaps and track revenue targets.

The analysis showed that the achievement level was different between the business units as well as between laboratories. Target achievement was monitored on a continuous basis and this identified areas of focus and provision for extra resources.

4.4 Average Revenue per Visit (ASP) Analysis

Average Revenue per Visit (ASP) was used to evaluate revenue generated per patient interaction. ASP is a crucial measure of business productivity and service utilization.

Monthly ASP analysis allowed for evaluation of the efficiency of the revenue generation and opportunities for optimising test utilisation and business performance.

4.5 Business Contribution Analysis

Business contribution analysis was carried out to determine the contribution of each business segment on the revenue generated. The analysis also showed that the revenue from FOFO (Franchise Owned Franchise Operated) was the highest at 50.62% (₹4.6 Crore) which was the major source of revenue to the organization. The second largest business source was PUP/SIS which contributed 37.02% (₹3.4 Crore).

The HLM/RLM/NRL segment accounted for 7.73% (₹0.7 Crore) of the total while the Home Care/COCO/SL segment accounted for 4.63% (₹0.4 Crore) of the total. It shows that FOFO business relies heavily and it is important to keep maintaining strong franchise relations and exploring avenues to enhance outputs of other business channels.

4.6 Client Mix Analysis

The client mix analysis was carried out to assess the retention, acquisition and attrition trends of clients in the period of April 2026 to May 2026. The analysis found 686 present clients, accounting for 83.66% of the total clients. There were 86 new clients (10.49 per cent) and 48 churn clients (5.85 per cent).

The high percentage of clients that are existing clients shows a great and solid client base. The

relatively low acquisition rate of new clients, however, indicates that there is room for greater business development activities. Also, the fact that there are churn clients implies that retention strategies are essential and regular touchpoints with clients are necessary to avoid losing revenue.

4.7 Test Mix Analysis

Test mix analysis was done for the assessment of contribution of the different test categories. When it comes to revenue, Routine tests performed the highest rate of 56.36% (₹5.1 Crore) followed by Packages at 37.40% (₹3.4 Crore). Specialized tests and Super Specialty/ Government category tests contributed lesser when compared to others, being 5.58% (₹0.5 Crore) and 4.98% (₹0.4 Crore) respectively.

The results show that routine investigations play a crucial role in revenue generation. While these are standard tests, they tend to report lower revenues per patient but do give consistency of business volume. Higher share specialized packages, super specialized packages and preventive health packages could lead to better Average Revenue per Visit (ASP) and business profitability.

4.8 Laboratory Performance Analysis

The performance analysis of the laboratories was done via laboratory wise target achievement and revenue generation. The results indicated that there were substantial differences in performance between laboratories.

SL Prayagraj was the top performing laboratory with 166.51% of the assigned target followed by RLM Mohali with 152.76% and SL Noida with 126.22%. Several other laboratories such as Medanta Patna, Medanta Ranchi, SL Muzaffarpur and Medanta Indore also went beyond their targets.

Medanta Delhi, on the other hand, had the lowest performance with an achievement level of 68.98%, followed by RLM Begusarai (84.62%), SL Varanasi (85.34%) and RLM Satna (89.10%). Monitoring and corrective interventions should be carried out with a focus on these laboratories to improve business performance.

The average achievement for the study period was 96.06%, which showed that most of the revenue was achieved by the organisation and strong performance was observed from most of the

laboratories.

A roadmap for the ASP analysis and revenue trend.

Average Revenue per Visit (ASP) was analysed to assess revenue realization efficiency. The ASP increased from ₹894 in April 2026 to ₹912 in May 2026, representing a growth of 2.01%.

The positive trend represents a positive change in revenue per patient visit. This improvement could be due to the improvement in test mix, better value investigations or better business performance. It is crucial to have continuous monitoring of ASP because it has a direct impact on overall revenue growth and profitability.

4.10 Target Achievement Analysis

The dashboard indicated that total target was ₹ 9.48 Crore and the target was met during the study period of ₹ 9.11 Crore. The organisation has achieved its target with 96.06% margin and the gap is ₹37.35 Lakh.

The result was close to the target but there is still a gap that needs to be filled by additional business generation activities. The laboratory level performance was analysed to give management actionable information to improve performance and target resources for high and low performing centres.

Results indicated that the organisation could meet and surpass the revenue goals with a slight increase in business volume.

CHAPTER 5: DISCUSSION

5.1 Discussion

This study focused on creating a Business Intelligence dashboard to evaluate business performance and optimize revenue at Medanta Labs. The dashboard successfully combined several business indicators into one platform, making it easier to monitor and analyse how the organization was doing.

The results showed that the organization met 96.06% of its revenue target during the study period. The analysis of business contributions found that the FOFO segment was the largest revenue generator. The client mix analysis revealed a good retention rate, with most clients classified as existing clients. The average selling price trend showed growth from April to May, signalling better revenue realization per patient.

These findings support previous research that emphasizes how Business Intelligence tools can enhance performance monitoring, operational transparency, and decision-making. The dashboard provided management with useful insights about revenue gaps, client retention, laboratory performance, and opportunities for business growth.

5.2 Managerial Implications

The dashboard created in this study can effectively help management at Medanta Labs make decisions. Having real-time business insights allows for quick identification of performance gaps and supports decision-making based on evidence.

The findings suggest that management should prioritize acquiring new clients, reducing client turnover, and increasing contributions from higher-value test categories to enhance revenue realization. Regular monitoring of laboratory performance can also enable targeted actions for underperforming centres.

Additionally, the dashboard can aid in strategic planning, performance reviews, revenue forecasting, and resource allocation across various business segments and locations.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study focused on developing a Business Intelligence dashboard to evaluate business performance and optimize revenue at Medanta Labs. The dashboard effectively brought together various business indicators into a central reporting platform. It enabled the efficient monitoring of revenue performance, target achievement, client behaviour, business contributions, laboratory performance, and operational trends.

The findings showed that healthcare analytics and Business Intelligence tools can change organizational data into valuable insights that support decision-making. The dashboard gave management a clear view of performance drivers, revenue gaps, and business opportunities. Overall, the study highlights the importance of data-driven management practices in improving business performance and operational efficiency in diagnostic service organizations.

6.2 Recommendations

Based on the findings, the following recommendations are made:

- Increase the focus on acquiring new clients to expand the business and boost revenue growth.
- Implement specific strategies to retain clients who might leave to reduce losses.
- Promote specialized, preventive, and high-value diagnostic tests to improve average revenue per visit.
- Conduct regular performance reviews for underperforming laboratories and business units.
- Strengthen contributions from non-FOFO business segments to lessen reliance on a single source of revenue.
- Use dashboard monitoring for regular business reviews and strategic decision-making.
- Continuously update the dashboard to include more business and operational indicators.

6.3 Future Scope of the Study

Future studies may expand the dashboard framework by extending the study period and including more business performance indicators. More advanced analytical methods, such as predictive analytics, forecasting models, and machine learning, could also be added to support proactive decision-making.

Further research might explore integrating clinical, operational, and financial indicators into a single healthcare analytics platform. Similar dashboard frameworks could be applied in other healthcare organizations to assess their effectiveness in improving performance monitoring and business outcomes.