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Chhatrapati Shahu Institute of Business Education & Research

(An Autonomous Institute), Kolhapur.

"A Study of Implementation and Integration of Systems, Applications, and Products in Data Processing (SAP) System in Dalmia Bharat Sugar and Industries Ltd, Asurle-Porle."

Submitted By

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Sangeet Alankar, A.I.R.B High Grade)

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DECLARATION

I declare that the research project report entitled **"A Study of Implementation and Integration of Systems, Applications, and Products in Data Processing (SAP) System in Dalmia Bharat Sugar and Industries Ltd, Asurle-Porle", under the guidance of "Dr. Sachin H Jagtap"** is the result of my own individual efforts and that it confirms to the university, school and course regulations regarding cheating and plagiarism. No material contained within Research Deissertation has been used in any other submission, by the author, for an academic award.

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of Business	CSIBER

External Evaluator

Dalmia Bharat Sugar

cement! sugar! refractories! power!

DBSIL/HR/KOP/ITC/2023-24/489

Date 22.08.2024

Industrial Training Certificate

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Miss. Manasi Tanaji Jamdade of Chhatrapati Shahu Institute of Business Education and Research, Kolhapur was with us from 22.06.2024 to 22.08.2024 as practical training & Internship in Information Management department.

During tenure of her training with us, we found her sincere, honest and hard working.

We wish her every success during her future endeavors.

This certificate has been issued on her request.

Dalmia Bharat Sugar and Industries Ltd. Sugar Unit- Shri Datta-Asurle-Porle. Tal. Panhala, Dist. Kolhapur- 416 229.

Suhas Gudale
Dy. General Manager - Human Relations

CERTIFICATE

This is to certify that the project report entitled **"A Study of Implementation and Integration of Systems, Applications, and Products in Data Processing (SAP) System in Dalmia Bharat Sugar and Industries Ltd, Asurle-Porle"** is bonafied work prepared by **"Miss. Manasi Tanaji Jamdade"** as a partial fulfilment for the award of degree of Master of Business Administration, submitted to **Chhatrapati Shahu Institute of Business Education & Research (CSIBER)**, Kolhapur, has been completed under my supervision and guidance.

To the best of my knowledge and belief, the work reported in this report is authentic and is not reproduced from any source.

Date: **Dr. Sachin H Jagtap.**

Place: Kolhapur (**Project Guide)**

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Miss. Manasi Tanaji Jamdade.

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Introduction

1. INTRODUCTION

In the modern industrial landscape, organizations must continuously adapt to rapidly changing business environments to maintain competitiveness and drive growth. One of the most transformative tools enabling this evolution is the adoption of Enterprise Resource Planning (ERP) systems. Among these, Systems, Applications, and Products in Data Processing (SAP) stands out as a globally recognized ERP platform, offering comprehensive solutions for managing core business processes through seamless integration and real-time analytics.

The implementation of SAP systems is a strategic move for enterprises aiming to unify fragmented processes, improve decision-making, and enhance operational efficiency. With its ability to integrate diverse functions such as supply chain management, financial operations, human resources, and production, SAP has become synonymous with operational excellence and organizational scalability.

This study explores into the **Implementation and Integration of the SAP system at Dalmia Bharat Sugar and Industries Ltd., Asurle-Porle**, a renowned player in the sugar industry. The company, with its focus on operational efficiency and sustainability, embarked on this ambitious project to modernize its legacy systems, improve cross-departmental collaboration, and enable data-driven decision-making. By integrating its critical functions such as procurement, production, inventory management, sales, and financial reporting under one platform, the organization sought to reduce redundancies, eliminate manual errors, and foster greater transparency across its operations.

The integration of SAP at Dalmia Bharat Sugar and Industries Ltd. represents a significant milestone in the company's digital transformation journey. It underscores how modern technology can be leveraged to address operational inefficiencies, foster innovation, and align organizational processes with global standards.

Through this study, a detailed understanding is developed of how the SAP system has not only addressed the immediate operational needs of the organization but also laid the foundation for future growth. The study also emphasizes the broader implications of such integration projects in aligning traditional business practices with contemporary industry benchmarks.

By examining the SAP implementation in-depth, this research offers insights into best practices, lessons learned, and the transformational impact of ERP systems in the sugar industry and beyond. It provides a valuable reference for other organizations considering similar transitions, showcasing how digital tools can revolutionize business operations and create competitive advantages in an increasingly interconnected world.

Sugar Industry in Kolhapur

Kolhapur, a prominent district in Maharashtra, is renowned for its thriving sugar industry, which plays a crucial role in the region's agricultural economy. Known for its fertile soil, favourable climate, and well-established irrigation systems, Kolhapur has emerged as one of the leading sugar-producing regions in India. The industry primarily revolves around the cultivation of sugarcane, a high-value cash crop, and the production of sugar and its by-products.

The sugar industry in Kolhapur has a rich history, with the establishment of cooperative sugar mills being a hallmark of its development. These cooperative mills, often owned and managed by local farmers, have been instrumental in uplifting the socio-economic conditions of the rural population. By providing a platform for collective ownership and equitable profit-sharing, these mills have empowered farmers and contributed significantly to rural development.

Kolhapur's sugar mills are known for their modernized infrastructure and adoption of advanced technologies in sugar processing. Many mills in the region have also diversified into producing ethanol, power generation through bagasse (a by-product of sugarcane), and organic fertilizers, reflecting a commitment to sustainability and value addition.

The region's sugar industry is supported by robust supply chain networks, including sugarcane transportation, processing units, and distribution channels. Additionally, Kolhapur's strategic location, with excellent connectivity to major markets, enhances its competitiveness in both domestic and export markets.

Challenges persist, including fluctuating sugarcane prices, water management issues, and global market volatility. However, proactive government policies, including

subsidies, export incentives, and support for ethanol blending programs, have helped stabilize the industry.

Kolhapur's sugar industry remains a backbone of the local economy, providing direct and indirect employment to thousands and significantly contributing to Maharashtra's and India's overall sugar production. Its blend of traditional cooperative models and modern industrial practices exemplifies the potential of agricultural industries in driving economic growth and sustainability.

Industries

1. **Shree Chhatrapati Shahu Cooperative Sugar Factory, Kagal.**

One of the oldest and most famous cooperative sugar mills in Kolhapur, known for its large-scale production and innovative practices.

2. **Dalmia Bharat Sugar and Industries Ltd., Asurle-Porle.**

A leading private sugar mill known for adopting advanced technology, sustainable practices, and diversified operations like ethanol production.

3. **Warana Sahakari Sakhar Karkhana Ltd., Warananagar.**

A prestigious cooperative sugar mill famous for its diversified ventures, including dairy and education, alongside sugar production.

4. **Gokul Cooperative Sugar Factory, Kolhapur.**

A prominent sugar mill that focuses on producing high-quality sugar and by-products, contributing significantly to the local economy.

5. **Rajaram Cooperative Sugar Factory, Kasaba Bawda.**

Known for its strong farmer-centric approach and consistent performance in sugar production.

6. **Yashwant Cooperative Sugar Factory, Hupari.**

A well-established sugar mill emphasizing sustainable sugarcane farming and efficient production techniques.

7. Chhatrapati Rajaram Cooperative Sugar Factory, Kodoli

Renowned for its updated operations and active participation in rural development initiatives.

8. Sadashivrao Mandlik Cooperative Sugar Factory, Shiroli

Known for its efficient production processes and commitment to environmental sustainability.

9. Dattajirao Kadam Cooperative Sugar Factory, Shirol

A notable player in the region’s sugar industry, contributing to the socio-economic upliftment of farmers.

10. Shree Panchganga Sahakari Sakhar Karkhana, Ichalkaranji

Recognized for its focus on quality and its role in promoting the cooperative movement in Kolhapur.

These sugar factories are pivotal to Kolhapur's economy, not only for their production capacity but also for their contributions to rural development, employment generation, and adoption of sustainable practices.

1.1. Aim of Study

The main goal of this study is to look at how the SAP system was set up and used at Dalmia Bharat Sugar and Industries Ltd., Asurle-Porle. It focuses on understanding how SAP has made important business activities like buying materials, managing production, keeping track of inventory, handling sales, and financial reporting more efficient. The study also explores the goals, challenges, and results of using SAP to see how it has improved the company's operations and decision-making.

The study highlights how SAP has helped the company adopt modern technology and stay up to date with industry standards. By examining what worked well and the difficulties faced, the research aims to provide useful ideas for other companies planning to use similar systems. Overall, the study shows how SAP can help businesses grow sustainably and stay competitive in the sugar industry.

1.2. Rationale of study

The rationale behind this study stems from the growing importance of Enterprise Resource Planning (ERP) systems, such as SAP, in improving operational efficiency and supporting decision-making in industries worldwide. In today's competitive environment, businesses, especially in the manufacturing and production sectors, are increasingly turning to ERP systems to streamline processes, integrate functions, and enhance data visibility. Dalmia Bharat Sugar and Industries Ltd., a leading player in the sugar industry, is a prime example of how adopting such systems can lead to substantial improvements in business operations.

1.2.1. Enhancing Operational Efficiency

The adoption of SAP in Dalmia Bharat Sugar and Industries Ltd. is a critical move to improve operational efficiency across various departments. SAP's integration offers real-time access to data, which streamlines procurement, production, inventory management, and sales processes. By automating these functions, the company can eliminate manual errors, reduce time delays, and improve overall performance. The rationale behind studying this implementation is to understand how such a system can drive significant improvements in operational workflows, which are essential for a competitive business in the sugar industry.

1.2.2. Digital Transformation and Modernization

The sugar industry is increasingly facing the need to adapt to modern technological solutions to remain competitive in a rapidly evolving market. By integrating SAP, Dalmia Bharat Sugar seeks to modernize its processes and enhance its digital capabilities. This study provides insight into how ERP systems like SAP can drive digital transformation, allowing companies in traditional industries to leverage cutting-edge technology to compete globally. The rationale lies in understanding the specific digital tools that can enhance both operational capabilities and business competitiveness.

1.2.3. Improving Decision-Making and Strategic Planning

One of the key reasons behind implementing SAP is its ability to centralize data across various departments, enabling better decision-making. With integrated data management, managers and decision-makers can access real-time insights into every aspect of the business, leading to more informed, accurate, and timely decisions. This study explores how SAP’s data-driven approach helps improve strategic planning and enhances the company’s ability to adapt to market fluctuations, optimize resources, and plan for future growth.

1.2.4. Addressing Implementation Challenges

The adoption of SAP systems often comes with several challenges such as system compatibility, training, and user adaptation. By studying Dalmia Bharat Sugar's SAP implementation, this research seeks to explore the specific hurdles the company faced during deployment. Understanding these challenges is vital for future ERP implementations, offering insights into how other companies can better manage the integration process, minimize resistance, and ensure long-term success.

1.2.5. Cost Efficiency and Resource Optimization

By automating processes and enhancing resource management, SAP can significantly reduce operational costs. The study seeks to evaluate the impact of SAP on cost-saving by improving resource utilization, reducing waste, and optimizing production

schedules. This is especially important in the sugar industry, where raw material costs like sugarcane and energy consumption play a vital role in profit margins.

By evaluating these factors, the rationale of the study is to present a comprehensive view of the strategic importance of SAP systems in driving operational excellence, digital transformation, and sustainable growth in the sugar industry.

1.3. Objectives

Broad Objective:

The primary objective of this report is to explore and analyse the benefits of implementing the SAP software system at Dalmia Bharat Sugar and Industries Ltd. Given the significance of SAP implementation as a strategic decision for any organization, this report aims to evaluate the specific advantages Dalmia Bharat Sugar intends to achieve through this integration.

Specific Objective of Study:

1. To analyze the challenges and inefficiencies encountered by Dalmia Bharat Sugar and Industries Ltd. in their previous system prior to the adoption of SAP.
2. To study how the implementation of the SAP system has mitigated these challenges and improved operational efficiency.
3. To study employee satisfaction with the SAP system, focusing on its usability and the operational enhancements it has introduced.

