Sabita Chhetri and Laxmi Tamang

Barriers and Success Factors for ERP Implementation in Nepalese SMEs: A Case Study Approach

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Author: Sabita Chhetri and Laxmi Tamang
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ABSTRACT:

This study examines the factors affecting Enterprise Resource Planning (ERP) implementation in Nepalese Small and Medium Enterprises (SMEs) using the Technology-Organization-Environment (TOE) model. This study addresses the limited empirical understanding of implementation challenges, essential success factors and ERP outcomes within retail and textile SMEs. Multiple case study with descriptive outcome scoring was used, with four SMEs (two in retail and two in textiles). Four SMEs with ERP systems or in the process of implementing ERP systems were included in the study. Using a semi-structured interview methodology, primary data was gathered from the managers, ERP users and employees directly involved with ERP implementation. Where available, secondary data, including ERP-related documents and ERP reports, were also analyzed. Thematic analysis was used to analyze the collected data based on the TOE model while the descriptive outcome scoring was used to evaluate the outcomes.

The results indicated that organisational factors such as top management support, employee training, and resistance to change were the most influential factors in ERP implementation results. Technological factors such as the complexity of the system and Information and Communication Technology (ICT) capability affected implementation effectiveness and vendor support was influential in overcoming technological constraints. Firms having more effective organizational readiness and management showed improved operational efficiency, system usage and decision-making results compared to firms experiencing more employee resistance and training limitations.

The study is a novel addition to the literature on ERP implementation study as it offers empirical evidence from the Nepalese SMEs and illustrates the interdependence of the various factors within the technological, organizational and environmental context in the capacity constrained SME context. The findings are also helpful for the SME managers and ERP vendors in understanding the difficulties and key success factors associated with ERP implementation.

KEYWORDS: ERP Implementation, SMEs, TOE Framework, Critical Success Factors, Barriers, Digital Transformation

Contents

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Abbreviations

ERP: Enterprise Resource Planning

SMEs: Small and Medium Enterprises

ICT: Information and Communication Technology

TOE: Technology–Organization–Environment

IT: Information Technology

KPI: Key Performance Indicator

HR: Human Resources

GDPR: General Data Protection Regulation

INTRODUCTION

1.1 Background of Study

ERP systems are combined information systems that integrate or merge various business operations to improve efficiency, coordination and decision-making within organizations (Al-Assaf, Alzahmi, Alshaikh, Bahroun & Ahmedet, 2024). These systems enable companies to streamline their operations, including finance, inventory, human resources (HR), and the distribution system, via an integrated platform (Canon, Santos, De Carvalho, Da Silva Monte, & De Barros, 2025). ERP is increasingly becoming a key tool for improving the performance and competitiveness of companies (Nawaz & Channakeshavalu, 2013; AlMuhayfith & Shaiti, 2020).

ERP implementation is widely seen in developed economies. SMEs within emerging countries such as Nepal experience multiple challenges in the process of implementing these systems (Weerasekara & Gooneratne, 2022). Nepalese SMEs frequently function under limitations like limited capital, low technological capacity, insufficient infrastructure, and resistance towards organizational change. These factors create significant challenges in the process of ERP implementation (S. R. Bhatt, 2025).

Nevertheless, ERP implementation is slowly growing among Nepalese SMEs, particularly in industries like retailing, textiles, etc. (Svensson & Thoss, 2021). Firms are seeing the potential benefits of ERP systems in boosting productivity, minimizing process errors, and facilitating better decision-making (AlHayek & Odeh, 2024; Tarigan et al., 2021). But ERP outcomes differ from company to company, depending on technological readiness, organizational support, and external factors (Nour, 2023; Llivisaca-Villazhañ et al., 2025).

This study focuses on analysing the problems and success factors of the ERP implementation in the Nepalese SMEs. Having a view of both the retail and textile sectors. The study will help in

getting a deeper understanding of the various factors affecting the ERP results in the context of a developing economy.

1.2 Problem Statement

Although ERP systems provide major benefits, their implementation within SMEs is commonly complicated as well as challenging (Alsughayer, 2024). Existing studies on ERP implementation primarily focus on large firms and developed economies, where companies have greater access to financial resources, technical knowledge, and facilities (Estébanez, 2021). As a result, these studies might not be directly relevant to SMEs in emerging economies like Nepal.

Nepalese SMEs experience specific challenges, including limitations of budget, lack of technical skills and resistance to change. These challenges commonly lead to failed or moderately successful ERP implementation (Moeuf, Pellerin, Lamouri, Tamayo-Girado, & Barbaray, 2017). Moreover, there are limited practical studies that analyzes ERP implementation in SMEs in Nepal through a case study approach (Moreira, 2025).

Furthermore, the majority of studies depend on quantitative methods as well as hypothesis testing that might not completely reflect the difficulties and situational factors affecting ERP implementation (ElFarmawi, 2019). There is a lack of studies that examine how technical, organizational and environmental factors influence each other to impact ERP results, especially across various sectors such as the retail and textile sectors (Egdair, Rajemi & Nadarajan, 2015).

Therefore, this study aims to address these research gaps by examining the challenges and key success factors influencing ERP implementation in Nepalese SMEs and analyzing how these factors impact implementation results.

While ERP implementation has been broadly examined within large companies and advanced economies, limited studies have concentrated on ERP implementation across Nepal-based SMEs. Existing studies commonly highlight technical elements while providing limited focus on the

relationships among organizational environmental aspects in SME settings. In addition, there is still limited evidence-based data on textile trading.

In this regard, this study will attempt to fill the aforementioned gap by taking a multi-case analysis approach in examining ERP implementation based on the TOE framework. The study emphasizes specifically identifying ERP implementation challenges, important ERP success factors, and ERP results among the Nepalese SMEs.

1.3 Research Questions

What technological, organizational, and environmental factors affect the ERP implementation in Nepalese SMEs?

What are the challenges and key success factors that affect the outcomes of ERP implementation in SMEs in Nepal?

What functional ERP-related and business impacts are there about ERP implementation in selected SMEs?

1.4 Research Objectives

The primary objective of this study is to examine the factors affecting ERP implementation in SMEs in Nepal using the TOE framework.

The specific objectives are:

1. To analyze the technological, organizational, and environmental elements affecting ERP implementation within Nepalese SMEs.
2. To identify the major challenges and essential success factors influencing ERP implementation results within selected SMEs
3. To examine the operational, ERP-related and business outcomes of ERP implementation within Nepalese SMEs.

The research questions and objectives are well-connected with the TOE framework. This study is aimed at analyzing the influence of the technological, organizational, and external determinants on ERP implementation outcomes in SMEs in Nepal. These objectives direct the examination related to challenges, success factors and organizational impacts related to ERP adoption.

1.5 Significance of the Study

The theoretical and practical significance of this study can be seen. From a theoretical perspective, the study contributes to the existing studies by using the TOE framework in the context of Nepalese SMEs. It offers empirical insights on ERP implementation in an emerging economy setting, which is still unexplored.

In practical terms, the results of this study serve as a source of knowledge for SME managers, ERP developers and policy makers. The findings can assist SME managers in understanding the factors that affect the success of ERP and improve the approach to implementation. ERP vendors can learn about the problems faced by SMEs and offer better solutions. The results can be used by policymakers to promote Digitalization and to foster SME development in Nepal.

1.6 Scope of Study

This study deals with the implementation of ERP in Nepalese SMEs, especially in the retail and textile industries. It comprises companies that have already adopted ERP or are in the process of implementation, which have been using the system for at least six months following the deployment.

The study examines ERP systems such as Odoo, Tally ERP, and SAP Business One. The emphasis is on organizational and operational outcomes instead of technical aspects of software development.

1.7 Organization of the Study

Chapter 1: Introduction

This chapter introduces the research topic, background, aims, objectives, research questions, scope and significance.

Chapter 2: Literature Review

This chapter examines research-based studies on relevant theories and previous studies.

Chapter 3: Methodology

This chapter describes research philosophy, research design, data collection methods, sampling techniques, data analysis methods and processes.

Chapter 4: Findings and Analysis

This chapter presents empirical findings and thematic analysis.

Chapter 5: Conclusion and Recommendations

This chapter analyzes the results in relation to academic studies and provides overall conclusions, recommendations, limitations and future research directions.

2. Literature Review

This chapter examines the literature on ERP implementation in SMEs. It focuses on key factors affecting implementation, such as technical, organizational, and external factors based on the TOE framework. The chapter also examines key success factors, challenges, as well as ERP results, and additionally highlights gaps that this study seeks to fill.

2.1 Enterprise Resource Planning (ERP) Systems

ERP systems are integrated systems. The system combines business processes with information technology to improve the efficiency and decision-making in the business, ranging over different departments (Jo & Park, 2023). ERP comprises the functions of accounting, procurement, inventory management, sales, and production into a collective system and under a single database system (Weerasekara & Gooneratne, 2022). The usage of ERP allows users to gain real-time information across the organization (Khan, Ab-Rahim & Yeng, 2025). According to Thomas H. Davenport (1998), ERP not only stands out as a software rather than an organizational change, as it requires the redesign of the business to comply with the ERP system requirements. This indicates that ERP implementation involves both technological and organizational transformation.

As ERP is costly and time-consuming, many organizations fail to achieve the operationalized return (Rajapakse & Thushara, 2023). The optimized results are not captured due to poor planning, a lack of abundant skills, and weak project management. Eugene J. Umble, Ronald R. Haft (2003) suggested that ERP implementation requires multiple steps such as planning, system configuration, data migration, testing, training, and more. This makes the installation and adoption of ERP extremely difficult, which comes up with the technological, organizational, and environmental challenges (Sola, 2021).

ERP implementation is particularly challenging for SMEs because SMEs have limited financial resources and limited technical expertise (Sahran, Goni, Muhhtar, 2010). Buonanno, faverio,

pigni, Ravarini, Sciuti, & Tagliavini (2005) depict that SMEs faced greater risk in ERP implementation due to similar underlying reasons, including the weak governance of the organization.

Figure 1. Structure of ERP Systems

2.2 ERP implementation in SMEs.

The situation in the adoption of ERP in large, SME differs vastly. Even though the purpose is found differently, the large corporations often implement ERP for strategic integration and competitive advantages, whereas the case is different in SMEs, where they adopt ERP to improve operational efficiency in areas such as accounting and inventory management (Gessa, Jiménez, & Sancha, 2023). According to T.C. Loh and S.C.L. Koh (2004), SMEs lean towards ERP for specific operational purposes and information management rather than strategic measures.

