

# Success and Failure of ERP Implementation in the Manufacturing Industry: A Systematic Literature Review

Zafira Fayyaza Lutfun Nisa<sup>1\*</sup>, Zidane Farras Habibie<sup>2</sup>, Muhammad Qomarul Huda<sup>3</sup>

<sup>1,2,3</sup>Information Systems, Faculty of Science and Technology, UIN Syarif Hidayatullah Jakarta, Indonesia  
[zafira.fayyaza23@mhs.uinjkt.ac.id](mailto:zafira.fayyaza23@mhs.uinjkt.ac.id)<sup>1\*</sup>, [zidane.farras23@mhs.uinjkt.ac.id](mailto:zidane.farras23@mhs.uinjkt.ac.id)<sup>2</sup>, [mqomarul@uinjkt.ac.id](mailto:mqomarul@uinjkt.ac.id)<sup>3</sup>

## Abstract

This study aims to identify and classify the key factors that influence the success and failure of Enterprise Resource Planning (ERP) implementation in manufacturing companies in Indonesia. The research was conducted using a systematic literature review (SLR) approach, following the PRISMA 2020 guidelines to ensure a structured and transparent selection process. A total of 182 articles were collected from five reputable scientific databases and screened based on predefined inclusion criteria, resulting in 15 articles selected for in-depth analysis. Through thematic analysis, the identified factors were grouped into four categories: organizational, human resources, technological, and external. The findings reveal that management commitment, adequate user training, and system suitability are the primary drivers of successful ERP implementation. In contrast, user resistance, lack of training, and poor system compatibility are the most common causes of failure. These results provide a conceptual foundation for developing more targeted and effective ERP implementation strategies that are tailored to the specific challenges of the Indonesian manufacturing sector. The study offers practical implications for both industry practitioners and academic researchers.

**Keywords:** ERP; Implementation; Success factors; Failure factors; Indonesian Manufacturing

## 1. Introduction

In today's digital era, manufacturing companies face increasing pressure to improve efficiency, flexibility, and comprehensive business process integration [1]. One integrated solution widely adopted to address these challenges is Enterprise Resource Planning (ERP), an information system capable of connecting various key functions within an organization, such as production, logistics, finance, and human resources, into a single, unified platform [2]. ERP implementation not only enables companies to reduce data redundancy and improve information accuracy but also accelerates decision-making processes that are more responsive to market and operational dynamics [1]. In Indonesia, the manufacturing sector is one of the main pillars of the national economy, which in 2024 is recorded as contributing around 19% to Gross Domestic Product (GDP) [3]. Many large companies in Indonesia, such as PT Astra International, Indofood Sukses Makmur, and Unilever Indonesia, have adopted ERP systems as part of their digital transformation to improve competitiveness and operational efficiency [4], [5]. However, the success of ERP implementation is uneven. Many companies, especially in the medium and small class, still face various obstacles in the implementation process [6]. Various challenges, such as limited human resources, high implementation costs, mismatches between business needs and the adopted system, and resistance to organizational change, are serious obstacles that often hinder the success of ERP projects [6]. Although ERP can theoretically provide strategic benefits to organizations, in reality, the success rate of this system implementation in the Indonesian manufacturing sector remains fluctuating. Previous studies even indicate that up to 70% of ERP projects fail to deliver the expected benefits [7]. The root of these problems often stems from a combination of technical, organizational, and external factors [8]. For example, errors in vendor selection, inadequate employee training, minimal top management involvement, and the lack of an effective change management strategy. A wide range of literature has attempted to identify and analyze factors influencing the success or failure of ERP implementations. However, most previous research has been limited to single case studies in specific companies without a systematic effort to synthesize these scattered findings into a comprehensive synthesis [9]. Furthermore, few studies have specifically focused on ERP implementation in the Indonesian manufacturing sector with a clear and in-depth thematic approach. However, the manufacturing context has unique characteristics that distinguish it from other sectors, both in terms of process complexity, integration requirements, and the scale of ERP projects undertaken. Studies that explicitly compare success and failure factors in pairs are also rare in the local literature. Therefore, this study aims to :

- Identify and categorize factors contributing to the success and failure of ERP implementations found in academic literature related to manufacturing companies in Indonesia.
- Synthesize findings from various studies to identify common patterns, key challenges, and frequently suggested recommendations.
- Provide a conceptual basis for manufacturing companies and decision-makers to design a more structured and effective ERP implementation strategy.