1.4. Scope And Limitations of the Study.

This report is intended solely for educational purposes and to meet internship requirements. It focuses on the SAP system's implementation at Dalmia Bharat Sugar and Industries (DBSIL), specifically analyzing both the positive and negative aspects experienced by DBSIL. The report details the specific SAP modules currently in use at DBSIL and excludes any potential future implementations.

1.4.1. Scope of the Study

The scope of this study focuses on evaluating the implementation of the **SAP software system** at **Dalmia Bharat Sugar and Industries Ltd.**, Asurle-Porle. The research covers:

- **Pre-SAP System Evaluation**

This section analyses the challenges and inefficiencies the organization faces with its legacy system before adopting SAP. It identifies bottlenecks in data management, reporting processes, and operational delays that hinder the company’s performance.

- **Post-SAP Implementation**

This part investigates how the SAP system addresses the identified challenges, focusing on its impact on operational efficiency, process automation, and data management. The study covers areas such as procurement, inventory management, production planning, and financial reporting.

- **Employee Satisfaction and Usability**

This section evaluates the impact of SAP on employee satisfaction, focusing on system usability, ease of integration into daily tasks, and the training efforts undertaken. The study also explores how employees perceive the system’s effectiveness in improving work processes and efficiency.

- **Strategic Alignment and Benefit**

The study examines how SAP integration aligns with Dalmia Bharat Sugar's broader strategic objectives and its role in the company's digital transformation. It highlights the specific benefits the organization aims to achieve through SAP adoption, such as improved decision-making, better resource management, and cost efficiency.

- **Recommendations for Future ERP Integrations**

The findings offer valuable insights for other businesses, particularly those in the sugar industry or similar sectors, considering the implementation of ERP systems like SAP. The study provides best practices for overcoming challenges and maximizing the benefits of ERP integration.

1.4.2. Limitations of the Study

- **Geographic Limitation**

The study focuses solely on **Dalmia Bharat Sugar and Industries Ltd.**, Asurle-Porle, and therefore does not reflect the experiences or outcomes of SAP implementation in other locations or industries. The findings are specific to this organization and may not be fully generalizable to other contexts.

- **Time Constraints**

Due to limited time for the study, the research primarily focuses on the initial implementation phase of SAP and its immediate effects on operational efficiency and employee satisfaction. Long-term impacts, such as sustained productivity improvements or ROI post-implementation, fall outside the scope of this study.

- **Employee Perspectives**

While the study evaluates employee satisfaction with SAP, the findings are based on a limited sample of responses and may not capture the full spectrum of experiences across all employees. Variations in individual experiences or department-specific challenges are not fully represented.

- **Technology Integration Challenges**

The study focuses primarily on the operational benefits and challenges related to SAP implementation and does not delve deeply into other technology-related issues, such as integration with third-party software or infrastructure challenges. These aspects may affect the overall success of the SAP implementation but fall outside the direct scope of the research.

By defining these limitations, the study provides a clear and focused analysis of the SAP system's impact on Dalmia Bharat Sugar, while acknowledging areas where additional research can provide further insights.

1.5. Company Details

Dalmia Bharat Sugar and Industries Ltd., Asurle-Porle unit, is part of the renowned Dalmia Bharat Group, one of India’s leading sugar manufacturers. Located in Maharashtra, this unit plays a key role in the group’s integrated sugar operations, contributing to sugar production, power generation, and ethanol production. The plant is designed for efficiency and sustainability, emphasizing renewable energy and waste management.

Asurle-Porle focuses on producing high-quality sugar while diversifying its offerings through by-products like molasses and bagasse. These are utilized for ethanol and co-generation power, reducing environmental impact. The unit supports local farmers by sourcing sugarcane and providing agronomic assistance, fostering a sustainable agricultural ecosystem. With advanced technology and innovative processes, the Asurle-Porle unit exemplifies the company’s commitment to sustainable growth and community development.

1.5.1. Overview

Formerly	Dalmia Bharat Sugar and Industries Ltd
Industry	Sugar Manufacturing
Founded	In 2012, Dalmia Bharat Group acquired **Shri Datt Sakhar Karakhana Asurle Porle.**
Headquarters	New Delhi, India
Key Location	Asurle-Porle, Kolhapur District, Maharashtra.
Chairman & CEO	Bharat Mehta.
Annual Turnover	Rs. 500-1000 Crore
Key Products	Sugar (White Sugar, Raw Sugar) Ethanol Power Generation (Cogen) Molasses Organic fertilizers

1.5.2. History of Dalmia Bharat Sugar and Industries Ltd.

Dalmia Bharat Sugar Industries Ltd. is a key player in India's sugar industry, which is vital to a country where agriculture supports the majority of the population. The company plays a significant role in producing sugar, an essential commodity in everyday life.

Founded in the 1990s, Dalmia Bharat Sugar started with a small 2500 TCD (Tons of Cane per Day) unit in Ramgarh, Uttar Pradesh. In 2012, the company expanded its reach by acquiring Shri Datt Sakhar Karakhana in Asurle-Porle, Maharashtra, boosting its crushing capacity significantly. Today, the company's total capacity stands at an impressive 25,000 TCD.

The company not only caters to domestic needs but also exports sugar to countries like Indonesia, Malaysia, Bangladesh, and several others across Asia, Africa, and the Middle East. Under the guidance of Mr. Gautam Dalmia, Dalmia Bharat Sugar has achieved consistent growth and remains a leading name in the industry.

1.5.3. Mission & Vision of Dalmia Bharat Sugar Industries.

- **Mission:**

To ensure sustainable sugarcane production which creates value for farmers and the community while sustaining a business ecosystem.

- ✓ Increase the daily crushing capacity.
- ✓ To provide services like t fir fighting eye, in its working area.
- ✓ To develop surrounding area of the factory.
- ✓ To develop the educational facilities in the area.
- ✓ To help farmers.
- ✓ To produce good products in factory.

- **Vision:**

To be amongst the top two players in the Indian Sugar Industry based on EBIDTA. (Earnings before Interest, Taxes, Depreciation, and Amortization).

1.5.4. Product Portfolio

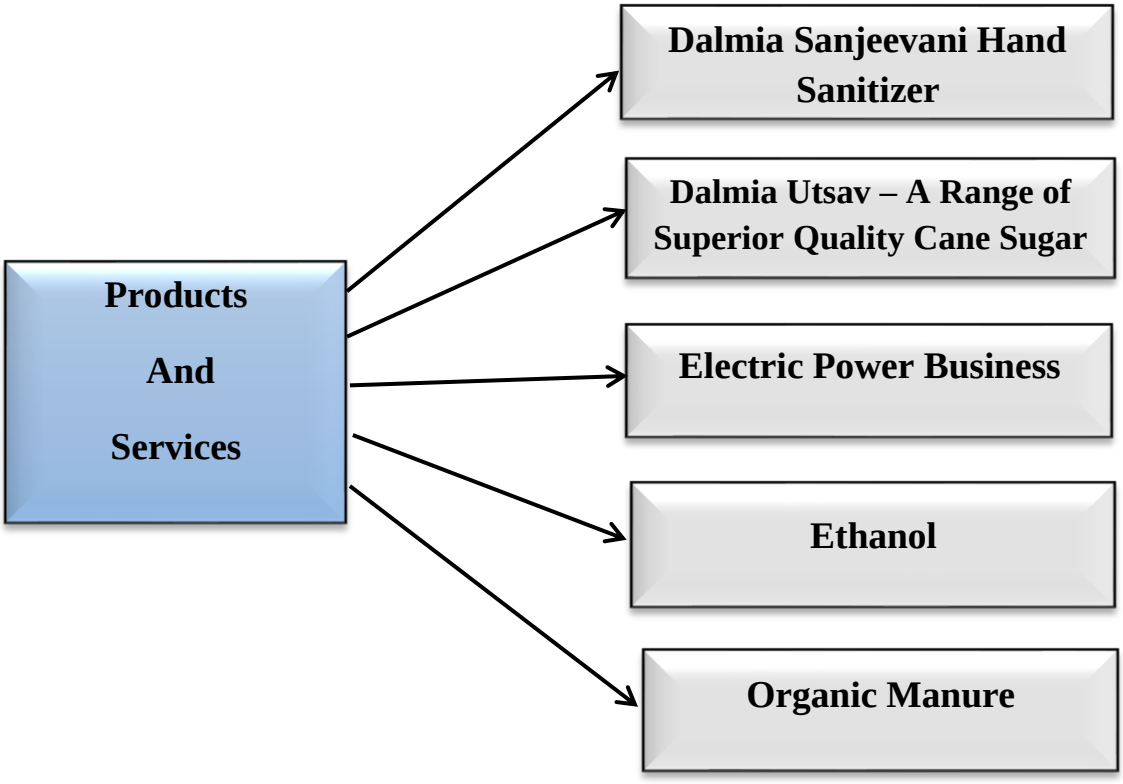

Fig 1. Product Portfolio

a) Dalmia Sanjeevani Hand Sanitizer:

It is the growing demand of hand sanitizers due to the pandemic of COVID-19, DBSIL is manufacturing alcohol-based hand sanitizers as per the WHO recommended formulation. Dalmia Sanjeevani Hand Sanitizer is an alcohol-based sanitizer containing 80% ethyl alcohol content which is very effective against viruses. Still it's manufacturing for medical purpose.

b) Dalmia Utsav – Superior Quality Cane Sugar:

Dalmia Utsav Dalmia Utsav White Crystal Sugar is ICUSMA (International Commission for Uniform Methods of Sugar Analysis) graded which is an indication of the product's superior quality.With the use of latest technologies like ION exchange, they keep the promise of producing white and pure crystal sugar that are 99.5% consistent in size. From manufacturing to packaging, the company ensures that the M-grade sugar is sulphur-free and hygienically packed.

c) Electric Power Business:

Dalmia Sugar and Industries Limited has an integrated business model to DE-risk itself from the cyclical nature of the sugar industry. Bagasse, a residue left after the extraction of juice from sugarcane, has high calorific value and is used in the generation of electricity, substituting the conventional thermal alternatives and eliminating the emission of greenhouse gases.

d) Ethanol Production:

Molasses is distilled to produce different kinds of alcohol and our company produces various types of alcohol:

- Rectified spirit
- Extra neutral alcohol (ENA)/Hydrous Alcohol
- Ethanol or Anhydrous Ethanol
- Denatured spirit.

e) Organic Manure:

The main customers of organic manure for DBSIL are farmers and tea estates. Its bio-composting facility can produce about 20,000 MT of organic manure per annul. It has an in-house availability of press mud, which is key raw material, from our own sugar factories. This allows for smooth production of good quality organic manure.

Summary

Dalmia Bharat Sugar and Industries Ltd. exemplifies innovation and sustainability across its diversified business operations. From high-quality sugar production and renewable energy generation to ethanol manufacturing and organic farming solutions, the company addresses key industry and environmental challenges. Each of these initiatives reflects DBSIL’s focus on sustainability, quality, and adaptability in an ever-evolving market landscape.