Somers & Nelson (2001) found that ERP implementation is strongly dependent upon the project goals, orientation of the management team, and effective project management. Similarly, Nah,

lau & kuang (2001) also concluded that managerial decisions are the primary cause of the ERP implementation failure rather than technical issues.

Due to a lack of expertise, SMEs have a strong leaning towards hiring vendors and consultants. So, vendors also stand as an important factor for SMEs implementing ERP (Alaskari Pined- Cuenca, & Ahamad, 2021).

2.3 Technology - Organization - Environment (TOE) Framework.

The TOE framework was developed by Louis Tornatzky & Mitchell Fleischer (1990)**,** which explained that technology adoption and implementation are based on three crucial factors: Technological context, environmental context, and organizational context. The technological context includes its infrastructure, system compatibility, and integration capability (Justino, Tengeh, & Twum-Darko, 2022). Organizational context has to do with the management policies, organizational size, financial resources, and project goals, and the environmental context has to do with vendor support, competition, and external consultants (Nguyen, Le, & Vu, 2022; Baker, 2011).

As the outcome of ERP implementations depends on several factors, the TOE framework is widely used in ERP implementations (Chung, Farah, & Tang, 2022). Many studies, like Ahn and Ahn (2020) and Awa, ukoha & Emecheta (2016), have used the TOE framework to analyze ERP adoption and implementation success because ERP systems require technological capabilities, organizational readiness, and extraneous factors to work simultaneously. In the context of Nepal, SMEs' ERP implementation is limited by poor information technology (IT) infrastructure and organizational limitations (Kharel & Dahal, 2020). According to Khaparde (2012), Rajapakse & Thushsar (2023), environmental limitations such as insufficient vendors and lower training facilities, alongside financial constraints, have been the major hindrances regarding the adoption of ERP in SMEs.

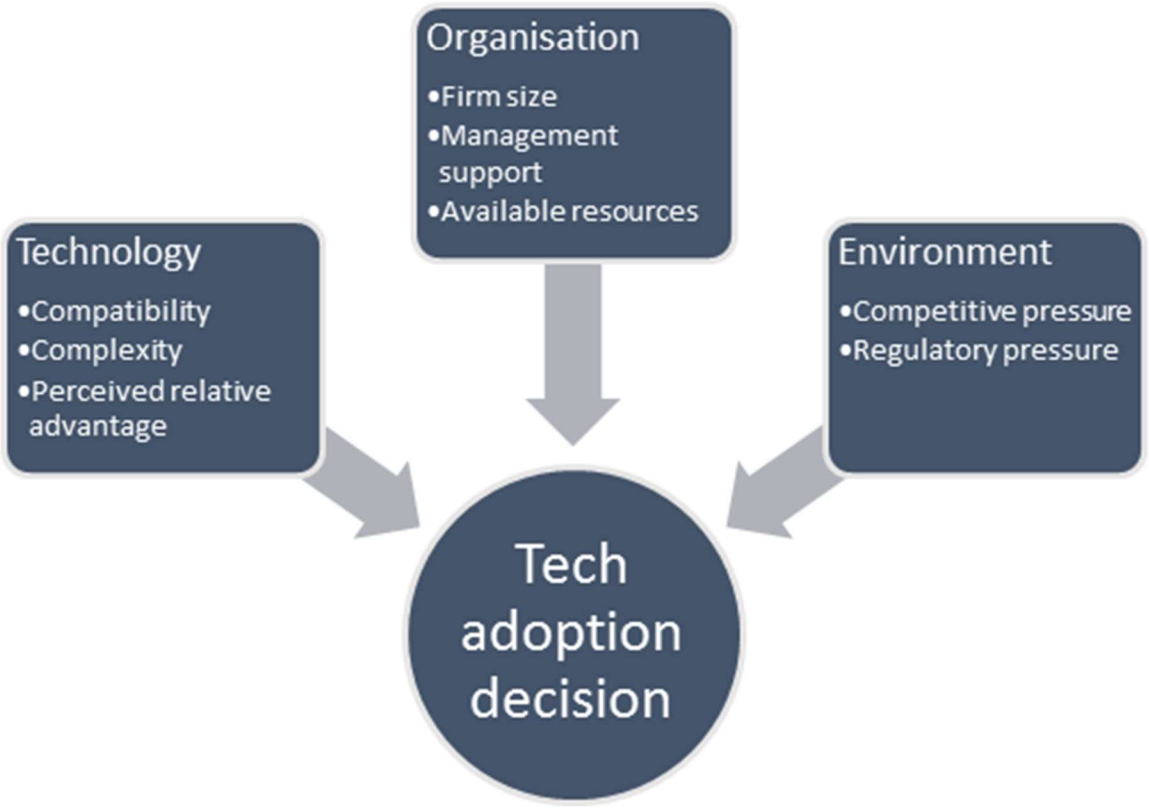


Figure 2. TOE framework

2.4 ERP implementation barriers

The barriers to implementing ERP are broadly categorized into technological, organizational, and environmental barriers. Technological barriers include system integration issues, data management and migration, and complexity in infrastructures (Vukovic, Gagić, Taušan, Raković, & Marić, 2024). According to Başoğlu, Daim, & Kerimoğlu, (2007), as businesses require different sorts of customization readily for them, this makes the ERP implementation delayed and cost averse.

Data migration and quality are the major technological challenges in ERP implementation, as organizations are required to transfer the legacy data into ERP format, which is a heavy time-oriented and susceptible to error (Umble et al., 2003). (Nah et al., 2001) found that top management support, limited financial resources, and delayed skills, as well as poor project

management, are the major organizational barriers. The implementation requires a change in structure, which is very difficult in SMEs, especially in Nepal, as it requires the change of job roles, workflows, and organizational processes (Adhikary & Ghosh, 2025).

Environmental barriers include the external factors like unreliable vendor support, fewer experts, and limited training, alongside a weak ICT infrastructure. (Loh & Koh, 2004) suggested that developing countries heavily source vendors for implementation and maintenance, which increases the risk in implementation due to the involvement of a third party. In Nepalese SMEs, the major challenges include low ICT capability, infrastructure limitations, limited financial resources, and resistance to organizational change, which continue to dominate, making it difficult for SMEs to adopt ERP (Khaparde, 2012; Timalsina et al., 2025).

2.5 Critical Success Factors for ERP Implementation.

Critical Success Factors (CSF) are key measures that determine the success of ERP implementation (Kusumawardhana, Eitiveni, Yaziji, & Adriani, 2024). Top management support, clear goals for the project, effective training, User involvement, vendor support, adaptation to change, and many more factors are highlighted in the literature (Saade & Nijher, 2016). Top management support, project management, and orientation towards the goal are the important ERP implementation success factors according to Somers and Nelson (2001). The same factors were also found by Nah et al. (2001), with the added importance of change in management and communication as critical success factors for ERP implementation outcomes. User training is critical in ERP success because they are complicated; users need to learn and abide by them to boost workforce efficiency (Ibrahim, Abdillah, & Huda, 2025). For SMEs, another important factor is vendor reliability because they are dependent on outsourcing and heavily rely on external consultants (Loh & Koh, 2004). Structured Training and Communication: Proper training and communication can minimize the challenges associated with ERP implementation and enhance the likelihood of a successful outcome.

2.6 ERP Implementation Outcomes

ERP implementation is evaluated under operational performance and business performance indicators. According to William DeLone & Ephraim McLean (2003), ERP success is measured through system quality, information quality, system usage, customer satisfaction, and overall organizational impact. The results are often represented in reporting, better inventory management, faster transaction processing, improved decision making, and cost reduction (Ali, Fayad, Alomair, & Naim, 2024).

2.7 Comparison of Nepalese SMEs with Finnish SME Context

ERP implementations, environments, and procedures differ significantly in developed and developing countries, despite differences in technological, organizational, and financial abilities of the country (Huang & Palvia, 2001; Fernández, 2003). SMES in developing countries face greater constraints compared to developed countries in regard to implementation and optimization (Y. Wang, 2016). These constraints include financial resources and adaptation capacities of infrastructure and human, and reliance on external vendors (Rajapakse & Thushara, 2023).

The need for ERP differs across organizations, their scale, and the requirements. ERP implementation in Nepal is often driven by accounting, inventory management, and reporting rather than strategic integration and process optimization (Giri, Thakur, & Chatterjee, 2019). In contrast to developed countries like Finland, which has the advantage of having a well-developed ICT infrastructure, high ICT literacy, an available workforce, and easy access to vendors (Hunady, Demeova, & Chylakova, 2025). In Finland, ERP is more about business process integration, supply chain integration, data-driven decision making and strategic development than about operational needs (Mehta, 2025). ERP implementation in Finland follows structured ERP implementation methodologies with phased methodologies, formal training programs, and change in management practices (Buonanno et al., 2005).

The importance of organizational factors like greater IT skills of employees, the existence of structured management practices, and formal project management also reveals higher success rates in ERP implementation in developed countries (Dospinescu & Buraga, 2025). Studies in developed countries show that organizational adaptation capacity, business alignment, and project management are major determinants in ERP implementation (Somers & Nelson, 2001).

Therefore, ERP implementation barriers, critical success factors, and ERP implementation outcomes differ between Nepalese SMEs and SMEs in developed countries such as Finland. These differences support the use of the TOE framework for analyzing ERP implementation in different country contexts (Tornatzky & Fleischer, 1990).

Table 1. Comparison of Nepalese SMEs with Finnish SME Context

Comparison Dimension	Nepalese SMEs	Finnish SMEs
Technological Readiness	Limited ICT infrastructure and technical expertise	High ICT capability and advanced technological infrastructure
ERP Adoption Level	Emerging and gradually increasing	Widely adopted and well-established
Financial Resources	Limited financial capacity for ERP investment	Strong financial support and access to funding
Employee Skills	Moderate to low digital literacy and technical skills	High level of digital skills and trained workforce

Top Management Support	Varies across firms; often limited strategic focus	Strong leadership involvement and strategic orientation
Training and Development	Limited formal ERP training programs	Structured and continuous training systems
Vendor Support	Highly dependent on external vendors	More self-sufficient with selective vendor use
Organizational Structure	Informal and less standardized processes	Formalized and structured organizational processes
Government Support	Limited policy and institutional support	Strong government policies supporting digitalization
External Pressure	Growing competition and digital transformation pressure	Highly competitive pressure with advanced market dynamics
ERP Outcomes	Moderate and evolving outcomes	High efficiency, integration, and performance outcomes

2.8 Empirical Review

Similarly, quantitative findings have presented the ERP implementation in SMEs between the relationship of organizational, technological, and environmental factors and ERP success. For example, Nah, Zuckweiler & Lau, (2003) surveyed and statistically tested and found that top

management support, training for the users for skill upgrade, and efficient communications policies are important factors of ERP success. Moreover, Loh & Koh (2004) employed survey data and discovered that project management, vendor reliability and training programs were correlated to ERP outcomes. They further conducted factor analysis to ensure the validity of the results. All these studies demonstrate the quantitative evidence on how ERP can be shaped and made successful, providing a solid base for the evaluation of ERP performance in SMEs.