This research contributes to this by providing a systematic literature review that summarizes over fifteen verified scholarly sources on ERP implementation in manufacturing companies in Indonesia. In analyzing this literature, a thematic categorization of factors influencing the

success and failure of ERP implementations was conducted, encompassing technical, organizational, human, and external aspects. This study is expected to provide more comprehensive insights for academics and business practitioners in understanding the dynamics of ERP implementation in a more contextual and applicable manner. Furthermore, the results of this study are expected to serve as a basis for developing an ERP implementation evaluation framework that is more relevant to the characteristics of the manufacturing sector in Indonesia. The structure of this paper is structured to facilitate the reader's systematic understanding of the research flow. The introduction will discuss the basic concepts of ERP and key findings from previous research related to the success and failure factors of ERP system implementation. The research methodology explains the literature review approach used to screen and analyze reference sources. The results and discussion section will present the key findings based on the literature analysis, including a classification of the factors most frequently cited in the literature. Finally, the conclusions and recommendations section will summarize key findings and provide recommendations for further research and practical application in manufacturing organizations.

## 2. Methodology

### 2.1. Systematic Literature Review

This study used a Systematic Literature Review (SLR) approach to identify, categorize, and analyze various studies discussing the success and failure factors of Enterprise Resource Planning (ERP) implementation in manufacturing companies in Indonesia. This approach was chosen to obtain a comprehensive overview of previous research results in a systematic, transparent, and focused manner. The SLR process in this study followed the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, which consist of four main stages [10]:

- Identification

Literature was collected from five credible scientific databases: IEEE Xplore, ScienceDirect, Scopus, SINTA (Science and Technology Index Indonesia), and GARUDA (Garba Rujukan Digital). Publish or Perish and Google Scholar were used as search engines. Search keywords were arranged in combination using the Boolean operators "ERP" AND "manufacturing" AND "Indonesia" AND ("success factors" OR "failure factors" OR "implementation"). The search was limited to articles published between 2020 and 2025, written in Indonesian or English, and with full-text abstracts. The search results yielded 182 initial articles.

- Screening

This stage involved removing 32 duplicate articles, leaving 150 articles. All articles were then screened based on their titles and abstracts. At this stage, 90 articles were excluded due to their lack of relevance to the ERP context in the Indonesian manufacturing sector, such as articles discussing ERP in the education, finance, or global sectors in general without local contextualization.

- Eligibility

The 60 articles that passed the screening stage were read in full (full-text reading) to assess their eligibility. Three criteria were used in this stage: a focus on ERP implementation (not just theory, design, or trend predictions), relevance to the Indonesian manufacturing sector, and explicit mention of ERP success and/or failure factors. From this stage, 45 articles were excluded due to not meeting one or more of these criteria. Most of these studies focused solely on ERP system design or studies outside the manufacturing sector.

- Inclusion

A final 15 articles that met all criteria were included in the analysis process. These articles were analyzed in depth to answer the following research questions (RQs) through data extraction and thematic analysis.

- RQ1: What are the factors contributing to the success of ERP implementation in manufacturing companies in Indonesia?
- RQ2: What are the factors contributing to the failure of ERP implementation in manufacturing companies in Indonesia?
- RQ3: What is the thematic classification of these success and failure factors?

A PRISMA diagram depicting this flow can be seen in Figure 1.