1.5.5. Board Of Directors & Managers

Sr. No.	Name	Designation
1.	Mr. Gautam Dalmia.	Managing Director & Executive Director
2.	Mr. Bharat Mehta.	Whole Time Director & CEO
3.	Mr. Pankaj Rastogi.	Chief Executive Officer
4.	Mr. Anil Kataria.	Chief Financial Officer
5.	Mr. S. Rangaprasad.	Dy. Executive Director & Unit Head
6.	Mr. Sangameswara C. D.	IM Department Head
7.	Mr. Suhas Gudale.	Dy. General Manager (HR)
8.	Mr. Shivprasad Padwal.	Engineering Head
9.	Mr. Sambhaji Bhosale.	Distillery Head
10.	Mr. T. Kanagabai.	Dy. General Manager (Production)
11.	Mr. Pravin Gojare.	Environment & Safety Officer
12.	Mr. Kiran Dhumal.	W.T.P Manager
13.	Mr. Sangram Patil.	General Manager (Cane)

1.5.6. Departments of Dalmia Bharat Sugar Industries.

- Information Technology (IT)
- Sales
- Account
- Human Resource (HR)
- Distillery
- Power Plant
- Water Treatment Plant (W.T.P)
- Engineering
- Store and Purchase
- Cane
- Production

1.5.7. Target Market of Dalmia Bharat Sugar Industries.

It supplies sugar to various firms such as,

United Breweries	Coca-Cola
Walmart India	Pepsi-Co
D-Mart	Carlsberg
Dabur	India Glycols

1.5.8. Competitors of Dalmia Bharat Sugar Industries.

- Warana Sugar Factory
- Shahu Sugar Factory
- Kumbhi Sugar Factory
- D.Y. Patil Sugar Factory

1.6. Research Project Structure

Title: A Study of Implementation and Integration of Systems, Applications, and Products in Data Processing (SAP) System in Dalmia Bharat Sugar and Industries Ltd, Asurle-Porle

The study is divided into six main sections:

- Introduction outlining the aim, objectives, scope & Company profile.
- Literature Review covering existing studies on SAP System.
- Research Methodology detailing the research design, data collection, and sampling.
- Theoretical background of the subject.
- Findings and Discussion presenting the results of the field study.
- Conclusion and Recommendation summarizing the key findings and offering actionable insights.
- Reference, Bibliography

CHAPTER: 2

LITERATURE REVIEW

2. LITERATURE REVIEW

The literature review for this project focuses on understanding the implementation and integration of ERP systems like SAP in the sugar industry and other similar sectors. Studies show that ERP systems streamline business processes, improve operational efficiency, and support better decision-making by integrating functions like production, inventory, finance, and sales. Research also highlights common challenges in ERP adoption, such as employee resistance, training needs, and high costs, which organizations must address for successful implementation. The review examines specific benefits of SAP systems, including real-time data access, process automation, and enhanced inter-departmental collaboration, with a particular focus on case studies from the sugar industry.

2.1. Textbooks

1. **Gupta, A. (2000).** ***Enterprise Resource Planning (ERP): A Managerial Perspective*****. McGraw Hill**

In **Enterprise Resource Planning (ERP): A Managerial Perspective**, Gupta explains that ERP systems like SAP help businesses streamline processes, improve data visibility, and integrate departments. He notes that while SAP is highly customizable, it is also complex and costly to implement. Successful implementation requires strong leadership, careful planning, and ongoing employee training. SAP's real-time data processing improves decision-making, but companies must invest in change management to address resistance and maximize its benefits.

2. **O'Brien, G. D., & Marakas, J. A. (2008).** ***Information Systems for Managers: Text and Cases*****. McGraw Hill**

In **Information Systems for Managers**, O'Brien and Marakas explain that SAP is most effective when it aligns with a company's goals, helping to achieve strategic objectives beyond mere task automation. Its modular design allows businesses to select only the necessary components, making it flexible and scalable. A key advantage of SAP is its ability to integrate data across departments, enhancing decision-making. However, implementing SAP can be costly and complex,

necessitating expert planning and a phased approach. Continuous training and support are vital to ensure employees effectively use the system and overcome any resistance.

3. **Bragg, G. D., & Schreiber, S. A. (2019). *Introduction to SAP S/4HANA*. SAP Press.**

In **Introduction to SAP S/4HANA,** Bragg and Schreiber discuss key benefits of the platform, including faster data processing through in-memory technology, which enhances operational efficiency and decision-making. They highlight the simplification of data models for easier management and the intuitive, mobile-friendly SAP Fiori interface that improves user experience. Additionally, S/4HANA supports seamless integration of business processes across departments for consistent data flow. The authors stress the importance of a well-planned implementation strategy, emphasizing thorough preparation and effective change management to overcome challenges and user resistance.

2.2. Articles and Reports

1. **SAP Insider. (2020). *Best practices for SAP implementation*. SAP Insider.**

This article outlines best practices for successful SAP implementation, highlighting the need for thorough planning and the right methodology. It emphasizes aligning the implementation with business goals, managing change effectively, engaging stakeholders, and maintaining continuous monitoring throughout the project lifecycle to ensure a smooth transition and successful outcomes.

2. **Johnson, P. B., & Rao, M. S. K. (2019). Challenges in implementing SAP: A study of six organizations. *Journal of Business Research*, 45(4), 320-330.**

This study examines the challenges faced by six organizations during their SAP implementations. Johnson and Rao identify issues such as budget overruns, technical complexities, resistance to change, and inadequate training. They suggest that better planning, stakeholder involvement, and sufficient resource allocation can help mitigate these challenges.

3. **Smith, K., & Wang, L. (2020). The role of user training in SAP implementation success. *Journal of Information Systems Education*, 31(2), 145-153.**

This article discusses the vital role of user training in SAP implementation success. Smith and Wang argue that comprehensive training programs are essential for ensuring effective system utilization by end-users. They stress the importance of ongoing support and knowledge transfer during and after the implementation process to enhance user competency.

4. **SAP Community Network. (2018). *A guide to SAP project management*. SAP Community Network.**

This article provides an overview of effective project management strategies for SAP implementations. It covers various project phases, from initiation to post-implementation support, emphasizing the importance of project management frameworks, efficient resource management, and clear communication throughout the project lifecycle to achieve successful implementation outcomes.

5. **Quigley, J. A. C., & Decker, R. C. J. (2021). Enhancing ERP implementation success through effective change management. *Business Process Management Journal*, 27(1), 70-83.**

This article examines the impact of change management on ERP implementation success, particularly for SAP systems. Quigley and Decker highlight that effective change management is crucial for employee adoption of new systems. They discuss strategies such as communication, training, and stakeholder engagement to address resistance and facilitate a smooth transition.

6. **Chae, A. K., & Cheon, M. H. (2017). The impact of ERP on business processes. *International Journal of Information Management*, 37(3), 172-181.**

This article analyses how ERP systems, including SAP, influence business processes across industries. Chae and Cheon argue that ERP systems streamline and standardize processes, enhance data accuracy, and improve decision-making capabilities. They

also discuss potential complexities introduced by ERP systems, such as workflow changes and impacts on organizational structure.

2.3. Journals

1. **Kumar, R., & Agarwal, S. (2020). A comprehensive study on ERP implementation in manufacturing industries. *International Journal of Production Research*, 58(10), 310-325.**

This study reviews factors influencing ERP implementation success in manufacturing, focusing on SAP ERP. Kumar and Agarwal identify key success factors, including top management support, user involvement, and effective communication throughout the project lifecycle. They emphasize the need to tailor ERP systems to meet the unique requirements of the manufacturing industry.

2. **Chen, H., & Huang, Y. (2019). The impact of SAP ERP on business process management. *Journal of Business Process Management*, 25(3), 187-199.**

This article examines how SAP ERP systems enhance business process management (BPM). Chen and Huang argue that SAP ERP streamlines and optimizes business processes by providing a unified platform for various operations. The article highlights improvements in data accuracy and decision-making facilitated by SAP ERP across business units.

3. **Farooq, M. O., & Uddin, A. Q. (2021). Challenges of SAP implementation in small and medium enterprises. *Journal of Small Business Management*, 59(4), 470-486.**

This article discusses unique challenges small and medium enterprises (SMEs) face during SAP implementation. Farooq and Uddin identify issues like limited financial resources, lack of technical expertise, and resistance to change. They suggest strategies such as phased implementation, outsourcing technical support, and prioritizing change management to address these challenges.

4. **Dos Santos, A. J., & DeMello, H. R. (2020). Adoption of ERP systems: A strategic perspective. *Strategic Information Systems*, 29(1), 65-77.**

This article analyses strategic considerations organizations must consider when adopting ERP systems, focusing on SAP. Dos Santos and DeMello emphasize aligning ERP adoption with long-term strategic goals and discuss how ERP systems provide competitive advantages by improving operational efficiency and enhancing decision-making capabilities.

5. **Tan, B. B. E. M., & Boon, S. L. M. (2021). Factors influencing ERP implementation success: A case study of SAP. *Journal of Business Research*, 54(6), 410-420.**

This case study identifies key factors influencing SAP ERP implementation success. Tan and Boon highlight strong leadership, adequate training, and effective communication as critical elements for achieving positive outcomes. The study emphasizes the importance of change management in minimizing resistance and ensuring smooth transitions during implementation.

CONCLUSION

From the given references, I get insights into the comprehensive overview of SAP and its implementation challenges and benefits. SAP systems, particularly S/4HANA, help businesses streamline processes, enhance data visibility, and integrate departments effectively, which improves operational efficiency and decision-making. However, implementing SAP can be complex and costly, requiring strong leadership, careful planning, and ongoing training to overcome resistance and ensure user adoption. Key success factors include aligning SAP with business goals, engaging stakeholders, and prioritizing change management. Additionally, user training and support play a crucial role in maximizing the system's effectiveness. Organizations that re-engineer their processes before implementation tend to see better outcomes. Ultimately, while SAP offers significant advantages, its success relies on strategic planning and effective execution.

CHAPTER: 3

RESEARCH METHODOLOGY

3. RESEARCH METHODOLOGY

The research methodology outlines the systematic approach and techniques that is used to conduct the study on the implementation and integration of the SAP software system at Dalmia Bharat Sugar and Industries Ltd. The methodology consists of the following components:

3.1. Research Question:

- SAP & Implementation

  How can SAP help your sugar industry?
  What are the main features of the SAP system that are used full for the sugar industry?
  How does SAP improve our production process in the sugar industry?
  Can SAP help you to manage your inventory more efficiently? and how?
  What kind of reports can we generate using SAP?
  What kind of indent you used frequently and for what purpose?
  How does the SAP handle sales and distribution in the sugar industry?
  How do we ensure our data is secure in the SAP?
  What are the steps in wording setting of SAP for your company?
  How long will it take to implement SAP in your sugar business?
  What is the cost associated with implementing and maintaining SAP?
  Can SAP scale as our business grows?

- Challenges and inefficiencies

  What challenges have you encountered with data entry in the previous system?
  What difficulties do you face while using the previous system?

- Mitigation of challenges

  Do you find the SAP system useful in your work?
  Why SAP system is useful?
  Which modules of the SAP system do you use most frequently?
  What benefits have you experienced from using the SAP system?

- Employee satisfaction with SAP usability

  How frequently do you use the SAP system in your work?

  Do you feel stressed while working on SAP?

  What features would you like to see added to the SAP system?

  How would you rate your overall satisfaction with the SAP system?

3.2. Research Design

The study adopts a **descriptive research design**, which is particularly useful for understanding the current state of phenomena, such as the integration of SAP systems within an organization. In this case, the focus is on the **pre- and post-implementation impacts** of SAP at **Dalmia Bharat Sugar and Industries Ltd.** (DBSIL), Asurle-Porle. This design allows for a detailed, comprehensive assessment of the **operational changes** resulting from SAP adoption, such as improvements in business processes, efficiency, data management, and overall workflow optimization.

By employing both **qualitative and quantitative methods**, this study aims to provide a more holistic view of the SAP system's impact. The **qualitative approach** includes in-depth interviews and observations, capturing the nuanced experiences of employees and management regarding the system's usability, challenges, and perceived benefits. **Quantitative data** is collected through surveys and performance metrics, enabling the analysis of specific outcomes such as productivity increases, cost reductions, and improvements in decision-making and resource allocation.

3.3. Sample

- **Target Population**:

The study focuses on the entire workforce of **Dalmia Bharat Sugar and Industries Ltd.**, specifically the employees and management who are directly involved in the daily operations and administration of the company. There are **60** employees. This includes those from key departments such as production, finance, IT, Cane, and human resources, as they have direct interactions with the SAP system.

- **Sample Size**:

To ensure comprehensive representation from various organizational levels, a sample of approximately **33 employees** is selected those are use SAP system. This sample includes participants from diverse roles within the company, allowing the study to capture a wide range of perspectives on SAP's impact.