Ifinedo and Sundberg (2012) found that organization factors, particularly top management support and employee training, significantly positively influence ERP system success. Likewise, another study conducted by Siddiqui, Limon, Hossain & Mintoo, (2025) has indicated that resistance to change and inadequate training are among the most important factors influencing the implementation of ERP in SMEs. These results indicate that even though technological awareness is significant, but organizational readiness has a stronger influence on ERP outcomes.

Moreover, Aremu, Shahzad, & Hassan (2019) emphasized the role of the external conditions, including vendor support and competitive pressure, in facilitating ERP implementation. They found that the SMEs often rely on external knowledge when there is a lack of internal resources. Similarly, a study conducted by Pandey, Singh, Jayesh, khare & Gupta (2022) found that companies with better vendor support and higher ICT capability attained improved operational efficiency as well as system performance. All these studies suggest that the factors of TOE dimensions interact with each other, and the result shows how successful the ERP adoption will be, thus finding the TOE framework applicable in the context.

Previous research on ERP implementation emphasizes that technology, organizational and environment factors all have an impact on the implementation outcomes. Some research focuses on technical readiness (ICT competencies and system compatibility), while others suggest that organizational readiness (top management support and employee readiness) is more likely to influence outcomes (Oyetade, Harmse, & Zuva, 2024). Besides, other external factors such as supplier support and influence from the outside have been identified as important factors that enable companies to overcome their own limitations (Tran, Van Thai, Duc, & Ngutenet, 2023).

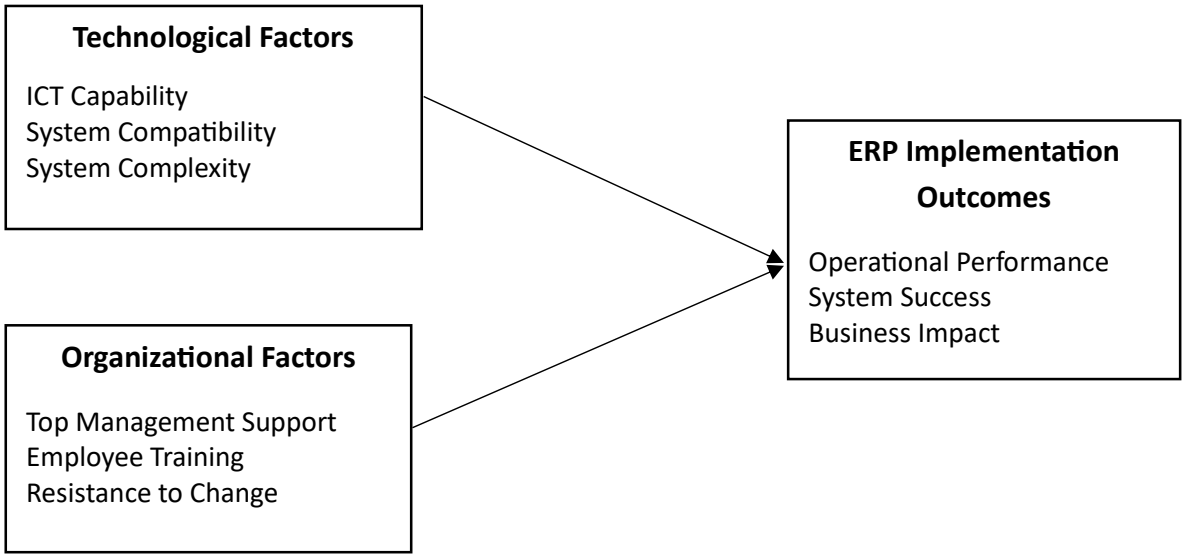
Ibrahim et al. (2025) revealed that user involvement and training can have a great influence on user acceptance and the effectiveness of the system. The research revealed that those who are involved in the implementation process are more likely to embrace and effectively adopt ERP systems. This places a strong emphasis on human factors as a key element for ERP success. Another empirical research by Rahayu and Dillak (2018) focused on critical success factors of ERP implementation and found that project coordination and business process reengineering system tailoring were the key factors.

The study suggests that the organizations must try to adapt ERP to fit existing processes as well as be prepared to change processes if necessary. This dynamic of systems adjustment and organizational change is important in SMEs. Furthermore, Matharaarachchi and Kaluarachchi (2025) found that organizational culture and leadership style greatly impact ERP implementation outcomes. All these indicate that a supportive culture is more likely to be successful with ERP, as it is a strong leader.

2.9 Conceptual Framework

This study is based on the TOE framework, which describes how various contextual factors impact technology adoption as well as implementation. For this study, technology-related factors are ICT capability, system alignment and system complexity. Organizational factors include top management support, employee training and resistance to change.

Environmental factors include vendor support, external influence and institutional context. These factors are expected to impact the ERP implementation, and the ERP implementation results are measured by operational efficiency, system success and the impact of the organization.



Source: (Tornatzky et al., 1990; Baker, 2011)

Figure 3. Conceptual Framework

The conceptual framework demonstrates that ERP implementation is affected by the combined effect of technological, organizational as well as environmental factors instead of one factor independently.

3. METHODOLOGY

This chapter outlines the research methods implemented or followed to investigate the barriers and CSFs influencing ERP implementation in Nepalese SMEs. This chapter describes the theoretical or philosophical viewpoint guiding or supporting research methods adopted, such as research approach, research design or strategy, research choices, time frame, research techniques, as well as processes along with data collection and analysis. This chapter explains the research design, approach, data collection methods, sampling strategy, and data analysis techniques applied in this study. Furthermore, ethical considerations applicable to the study are examined to ensure that the study is carried out ethically as well as transparently.

3.1 Research Design

The study takes an integrated qualitative and quantitative case study approach to understand the problem and critical success factors of ERP implementation in Nepal's SMEs. The approach is appropriate since detailed qualitative insights from the research are supported by quantitative evidence, providing a more comprehensive understanding of ERP implementation experiences (Creswell, 2013).

This is a qualitative multiple case study with descriptive outcome scoring. The data is analyzed independently, followed by integration at the interpretation and discussion level. This helps to develop a complete picture of ERP implementation outcomes by combining the interview findings with descriptive scores of outcomes (Fetters, Curry, & Creswell, 2013).

This type of research is particularly suitable for a case study design since ERP implementation has a close connection with the real organizational environment. It enables the study to explore the way ERP is adopted in real business settings, especially with SMEs of Nepal, as the implementation outcomes are greatly affected by factors like infrastructure constraints, ICT capability, employee readiness, vendor support and organisational resources (Weerasekara & Gooneratne, 2022).

The present study is a qualitative multiple-case study supported by descriptive outcome scoring of four SMEs. The aim is not to obtain a statistical generalization but to build up a deep and context-specific knowledge of ERP implementation in various SME contexts. The barriers, success factors and outcomes are relevant to each case. The quantitative is limited to descriptive outcome scoring, complementing the qualitative data, and quantifying how each participant perceived operational performance, system success and business impact after ERP implementation.

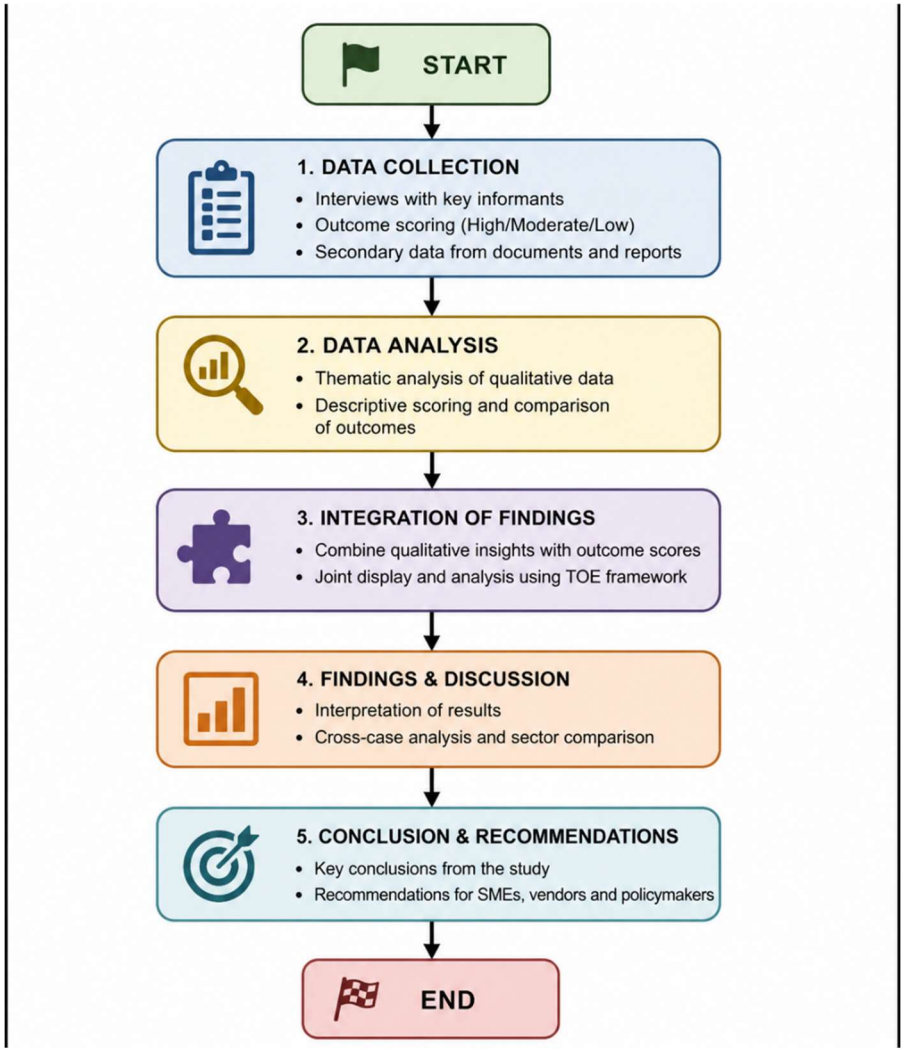


Figure 4. Research Process Flow

3.2 Research Approach

The study employs an inductive approach with the collection of qualitative data from semi-structured interviews with key organizational members. The interviews give the speakers the chance to discuss their first-hand experience of implementing ERP, challenges, successes and sector-specific problems. The inductive approach is helpful because it can uncover themes, patterns and contextually salient insights that may not be as well-expected as the TOE framework can (Yuwono & Rachmawati, 2023). They can identify problems, for example, a lack of confidence in staff, vendors not responding, etc., to name just a few. These insights give a better understanding of ERP implementation in the context of SMEs in Nepal.