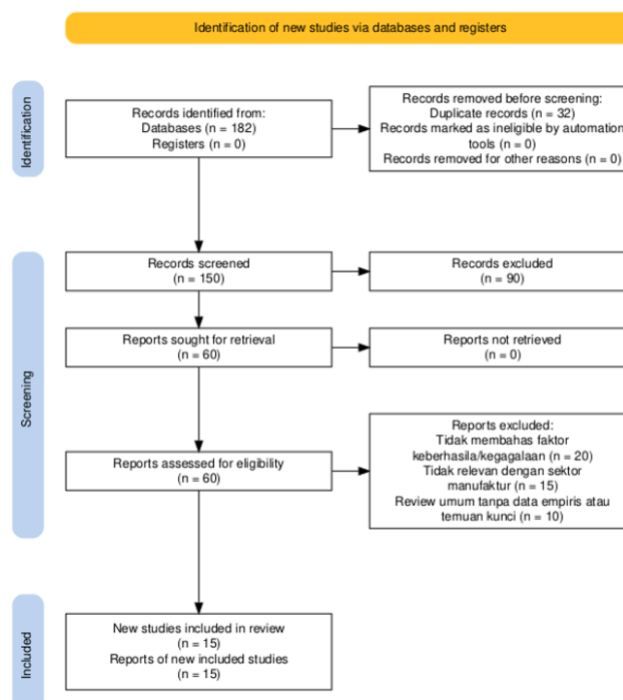


Fig. 1: PRISMA Flowchart

## 2.2. Collect Data

The data in this study were collected from a search of scientific articles in five credible and recognized databases in the field of information technology and information systems: IEEE Xplore, ScienceDirect, Scopus, SINTA, and GARUDA. The search was conducted during June 2025. The inclusion and exclusion criteria for this study are shown in Table 1.

**Table 1 : Inclusion and Exclusion Criteria**

| Inclusion  | Exclusion  |
|--|--|
| Articles published between 2020 and 2025             | Articles published before 2020 or after 2025                                 |
| Focus on ERP implementation                          | Only discuss technical aspects without organizational implementation context |
| Manufacturing sector in Indonesia                    | Non-manufacturing sectors  |
| Mention factors of ERP success or failure            | Do not mention factors of ERP success or failure                             |
| Articles available in full-text or complete abstract | Predictive studies without empirical data                                    |

Articles that have passed the selection are recorded in a spreadsheet and extracted based on: (1) author and year, (2) study objectives, (3) research methods, (4) sectors, and (5) identified success or failure factors.

## 2.3. Data Analysis

The analysis was conducted using a manual thematic analysis approach, based on the framework of Braun & Clarke (2006) [11]. This process aims to identify patterns or themes emerging from the findings of various studies related to ERP implementation in the manufacturing sector [12]. Each article that passed the inclusion stage was analyzed to extract important information, specifically regarding:

- Success factors for ERP implementation
- Failure factors for ERP implementation
- Thematic categories: Organization, Human Resources (HR), Technology, External

The analysis process was conducted manually through the following steps:

- Extracting key information from each article into a synthesis table.
- Labeling or thematic coding the identified factors (for example, "management commitment" was labeled with the theme "Organization").
- Grouping data based on similar themes to identify the frequency and trends of factor patterns.
- Compiling tables and visualizing them in graphical form (bar charts and pie charts) to support simple quantitative analysis.

This analysis was conducted without the use of qualitative analysis software such as NVivo or ATLAS.ti, but rather using a spreadsheet-based approach and manual reading. The final results of this thematic analysis were used to answer the three previously formulated research questions (RQ1, RQ2, and RQ3).

## 3. Result and Discussion

This study was conducted to identify and classify the success and failure factors of Enterprise Resource Planning (ERP) implementation in manufacturing companies in Indonesia and to compile a thematic mapping of these factors based on organizational, human resources (HR), technology, and external factors. Based on the analysis, a number of dominant factors were identified that play a significant role in the success and the main causes of failure of ERP implementation. Each subsection will answer the previously formulated research questions (RQ1, RQ2, and RQ3)..

### 3.1. RQ1 – What are the success factors for ERP implementation in manufacturing companies in Indonesia?

Based on the analysis of the reviewed literature, several key factors are frequently associated with successful ERP implementation. One of the most frequently cited is top management commitment. This factor is mentioned in nearly all articles analyzed and is often considered the foundation of the entire implementation process. This commitment extends beyond financial support to active involvement in the planning and strategic decision-making process. Furthermore, user training is also crucial. ERP implementations often involve significant changes to workflows, so training not only helps users understand the new system but also increases their confidence and readiness to face change. Without adequate training, system use tends to be suboptimal. Another factor is the fit between the ERP system and business processes. Several studies have shown that implementation success depends heavily on how well the ERP system can be tailored to the company's needs and operational characteristics. If the system is too rigid or out of context, business processes can become inefficient. Additional factors frequently mentioned include:• Support from vendors and implementation partners• Readiness of IT infrastructure• Thorough project planning• Open communication between departments• Change managementAll of these success factors are summarized in Table 2 below.

