

DATA VISUALIZATION: ANALYSING FACTORS OF DIABETES USING BUSINESS INTELLIGENT

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ABSTRACT - This project aims to use data visualization and a Business Intelligent (BI)-based dashboard to identify risk factors for diabetes. It emphasizes the need for funding to improve diabetes treatment and addresses the misalignment of healthcare management with national priorities, like in India. The project involves analysing diagnostic measurements in a diabetes dataset, creating a user-friendly dashboard using tools like Figma and Canva, and conducting user testing. The stages include planning, analysis, design, development, and testing, all focused on visualizing diabetes-related information. The dataset is transformed and loaded into the dashboard using Extract, Transform, and Load (ETL) methods, and visualization tools are used to present the data. A user acceptability test (UAT) with 30 participants, including diabetic patients, evaluates the effectiveness of the dashboard in helping patients understand diabetes factors. The results support the value of the Visualization of Diabetes Factors dashboard while identifying areas for improvement.

Keywords: Diabetes, data visualization, Business Intelligent (BI), factors, user acceptance test

1. INTRODUCTION

This project aims to create data visualizations for diabetes, identify risk factors, and improve diabetes treatment funding. It addresses the misalignment between healthcare management and national priorities, particularly in countries like India. The research involves analyzing diabetes data, creating a user-friendly dashboard using tools like Figma and Canva, and conducting user testing. The project has three objectives: analyzing data requirements, building a visual dashboard, and testing user acceptance. By restructuring the dataset and selecting appropriate data types, the dashboard is developed seamlessly. The Waterfall approach, with five phases, is used: planning, analysis, design, development, and testing. Power BI is the primary tool for data visualization. User Acceptance Testing (UAT) will evaluate the project's outcome.

2. METHODOLOGY

For the Data Visualization: Analysing Factors of Diabetes Using Business Intelligent, the Waterfall Model was used as the technique. Planning, Analysis, Design, Development, and Testing are the five phases. The problem description, aim, project scope, and project importance are all defined during the planning process. The next phase is analysis, where prior similar activities are examined to gather data and determine project requirements. The Design phase, which follows, entails creating a Canva prototype for the Data Visualization: Analysing Factors of Diabetes Using Business Intelligent. Power BI is used for data visualization throughout the development phase, whereas Apache Hive and Microsoft Excel are used for data cleansing and ETL processes. Finally, the dashboard will undergo a User Acceptance Test (UAT) during the Testing phase.

3. RESULTS AND DISCUSSION

Consumers will test and assess the dashboard during the User Acceptance Testing (UAT) phase. Perceived Ease of Use, Perceived Usefulness, Attitude, and Intention to Use are the four categories into which the questions in User Acceptance Testing are split. To give respondents the chance to comment on the questionnaire, this project uses Google Forms as an online survey. The results of the tests are shown in Figure 1.

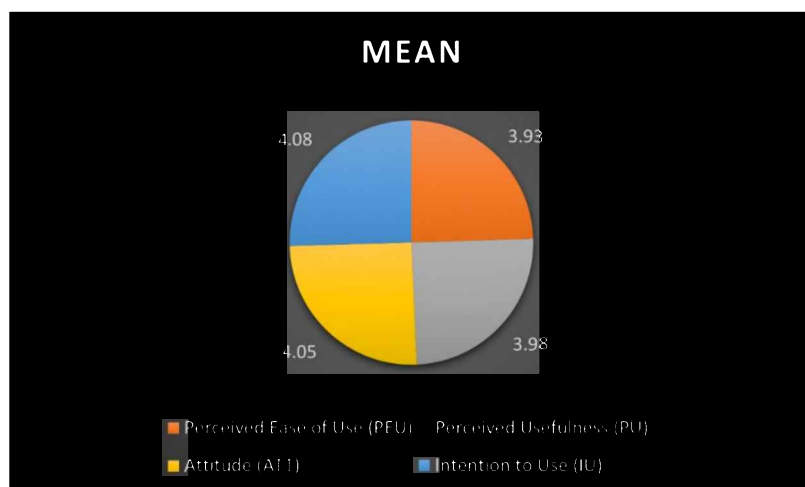


Figure 1. User Acceptance Test (UAT) Mean

4. NOVELTY OF RESEARCH / PRODUCT

By using business intelligence approaches to examine the aspects related to diabetes, this research study makes a fresh contribution to the field of data visualization. The initiative offers a distinctive method for comprehending and analysing complex diabetic data by fusing data visualization concepts with business intelligence tools. Users of the produced dashboard can study and acquire insights into the several aspects causing diabetes thanks to the usage of interactive charts, graphs, and tables. The dashboard's effectiveness and user-friendliness are further ensured by the inclusion of usability testing and user feedback. Overall, this project's innovative use of data visualization and business intelligence advances our knowledge of the factors that affect diabetes while providing an important tool for management of healthcare decisions in the context of this common disease.

5. CONCLUSION

In conclusion, the publication Data Visualization: Analysing the Factors of Diabetes using Business Intelligent was developed to aid in the understanding of the factors that influence diabetes. Dashboards are created to aid users in understanding and learning about parameter trends connected to diabetes. The dashboard includes all the crucial details a person needs to comprehend about diabetes. The analysis is illustrated using a variety of graphics, including maps, line charts, tree maps, donut charts, and bar charts.

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