It is noteworthy that this study does not use statistical hypothesis testing. Rather, it is based on pattern-based analytical interpretation. The quantitative component involves descriptive outcome scoring while the qualitative component provides an in-depth description of ERP deployment experiences, challenges and outcomes in various SMEs. In this study, 4 SMEs are targeted that are operating in the retail and textile industry of Nepal. These industries were selected due to the fact that they are increasingly adopting ERP systems to improve operational collaboration, inventory management and organizational efficiency. Selected companies were in the process of implementation, or they had already implemented the process, at the data collection time. This variation in the case firms about the implementation progress, the ICT competence and the organizational preparedness allowed the study to provide a picture of the ERP implementation practices and results that were diverse.

While descriptive ERP outcome scoring is included, the study is essentially qualitative. The quantitative component can only be used to describe the level of ERP outcomes (high, moderate and low) according to respondents' perception and information provided by the organization. The study is therefore considered more of a qualitative multiple case study with descriptive outcome scoring, not a full mixed method design.

3.3 Population and Sample

The population of this study are the small and medium-sized enterprises of Nepal, which have already implemented or are implementing ERP. The emphasis on SMEs is based on the understanding that these enterprises experience specific difficulties in ERP integration when compared with large organizations such as resource limitations, lack of technical expertise and organizational capability.

Purposive sampling is used to select organizations that meet the requirements (Campbell, Greenwood, Prior, Shearer, Walkem, Young, Bywater & Walker, 2020). The criteria are SMEs operating in the retail and textile industry, companies actively using ERP platforms (Odoo, Tally ERP and SAP Business One), and companies that have implemented ERP or have been using ERP for over 6 months after ERP implementation. This ensures that the respondents have the experience to deliver valuable results and offer pertinent information on ERP adoption and its impacts. By selecting the appropriate organizations (purposive sampling), the organizations currently experiencing and relevant to ERP can be included, and the qualitative data is enriched and deepened, and the quantitative data is applicable. It highlights some of the industries and platforms, enabling an analysis of ERP adoption in a known but practically relevant setting.

This technique allows for the selection of suitable companies for the study and gives them meaningful results. The selection criteria consist of industry types, like retail and textile, ERP utilization status and availability of respondents. A limited number of samples exist, but it is sufficient for a detailed case-based analysis. Before deciding on the final sample size for this study, two possible sampling approaches were considered. The sampling technique adopted was purpose sampling, and the number of SMEs sampled was four. The rationale behind selecting this group of companies is why that they are selected: They have first-hand experience with ERP, and they are from the retail and textile sectors. This led them to be appropriate for studying barriers, critical success factors and outcomes of ERP implementation in the context of SMEs in Nepal.

The study comprises four SMEs chosen from the retail and textile sectors. This use of four case firms is consistent with the multiple-case study method used in this study, where the focus is on collecting a detailed and context-based understanding instead of statistical generalization. Each of the selected SMEs offers the opportunity to explore ERP implementation in the actual organizational context, and the technological, organizational and environmental considerations that influence ERP implementation outcomes.

The four case firms enable the researcher to investigate ERP implementation processes in detail, across various business contexts. Both firms are in the retail and textile business, and hence the study can be used to compare similarities and differences between the two sectors. The cross-case comparison enhances the analytical contribution of the study by highlighting commonalities, sector-specific differences, and problems to be overcome at the case level. For instance, a company might have difficulty attracting skilled subject-matter experts because of low ICT capability, whereas another company could have issues with their employees or vendors. Comparing these cases can help to understand how various factors affect ERP success in various SME contexts.

For qualitative and case study research, the number of samples is typically dictated by the richness, relevance, and usefulness of the data, rather than by the statistical requirements. The selected four SMEs were able to furnish enough details that were used to investigate the main research themes: ERP barriers, management support, employee training, vendor support, system usability and implementation outcomes. For this exploratory study, then, the sample size is deemed adequate for the study.

Two sectors enhance the diversity of the sample. The ERP implementation process might be different for retail & textile SMEs due to variations in business processes, operational requirements, employees' skills, and the system's usage. Given the low number of cases, the results of sector comparisons should be used with care.

The findings of this study should not be interpreted as representative of the generalizable to all the country's SMEs in Nepal. Instead, the outcomes provide analytical and contextual feedback that may help in thinking about similar contexts of ERP implementation. Future studies could build upon this research by using larger samples, more sectors and quantitative methods to test and validate the patterns that were identified in this study.

3.4 Data Collection Methods

Data for this study was collected using three main methods: semi-structured interviews, ERP outcome scoring and secondary document review. Multiple data sources helped in achieving a balance of the understanding of ERP implementation in Nepalese SMEs.

The key informants, such as ERP users, accountants, and managers, were interviewed using semi-structured interviews. The respondents were selected because they have first-hand experience of ERP implementation and use of ERP. The interviews highlighted the areas of ERP experience, barriers to ERP implementation, the critical success factors, employee readiness, management support, vendor support and the perceived outcomes of ERP implementation. Semi-structured interviews were suitable because they allowed an explanation of the experiences to be provided in detail, without veering off the general research theme. Each interview lasted for about 20-30 minutes. Semi-structured design allowed the flexibility of participants' responses, leaving them the opportunity to elaborate on implementation practice, while ensuring consistency across firms. The written data were then recorded and later analyzed according to the TOE aspects, which are technical, organizational and environmental. Second, the findings of ERP implementation were assessed through a simple scoring technique that was based on respondents' perceptions. To measure the impact of ERP on operational efficiency, system performance and organization, participants were asked about the changes they noticed due to ERP. These scores were then compared with the ERP results for each of these selected case companies.

Thirdly, if secondary data was available, it was used. This comprised ERP-related documents, process documents, Key performance indicators (KPI) reports and system-related information. Secondary data was identified to enhance and validate the primary responses. Generally, these data collection techniques facilitated the data analysis in the description and explanation of the ERP implementation results of the selected SMEs.

Qualitative Data

The present research used a qualitative method and semi-structured interviews with the key organizational respondents – managers, accountants, and ERP users. In this regard, the participants were chosen because of their first-hand knowledge and experience of ERP implementation in their organization.

The employees' readiness, management support, ERP vendor participation, training methods, and issues faced in ERP adoption were discussed, as well as experiences through ERP implementation and factors that helped the ERP implementation be successful. This helped the study to gather detailed information about barriers and critical success factors in implementing ERP in Nepalese SME.

The use of semi-structured interviews was deemed appropriate as it allowed the researcher to explore the key themes of the research and also allowed the participants to detail their experiences. It contributed to capturing real problems that may not have been captured through structured questionnaires. Responses can be staff reactions to ERP systems, vendor support for ERP implementation and management response to resistance.

The qualitative data was context-specific, rich and gave a general picture of ERP implementation practices. It also facilitated the emergence of some new ideas and trends about technology, organizational and environmental aspects that influence ERP success in SMEs.

Quantitative Data

Quantitative data was used to measure the perception of the outcomes of ERP implementation in the selected SMEs. The quantitative part of the study was not planned to be analyzed statistically, but simply a descriptive scoring system due to the small sample size and case study design.

The respondents were asked to score the outcomes of ERP implementation based on three key aspects: operational efficiency, system performance and organizational benefits. Some of the operational efficiencies that were enhanced include process speed, error reduction and workflow effectiveness. The user satisfaction, ease of use and system reliability were associated with system performance. Some of the organizational advantages included saving money, better decision-making, and overall business impact.

Then the answers were categorized under three descriptive categories: high, medium and low. This enabled the results of ERP to be compared with the selected case companies and with the retail industry and the textile industry. For example, companies with a higher training level and better ICT capability were more likely to report higher ERP results, as well as companies that gave a higher score for management support.

There was no complex statistical testing undertaken as the study was exploring in nature, and the sample size was limited. However, quantitative evidence was able to complement the qualitative findings and give the data quantitative value. The general scoring approach enhanced analysis as it helped to compare the results of ERP across companies and across industry segments.

Secondary Data

Secondary data is also utilized to validate data and offer additional insight. These consist of ERP-related documents like process routines, KPI reports and system log records when available. Using

secondary data is used to verify the results of interviews and make the results of the research more reliable.

Table 2. Data Collection Summary Table

Method	Source	Purpose
Interview	Managers	Insights
Scoring	Respondents	Outcomes
Secondary	Documents	Support

3.5 Measurement of Variables

The main variables of this study are developed from the TOE framework. This approach identifies the factors influencing the ERP implementation into three broad categories: technological, organizational and environmental. These variables are operationalized in measurable indicators, which will allow the study to investigate ERP implementation systematically and consistently.

Technological factors include the technical conditions that impact ERP adoption and use. In this research, they cover the capability of ICT, system integration and perceived ERP platforms complexity. The capability of ICT involves the technical capabilities and the effectiveness of the ERP system within the firm. System integration looks at the ERP's ability to integrate various business processes like finance, inventory, sales and reporting. Perceived complexity: Users' difficulty with ERP system implementation and usage.

Organizational factors are internal conditions of the business that affect the success of implementation. These include top management support, employee training, and resistance to change. The extent of leadership commitment, resource allocation and guidance during ERP

implementation is measured using top management support. Employee Training: How well the staff are provided with appropriate training and support to use the new system. Resistance to change is in the opposite direction of how change is measured in other words, how much your employees are unwilling to change from traditional to ERP-based processes.

External conditions that have an impact on ERP implementation are called environmental factors. These include external pressure and institutional context, and vendor support. Vendor support is the technical assistance, troubleshooting and guidance offered by ERP suppliers. External pressure includes market competition and digital transformation pressure. Institutional context is the broader business and policy context that influences SME digitalisation.

Operational efficiency, system effectiveness and organizational impact are all considered to assess the results of ERP implementation. Operational efficiency involves the speed of processes, minimizing errors, and improving workflow. User satisfaction, ease of use and reliability are a part of system effectiveness. Organizations benefit from a reduction in costs, improved financial performance, and a better and faster decision-making process. These dependent variables are assessed by means of an ordered testing methodology, through the perception and experience of the participants.