**Table 2: Success Factors for ERP Implementation by Category**

| Success Factors       | Thematic Category | Number of Articles |
|-----------------------|-------------------|--------------------|
| Management Commitment | Organizational    | 10                 |

|                          |                 |   |
|--------------------------|-----------------|---|
| User Training            | Human Resources | 8 |
| ERP System Suitability   | Technology      | 6 |
| Vendor Support           | External        | 6 |
| Organizational Readiness | Organizational  | 4 |

Thematic Category and Number of Articles

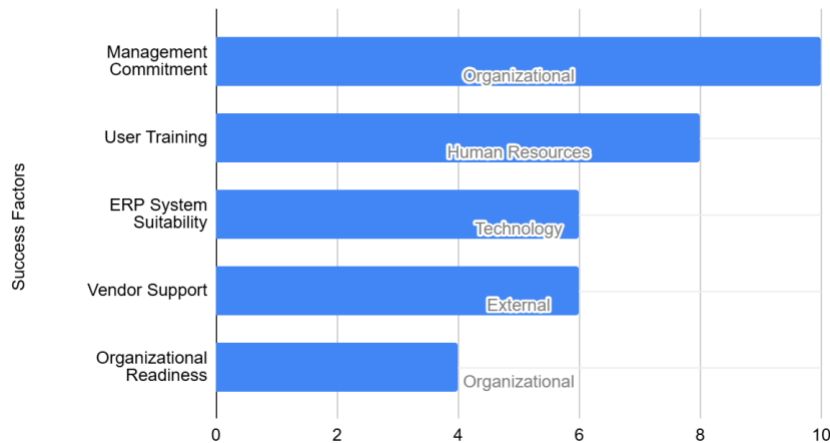


Fig. 2: Frequency of Occurrence of Success Factors

The analysis results show that management commitment is the most frequently cited factor in various journals. Top management involvement, not only in budget allocation but also in ensuring communication of vision and strategic direction, has been shown to facilitate the transition to ERP. Several studies emphasize that without management support, the risk of failure increases even if the technology used is the latest [1], [2], [4]. User training is also one of the most influential factors. Most studies highlight the importance of structured training programs to enable users to adapt to complex ERP modules [3], [5], [6]. Lack of training often triggers resistance and operational errors. From a technological perspective, the suitability of the ERP system to local business needs plays a vital role. Several studies explain that flexible and customizable ERP systems tend to support optimal organizational performance [2], [5], [7]. Vendor support, whether in the form of consultation, installation, or post-implementation services, is also an external factor that strengthens success [1], [4], [7]. Finally, organizational readiness and change management strategies also frequently appear in the literature. Studies show that organizations that have prepared an adaptive culture and clear change planning are better able to face potential obstacles during the system migration process [2], [8].

### 3.2. RQ2 – What are the causes of ERP implementation failure in manufacturing companies in Indonesia?

In addition to success factors, several factors can cause ERP implementations to fail or even fail completely. Table 3 summarizes the most frequently cited failure factors in the reviewed articles. Figure 3 shows the dominance of user resistance and inadequate training as the primary causes.

Table 3: Factors that Cause ERP Implementation Failure by Category

| Failure Factors                | Thematic Category | Number of Articles |
|--------------------------------|-------------------|--------------------|
| Lack of Training               | Human Resources   | 8                  |
| User Resistance                | Human Resources   | 7                  |
| ERP System Incompatibility     | Technology        | 6                  |
| Vendor Delays                  | External          | 4                  |
| Lack of Internal Communication | Organizational    | 3                  |

