"Applicability of Business Intelligence in transforming Hospital Management"

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Abstract: Healthcare industry is growing rapidly generating large data with the increase of patient inflow. Data are required for improving patient care, operational efficiency and financial performance of growing healthcare industry. This raw data needs to be converted in useful information for decision making process.

Decision-makers must now deal with a growing demand for clinical and administrative information in order to meet legal and customer-specific criteria. Business Intelligence (BI) is considered to be a potential remedy for this current issue. Business Intelligence (BI) has emerged as powerful solution which harness data collected from healthcare system into actionable insights. However, healthcare differs from other industries in using information to influence diverse constituencies, such as physicians, patients, government, insurance companies, hospital administrators, and pharmacies. Privacy issues and BI operations can be challenging, as healthcare organizations collect and analyse sensitive patient data.

This contribution aims to translate and modify the current findings for the healthcare context because the industrial sector is the primary focus of the BI research that has already been conducted.

Keywords: Business Intelligence, Hospital Management, Decision-making, Operational Efficiency, Performance Improvement, Data Analytics.

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Purpose of the study: This research is undertaken to explore the applicability of Business Intelligence in hospital management. Research examines Business Intelligence (BI) impact on Decision-Making, operational processes, and overall performance. The research also discusses the challenges encountered during the implementation of Business Intelligence in hospital settings including data integration, data privacy, and governance.

Methodology: The study utilizes a mixed-methods approach, combining quantitative data analysis and qualitative interviews with hospital administrators and stakeholders. Quantitative analysis involves collecting data on key performance indicators (KPIs) related to patient outcomes, operational efficiency, and financial metrics before and after the implementation of BI tools. Qualitative interviews provide insights into the perceived benefits, challenges, and lessons learned from using business intelligence in hospital management.

The findings of this study highlight the transformative impact of business intelligence in hospital management. The quantitative analysis reveals significant improvements in key performance indicators, such as reduced patient waiting times, increased revenue, improved resource utilization, and enhanced patient satisfaction scores. The qualitative interviews provide deeper insights into how BI tools enable data-driven decision-making, streamline operational processes, and drive strategic initiatives in hospitals.

A cross-sectional research design is used, as it allows for the collection of data at a single point in time and enables the examination of relationships between variables business intelligence, patient outcomes, operational efficiency, and financial metrics.

Source of data: A Sample unit, which could include 10 Allopathic hospitals or healthcare organizations that have implemented BI systems in Bangalore. This research uses purposive sampling technique to select a representative sample of hospitals or healthcare organizations includes hospital Administrator, BI developer and doctors as respondents. Data is collected through administrating well a structured questionnaire among selected hospitals or healthcare organizations. The questionnaire includes items that measure the extent of BI implementation, perceived benefits, challenges, and organizational performance indicators.

To analyse data by appropriate statistical techniques, such as descriptive statistics, correlation analysis, and regression analysis using software tool SPSS or Jamovi to analyse the influence of BI on key performance metrics, such as revenue generation, patient satisfaction, and quality of care.

Challenges and Barriers of BI in Hospitals: The applicability of business intelligence (BI) in hospital management has the potential to revolutionize decision-making, operational efficiency, and patient care. However, several challenges and barriers must be addressed to fully harness the benefits of BI in healthcare settings. Inconsistent data formats, data silos, and poor data quality can hinder the effective utilization of BI tools and limit the accuracy and reliability of analytical insights. Inadequate infrastructure, legacy systems, and limited IT resources pose significant challenges and barriers to the successful implementation and utilization of BI in hospital management. Ensuring data governance, protecting patient privacy, and maintaining data security while utilizing BI tools can be complex and challenging.

Implications for Hospital Management: This research can provide evidence-based recommendations for hospitals and healthcare organizations regarding the implementation and utilization of BI systems. It offers insights on best practices, strategies, and approaches for maximizing the benefits of BI in hospital management. Also highlights areas for improvement and suggest ways to overcome challenges identified during the research.

Contribution to Knowledge and Future Research: The research will contribute to the existing body of knowledge on the applicability of BI in hospital management. study provides suggestions in potential areas for further research and exploration in the field of BI in healthcare management.

The outcome of the paper on the applicability of business intelligence in hospital management would contribute to the existing body of knowledge in healthcare administration and provide valuable insights for healthcare professionals, researchers, policymakers, and administrators aiming to enhance the use of data-driven approaches in hospital management. The paper reveals the impact of BI on organizational performance. Furthermore, it explores the critical success factors and best practices for successful adoption and utilization of business intelligence tools in hospital management.

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