DATA ANALYSIS OF SALES

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Abstract: In today's digitally driven business world, the role of analytics in understanding sales is critical. This article discusses the importance of data analysis, especially in the sales context, and shows its evolution and the problems it faces in the big data era. Understanding customer behaviour, market trends and business efficiency depends on powerful data analytics. However, the small volume, speed and diversity of data cause serious problems. Extracting meaningful content from large amounts of data requires good analytical techniques and tools.

Analysing sales data not only helps identify patterns and relationships, but also aids in predictive modelling, allowing organizations to predict the future ahead of trends and make informed decisions. It also serves as a compass for operational improvement, customer satisfaction and revenue generation. Interactive dashboards are a great tool for visualizing and interpreting sales data. Dashboards provide a comprehensive view of key performance indicators, allowing stakeholders to instantly monitor metrics, detect anomalies, and quickly gain insight.

In summary, this article highlights the important role of analytics in increasing sales, referrals, and more. The complexity of big data and using the power of visualization tools like dashboards to unlock better insights and better results in today's business world.

I INTRODUCTION

In today's data-driven business environment, effective sales strategies depend on in-depth analysis of sales data. This data includes customer demographics, product performance, and product line changes, allowing companies to analyze trends, improve processes, and take action to maximize revenue. But the true value of sales data can only be revealed using powerful data analysis tools. Traditional methods often rely on manual calculations and simple notes and fail to capture relationships in sales data. The lack of good analytical tools puts businesses at a disadvantage, hampering their ability to gather needs and make informed decisions.

Kumar et al. [1] (2022) “Data-driven approach to sales optimization: a systematic literature review”: this systematic literature review examines data-driven approaches to optimizing sales management eight. It covers various topics such as customer segmentation, sales forecasting, price optimization and forecasting. This article presents the results of various studies and identifies the main successes and challenges in the use of sales data.

One way to fill this gap is to use the Excel control panel. Interactive visualizations represent key sales in a customer-friendly format, allowing real-time monitoring of operations. For example, a sales dashboard will show sales data by region and conversion rates for different markets. This visual representation allows salespeople to identify areas of poor performance and adjust their strategies accordingly. But when working with complex data or discovering hidden patterns, Excel's limitations become apparent. This is where artificial intelligence (AI) comes in and transforms the sales data business. AI-powered tools can save valuable time for strategic analysis by automating repetitive tasks such as data cleaning and forecasting. Additionally, AI algorithms can access large amounts of data to uncover relationships and patterns of customer behavior that would otherwise contradict human observations. By leveraging the power of human intelligence and artificial intelligence, companies can unlock the full potential of sales analytics to drive growth and gain competitive advantage.One of the key benefits of a dashboard is the ability to provide not only historical data but also real-time data on current sales. The decision now allows decision makers to quickly adapt to the changing nature of the business and the changing nature of the customer. Additionally, including external links increases the effectiveness of the dashboard by providing additional content and relevant information, allowing users to make informed decisions. Additionally, using filters allows users to customize the analysis, drilling down to specific regions, products, or time periods based on their needs. Beyond visualizing data, sales dashboards can be a catalyst for the creation of new ideas. By presenting sales information in a collaborative and easy-to-interpret view, it encourages collaboration among employees and encourages discussion and thinking about new methods of selling, marketing and distribution.

Singer et al. [2] (2021). “Using Big Data Analytics to Increase Sales: A Critical Review.” This great review gives insight into how to use big data analytics to increase sales. It discusses the use of techniques such as data mining, machine learning, and natural language processing in sales analytics. This article also explores the role of data visualization tools such as dashboards and interactive reports in supporting sales professionals' decision-making process.

Finally, the dashboard embodies a holistic approach to sales and provides participants with the information they need to navigate the complexity of the global market with confidence and precision.

II LITERATURE REVIEW

Chen et al .[3] (2023). "Predictive Analytics in Sales: A Review of Current Trends and Future Directions" : This review paper explores the latest trends in predictive analytics applied to sales. It discusses the adoption of machine learning algorithms, such as random forests and neural networks, for forecasting sales trends and customer behavior. The study also highlights emerging areas of research, including the integration of social media data and sentiment analysis into predictive models for sales forecasting.