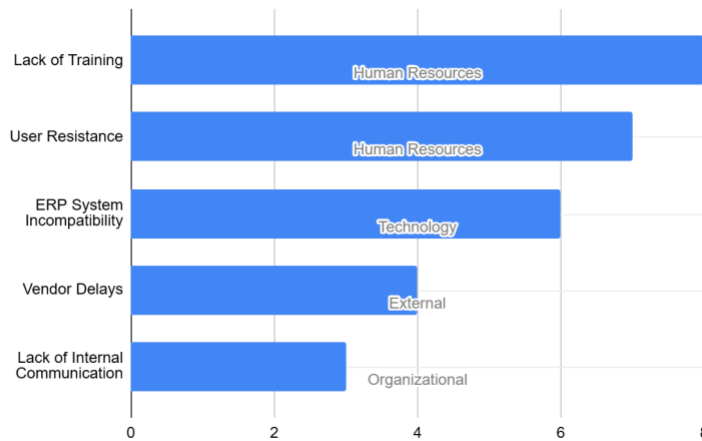


Fig. 3: Frequency of Occurrence of Failure Factors

Lack of training is the most common cause of failure. Several studies have shown that shallow or rushed training programs leave many users unprepared for new systems [1], [5], [6]. This is closely related to user resistance. Studies indicate that employee resistance often occurs because they feel uninvolved or do not understand the immediate benefits of ERP [2], [8], [10]. From a technological perspective, system incompatibility with local business processes forces many companies to modify their workflows to accommodate ERP, rather than the other way around. This often creates new inefficiencies [2], [4], [7]. External factors such as vendor delays in providing services and technical support have also been identified in several studies [1], [5]. Meanwhile, poor internal communication exacerbates the situation as employees feel they lack clear direction during the transition [3], [7].

3.3. RQ3 – What is the thematic classification of these success and failure factors?

When viewed across major themes, organizational and human resource factors account for the largest share, both as determinants of success and causes of failure. This emphasizes that technology alone is insufficient without managerial support, organizational cultural readiness, and quality human resources. External factors, such as vendors, are important, but their role is more of a supporting role. Therefore, manufacturing companies planning to implement ERP should prioritize change management, internal communication, and ongoing training. Figure 4 shows the distribution of the contribution of each theme to the reviewed literature.

Table 4: Classification of ERP Factors by Theme

| Thematic Category | Number of Identified Factors | Number of Articles | Percentage (%) |
|-------------------|------------------------------|--------------------|----------------|
| Organizational    | 4                            | 13                 | 33%            |
| Human Resources   | 3                            | 13                 | 33%            |
| Technology        | 2                            | 6                  | 17%            |
| External          | 2                            | 7                  | 17%            |

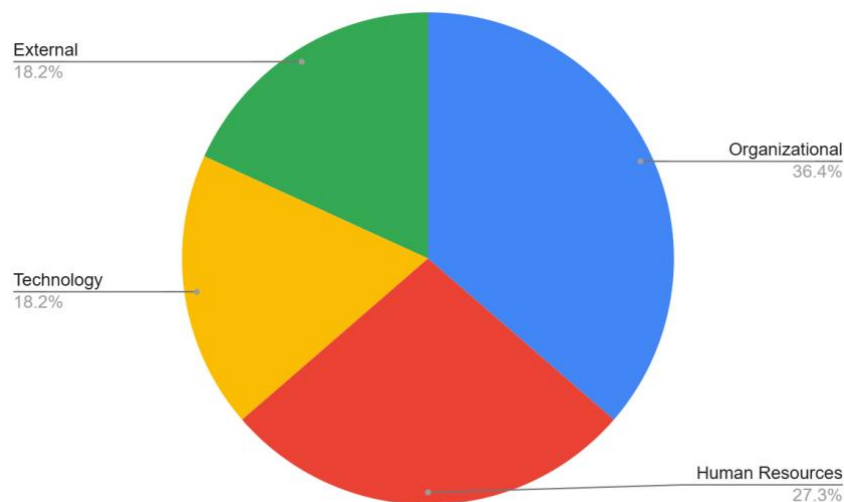


Fig. 4: Pie Chart of ERP Factor Theme Distribution

## 4. Conclusion

This study provides a comprehensive thematic classification of success and failure factors in ERP implementation within Indonesia's manufacturing sector, based on a systematic review of recent literature. The analysis reveals that organizational commitment, continuous user training, and system suitability are critical for success, while user resistance, inadequate training, and system incompatibility frequently hinder implementation. These factors span across four dimensions: organizational, human resources, technological, and external.

The novelty of this study lies in its thematic synthesis of literature between 2020 and 2025, offering an up-to-date reference for ERP implementation strategies specific to the Indonesian manufacturing context. While previous studies often isolate technical or organizational aspects, this research emphasizes the importance of a holistic and integrated approach.

Despite its reliance on secondary data and manual analysis, the findings serve as a foundational reference for practitioners and scholars. To enhance ERP adoption outcomes, it is recommended to actively engage top management, ensure comprehensive training, align ERP modules with business needs, and foster cross-department communication. Future research using case studies or fieldwork is encouraged to validate and deepen the insights gained from this review.