- **Sampling Technique**:

A **simple random sampling** technique is employed to select participants. This approach ensures that all employees, regardless of their position or department, have an equal chance of being included in the sample. This method helps mitigate any bias in the selection process and ensures that feedback is gathered from a diverse group of employees, including management, staff, and workers.

3.4. Method of data collection

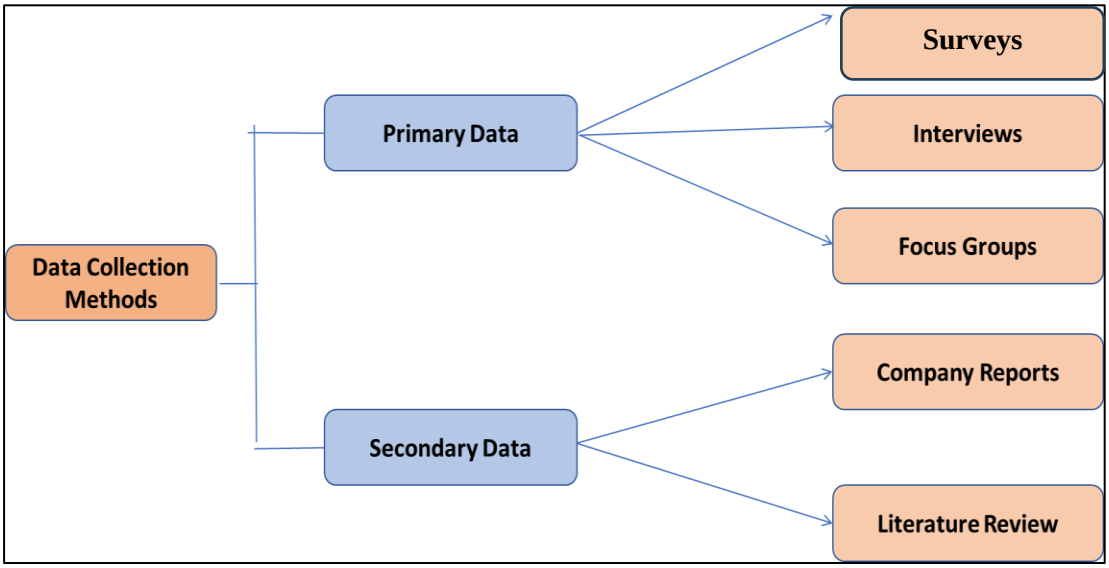

Fig 2. Data collection Method

- **Primary Data:**

i. **Surveys**: Structured questionnaires are distributed to employees to collect quantitative data on job satisfaction, perceptions of working conditions, usability, training effectiveness, and perceived operational efficiency post-SAP implementation.

ii. **Interviews**: Semi-structured interviews with management and employees are conducted to gain qualitative insights into the challenges faced with the previous system and the impact of SAP on their daily tasks and workflows.

iii. **Focus Groups**: Group discussions with employees help gather diverse opinions and facilitate in-depth discussions about their experiences with the SAP system.

- **Secondary Data:**

i. **Company Reports:** Internal reports on operational metrics and performance indicators pre- and post-SAP implementation is analysed. Relevant documentation provided by Dalmia Bharat Sugar, such as implementation plans and feedback reports, is also reviewed.

ii. **Literature Review:** Relevant academic journals, case studies, and previous research papers related to SAP implementation in the sugar industry are reviewed to contextualize the findings.

3.5. Data Analysis Techniques

Quantitative Approach:

For this SAP implementation project at Dalmia Bharat Sugar and Industries Ltd., a structured survey was designed to collect quantitative data from employees and management. The survey focused on:

- **Operational Efficiency:** Gathering information on productivity, workflow optimization, and error rates before and after SAP implementation.
- **Employee Usability and Training:** Evaluating employee satisfaction with the system, the effectiveness of training programs, and usability perceptions.
- **Business Impact:** Assessing the financial implications, cost savings, and resource allocation improvements attributed to SAP.

Qualitative Approach:

In-depth interviews were conducted with employees, management, and implementation specialists. These discussions provided detailed insights into:

- **Challenges and Benefits:** Understanding operational challenges before SAP and identifying improvements after implementation.
- **Employee Perspectives:** Capturing feedback on the usability, training effectiveness, and impact of SAP on daily tasks.
- **Strategic Insights:** Exploring managerial views on decision-making improvements and the overall influence of SAP on business operations.

Conclusion

This research provides valuable insights into the impact of SAP implementation at Dalmia Bharat Sugar and Industries Ltd. (DBSIL), Asurle-Porle. By combining qualitative and quantitative approaches, the study effectively examines how factors like system usability, employee training, operational efficiency, and decision-making processes have been influenced by SAP integration.

The findings reveal that SAP has significantly improved business operations by streamlining workflows, optimizing resource management, and enhancing data accuracy. It also highlights areas for improvement, such as tailoring training programs to diverse employee needs and addressing initial resistance to technology changes.

Recommendations from the study emphasize the need for continuous employee engagement, regular updates to the SAP system, and leveraging its advanced features to achieve long-term efficiency and productivity goals. This will allow DBSIL to sustain its competitive edge and foster innovation in its operational practices.

CHAPTER: 4

THEORETICAL BACKGROUND OF THE SUBJECT

4.1. Introduction of SAP

- **SAP: A Software Powerhouse**

SAP, a German software giant founded in 1972, is a world leader in enterprise applications. They are the top vendor for standard business software and hold the number three spot for overall software vendors globally.

- **SAP ERP**

SAP ERP, or Enterprise Resource Planning, refers to a comprehensive software solution that integrates various crucial functions within a company. It essentially combines functionalities previously offered under "SAP R/3" with a modern client-server architecture. The latest version boasts over 30,000 data tables, enabling real-time connections between different departments.

- **Modules and Benefits of SAP ERP**

SAP ERP offers a range of modules catering to diverse business needs. These include functionalities for marketing, sales, production, human resources, finance, and more. By consolidating data from these modules, SAP ERP empowers companies with a holistic view for effective resource planning. Successful implementation of SAP ERP can lead to significant cost savings through improved integration.

- **Challenges of Implementation**

While the advantages of SAP ERP are compelling, implementation and training come at a hefty price. Common pitfalls during implementation include unclear objectives, resistance to change management, inadequate planning, and insufficient testing. These factors can make the difference between a successful and unsuccessful integration.

- **The Potential of SAP ERP**

A well-implemented SAP ERP system can revolutionize a company's operations. Imagine transitioning from outdated, siloed systems to a fully integrated platform! Potential benefits include streamlined business processes, reduced inventory levels, and faster lead times.

4.2. Stages of SAP Implementation

SAP Implementation consist following stages:

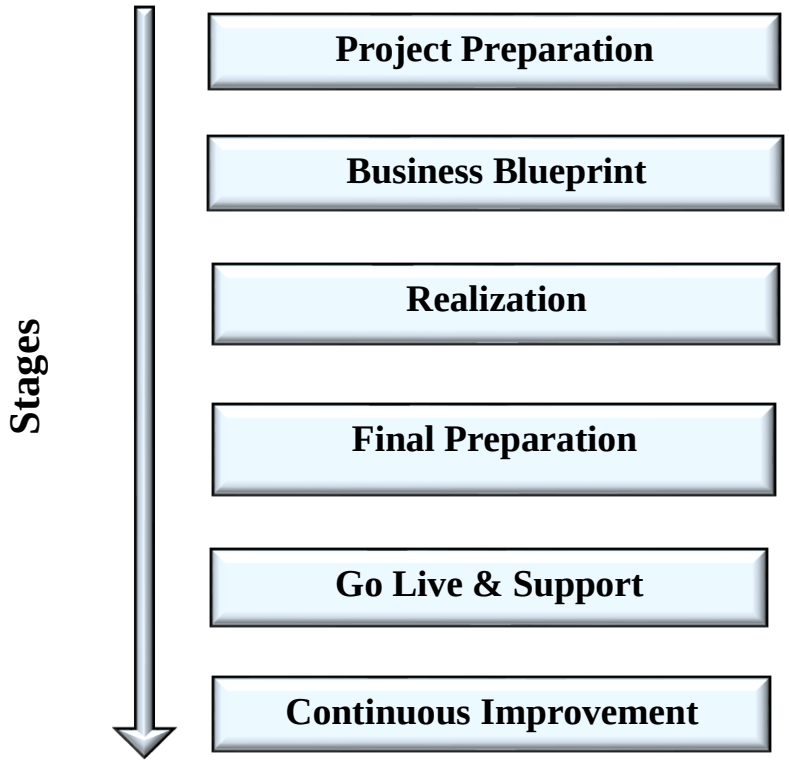

Fig 3. Implementation Stages

1. Project Preparation:

This is the planning stage where the project team is assembled, goals are set & project plan is created. The sugar industry decides to implement SAP to streamline their operations. They form a team, define goals & plan the project timeline & budget.

2. Business Blueprint:

In this stage, the team works with stakeholders to understand & document the business processes that the SAP system will support. This creates a blue print or detailed plan for how the system will be configured. The team maps out the company's current processes such as how they handle entry of sugarcane, inventory, production & finance. They design how these processes will look in SAP, creating a detailed plan.

3. Realization:

The SAP system is configured based on the business blue print. This includes customizing the software, developing necessary features & setting up system environment. They setup modules for sales, inventory management, production & accounting to match the company's requirements.

4. Final Preparation:

Before going live, extensive testing is done to ensure the system works correctly. User are trained on how to use new system & data is migrated from old system to the new SAP system. The team test the SAP system with sample data.

5. Go Live & Support:

The SAP system is activated & becomes the primary system for business operations. During this stage, the project team provides support to resolve any issues & ensure everything runs smoothly.

6. Continuous Improvement:

After implementation, the system is monitored & maintained. Updates & improvements are made as needed to ensure the system continues to meet business needs. The team monitors the systems performance & make necessary adjustment.

4.3. SAP Modules Implemented at DBSIL

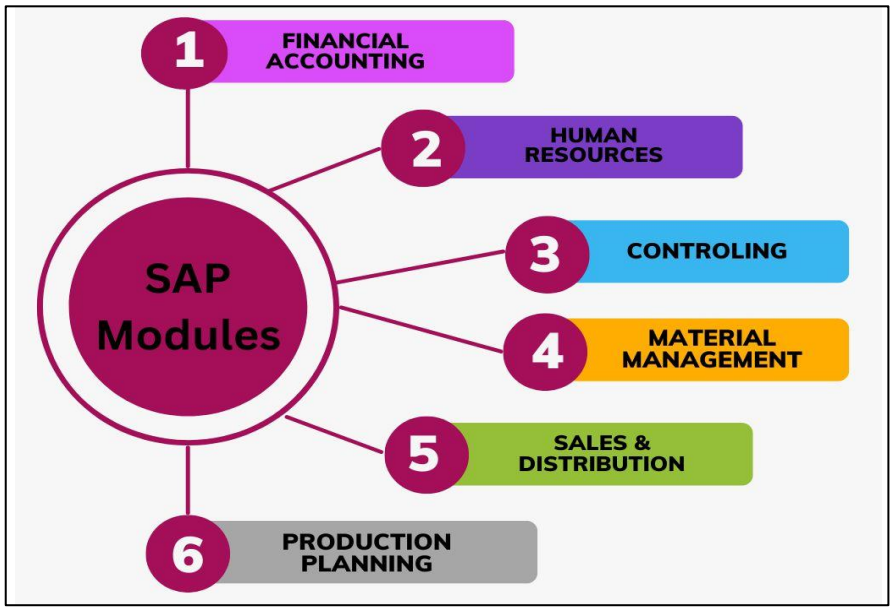

Fig 4. SAP Modules

The implementation time varies based on the complexity and size of the business but typically ranges from few months to over a year. The time period for SAP implementation in DBSIL is nearly **3 years.**

The implementation of the SAP system involves significant costs, running into **crores**, which include licensing fees, implementation charges, training expenses, and ongoing maintenance. The total expense varies depending on the scale of implementation, the selected modules, and the specific business requirements.