3.6 Data Analysis Techniques

The Interview data was manually coded based on the technological, organizational and environment dimensions of the TOE framework. Implementation experiences and responses were similar and grouped together into themes of barriers, critical success factors, and ERP implementation outcomes. A cross-case comparison was then made to find common patterns and differences between the four SMEs.

The analysis is done at two levels. Initial studies are conducted through an individual case analysis, which involves an exploration of the experiences and barriers to ERP adoption for each SME. Second, a cross–case analysis is made to determine similarity and dissimilarity among the SMEs

in different sectors with a focus on Retail versus Textiles, which provides a broader picture of the ERP adoption cases and the factors involved.

The study adopts an explanatory approach along with theme-based analysis. This involves the identification of the relationship between barriers, key success factors and ERP results both within and across cases. To analyse the interplay of the different TOE factors and their combined effect on the implementation outcomes, rather than only describing.

Simple descriptive comparison methods were used for quantitative data analysis. The quantitative component was limited to descriptive outcome scoring and was not intended for statistical testing or generalization. Instead, the scoring approach was used to support the qualitative findings by providing measurable indicators of ERP implementation outcomes across the selected case firms.

The responses to ERP outcomes were rated by participants as high, moderate and low level. The level of improvement in operational efficiency, system effectiveness and organizational impact following ERP implementation was evaluated by these categories. Operational efficiency comprised process speed, reduction of errors and enhancement of the process. User satisfaction, ease of use and reliability, cost reduction, financial performance and improved decision-making were the system effectiveness and organizational impact factors, respectively.

The responses to these questions were categorized and then compared between the selected firms to find the differences in the ERP outcomes. The comparison was also made across sectors between retail and textile SMEs, to see if there was any difference in the experience of implementation and outcomes of the SMEs in these two sectors. This comparison enabled the identification of patterns, such as whether textile companies had better ERP results than retail companies, or whether certain companies did not have much traction in the ERP process because they lacked training, were more resistant to change or were less able to implement ICT.

Inferential statistics were not used because the study does not aim to test hypotheses and develop a statistically generalizable result. Rather, descriptive results and implications are the concern of the analysis. This method enables companies and industries to compare the implementation of ERP success rate easily and accurately, as well as to gain a better insight into the qualitative interpretation.

3.7 Data Integration

Qualitative and quantitative evaluations were made separately and then the results were combined through a comparative table. ERP performance scores and some of the primary issues and success factors gained from the qualitative findings have been presented in the table below. This combination facilitates a cross- analysis of ERP results both at the firm level and at the sector level, thus providing a thorough understanding of the links between organizational processes, contextual environment and technological capacity. This study is a mixed- method study, which combines the qualitative and quantitative data analysis results in a holistic understanding of ERP implementation.

Thematic analysis was used to analyze the qualitative data, focusing on patterns associated with technological, organizational and environmental aspects, according to the TOE framework. Assessment of the performance of ERP was done based on the quantitative form of performance scoring in different aspects.

The integration of these data sources was done through a combination of the two, in that qualitative findings and quantitative results were presented together for each case. This enabled an easy comparison between firms and helped to identify the relationship between implementation factors and results. The study also incorporates several data sources to give the result a deeper meaning and reliability by triangulating the data.

3.8 Validity and Reliability

To ensure the integrity and credibility of the study, various steps were taken to maintain validity and reliability. Validity was improved through the use of several data sources such as interviews, result evaluation and secondary records. This combination of methods helped ensure that the results are strongly supported as well as represent the real context of ERP implementation (Bernardo, Manede, Barroso, & Santos, 2024). Furthermore, the use of the TOE framework provided a systematic foundation for data collection and analysis, enhancing construct validity (Awa et al., 2016).

Reliability was ensured by a consistent data collection process across all case organizations. Semi-structured interview guidelines were applied to ensure uniformity, while proper documentation regarding data collection was maintained. This supports that the study can be interpreted as well as replicated in similar settings (Hamilton & Finley, 2019). Furthermore, efforts were made to reduce bias through verification of responses and ensuring consistency in analyzing data.

3.9 Ethical Considerations

Ethical guidelines were carefully observed across the study in line with institutional guidelines as well as general research ethics. All individuals involved were supplied with detailed information regarding the aim of the study had to provide an electronic consent or agreement form before responding to the survey. Participant anonymity was maintained through avoiding the collection of identifying data, enabling participants to express their views openly without danger of identification.

Privacy and confidentiality were maintained through safekeeping or storage of all acquired data in secure files or encrypted files available only to the researcher, and the data was used for research purposes. Respondents were able to stop at any time before filling out the form, ensuring voluntary participation in line with the data protection guidelines set forth in the GDPR (General Data Protection Regulation). All data will be completely deleted or removed when the

dissertation is completed and evaluated, to ensure proper maintenance of data integrity or management while ensuring the privacy of the participant.

3.10 Limitations

Although the research method is good, there are limitations in the research approach. The conclusions are subject to limited applicability due to the small sample size and the fact that the study was conducted in specific sectors (retail and textile). The results, therefore, are based on the context and experiences of the companies that were targeted and do not necessarily represent the experiences of all SMEs. Second, the study is based mainly on qualitative data as well as participant perceptions that might be prone to bias. Whilst every attempt has been made to check information with more than one source of data, some personal bias may persist.

Third, the secondary data available across the firms was not uniform and unbiased performance measures were not incorporated into the analysis to the fullest extent. Consequently, the research relies more on perceived than quantitative performance. Lastly, the study is cross-sectional, which means that it looks at ERP implementation at a given moment. ERP outcome could evolve with time, and more studies with a longer follow-up period might shed light on the long-term impact.

Despite these limitations, the study provides valuable insights into ERP implementation in SMEs and supports the understanding of the role of technical, organizational as well as environmental factors. As a result, the study does not provide statistically generalizable findings but instead provides an exploratory and descriptive snapshot of the situation, with a need to further research to expand sample sizes and incorporate longitudinal tracking.

4. Analysis and Findings

This chapter presents the analysis and results of the study about ERP implementation in Nepalese SMEs. The findings are based on primary data obtained from interviews using a semi-structured interview and the results of the performance scoring, which is complemented by secondary data in the form of ERP documents and performance records (KPIs) if available. The approach taken in the analysis is mixed method, in which the qualitative data and quantitative data are analyzed separately and synthesized. The results are presented according to the TOE model and ERP performance measures.

4.1 Profile of Case Firms

The study covered SMEs from the retail and textile industry having implemented or are in the process of implementing ERP systems.

Table 3. Profile of Case Firms

Case Firm	Sector	ERP System	Implementation Status
SME 1	Retail	Odoo	Completed
SME 2	Retail	Tally ERP	In Progress
SME 3	Textile	SAP B1	Completed
SME 4	Textile	Odoo	Completed

The study consists of 4 SMEs from the retail and textile industry. These firms were chosen due to their first-hand experience in ERP implementation and because they were at various stages of

ERP adoption. Having a mix of companies in two different industries offers a good foundation for comparing ERP implementation experiences, obstacles and results in various business settings.

SME “1” is a firm in the retail industry, where they have finished the Odoo ERP deployment. The ERP system has already been integrated into the company's standard workflows, such as inventory management, sales tracking, reporting, and internal coordination. In the post-implementation stage, the benefits and challenges faced after ERP adoption, SME “1” serves as useful evidence, as the system has been fully implemented.

SME “2” is also in the retail industry and is still in the process of implementing the ERP. The company is implementing Tally ERP, which is mainly used for accounting, financial records and operational reporting. Although SME “2” is still in the process of implementation, the experiences of this firm can be valuable to understand some of the early challenges in the implementation process, including resistance to change, system usability, training, and employee adjustment. The continuous implementation process also has an impact on the current organization's performance, as the firm is not yet reaping the benefits of ERP.

SME “3” has been able to apply SAP Business One successfully in the textile sector. This SME is at a higher level of ERP usage the ERP system is already used for business. SME “3” offers valuable lessons on the role robust system integration, employee readiness and management commitment can play in achieving successful ERP results.

Another textile business, called SME “4”, has fully embraced Odoo ERP and put it right into the day-to-day business activities. The experience shows how an ERP system can be helpful in the control of operations, data and processes in textile SMEs.

The overall diversity and relevance of the selected SMEs are good. Their sector differences and the stage of ERP implementation and level of ERP platform enable the study to compare the impact of technological capabilities, organizational readiness and external support on ERP

adoption. It is a cross-case study which gives an extra dimension to the study and offers examples of experiences gained and current experiences from retail and textile SMEs.

4.1.1 Respondent Profile

The data for this study were gathered from key informants who are involved with ERP implementation. This means that both managers and ERP users should be able to get their hands dirty with ERP systems at hand.

Table 4. Respondent's Profile

Case Firm	Respondent Role	Experience
SME 1	Manager	5 years
SME 2	Accountant	3 years
SME 3	ERP User	4 years
SME 4	Manager	6 years

The data for this study were collected from key informants directly involved in the implementation and use of ERP in their companies. These respondents were chosen due to their practical experience with ERP implementation, as well as their experience with using ERP systems and how they impact the organization. Their involvement introduced relevant views and experiences of management and of users.

The respondents were in various organizational positions such as Manager, Accountant and ERP user. This role diversity was important as ERP implementation has an impact on various parts of a business. The managers provided strategic feedback with regard to implementation planning,

decision making, resource mobilization and leadership support. The accountant provided an operational perspective, such as ERP being used for financial records, financial reporting, cost of operations and transaction processing. The ERP user experienced real-world interaction with the system, usability, satisfaction and problems found in the normal operation of the system.

Experience-wise, the respondents were ranked from three to six years of work experience. It shows that they had sufficient knowledge about their business processes and how ERP fits in with their organisations. Those with more experience had valuable input regarding the effect of ERP on the organization's workflow, and those having first-hand experience with ERP in their organisation helped to make the challenges practical.

The diversity of roles and experience of the respondents contributed to the quality of the data collected. It allowed for the analysis of the implementation of ERP from multiple angles, and not only the respondents' point of view. Overall, this diversity has contributed to the findings being more credible, deep and comprehensive as it was a fusion of strategic, financial and operational perspectives of ERP implementation in SMEs in Nepal.

4.2 Qualitative Findings (Thematic Analysis using TOE Framework)

These four case firms collected responses to interviews, which were analyzed thematically to generate the findings. Technological, organizational and environmental aspects of the TOE were used for arranging the interview data. Themes were developed based on similar responses, implementation experiences, and common challenges and factors of success.