## References

- [1] F. E. Sologia, R. W. Witjaksono, dan L. Ramadani, "Evaluation of the Successful Implementation of Enterprise Resource Planning Based on SAP Using the DeLone & McLean Model," *Int. J. Community Serv. Learn.*, vol. 8, no. 1, hlm. 29–40, Mei 2024, doi: 10.23887/ijcs.v8i1.75924.
- [2] M. A. S. Anas dan Intan Sofiya, "Analisis dan perancangan sistem informasi pengolahan data rekam medis berbasis WEB di puskesmas XYZ," *INFOTECH J. Inform. Teknol.*, vol. 3, no. 2, hlm. 82–91, Des 2022, doi: 10.37373/infotech.v3i2.350.
- [3] "Manufacturing Industry Contribution Continues to Decrease." Diakses: 8 Juli 2025. [Daring]. Tersedia pada: <https://www.kompas.id/artikel/en-meski-melambat-industri-pengolahan-masih-jadi-penggerak-ekonomi-2024>
- [4] F. Cuandra dkk., "ANALYSIS OF ERP SYSTEM IMPLEMENTATION AND SUPPLY CHAIN IN PT INDOFOOD CBP SUKSES MAKMUR," *Marg. J. Manag. Account. Gen. FINANCE Int. Econ. ISSUES*, vol. 1, no. 3, hlm. 67–76, Mei 2022, doi: 10.55047/marginal.v1i3.193.
- [5] A. Page, "Penerapan ERP Pada Perusahaan Unilever," *Sumihai Teknologi Indonesia*. Diakses: 8 Juli 2025. [Daring]. Tersedia pada: <https://sumihai.co.id/id/penerapan-erp-pada-perusahaan-unilever/>
- [6] "ENTERPRISE RESOURCE PLANNING ERP SYSTEM."
- [7] S. D. Larasati, I. Eitiveni, dan P. Mahardhika, "Analysis of ERP Critical Failure Factors: A Case Study in an Indonesian Mining Company," *J. Sist. Inf.*, vol. 19, no. 2, hlm. 34–47, Okt 2023, doi: 10.21609/jsi.v19i2.1291.
- [8] Glorie Fajar Paularine, Amelia Setiawan, dan Hamfri Djajadikerta, "Pengaruh Implementasi Enterprise Resource Planning dalam Supply Chain Management: Sebuah Tinjauan Literatur," *SATESI J. Sains Teknol. Dan Sist. Inf.*, vol. 5, no. 1, hlm. 38–50, Apr 2025, doi: 10.54259/satesi.v5i1.4067.
- [9] Y. R. Perdana, "Adoption of Enterprise Resources Planning (ERP) In Indonesian Manufacturing Companies," *GATR J. Bus. Econ. Rev.*, vol. 5, no. 3, hlm. 86–93, Des 2020, doi: 10.35609/jber.2020.5.3(2).
- [10] N. R. Haddaway, M. J. Page, C. C. Pritchard, dan L. A. McGuinness, "PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis," *Campbell Syst. Rev.*, vol. 18, no. 2, hlm. e1230, Jun 2022, doi: 10.1002/cl2.1230.
- [11] V. Braun dan V. Clarke, "Using thematic analysis in psychology," *Qual. Res. Psychol.*, vol. 3, no. 2, hlm. 77–101, Jan 2006, doi: 10.1191/1478088706qp0630a.
- [12] S. S. Choudhuri, "REVOLUTIONIZING MANUFACTURING ERP WITH AI AND IOT REAL-TIME INSIGHTS AND STRATEGIC OUTCOMES".
- [13] Bayu Setyo Nugroho dkk., "Implementation of ERP and SCM System to Improve Productivity and Competitive Advantage of Veneer Sales at PT Karya Megah Indowood," *Indones. J. Inf. Syst.*, vol. 7, no. 2, hlm. 164–177, Feb 2025, doi: 10.24002/ijis.v7i2.10595.
- [14] D. Trisanto, E. Rahmawati, N. Rismawati, dan M. F. Mulya, "Penerapan Enterprise Resource Planning (ERP) Pada Sistem Supply Chain Management Di Pt Poliprima Cipta Unggul Menggunakan ODOO 16.0," *J. Inf. Syst. Inform. Comput.*, vol. 8, no. 2, hlm. 389, Des 2024, doi: 10.52362/jisicom.v8i2.1674.