For instance, creating a single SAP user ID costs **₹75,000**. With **92 IDs** created, this results in a total expense of **₹6,900,000.** Additionally, the annual maintenance cost for the SAP system amounts to **₹9,000,000.** These costs reflect the investment required to leverage SAP's advanced capabilities for streamlining operations and enhancing business efficiency.

4.4. Areas where SAP provides solutions.

a) SAP ERP Financial:

- Accounts Payable
- Accounts Receivable
- Accounting and Financial reporting
- Risk management, regulatory compliance, and cash flow monitoring
- Travel management

b) SAP ERP Human Capital Management:

- HR and payroll
- Recruitment and Training
- HR reporting

c) SAP ERP Operations:

- Procurement and Logistics
- Product development and manufacturing
- Sales and service
- Operations analytics

4.5. SAP Software delivers following things:

- A complete view of the costumer, available throughout the organization.
- A coordinated, integrated system with the flexibility to support the changing organization.
- Support for supply chain management and demand planning to improve shelf stock productivity and reduce stock-outs.
- Supply and demand planning capabilities the enable quicker response to changing customer buying patterns and sell-through tracking to meet reporting requirements.
- Integrated business processes across logistics, sales, and finance for all franchisees within the business network.

4.6. Benefits Of SAP

1) **Inventory Management:** SAP tracks inventory level in real time, forecast demand & automates reordering processes. These ensures we have the right amount of stock at all time, reducing waste and preventing shortage.

2) **Sales and Distribution:** SAP manages sales orders track shipments, handles customers inquiries & processes invoices. It ensures smooth order processing, timely deliveries & accurate billing. It streamlining the entire sales & distribution process to improve customer's satisfaction & operational efficiency.

3) **Production:** SAP integrates production data, monitors equipment performance, schedules maintenance & manage production workflows. This result in reduced downtime, optimized production schedules & improve overall efficiency & also better resource utilization.

4) **Budgeting:** SAP helps you set budgets, track expenses, and see where our money goes, so we can plan for the future and avoid surprises.

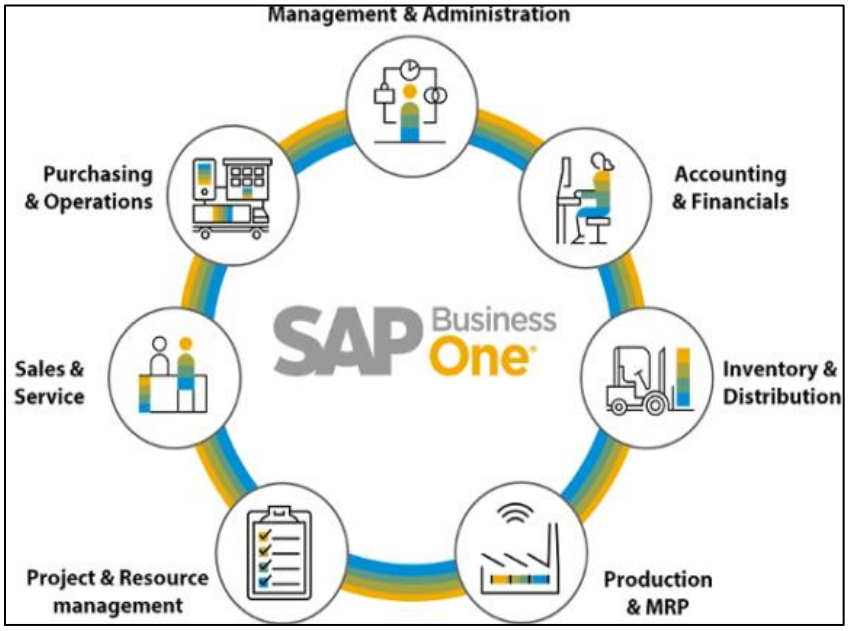

Fig 5. SAP Benefits

5) **Control:** SAP keeps a close eye on everything, preventing errors and making sure our money is used wisely.

6) **Reporting:** SAP gives us clear, up-to-date information about our finances, all in one place. This makes it easy to understand how our business is doing and make informed decisions.

7) **Costing:** SAP helps track all the costs involved, so we can price things accurately and identify areas to save money.

8) **Security:** SAP has built-in security features to protect our information from unauthorized access. t's like having a vault for our numbers.

4.7. SAP for management or industry.

SAP system software contains different functions which are useful for various activities in industry. Each function having specific property which are used for specific activity.

Functions are as follows:

1. Auto Indent/PR
2. Capex Indent/PR
3. CAPEX PR HO PROJECT
4. Cap Service Indent/PR
5. Emergency Indent/PR
6. Framework Requisn
7. Maintenance PR
8. Outl.Agmt Requisn
9. Purchase Requisition
10. Return PR
11. Revenue Indent/PR
12. ROL Indent/PR
13. Service Indent/PR

Out of that the DBSIL use only few functions i.e.

- **Capex Indent/PR:** This type is used for requesting capital expenditure items, which are assets used for a longer period. (Tracks investments in equipment and infrastructure)
- **Cap Service Indent/PR:** This is used to request services related to capital assets, such as maintenance or repairs. (Ensures proper upkeep of capital equipment)

- **Emergency Indent/PR:** This is used for urgent purchases that cannot wait for the usual approval process. (Fast-tracks procurement for critical needs)

- **Revenue Indent/PR:** It could be for requesting items that will generate revenue, such as point-of-sale supplies. (Tracks materials used for income generation)

- **Service Indent/PR:** This is used to request any type of service from a supplier, not necessarily related to capital assets. (Broad category for various service procurements)

- **Maintenance PR:** In the sugar industry, Maintenance PR (Purchase Requisition) in SAP is used to request the procurement of maintenance materials and services. This ensures timely repairs and upkeep of machinery, minimizing downtime and maintaining efficient production.

CHAPTER: 5

ANALYSIS, INTERPRETATION AND FINDINGS

5.1. Data Analysis and Interpretation.

Data interpretation is the process of analysing collected data to extract meaningful insights, identify patterns, and draw conclusions to inform decisions. In the context of this project on SAP implementation at Dalmia Bharat Sugar and Industries Ltd., data interpretation helps assess the system's impact on operations and employee productivity. This involves statistical methods, trends analysis, and visualizations to understand the efficiency and effectiveness of SAP in streamlining business processes.

Key goals of data interpretation for this project include:

- **Identifying operational improvements:** Analysing pre- and post-implementation data to uncover patterns in productivity, resource utilization, and cost-effectiveness.
- **Understanding employee perspectives:** Exploring feedback on usability, training, and system benefits through qualitative analysis.
- **Making informed recommendations:** Using the interpreted data to guide future technology adoptions or process enhancements within the organization.

Techniques Applied:

- **Descriptive Statistics:** Summarize operational metrics like productivity rates, error rates, and cost changes before and after SAP.
- **Data Visualization:** Use charts and graphs to highlight improvements in workflow efficiency or identify bottlenecks.
- **Qualitative Analysis:** Identify themes in interview responses and group discussions, highlighting common challenges and benefits experienced by employees.

By leveraging these techniques, the project aims to provide actionable insights into the advantages and challenges of SAP implementation, ensuring informed strategic decisions for continuous improvement.

1. Educational qualification

- **Observation**

Table 1. Education & No. of Employees

Education	No. of employees
10th or 12th	2
Diploma	4
Graduation	16
Post graduation	11
Grand Total	**33**

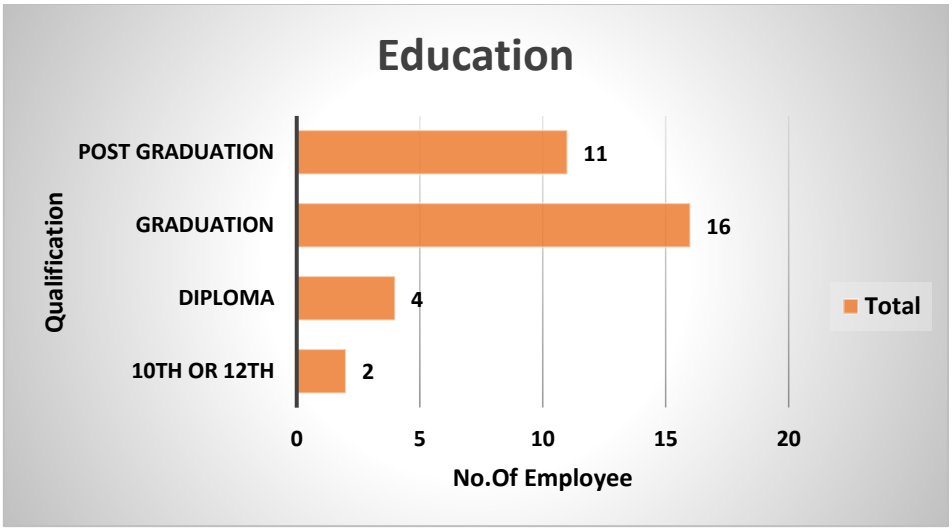

Fig 6. Qualification of employees

- **Interpretation: -**

The company has many employees with good education. Most of them have completed their graduation, which means they have a strong base for learning and problem-solving. There are also many employees with post-graduation degrees, which shows they have specialized skills.

Even though the employees are educated, the company can benefit from training everyone on how to use SAP. This can help in many ways:

✓ **Faster work:** SAP can automate many tasks, making work quicker.

✓ **Fewer mistakes:** People who know SAP can make fewer errors in their work.

- ✓ **Better decisions:** SAP provides tools to analyse data, which helps in making smart decisions.
- ✓ **More output:** By using SAP efficiently, employees can produce more work.
- ✓ **Stronger business:** A skilled workforce using SAP can make the company more competitive.

In short, training everyone on SAP can make the company more efficient, accurate, and successful.

2. Training Program

- **Observation**

Table 2. Training Program

Training	Responses
No	10
Yes	23
Grand Total	**33**

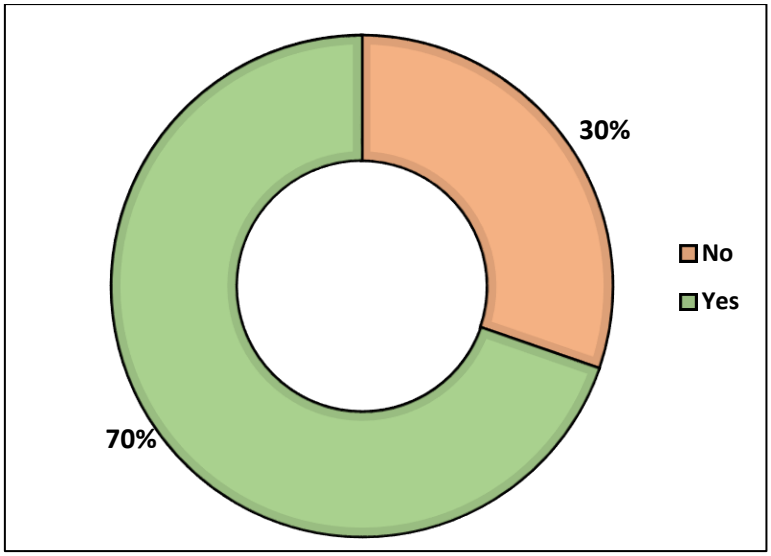

Fig 7. Training Program

- **Interpretation: -**

The company has some employees who don't know how to use SAP very well. This can cause problems for them and the company.

If everyone is trained on SAP, it can have many benefits:

✓ **Faster work:** People can work more quickly and efficiently.

✓ **Fewer mistakes:** People can make fewer errors in their work.

✓ **Better decisions:** SAP can help people make better choices.

✓ **More work done:** People can finish more work in less time.

✓ **Stronger business:** A skilled workforce can make the company more competitive.