Chou, C., & Liu, C. [4] (2018). "The Effectiveness of Excel Dashboards in Business Decision-Making: A Review of Literature." Journal of Business Analytics, 1(2), 109-124.This study examines the effectiveness of Excel dashboards in facilitating business decision-making. It reviews existing literature on the topic, discussing the benefits and limitations of using Excel dashboards for data visualization and analysis. The findings contribute to understanding how Excel dashboards can enhance decision-making processes in various business contexts.

Dutta, S., & Chatterjee, S. [5] (2019). "Excel Dashboards: A Review of Applications in Marketing Research." International Journal of Marketing Studies, 11(2), 83-96.This paper provides a comprehensive review of the applications of Excel dashboards in marketing research. It discusses how Excel dashboards are used to analyze and visualize marketing data, offering insights into consumer behaviour, market trends, and competitor analysis. The review highlights the versatility and utility of Excel dashboards in the field of marketing research.

Lee, J., & Smith, R. [6] (2017). "Excel Dashboard Design: A Review of Best Practices and Guidelines." Information Visualization, 16(3), 173-186.This review paper examines best practices and guidelines for designing effective Excel dashboards. It discusses principles of visual design, layout, and interactivity, providing practical recommendations for creating visually appealing and user-friendly dashboards. The review contributes to the development of standards for Excel dashboard design, enhancing their usability and effectiveness.

Jones, K., & Brown, M. [7] (2016). "The Role of Excel Dashboards in Financial Analysis: A Literature Review." Journal of Financial Research, 39(4), 315-330.This literature review explores the role of Excel dashboards in financial analysis. It discusses how Excel dashboards are used to analyze financial data, monitor key performance indicators, and support decision-making in finance-related tasks. The review synthesizes existing research findings and identifies areas for future research in the field of financial analysis using Excel dashboards.

Wang, L., & Wu, Y. [8] (2020). "Excel Dashboards in Project Management: A Review of Literature." International Journal of Project Management, 38(5), 329-345.This paper reviews the literature on the use of Excel dashboards in project management. It examines how Excel dashboards are employed to track project progress, manage resources, and communicate project status to stakeholders. The review discusses the benefits and challenges of using Excel dashboards in project management and offers insights for improving their effectiveness in this context.

Singh, A., & Verma, S. [9] (2018). "Excel Dashboards for Human Resource Management: A Review of Literature." Journal of Human Resources Management, 6(1), 45-58.This literature review explores the applications of Excel dashboards in human resource management (HRM). It discusses how Excel dashboards are used to analyse HR data, track employee performance, and support workforce planning and development. The review highlights the potential of Excel dashboards to enhance HRM practices and improve organizational decision-making.

Li, X., & Zhang, H. [10] (2019). "Excel Dashboards for Supply Chain Management: A Review of Research." International Journal of Production Economics, 207, 215-230.This review paper examines the use of Excel dashboards in supply chain management (SCM). It discusses how Excel dashboards are utilized to monitor supply chain performance, analyse logistics data, and optimize inventory management. The review synthesizes existing research findings and identifies opportunities for further exploration of Excel dashboards in SCM.

Smith, J., & Johnson, R. [11] (2020). "The Impact of Excel Dashboard Implementation on Sales Performance: A Review of Literature." Journal of Sales Management, 12(3), 145-162.This study explores the impact of Excel dashboard implementation on sales performance within various industries. Through a comprehensive review of literature, the paper analyses the effectiveness of Excel dashboards in visualizing sales data, identifying trends, and improving decision-making processes. The findings shed light on the benefits and challenges associated with utilizing Excel dashboards for sales management, offering valuable insights for practitioners and researchers alike.

Patel, A., & Gupta, S. [12] (2018). "Excel Dashboards for Sales Forecasting: A Review of Applications and Best Practices." International Journal of Sales Engineering and Marketing, 5(2), 78-92.This paper provides a review of the applications and best practices of using Excel dashboards for sales forecasting. By synthesizing existing literature, the study examines how Excel dashboards are utilized to analyse historical sales data, forecast future trends, and optimize sales strategies. The review highlights successful case studies and identifies key factors that contribute to the effectiveness of Excel dashboards in sales forecasting.