- [15] T. Fatmawati, R. Kramanandita, dan R. Miza, "Rancangan Implementasi Enterprise Resource Planning (ERP) pada Sistem Pengelolaan Sales Order PT Jaya Mandiri Indotech," *J. Teknol. Dan Manaj.*, vol. 20, no. 1, hlm. 33–44, Feb 2022, doi: 10.52330/jtm.v20i1.49.
- [16] R. N. Fadhlila dan S. Saptadi, "IMPLEMENTASI ERP BERBASIS ODOO PADA DIVISI FABRIKASI PT INKA MULTI SOLUSI".
- [17] Aura Diva Shafa Dharma dan Akmal Suryadi, "Implementasi Sistem Enterprise Resource Planning (ERP) pada PT XYZ dengan Menggunakan Modul Inventory Odoo," *Venus J. Publ. Rumpun Ilmu Tek.*, vol. 2, no. 1, hlm. 122–133, Jan 2024, doi: 10.61132/venus.v2i1.105.
- [18] M. S. A. Putro dan S. Nursyamsiah, "ANALISIS IMPLEMENTASI LEAN MANUFACTURING DENGAN METODE 5S PADA STARTUP MANUFAKTUR DI INDONESIA," *J. Ilm. Manaj. Ekon. Akunt. MEA*, vol. 8, no. 3, hlm. 1800–1817, Nov 2024, doi: 10.31955/mea.v8i3.4652.
- [19] A. Bakar, R. Rahmi, dan R. Wahyuni, "IMPLEMENTASI SISTEM INFORMASI MANUFAKTUR BERBASIS CLOUD UNTUK PENINGKATAN KINERJA DAN RESPONSIVITAS INDUSTRI," vol. 3, 2024.
- [20] Z. J. H. Tarigan, H. Siagian, dan F. Jie, "The Role of Top Management Commitment to Enhancing the Competitive Advantage Through ERP Integration and Purchasing Strategy," *Int. J. Enterp. Inf. Syst.*, vol. 16, no. 1, hlm. 53–68, Jan 2020, doi: 10.4018/ijeis.2020010103.
- [21] A. P. Pradata dan D. Ernawati, "The Influence of ERP-SAP Implementation and Inventory Management on Production Efficiency through Inventory Control Performance Using Partial Least Square (PLS) Method," *Indones. J. Comput. Sci.*, vol. 13, no. 3, Jun 2024, doi: 10.33022/ijcs.v13i3.3961.
- [22] S. Andriasari, I. Ayesah, A. R. Vanchapo, dan D. S. Riatmaja, "Analisis Faktor-Faktor Penentu Keberhasilan dalam Implementasi Paket Sistem Enterprise Resource Planning (ERP) untuk Mencapai Keunggulan Bersaing Perusahaan," vol. 7, 2023.
- [23] Agus Sulaksono dan Julius Nursyamsi, "PERKEMBANGAN ERP BIDANG INDUSTRI MANUFAKTUR ERA TRANSFORMASI DIGITAL," *J. Akunt. Dan Manaj. Bisnis*, vol. 2, no. 2, hlm. 106–119, Agu 2022, doi: 10.56127/jaman.v2i2.222.
- [24] E. Eryc dan D. Santoso, "PENENTUAN FAKTOR – FAKTOR KUNCI KEBERHASILAN IMPLEMENTASI PERANGKAT LUNAK ERP BERBAHASA MANDARIN: ANALISIS STUDI KASUS PADA PERUSAHAAN MANUFAKTUR DI BATAM," *J. Inf. Syst. Manag. JOISM*, vol. 5, no. 2, hlm. 176–182, Jan 2024, doi: 10.24076/joism.2024v5i2.1385.
- [25] P. D. Yusmita, "Studi tentang Implementasi Sistem Enterprise Resource Planning (ERP) pada Industri Manufaktur".
- [26] Y. Zeng dan M. J. Skibniewski, "Risk assessment for enterprise resource planning (ERP) system implementations: a fault tree analysis approach," *Enterp. Inf. Syst.*, vol. 7, no. 3, hlm. 332–353, Agu 2013, doi: 10.1080/17517575.2012.690049.
- [27] D. Napitupulu, "ANALISA KEBERHASILAN SISTEM ERP STUDI KASUS : PT. AUTONETSYS INDONESIA".