3. Usefulness Of SAP

- **Observation**

Table 3. Usefulness of SAP

Usefulness of SAP	Responses
No	12
Yes	21
Grand Total	**33**

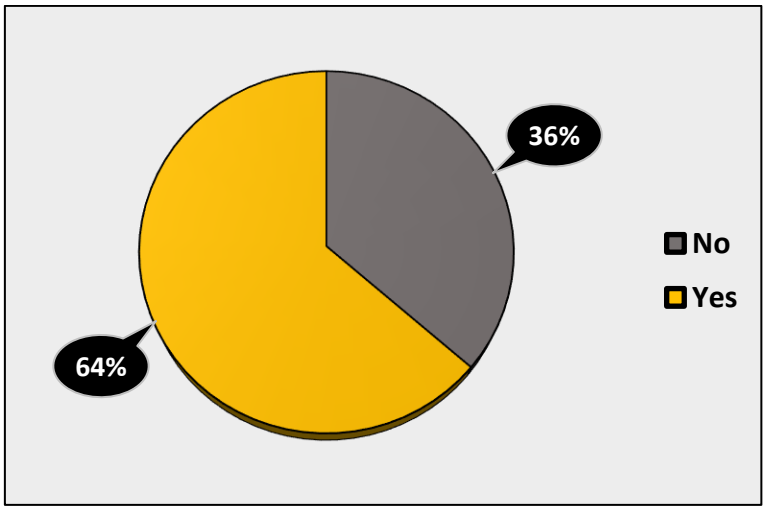

Fig 8. Usefulness of SAP

- **Interpretation: -**

Most people in the company think SAP is a good tool. They think it helps them work faster, make better decisions, and work better together. But there are some people who don't like SAP.

Possible reasons for dissatisfaction with SAP:

✓ **Lack of training:** Employees may not have received adequate training on how to use SAP effectively.

✓ **Poor user interface:** The SAP interface may be confusing or difficult to navigate.

✓ **System performance issues:** Slow performance or frequent crashes can frustrate users.

✓ **Limited functionality:** SAP may not meet the specific needs of certain departments or roles.

By fixing problems and using SAP well, we can make the company more efficient and successful.

4. Reasons of usefulness of SAP

- **Observation**

Table 4. Reasons of use

Reasons	Responses
Easy to use	15
Give proper output	20
Saves the manpower	10
Help to data analysis	19

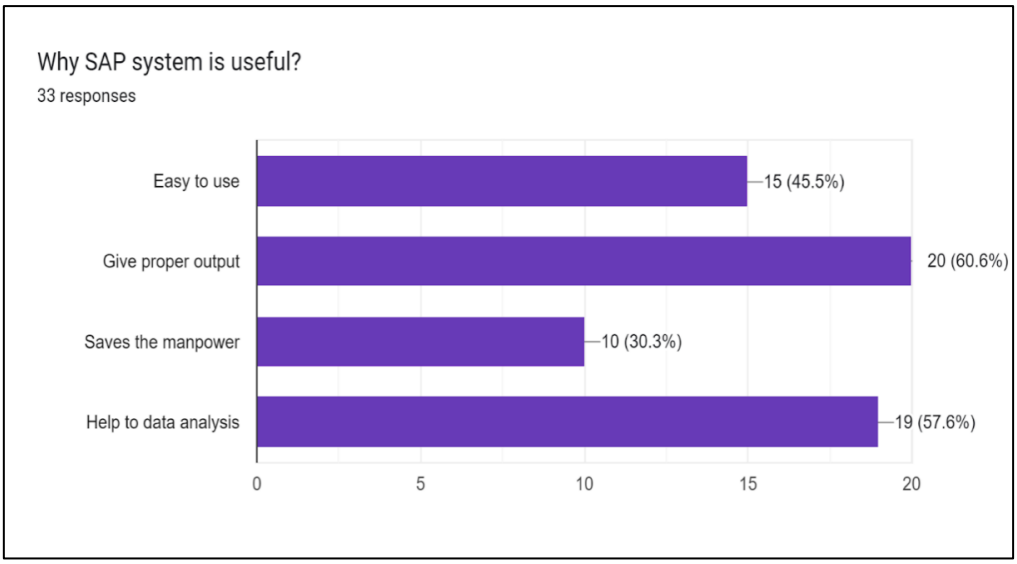

Fig 9. Reasons of use

- **Interpretation: -**

The data indicates that employees primarily value SAP for its ability to:

✓ **Give proper output:** This indicates that SAP is reliable in generating accurate and timely information.

✓ **Help with data analysis:** Employees find SAP useful for extracting insights and making data-driven decisions.

While ease of use and manpower savings are also considered benefits, they seem to be less emphasized compared to the other two factors.

Overall, the chart suggests that SAP is perceived as a valuable tool for improving operational efficiency and output quality.

5. Frequency of Use of SAP

- **Observation**

Table 5. Frequency of Use of SAP

Frequency	Count
Daily	25
Monthly	5
Rarely	1
Weekly	2

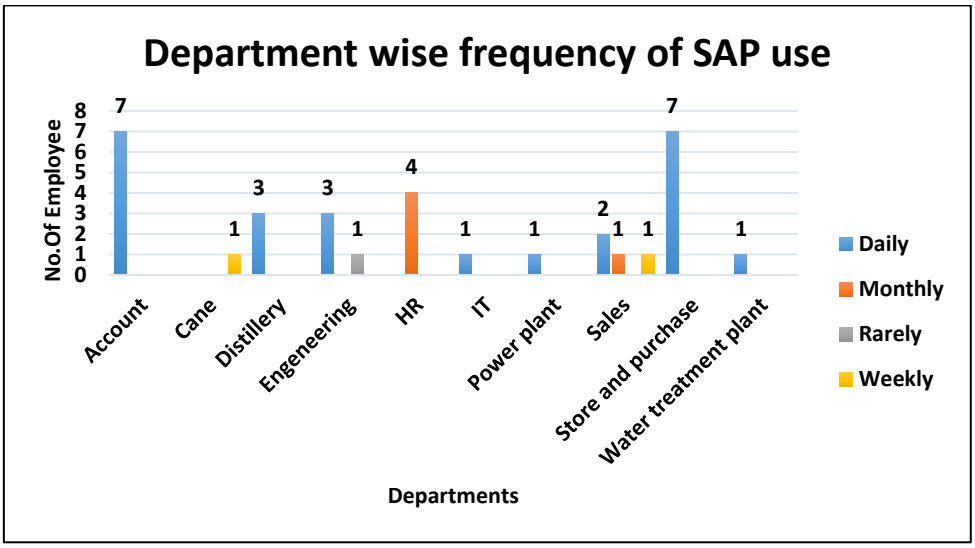

Fig 10. Frequency of Use of SAP

- **Interpretation: -**

The diagram demonstrates that the frequency of SAP system usage varies significantly among different departments within the organization. Some departments heavily rely on the SAP system for daily operations, while others utilize it less frequently. This suggests that the system's role and importance differ across departments, potentially influencing its overall impact and effectiveness within the organization.

6. Modules of the SAP system

- **Observation**

Table 6. Department wise use of SAP Modules

SAP Modules	Count
Financial Accounting (FI)	12
Human Resources (HR)	4
Material Management (MM)	16
Sales & Distribution (SD)	4
Controlling (CO)	2
Production Planning & Production Management	6

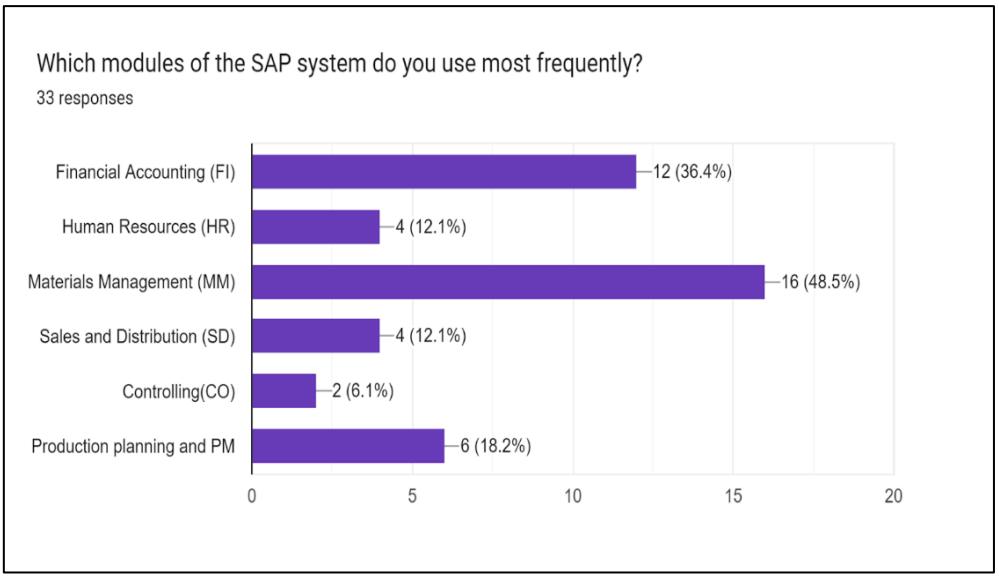

Fig 11. Department wise Use of SAP Modules

- **Interpretation: -**

The chart shows that most people use **Materials Management (MM)** and **Financial Accounting (FI)** modules in SAP. This means these modules are very important for the company's work. MM is likely used for managing inventory and logistics, while FI is used for tracking money and making financial transactions & reports. Other modules like Production Planning, Sales, and HR are used less often, possibly because they are simpler or managed by other systems. However, we need more data to be sure. Overall, MM and FI are the main SAP modules used in the company and are crucial for its operations.

7. Challenges encountered with previous system

- **Observation**

Table 7.Challenges encountered with previous system

Challenges	Count
Data entry error	8
Time consuming processes	5
Lack of automation	3
Difficulty in understanding fields	11
Inadequate support for complex data types	14
NOT	2

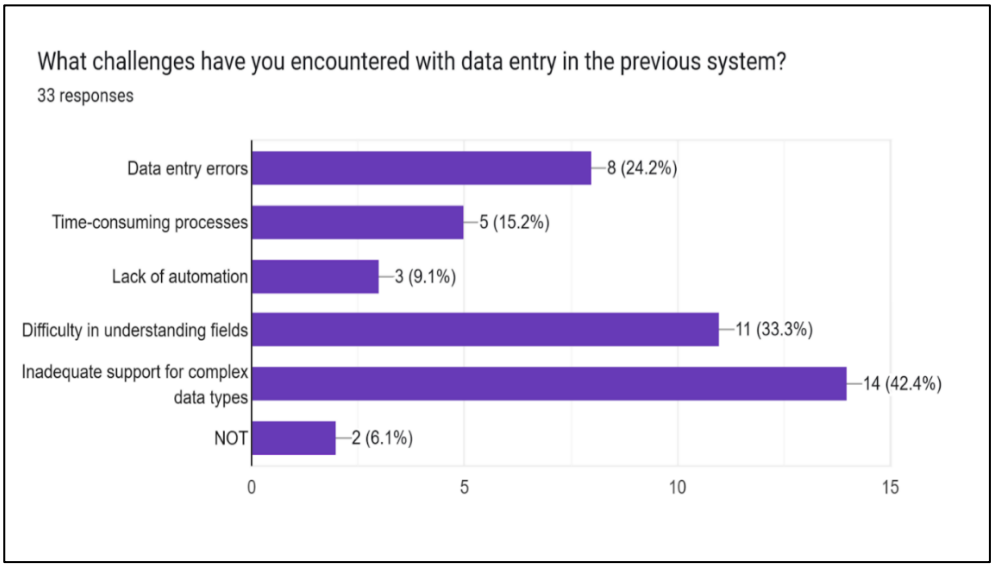

Fig 12. Challenges encountered with previous system

- **Interpretation: -**

The chart indicates that **data entry errors** are the most common challenge faced by users when entering data into the previous system. **Difficulty in data entry** and **inadequate system design** are also major pain points. These findings indicate that improving data entry accuracy, simplifying the process, and enhancing system usability are crucial areas for improvement. These problems are solved with implementing the SAP System.