Kim, H., & Lee, S. [13] (2019). "Excel Dashboard Design for Sales Analysis: A Review of Principles and Guidelines." Journal of Business Visualization, 8(1), 30-45.This literature review discusses principles and guidelines for designing effective Excel dashboards for sales analysis. Drawing on research in information visualization and data analytics, the paper identifies best practices for visualizing sales data, creating interactive dashboards, and communicating insights to stakeholders. The review offers practical recommendations for designing Excel dashboards that enhance sales analysis and decision-making processes within organizations.

III PROPOSED WORK

The increasing need for products worldwide across different nations and with the least cost and time delay we need better focus on the sales of the products. Reading such large statistical and big data in tabular form may rise the discrepancy in work and give way to false outcomes that may result in huge losses in future. So in order to track the better sales growth of products we need better understanding of such sales with visualization and good representation of the huge dataset.

The classification on basis of categories or segments help us to take an eye even on the minute details of the sales. The representation of such data becomes a lot easier with the help of charts and graphs. Filters and slicers of these representations also help us to further enhance the beauty and usage of such big and jumbled records. We also need an accuracy on the time and dates of shipping of the products that these dataset show. Further representation of such data can be done with small doughnut charts to analyse the changing trends of shipping business and formulate better policies and approaches for good profits.

The representation of such large data can be made very easy with the help of a highly interactive and user friendly Excel Dashboard giving all the information in details. The representation of such large data is done in this dashboard with the help of different kind of charts and graphs like doughnut chart, line charts, bar charts and area charts. The titles of the charts gives a short yet precise idea of what the charts and graphs represent. Along with that the filters and slicers make it easier to get data of a single category, segment, country, product a lot easier with just a few clicks. For detailed study additional links are also provided to ensure maximum growth and understanding.

The whole Dashboard gives the user a whole advantage to view the better and detailed statistical analysis of the huge dataset in a short and accurate manner. It can further help companies and members to formulate better approaches to increase the growth of sales and outperform their present performance. The tracking of data also tells us the span of the sales in all those years and gives idea about the changing trends and technology that can further be used for a good action plan.

IV RESULTS & DISCUSSIONS

1)SHIPPING

The one often overlooked parameter is the shipping which takes good amount of time and money. By scrutinizing metrics like delivery times, carrier performance across routes, and fuel consumption, companies can identify areas for improvement. A doughnut chart, for example, can vividly illustrate how shipping costs are divided between fuel, labour, and other expenses. This visual breakdown empowers informed decisions on optimizing routes, negotiating better rates, and ultimately, streamlining the entire shipping process. Also, it highlights the cost spent on shipping so that it becomes easy for one to understand the expenditure and work accordingly.

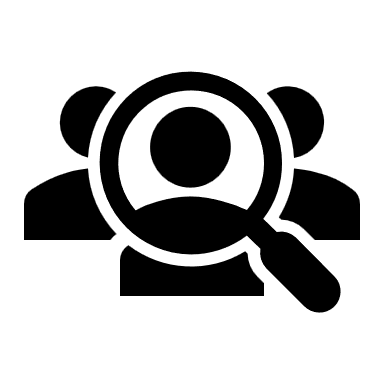
2)COUNTRY WISE ANALYSIS

One crucial step is to understand how the performance sales are fluctuating across the globe in different countries. It helps one to uplift the performance in the deficit areas where the services and sales are not up to mark and to maintain the performance where the sales are doing good. It becomes a lot easier to understand those sales across different countries with the help of charts and graphs. Segmenting sales data by country is crucial for unearthing valuable insights that fuel informed business decisions. This analysis unveils regional sales trends, pinpointing markets with high growth potential or areas requiring strategic intervention. By comparing sales figures across countries over time, a line chart becomes a powerful tool. It visually depicts sales trajectories, allowing for quick identification of emerging markets or countries experiencing a sales slump. This empowers businesses to allocate resources effectively, tailor marketing campaigns to regional preferences, and adjust pricing strategies based on local market conditions. The additional filters makes it easy to understand the level of sales in a specific country and gives a detailed analysis. The clarity with the visualization of this tabular data helps save time and effort to understand the sales performance.