The outcome scoring categories (high, moderate and low) were allocated based on comparative analysis of respondent perceptions about operational performance, system success and business outcome. Where possible, further secondary documents and implementation papers were also studied to gain an understanding and make a comparative evaluation.

Table 5. Coding structure Based on TOE Framework

TOE Dimension	Interview Evidence	Coded Theme	Barrier / Success Factor	Outcome Implication
Technological	"Employees were unfamiliar with ERP systems"	Limited ICT capability	Barrier	Slower implementation
Technological	"System required technical guidance"	System complexity	Barrier	Lower ease of use
Organizational	"Management encouraged system usage"	Top management support	Success factor	Higher user acceptance
Organizational	"Training improved employee confidence"	Employee training	Success factor	Better system utilization
Organizational	"Employees preferred manual systems"	Resistance to change	Barrier	Delayed adoption
Environmental	"Vendor guided implementation process"	Vendor support	Success factor	Reduced technical problems

4.2.1 Technological Factors

The results show that technological issues such as IT capability and system difficulty are important factors that impact ERP adoption. The more efficiently it was implemented, the better the IT infrastructure of a company and the more trained the staff. But there were issues with the operation and problem-solving of firms with limited knowledge. There were also technical difficulties, particularly at the implementation phase.

A retail player said, "We had to deal with a lack of understanding of the ERP system when we first started implementing it. Our employees were not used to the ERP and had not seen this kind of technology before. Another participant said, "It was tough at first since we didn't have much of an IT background." Likewise, technical complexity was identified as a hurdle, especially in the beginning. Another respondent noted: 'It is a complicated system, effective, but it took time for us to get to know it."

Organizational variations in IT capability were found. The internal technical expertise had been identified by SME 1 (Retail) as one of the challenges of the system in the early stage, and SME 3 (Textile) had earlier experience with digital technologies, so that the system could be used more easily. For SME 2 (Retail), system usability was reported as an ongoing issue, particularly in the initial stages of implementation, "we were about to outsource one technical person", while SME 4 (Textile) reported some moderate issues with system usability rather than system failures. These differences suggest that there is a difference in ease of ERP implementation regarding the prior ICT history.

4.2.2 Organizational Factors

The selected SMEs showed that the results of ERP implementation were greatly influenced by organizational factors. Out of these factors, the top success determinant was found to be senior management support. Companies that had active management support for ERP implementation were more successful as management guided, motivated and equipped individuals to reduce the uncertainty surrounding ERP implementation. Another important aspect was the leadership that ensured the ERP system was viewed as an organizational system and not a technical project and helped to convey the objectives of ERP adoption.

A second key organizational element was training employees. The results indicate that companies that offered adequate training had more seamless transitions and adoption of users. Employees were trained to educate them on the ERP system and its implications for their work and how ERP can help in improving business processes. One participant said, "Training was very important if we were not trained, we wouldn't be able to use the system properly".

As you can see, ERP success is not only about implementing the ERP system; it's also about ensuring that employees are set up for the success of the system. Helpful guidance and practice boosts staff confidence in the system and engagement. One respondent added, “Training programs helped build up employee confidence, and reduced resistance to ERP adoption.”

However, a lack of will to change was a major hurdle in some businesses. Not welcome ERP and did not want to have to change their work patterns from the old ERP. Slowdowns in system usage and a reduction in the effectiveness of implementation were due to this resistance. The employees in companies which don't communicate effectively are not as knowledgeable about the benefits of ERP, which brings hesitation and doubt.

In the level of preparedness of case firms, there were also differences in the level of preparedness of case firms. Other employees were not receptive to ERP and wanted to keep old work patterns and the old ERP. Slowdowns in system usage and a reduction in the effectiveness of implementation were due to this resistance. In companies that don't communicate effectively, the employees are not as knowledgeable about the advantages of ERP, thus creating hesitation and uncertainty.

The management participation was robust in SME 3 which facilitated ensuring employee alignment to the implementation process, improving ERP outcome. However, SME 2 was less resistant due to the lack of training and communication. This affected the acceptance by the users and hampered the implementation. Slowly, SME 1 expanded the implementation of ERP with the constant support of the management and regular training workshops. All this work contributed to reducing resistance and getting a better attitude of employees towards the system.

The results indicate that leadership, training, and change management have a direct impact on ERP user acceptance, generally. Companies that invest in employee training and have firm management support are more likely to make ERP implementation successful. Firms that have only some training and poor communication, on the other hand, can find that they have resistance, lower adoption and lower use of their systems. Hence, the preparedness of the organization is a crucial factor for the success of ERP implementation in SMEs of Nepal.

4.2.3 Environmental Factors

The results also indicated that the effect of the environmental factors was very significant on the ERP implementation results of the selected SMEs. Of these factors, vendor support was determined to be the most significant external factor. In Nepal, many SMEs are not as adept at using the ICTs and heavily depend on ERP vendors for technical guidance, troubleshooting, system configuration, training and post-implementation support. This enabled firms to deal with technical issues better and put less strain on internal staff during implementation, thanks to the strong involvement of vendors.

Interviews yielded the same results: The role of vendors is important.

One respondent said, “The vendor gave me the step-by-step guidance, and if not for the vendor, it would have been quite difficult.”

This indicates that vendor support is not only helpful, but vital for companies that are not familiar with ERP.

Similarly, another respondent commented, “The vendor support team was very helpful in resolving issues promptly when they arose.

This showed that the Vendor's quick response efforts helped to reduce the impact on the system and assisted in a smoother ERP application. Another one of the respondents said, "Vendor was supportive during implementation and provided education to employees on system features.

The amount of environmental support, however, varied among the case firms. Problem-solving and user support from the vendors were found to be important in SME 1 and 2. Problem-solving and user support from the vendor were an important factor for SME 1 and 2. This was primarily due to the fact that these companies lacked the technical know-how on their own and required greater external assistance in implementing ERP. As for the other side of the coin, the more capacity the companies had, the less they had to engage with the vendors. SME 4 had moderate

reliance on vendors, mostly for upgrades to the systems, maintenance and technical adjustments. This means if the in-house ICT skills are deficient, vendor support is important.

In addition, external pressure was a factor in ERP implementation decisions. Competition, customer expectations and the increasing demand for digitalization drove SMEs to take up ERP to boost their efficiency, reporting and operational control. However, support for the broader institutions and regulations was not as broad. There was limited evidence of the companies receiving high levels of support from the government, formal government support for digitalisation or sector-specific ERP guidance. The overall findings show that there is an impact of ERP in SMEs in Nepal regarding the environment. Organic growth can offset internal shortcomings, and market forces drive companies to streamline their processes. But the lack of institutional support poses a challenge in the widespread adoption of ERP.

4.3 Quantitative Findings (ERP Outcome Scoring)

The structured approach for the evaluation of the ERP result was used to incorporate participants' feedback and opinions. This enabled them to better understand the user's experience of the system when working. The participants' views were sought on the ease of use, effectiveness and usefulness of the system in performing the tasks. The evaluation was based on the experience of users, not only assessing the technological performance of the ERP system, but also the effectiveness of the system in a real working environment.

4.3.1 Operational Performance

Table 6. Operational Performance

Case Firm	**Efficiency Improvement**	**Error Reduction**	**Process Speed**
SME 1	High	High	High

SME 2	Moderate	Moderate	Moderate
SME 3	High	High	High
SME 4	Moderate	Moderate	Moderate

Most companies reported that they saw improvements in the way they worked, for example, reduced errors, faster processing times.

From the above table, ERP implementation has a positive impact on the operational performance of the four case companies. Three key parameters are studied: efficiency gain, error reduction, and process speed. These indicators are crucial since ERP systems are supposed to result in better coordination, lower manual errors and speed up business processes while being more reliable.

The findings show that there is a considerable variation among the firms. High levels of improvement were reported for all three indicators by SME 1 and SME 3. These companies were able to use ERP systems effectively in their daily operations, indicating their successful integration. In SME 1, ERP system implementation helped to improve workflow efficiency, reduce errors in business processes, and speed up routine tasks. Similarly, good operational improvement was identified for SME 3, and this improvement was found to be linked to the improvement in the ICT capability, management support and effective use of the ICT system. These findings suggest that, if implemented and accepted by users, ERP systems have the potential to have a great impact on operational performance.

There was moderate improvement in efficiency, reduction of error and process speed for SME 2 and SME 4. This indicates that the implementation of ERP had an impact, but not to the full extent of the benefits. The moderate result for SME 2 could be due to the implementation of the ERP system. This system was not yet fully embedded in the work processes, and the full benefits of

this operation were not yet felt in the firm. But employee resistance to change, lack of training, and employee adjustment problems can impact ERP implementation.

Despite ERP implementation, the moderate improvement in SME 4 was evident. This means that only implementation is not enough for achieving high operational performance. For added value to stem from ERP systems other factors are also playing a role, such as system usability, employee trust and continual training. If the system is still in the adaptation stage by employees or there are usability issues, then the adaptations to the system's operation might be limited.

The findings suggest that ERP implementation has the potential to enhance operational efficiency for Nepalese SMEs, particularly in terms of efficiency, minimising errors or speeding up processes. The degree of improvement, however, will be determined by the effectiveness of the implementation and use of the system. The ICT capability of the firms, management support, training and employee preparedness have a positive correlation with operational benefits. Thus, ERP success is not just a technical achievement but also relies on organizational readiness and user acceptance.

ERP outcome ratings were categorized based on respondents' opinions collected using semi-structured interviews with managers and financial officers of ERP users from the 4 case firms. Respondents also examined ERP implementation results in relation to operational efficiency, system effectiveness and business effect.

The classifications of high, moderate and low are relatively based on the consistency of supportive outcomes and supporting institutional data whenever accessible. Firms reporting greater improvements, system utilization and decision-making were classified as high, whereas firms facing difficulties in the process of implementation were categorized as moderate or low.

4.3.2 System Success

System effectiveness changed based on employee training and support.

Table 7. System Success

Case Firm	User Satisfaction	Ease of Use	Reliability
SME 1	High	Moderate	High
SME 2	Moderate	Low	Moderate
SME 3	High	High	High
SME 4	Moderate	Moderate	High

The table shows the success of the ERP implementation by each case firm on the system level. The success of the system was measured using three parameters: user satisfaction, useability, and system reliability. These indicators are important because if an ERP system cannot support business performance when users are satisfied, it can't operate effectively, nor is it a sure bet to support regular business activities.