8. Difficulties faced with previous system

- **Observation**

Table 8.Difficulties faced with previous system

Difficulties	Count
Complexity of the user interface	4
Lack of adequate training & support	10
System Performance issues	16
Difficulty in integrating with other systems	6
High cost of customization & maintenance	9
NOT	1

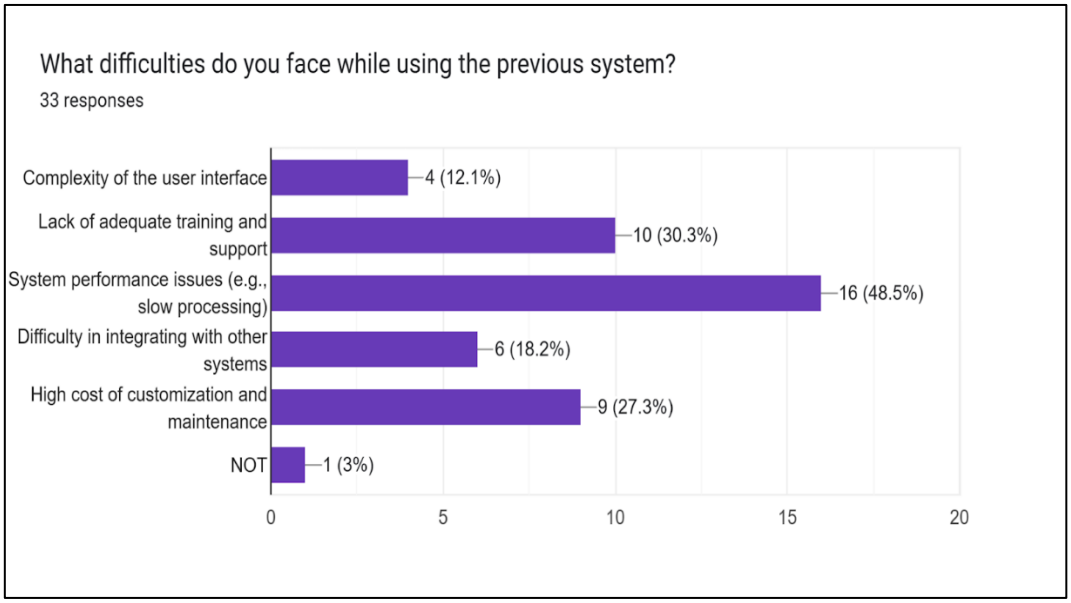

Fig 13. Difficulties faced with previous system

- **Interpretation: -**

The main problem with previous system is that it's hard to use. Many people find it difficult to navigate, and they don't feel like they've been properly trained on how to use it. This makes it frustrating to work with.

While the system is complex, the biggest issue is how it's designed for users. There are also some technical problems with the system itself, and some people think it's too expensive.

9. Stress level during work

- **Observation**

Table 9.Stress Level

Row Labels	Responses
No stress at work place	13
Sometime	16
Can't Say	4
Grand Total	**33**

Fig 14. Stress level during work

- **Interpretation: -**

The data suggests that stress is a common experience among SAP users. While a significant portion of users report experiencing stress sometimes, there is also a group that does not experience stress. This suggests that factors like workload, job satisfaction, and individual coping mechanisms play a role in determining stress levels.

Potential implications of stress on SAP usage:

- ✓ **Decreased productivity:** Stress impairs cognitive function, leading to reduced productivity and efficiency in using SAP.
- ✓ **Increased errors:** Stress increases the likelihood of errors in data entry and other SAP tasks.
- ✓ **Reduced user satisfaction:** Stress reduces user satisfaction with SAP, causing frustration and resistance to system usage.
- ✓ **Impact on decision-making:** Stress impairs decision-making abilities, potentially leading to suboptimal choices when using SAP.

10.Benefits of SAP system

- **Observation**

Table 10.Benefits Of SAP

Benefits	Count
Improved efficiency & productivity	17
Enhanced data accuracy & consistency	19
Better reporting & analytics capabilities	18
Streamlined business processes & operations	12

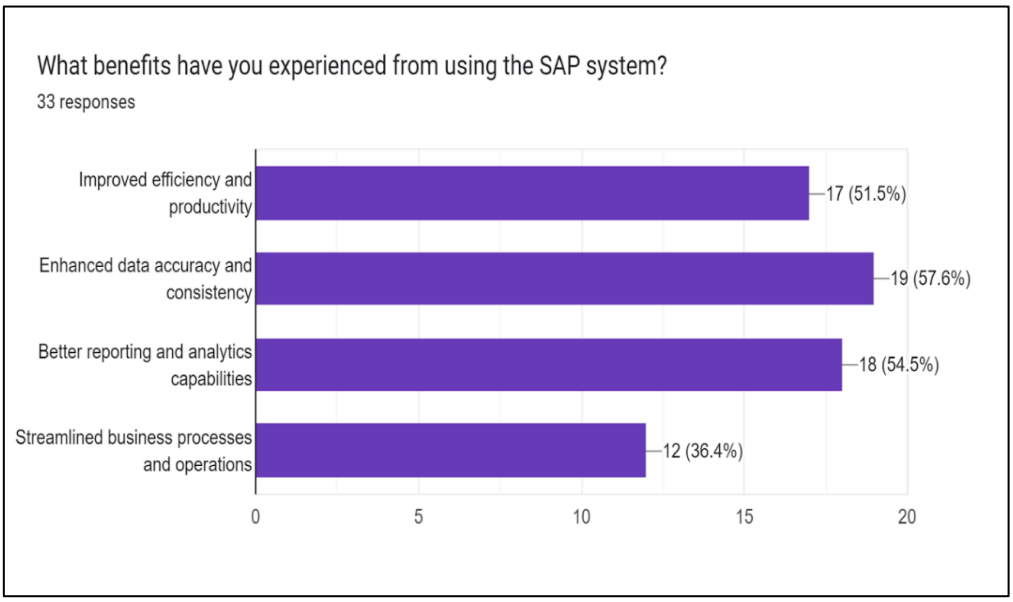

Fig 15. Benefits of SAP System

- **Interpretation: -**

SAP is a really useful tool for many people in the company. It helps in many ways:

✓ **Accurate data:** SAP keeps data correct and consistent, which helps in making good decisions.

✓ **Better reports:** SAP creates detailed reports to understand how the business is doing.

✓ **Faster work:** SAP automates tasks, making work quicker and easier.

✓ **Smoother processes:** SAP helps make the way things are done in the company more efficient.

11. Desired Features in SAP system

- **Observation**

Table 11.Desired Features in SAP

Features	Count
Advance data analytics tools	15
Improved mobile accessibility	11
Enhanced collaboration features	7
More customizable dashboard	7
Better user documentation & tutorials	11

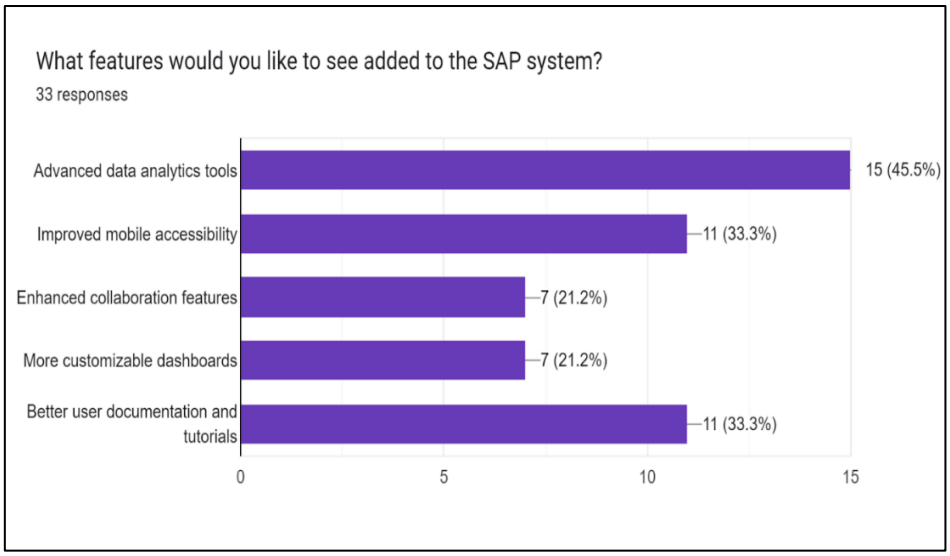

Fig 16. Desired Features in SAP system

- **Interpretation: -**

Based on the data presented, the primary features users desire to be added to the SAP system are enhanced collaboration capabilities, improved mobile accessibility, and more customizable dashboards. These features are likely sought after to improve efficiency, productivity, and user experience.

The relatively high demand for advanced data analytics tools suggests a growing need for data-driven insights within the organization.

In simple terms, people who use SAP want the system to be better at helping them work together, use it on their phones, and customize the way they see information. They also want to be able to analyse data more easily.

12.Satisfaction with the SAP system

- **Observation**

Table 12.Satisfaction with the SAP

Response	Count
Satisfied	26
Very satisfied	7
Grand Total	**33**

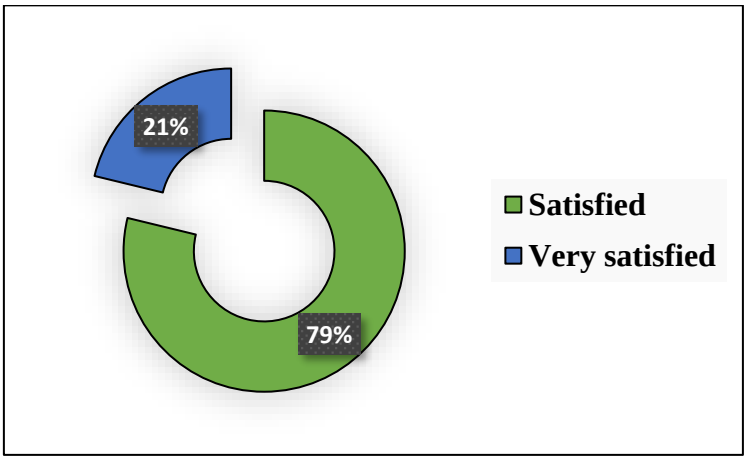

Fig 17. Satisfaction with the SAP system

- **Interpretation: -**

The data indicates a high level of overall satisfaction with the SAP system. A significant majority of users are satisfied with the system, and a notable proportion are very satisfied. This suggests that the SAP system is generally well-received and meets the needs of users.

Potential reasons for high satisfaction:

✓ **User-friendly interface:** The system is easy to navigate and use.

✓ **Effective training and support:** Users have received adequate training and support to use the system effectively.

✓ **Reliable performance:** The system performs reliably and efficiently.

✓ **Relevant features and functionalities:** The system provides the necessary features and functionalities to meet user needs.

5.2. Finding

1. **Impact of Education:** (From Table 3 & Fig 6)

The analysis reveals that the company has a well-educated workforce, but there's room for improvement through SAP training. This investment can significantly enhance efficiency, accuracy, and decision-making capabilities. By automating tasks and optimizing workflows, SAP can boost productivity and give the company a competitive edge.

2. **Training Enhances Performance:** (From Table 2 & Fig 7)

The analysis highlights a significant knowledge gap within the company regarding SAP usage. Training all employees on SAP can significantly improve efficiency, reduce errors, enhance decision-making, boost productivity, and ultimately strengthen the company's competitive position.

3. **User Agreement on SAP's Usefulness:** (From Table 3 & Fig 8)

The majority of employees find SAP to be a valuable tool that enhances efficiency, decision-making, and collaboration. However, a minority of users are dissatisfied due to factors such as inadequate training, a poor user interface, system performance issues, or limited functionality. Addressing these issues can significantly improve user satisfaction and the overall effectiveness of SAP within the organization.

4. **Key Benefits of SAP:** (From Table 4 & Fig 9)

The data suggests that employees primarily value SAP for its ability to generate accurate and timely information and its ability to help with data analysis. While ease of use and manpower savings are also considered benefits, they are less emphasized. Overall, employees perceive SAP as a valuable tool for improving operational efficiency and output quality.