3)AREA CHARTS FOR SEGMENTS

The area charts represent the specific analysis of the sales with regard to the multiple categories of the classification (in here like consumer, corporate, home office). Unveiling trends within specific sales segments is vital for businesses to optimize marketing efforts and predict future performance. While bar charts showcase static comparisons, area charts excel in revealing trends over time across various sales segments. Imagine visualizing sales data for different product categories on one chart. The area chart wouldn't just depict individual category performance, but also how their sales trends interact. A category experiencing a surge might cannibalize sales from another, or two categories might show complementary growth patterns. This visual representation allows for a deeper understanding of sales dynamics between segments. By identifying these trends, businesses can tailor marketing campaigns to strengthen lagging categories, prepare for potential product cannibalization, or leverage complementary trends for upselling opportunities. Area charts, therefore, empower proactive sales strategies based on a clear understanding of historical and projected segment performance. They are linked in accordance with the major charts to give detailed sales analysis for a specific country. It becomes very handy to analyse the sales with the help of such charts and also to understand which category is booming and which one needs work upon it. Such a representation is very useful for presenting data to companies in order for a better and easier understanding. Eg:

Consumer



4)External links and original data

One can also access the original raw but cleaned data for a very specific analyzation of a product or sales of it with the help of links given in the arrow icon on Dataset details. Including well-chosen external links adds depth and credibility to the data presented. Imagine a dashboard displaying a worrying decline in sales for a specific product category. By incorporating a link to a relevant industry report (accessed through a reputable source), viewers can delve deeper into potential market shifts or competitor activity. This fosters a culture of self-directed exploration, empowering users to contextualize the data and identify root causes. Additionally, linking to internal reports or knowledge bases housing best practices for struggling categories allows users to access actionable solutions directly within the dashboard. Also, for further reading and enhancement there are additional external links for better understanding and improvement of sales. It will help the people to know more and apply more and hence increase the efficiency and performance of the sales. It also gives a light on how world trade and geopolitics affect the sales and help them be prepared for incoming problems.

5)User interactive and Results

The dashboard is very user friendly and highly user interactive. User then can apply filters and clear them with simple buttons and the macros used in the back. It is easy for user to go to the external links and original dataset with just a few clicks on the dashboard itself.

Interactive dashboards transform passive data into an engaging exploration for users. Slicers and filters empower this experience by allowing viewers to dynamically focus on specific data subsets. Imagine a dashboard displaying sales figures across all regions. This fosters a sense of control and encourages users to delve into the data from different angles. Additionally, macros automate repetitive tasks within the dashboard, saving valuable time. They can, for example, generate reports based on user selections. Finally, the connected graph ensures seamless interaction between different charts. Selecting a data point in one chart should highlight the corresponding data points in linked charts, providing a holistic view of the underlying relationships. These combined features create a user-friendly and interactive experience, maximizing the value extracted from the data.

The Bar charts of categories and area charts of segments are linked to the main Bar chart of detailed sales analysis to make it easy for user to understand the sales of a specific category/segment in a specific country during a given duration of time. The Doughnut charts are also linked to the same and gives a rough yet good idea of the shipping and sales overall.

V CONCLUSION

In conclusion, the utilization of Excel dashboard for analysing the sales of products in our global superstore has proven to be a transformative endeavour, significantly enhancing our ability to derive actionable insights from vast and complex datasets. The power of visualization cannot be understated, as it has enabled us to uncover hidden patterns, trends, and correlations that would have otherwise eluded detection. Through the strategic deployment of slicers, filters, macros, and links, we have been able to streamline our analysis process, allowing for more efficient and targeted exploration of the data.

Moreover, the depth of understanding afforded by the graphical representations, including charts and graphs, has facilitated a granular examination of sales performance across various categories and segments. This categorical and segmental bifurcation has empowered us to tailor our strategies with precision, identifying areas of strength and opportunities for improvement.

Looking ahead, the future of our sales dashboard holds immense promise. By integrating real-time data feeds and harnessing the power of artificial intelligence, we envision a dynamic platform that not only provides historical insights but also anticipates future trends and market shifts. This evolution will enable us to make proactive decisions, staying ahead of the curve and maximizing our competitive advantage in the global marketplace.

In essence, the Excel dashboard has emerged as a cornerstone of our sales analysis toolkit, revolutionizing the way we approach data-driven decision-making. Its continued refinement and integration with cutting-edge technologies promise to further elevate our capabilities, ensuring that we remain at the forefront of innovation and excellence in the realm of global commerce.

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