The results show that SME 3 outperforms all systems in all measures in terms of system success. It noted satisfaction of the users, ease of use and reliability. This shows that the ERP system used in SME 3 was successful in integrating the system into the business and was well received by the employees. High User-friendly rating indicates an easy-to-use system, and a high Reliability rating indicates a consistent system. A high level of ICT capability, high level of management involvement and effective employee preparation may be linked to this high performance.

SME 1 also exhibited positive system success, high user satisfaction and high system reliability. Moderate, however, was the ease of use. This means that these users were pleased with the ERP system, they considered it reliable, but it was still a bit time consuming to use. This can be because of system complexity, lack of technical expertise or due to the requirement of further user

training. So, satisfactory system results have been achieved for SME 1, but there is room to further improve the user-friendliness and confidence of the system.

The relative success of the systems, however, was low for SME 2. Ease of use is rated low; user satisfaction and reliability are rated moderate. This means that the end users experienced issues with the ERP system. Low ease of use rating can be related to lack of training, or employees' resistance or because implementation was not yet completed. It was not a full system so users may not be confident and experienced enough to use the system effectively.

SME 4 was found to be moderately easy to use, easy to satisfy and very reliable. What this would translate to was that the ERP worked well but did not understand or get a handle on the functions and processes. Thus, the reliability of the system was not enough to guarantee the complete success of the system.

The overall results confirm that the success of an ERP system is not only dependent on the performance of the system, but also on the user experience and the readiness of the organisation and the employees for training. Companies that can provide suitable end-user support, guidance and continuous training have a better chance of successful end- user adoption and effectiveness of the system. This reveals how much organizational factors are aligned with the technical systems' success in the ERP implementation process.

4.3.3 Business Impact

Table 8. Business Impact

Case Firm	**Cost Reduction**	**Profit Impact**	**Decision-Making**
SME 1	Moderate	Moderate	High
SME 2	Low	Low	Moderate

SME 3	High	Moderate	High
SME 4	Moderate	Moderate	Moderate

The table shows the organizational impact of implementing ERP in four case companies with an emphasis on cost saving, profit impact and decision making. The results suggest that SME 3 has the maximum overall organizational impact with moderate financial impacts on cost savings and improved decision making. This means the ERP system has significantly streamlined operational management and given real-time information for strategic decisions, but the financial benefits have yet to be fully realized.

SME 4 represents moderate performance on all indicators, reflecting progress that is significant, but at a constant rate. The results indicate that ERP systems are more influential on decision making and operational transparency in the early stages and financial benefits like cost reduction and profitability improvement are observed in the overall aspects. The findings highlight the effect of both the extent of system adoption, and the period of system use on the organizational impact.

ERP implementation resulted in enhanced decision-making as well as cost management. But the benefits of the financial aspect were not immediate, for all firms, particularly for businesses at the beginning of the implementation stage.

The outcome score for the ERP was assigned according to participants' perceptions gathered during the interviews, and supported by available organizational records, if any. All outcomes' aspects were graded comparatively within companies based on indicators like operational productivity, user satisfaction, reliability, cost minimization, and enhancement in decision making.

To simplify and facilitate comparison across firms, scoring groups for high, moderate, and low were used. Companies that had positive and consistent responses and better implementation

results were assigned to high while companies that had moderate or low implementation results and positive responses were assigned to moderate or low.

4.4 Within-Case Analysis

SME 1

The results of the ERP implementation in SME 1 were relatively good compared to other companies in the study. The company did face some difficulties with IT capability and system complexity, though the top management's support and direct work from the vendor assisted in smooth system implementation. Respondents commented that management was always supportive of staff to use the ERP system and gave them the necessary operational support during the transition process.

One of the respondents said, "Initially, the employees were skeptical in using this system, but management used to motivate the employees and also ensured the monitoring of the usage of ERP system.

The findings indicate that management's participation played an important role in decreasing employee resistance and enhancing system adoption. The company also reported progress in operational efficiency and quicker entry into the organization post ERP implementation.

SME 2

The data collection period for SME 2 showed an average (moderate) ERP outcome due to the fact that the implementation method was ongoing during that time. The firm had more problems related to their organization, including resistance to change and inadequate training of employees. Employees knew more about traditional manual or non-digital systems than ERP, thereby delaying the adoption of ERP and decreasing the utilization of systems.

One of the respondents said, "Because some employees would not feel confident and sure about the new system so they would prefer more traditional or manual work.

Lack of training opportunities also had an impact on employee confidence and ease of use. Organizational readiness to make full use of this ERP system continued to be low even though it had vendor support.

SME 3

The four firms had the most impressive ERP results with SME 3 leading the pack. The firm possessed relatively high ICT capability and organizational coordination which facilitated smoother implementation and system utilization. After the ERP implementation, operational combination improvement, inventory management and decision-making process improvement were highlighted by the Respondent.

One respondent has said, “The ERP system enabled us to link the information of various departments and reduced delays in the reporting process.

The results indicate that technical readiness, along with management involvement, had a positive impact on the success of ERP implementation in the firm.

SME 4

Although finalizing the implementation, SME 4 showed moderate ERP outcomes. This system improved the reliability of operations and process monitoring but had usability issues during the adaptation process. The participants described how much time was required for them to master the system and how they had to rely on the support of vendors and management for it.

One respondent said, "The system was consistent, but some features did not get easy at the initial stages.

The findings indicate that, although resistance and ease of use considerations affected the pace of implementation, the system was gradually accepted by the employees after training and vendor support.

4.5 Cross-Case Analysis

A comparison among the case firms indicates that similar trends in ERP implementation results. Organizations that were IT-capable and had leadership support to them were able to achieve better results with regard to operational efficiency and the effectiveness of the systems. These firms managed to adjust faster to the ERP system as well as use features effectively (Hasan, 2018). However, due to lack of technical knowledge and poor management support, the implementation was delayed and poor results obtained. Resistance to change was also found to be one of the critical obstacles, particularly in firms having employees with more experience in the traditional ways of work (Furxhi, 2021).

In all cases, there was a significant amount of support from the suppliers, which assisted the organizations in tackling technical issues and internal challenges. Sustained guidance and technical assistance resulted in more effective implementation and increased use of the programs (Asa, Naruses, & Tsoy, 2023). In addition, industry comparison also reveals that the overall performance of textile SMEs was better than that of retail SMEs in the ERP outcomes. This variation can be explained by improved readiness, greater system utilization as well as improved organizational coordination found in textile companies (Siddiqui et al., 2025).

Comparing the four case companies in greater detail, the outcomes of ERP implementation are shown to depend on the interaction of more than one factor: between technological, organizational and environmental factors. For instance, SME 1 achieved good results despite technology limitations early in implementation because of strong leadership support and effective external support. This suggests that the organizational support, as well as environmental support, will offset the reduction in technological preparedness.

On the other hand, SME 2 shows that while external support is available, the lack of internal support, particularly in the training of employees and change management, can have a significant effect on the effectiveness of ERP. The continued implementation phase indicates that ERP benefits are not instant but take time to manifest, evolve and adapt to the organization's needs.

Finally, a comparison between SME 3 and SME 4 emphasizes the need for the company's internal capabilities. Although both companies belong to the textile industry and have been able to fully adopt ERP, the outcomes of SME 3 were higher due to higher IT capability and management engagement. In contrast, moderate results were obtained in SME 4 due to problems of system usability and problems with adjusting the employees. This shows that there are variations in the capacity of individual firms within a sector.

4.6 Integration of Findings

Table 9. Joint Display Analysis

Case Firm	Sector	Outcome Level	Key Barriers (TOE)	Key CSFs (TOE)
SME 1	Retail	High	Low ICT capability, system complexity	Top management support, vendor support
SME 2	Retail	Moderate	Resistance, low training	Vendor support
SME 3	Textile	High	Minor technical issues	Strong ICT management support
SME 4	Textile	Moderate	Resistance, usability issues	Training, vendor support

The joint display table makes a comparative analysis of the results of the ERP implementation, the most important barriers and critical success factors in the sampled firms. It aggregates the

qualitative and quantitative data to demonstrate the impact of the technological, organizational and environmental factors in ERP outcomes in each scenario.

While the problems of technology in ERP included insufficient information technology capability and complexity of the system, SME 1 managed to achieve good performance in ERP. In other words, technical shortcomings were not seen as having prevented successful implementation if there were strong support mechanisms around them. For this, however, the active support of the senior management and effective help from the vendor were significant in overcoming implementation challenges. Management support facilitated the change process, and vendor support was used to resolve technical issues and to enhance understanding of the system.

SME 2 had medium ERP performance. There were organizational, not technological, problems in this firm. The lack of openness to change, training of employees and insufficient readiness hampered ERP implementation. Even with vendor support, internal organizational weakness was an issue to be addressed. This illustrates the importance of external implementation support, but not the need for appropriate training, communication and employee acceptance.

The implementation success was highest among the textile companies with SME 3. This is because of its high ICT capability, high level of management involvement and low level of technical difficulties. All these aspects helped with the smooth usage of the system and better integration of ERP in regular business operations. SME 3 indicates that a successful ERP implementation will be more positive where technological readiness is high and organizational commitment is high.

A moderate outcome level was achieved for SME 4. While the firm had already gone through the ERP implementation, it still faced issues with resistance to change and system usability. But with the help of employee training and vendor support, the firm can make steady strides toward the adoption of systems and operational improvements.

In general, the results of the integrated findings indicate that barriers and success factors interact and thus influence ERP outcomes. There were some technical and organizational problems in all

the firms, but the firms with good management support, training, ICT capability and vendor support got better results. The results also indicate that there was a slight improvement in the performance of textile SMEs compared to the retail SMEs due to their ability to have good internal capacity and readiness for ERP implementation.

4.7 Sector Comparison (Retail vs Textile SMEs)

The study results reveal significant differences between the implementation results of ERP for retail and textile SMEs. The general conclusion for the textile companies was that they were generally performing better, notably in operational efficiency and system utilisation, as well as in internal coordination. This could be attributed to greater ICT capability, process discipline and readiness for system implementation (Andersen & Segars, 2001) as these are comparatively higher in this case. Typical structured textile production systems, inventory planning and workflow coordination are dependent on ERP functions. This made it easier for them to integrate ERP into their current operations.

The textile industry groups (SME 3 and SME 4) had more consistent ERP results than the retailers in this study. The technological preparedness and effective use of the system, and active involvement of the managing system were the main reasons for high performance in SME 3. The firm seemed to be better prepared internally to grasp the ERP functions, run them and reap benefits from them. SME 4 had moderate outcomes, which were also assisted by training and vendor support. It means that if the processes are already structured and employees are provided with adequate support, then ERP systems can provide excellent value for textile SMEs.