5. **Varied Usage Across Departments:** (From Table 5 & Fig 10)

The frequency of SAP usage varies significantly across departments. Some departments heavily rely on SAP for daily operations, while others use it less

frequently. This suggests that SAP's role and importance differ across departments, which may impact its overall effectiveness within the organization.

6. Most Utilized SAP Modules: (From Table 6 & Fig 11)

The analysis shows that Materials Management (MM) and Financial Accounting (FI) are the most frequently used SAP modules. MM likely handles inventory and logistics, while FI is used for financial tracking and reporting. Other modules, such as Production Planning, Sales, and HR, are used less frequently, possibly due to their simpler nature or being managed by other systems. Overall, MM and FI are the core SAP modules crucial for the company's operations.

7. Common Challenges: (From Table 7 & Fig 12)

The analysis reveals that data entry errors and system design issues were significant challenges with the previous system. These problems were hindering data accuracy and efficiency. Implementing SAP can address these challenges by streamlining data entry processes, improving system usability, and reducing errors.

8. User Experience and Training: (From Table 8 & Fig 13)

The previous system suffered from significant usability issues, including a complex user interface and inadequate training. These factors led to frustration and inefficiency among users. Additionally, technical performance issues and high costs associated with customization and maintenance further compounded the problems.

9. Impact of Stress: (From Table 9 & Fig 14)

The data indicates that stress is a prevalent issue among SAP users. While some users are not significantly stressed, factors like workload and job satisfaction can contribute to stress levels. This stress can negatively impact SAP usage by decreasing productivity, increasing errors, reducing user satisfaction, and impairing decision-making abilities.

10. Primary Benefits Experienced: (From Table 10 & Fig 15)

SAP is a valuable tool that offers several benefits to the company. It ensures data accuracy and consistency, provides detailed reports for better decision-making, automates tasks to improve efficiency, and streamlines business processes for overall operational effectiveness.

11. Desired Features: (From Table 11 & Fig 16)

Users primarily desire enhancements in three key areas of SAP:

- **Collaboration:** Improved collaboration features can facilitate teamwork and communication.
- **Mobile Access:** Enhanced mobile accessibility allows for greater flexibility and productivity.
- **Customization:** More customizable dashboards enable users to tailor the system to their specific needs.

Additionally, there is a growing demand for advanced data analytics tools to gain deeper insights from data.

12. User Satisfaction: (From Table 12 & Fig 17)

The high level of user satisfaction with the SAP system is likely due to several factors: a user-friendly interface, effective training and support, reliable performance, and relevant features and functionalities. These factors contribute to a positive user experience and overall satisfaction with the system.

CHAPTER: 6

CONCLUSIONS AND RECOMMENDATIONS

6. Conclusions and Recommendations

6.1. Conclusion

The SAP system at Dalmia Bharat Sugar Industry is highly beneficial and widely recognized for improving efficiency and accuracy. However, there are key areas for improvement:

i. Training:

To fully leverage the potential of SAP and maximize its benefits, it is imperative to invest in comprehensive and ongoing training programs for all users. This training should cover not only the basic functionalities of the system but also advanced techniques and best practices. By providing users with the necessary knowledge and skills, organizations can enhance their efficiency, reduce errors, and improve decision-making processes. Regular refresher courses and updates on new features and functionalities will keep users informed and proficient in using the system effectively.

ii. Usability:

To enhance user satisfaction and overall system efficiency, it is crucial to simplify the system design and streamline data entry processes. By minimizing complexity and reducing the number of steps required to complete tasks, organizations can significantly improve user experience. Additionally, implementing intuitive interfaces and clear navigation can further enhance usability. By focusing on these aspects, organizations can reduce errors, save time, and improve overall productivity.

iii. Stress Reduction:

To mitigate the negative impacts of stress on SAP users, organizations should prioritize providing adequate support and resources. This includes offering accessible help desks, user manuals, and online tutorials. Additionally, implementing flexible work arrangements and encouraging regular breaks can help reduce stress levels. By prioritizing user well-being, organizations can improve job satisfaction, enhance productivity, and create a positive work environment.

iv. Collaboration:

To foster collaboration and improve productivity, organizations should enhance teamwork tools and provide mobile access to SAP. By integrating effective collaboration features, such as real-time chat, document sharing, and video conferencing, teams can work seamlessly together, regardless of their location. Additionally, enabling mobile access to SAP allows users to stay connected and productive on the go. By investing in these technologies, organizations can break down silos, improve communication, and accelerate decision-making processes.

v. Customization:

To tailor SAP to individual needs and preferences, organizations should allow personalized dashboards for different roles. By enabling users to customize the layout and content of their dashboards, they can access the most relevant information and insights. This personalization can significantly improve user experience, enhance decision-making, and increase overall productivity. By empowering users to customize their workspace, organizations can create a more efficient and effective SAP environment.

vi. Department Support:

To ensure optimal SAP usage across different departments, organizations should provide tailored support, focusing on key modules relevant to each department. By offering specialized assistance and training, organizations can empower users to effectively utilize SAP and achieve their specific goals. This targeted support can help address department-specific challenges, improve efficiency, and enhance overall satisfaction with the system. By providing dedicated support, organizations can foster a culture of continuous improvement and maximize the value of SAP.

vii. User Satisfaction:

To maintain high levels of user satisfaction and ensure the ongoing success of SAP implementation, organizations should proactively address user concerns and continuously gather feedback. By establishing regular communication channels, such as surveys and feedback forms, organizations can identify areas for improvement and take steps to address them. Additionally, providing dedicated

support channels and prompt resolution of issues can significantly enhance user satisfaction. By prioritizing user feedback and making data-driven improvements, organizations can create a positive user experience and maximize the value of SAP.

viii. Work Environment:

To optimize SAP usage and overall employee satisfaction, it is essential to maintain a positive and supportive work environment. By fostering a culture of collaboration, recognition, and work-life balance, organizations can significantly improve employee morale and productivity. Additionally, providing ergonomic workstations and flexible work arrangements can enhance employee well-being and reduce stress. By creating a positive work environment, organizations can attract and retain top talent, improve employee engagement, and ultimately drive business success.

By addressing these areas, Dalmia Bharat Sugar Industry can maximize the effectiveness and user satisfaction of the SAP system.

Overall, the SAP system is generally well-received by employees. They find it useful for various tasks, such as managing data, making decisions, and improving efficiency. However, there are areas where improvements can be made, such as providing better training and support, enhancing mobile accessibility, and offering more advanced data analytics tools. By addressing these areas, the organization can further optimize the use of SAP and maximize its benefits.

6.2. Recommendations

1. Enhance User Training and Support

- **Tailored Training Programs:**

Tailored training ensures that employees receive instruction specific to their roles and responsibilities. By customizing training programs, organizations can maximize learning effectiveness and improve employee performance.

- **Continuous Support Channels:**

Continuous support channels provide timely assistance to users, ensuring a smooth and efficient SAP experience. By establishing help desks and knowledge bases, organizations can promptly address user queries and concerns, minimizing downtime and maximizing productivity.

2. Optimize System Performance and Usability

- **Regular System Maintenance:**

Regular system maintenance is crucial for ensuring optimal SAP performance and minimizing downtime. By conducting routine maintenance tasks, organizations can prevent potential issues, improve system stability, and enhance overall user experience.

- **User-Friendly Interface:**

A user-friendly interface can significantly enhance user experience and productivity. By continuously improving the interface design, organizations can make SAP more intuitive and easier to navigate.

- **Performance Monitoring:**

Performance monitoring tools help identify and address system bottlenecks, ensuring optimal performance and responsiveness. By monitoring key performance indicators, organizations can proactively identify and resolve issues, improving overall system efficiency.

3. Mobile Accessibility and Collaboration

- **Mobile Optimization:**

Optimizing SAP for mobile devices empowers users to access and utilize the system on the go, enhancing flexibility and productivity.

- **Collaboration Tools:**

Integrating collaboration tools within SAP fosters teamwork, knowledge sharing, and efficient communication among team members.

4. Modular Implementation and Customization

- **Phased Implementation:**

Implementing SAP modules in a phased approach minimizes disruption to business operations and allows for a more controlled and manageable rollout.

- **Customization:**

Customizing SAP to align with specific business requirements and workflows enhances its fit and effectiveness within the organization.

5. User Satisfaction and Adoption

- **Gather User Feedback:**

Regularly collecting feedback from users is essential for identifying areas for improvement and ensuring the system meets their needs.

- **Continuous Improvement:**

By continuously implementing improvements based on user feedback and evolving business needs, organizations can maintain the relevance and effectiveness of SAP.

To maximize the benefits of SAP, organizations should prioritize user experience, system performance, and continuous improvement. By implementing tailored training programs, optimizing the user interface, and fostering collaboration, organizations can enhance user satisfaction, improve efficiency, and drive business growth. By implementing these recommendations, the company can significantly enhance the effectiveness of SAP, improve user satisfaction, and drive overall business performance.

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iii. https://www.sap.com/india/about/what-is-sap.html
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ii. https://nestellassociates.com/wp-content/uploads/2019/07/Case-study-of-ERP-implementation.pdf#:~:text=URL%3A%20https%3A%2F%2Fnestellassociates.com%2Fwp
iii. https://blog.sap-press.com/case-study-lessons-learned-from-a-tough-sap-s4hana-implementation

ANNEXURE 1:

1. Department

a) IT b) Account c) HR
d) Sales e) Distillery f) Water treatment plant
g) Engineering h) Store and purchase i) Production
j) Cane k) Power plant

2. Educational qualification

a)10^{th} / 12^{Th} b) Graduation
c) post-graduation d) Diploma

3. Did the company organize any training/orientation program on the SAP System?

a) Yes b) No

4. Do you find the SAP system useful in your work?

a) Yes b) No

5. Why SAP system is useful? (Multiple Choice)

□ Easy to use

□ Give proper output

□ Saves the manpower

□ Help to data analysis

6. How frequently do you use the SAP system in your work?

a) Daily b) Weekly
c) Monthly d) Rarely

7. Which modules of the SAP system do you use most frequently? (Multiple Choice)

□ Financial Accounting (FI) □ Human Resources (HR)

□ Controlling (CO) □ Materials Management (MM)

□ Sales and Distribution (SD) □ Production planning (PM /PP)

8. What challenges have you encountered with data entry in the previous system? (Multiple Choice)

□ Data entry errors □ Time-consuming processes

□ Lack of automation □ Difficulty in understanding fields

□ Inadequate support for complex data types □ NOT

9. What difficulties do you face while using the previous system? (Multiple Choice)

□ Complexity of the user interface
□ Lack of adequate training and support
□ System performance issues (e.g., slow processing)
□ Difficulty in integrating with other systems
□ High cost of customization and maintenance
□ NOT

10. Do you feel stressed during working on SAP?

a) Always b) Some Times c) Can't Say d) No Stress at work place

11. What benefits have you experienced from using the SAP system? (Multiple Choice)

□ Improved efficiency and productivity

□ Enhanced data accuracy and consistency

□ Better reporting & analytic capabilities

□ Streamlined business processes and operations

12. What features would you like to see added to the SAP system? (Multiple Choice)

□ Advanced data analytic tools □ Improved mobile accessibility

□ Enhanced collaboration features □ More customizable dashboards

□ Better user documentation and tutorials

13. How would you rate your overall satisfaction with the SAP system?

a) Highly satisfied b) Satisfied c) Can't Say

d) Not Satisfied e) Highly Dissatisfied

ANNEXURE 2:

Questions For Group Discussion & Interview

1. How can SAP help your sugar industry?
2. What are the main features of the SAP system that are used full for the sugar industry?
3. How does SAP improve our production process in the sugar industry?
4. Can SAP help you to manage your inventory more efficiently? and how?
5. What kind of reports can we generate using SAP?
6. What kind of indent you used frequently and for what purpose?
7. How does the SAP handle sales and distribution in the sugar industry?
8. How do we ensure our data is secure in the SAP?
9. What are the steps in wording setting of SAP for your company?
10. How long will it take to implement SAP in your sugar business?
11. What is the cost associated with implementing and maintaining SAP?
12. Can SAP scale as our business grows?