However, retail SMEs were more challenged to implement. Limited technical skills, complexity of system, lesser readiness and resistance to change among employees were some of these challenges. Businesses that are run as retail businesses are usually dynamic and have varied activities in relation to their sales, inventory and customer-related operations. If employees aren't trained correctly or the ERP is not intuitive, then it can make it more difficult to implement. However, difficulties with system usability and employee adaptation were also a problem in SME

2, which impacted its overall performance. Results suggest that retail SMEs are likely to encounter higher technical and organizational challenges when implementing (Forno, Bataglini, Steffens & de Souza, 2021).

Technical assistance from the vendor was significant in both sectors, yet in various ways. Vendor support was more central in retail SMEs due to the low level of ICT capability within the retail SME and the need for guidance when implementing. Vendor support solved technical issues, system confusion and lack of training (Wa, USA, & Chowdhury, 2025). In the textile SMEs, vendor support was also helpful, but it was more as an enabling factor rather than a key factor to success. This is because there seemed to be a greater inner readiness and system fit of the textile companies (Rese, Baier, & Rausch, 2021).

Another important difference was found in organizational readiness. The managerial involvement and internal collaboration within the textile SMEs were the best supporting factors for the smooth ERP implementation. The resistance to change was higher among Retail SMEs, and training effectiveness was relatively lower. This means that the ERP outcomes are not only about the ERP software but also about the readiness of the organization to implement and utilize the ERP software.

The overall result on the sector comparison indicates that the textile SMEs were better performing than the retail SMEs in this sample due to their better ICT capability, stronger operational structure and higher level of organizational readiness. The results, however, must be taken with a pinch of salt as the sample size is small. The results are not generalisable for all Nepalese SMEs.

Table 10. Comparison (Retail vs Textile)

Comparison Dimension	**Retail Sector**	**Textile Sector**

Firms in Study	SME 1, SME 2	SME 3, SME 4
Implementation Status	SME 1: Completed SME 2: Ongoing	SME 3: Completed SME 4: Completed
Overall ERP Outcomes	SME 1: High, SME 2: Moderate	SME 3: High SME 4: Moderate
Key Strengths	• Strong management support (SME 1) Good system usage (SME 1) Improving processes (SME 2)	• Strong ICT capability (SME 3) Good data integration (SME 3) Better operational control (SME 3)
Key Challenges	• Resistance to change (SME 2) Lack of employee training (SME 2) Implementation still in progress (SME 2)	• Usability issues (SME 4) Employee adaptation (SME 4) System complexity (SME 4)
Top Performing Firm	SME 1	SME 3
Main Outcome Drivers	Management support, vendor support, system usage	ICT capability, training, management involvement
Overall Sector Insight	Retail SMEs show varied outcomes depending on organizational readiness and training	Textile SMEs achieve better outcomes when ICT capability and training are strong

Even though there are differences in the industry, it is important to carefully understand industry comparisons. The findings are limited to a few cases and may not be applicable to the broader population of SMEs. Therefore, the results should be considered as suggestive trends instead of conclusions. Further research with a large sample size may yield more evidence of differences between industry implementations of ERP.

The overall comparison shows that factors considered in the effective implementation of ERP in SMEs involves alignment. Firms that integrate strong management support, sufficient training and effective vendor support are more inclined to greater levels of system success and business impact. The findings also confirm the use of the TOE framework in understanding ERP implementation results in different organizational contexts.

4.8 Discussion of Findings

The findings suggest that both technical and organizational factors, as well as environmental factors, influence the success of implementing ERP. Other organizational issues such as employee readiness and top management support also play a significant part (Ali, Murray, Muhammed, Dwivedi, & Rashiti, 2022), apart from technical readiness. Environmental factors, particularly vendor support, are seen as enabling factors to offset the internal factor weaknesses (Qiao, Li & Capaldo, 2024).

The findings of this study directly address the research questions by analyzing the effect of technical, organizational and external factor on the ERP implementation results among the SMEs in Nepal. The results suggest that there is no single factor that impacts the success of implementing ERP; rather, multiple factors in the TOE framework have an impact.

In response to the first research question, the study identifies different barriers that have been identified as crucial, as well as success factors. Organizational issues like resistance to change and lack of training were noted in several cases, while technological issues like lack of ICT capability and system difficulty were particularly noted in retail-oriented companies. Meanwhile, key

success factors, such as top management support and venders support, helped in enabling the implementation process significantly. These findings are consistent with the findings of previous research that emphasizes the importance of organizational readiness and external assistance for the success of ERP implementation.

In response to the second research question, the findings suggest that not all these elements are separate, but they are interrelated. For instance, vendor support was discovered to help companies overcome technological constraints, while solid managerial support lessened employee resistance and promoted system adoption. This is in line with the TOE framework, emphasising the integrated effect of technology and organisational as well as environmental factors.

Moreover, according to the results of this study, the third research question showed that comparatively better ERP results are obtained by the textile SMEs in this study, as compared to retail SMEs. This can be due to improved organizational skills and use of systems. This variation needs to be approached with caution, however, due to the small number of samples and limited applicability.

In general, results are consistent with previous studies, which emphasize the pivotal importance of organizational factors in implementing ERP successfully. This study, however, adds emphasis by highlighting the importance of vendor support as a key enabling factor in SMEs with low ICT capability, particularly in developing economies such as Nepal.

4.9 Link Between TOE Factors and Outcomes

The findings show that the outcomes of ERP implementation have a strong association with the technological, organizational, and environmental factors. Ease of system adoption is impacted by technical readiness, particularly IT capability. But its impact can be affected by organizational issues like readiness and leadership support.

There are many organizational factors that have an impact on ERP implementation success. Firms with more management involvement, and systematic training programs, demonstrated higher levels of system adoption and use. On the other hand, resistance to change was found as an impediment to implementation and performance.

There are supporting mechanisms, such as environmental factors, that assist organisations to overcome the weaknesses. An inadequate IT capability had a significant role in the successful system performance and user understanding in SMEs. These results strengthen the combined nature of the TOE framework.

Insightful examination of the results shows that the relationship between TOE factors and ERP outcomes is not linear but is rather highly interrelated. Technological factors like ICT capability and technological complexity affect the early phases of ERP implementation but are significantly influenced by the organizational factors. In some companies, however, where IT capability was low, positive results were still being obtained by having strong leadership and effective training. This means that the technological constraints can be affected by the organizational constraints.

Furthermore, the environmental dimension, especially supplier support, was an intervening variable between technological and organizational dimensions. In several cases, the vendor support was used to address the complexity of technology and to make up for the lack of in-house expertise for the firms. This highlights that external assistance can increase system usability and user confidence, and ultimately, the overall ERP outcomes. Employee training and external support are important because they have a direct impact on system acceptance within the framework of effective usage.

Overall, the findings indicate that the high ERP success is achieved when technological readiness, organizational support and environmental support are collectively available. If you don't have any of these, you can still have a poor system even with all the other factors. It enhances the relevance or importance of the TOE as an overall framework to explain ERP implementation in SMEs.

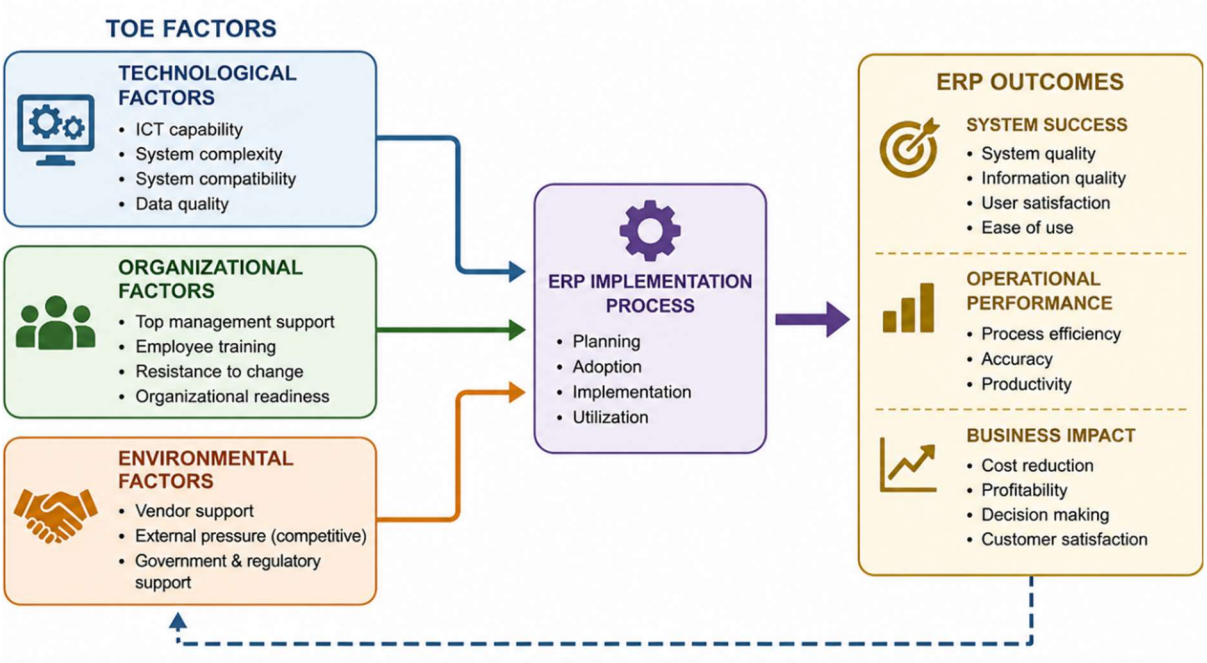


Figure 5. Link Between TOE Factors and ERP Outcomes

5. Conclusion and Recommendations

This chapter shows the findings of the study about ERP implementation in Nepalese SMEs and a few practical recommendations and suggestions for future studies. The findings of Chapter 4 are used to draw conclusions.

5.1 Conclusion

The purpose of this research was to study the effect of technological, organizational and environmental factors on the outcomes of ERP implementation in SMEs in Nepal in terms of retail and textile sector. The study indicates through a mixed-method approach using the TOE framework some key factors that influence ERP success.

These results suggest that the implementation of ERP is not a single factor but the mixture of technological, organizational as well as environmental factors. Of these organizational factors, top management support is the most important in achieving successful implementation. Companies that had high levels of leadership engagement and employee engagement were able to outperform when it came to results, even under technological constraints.

Other technological factors like ICT capability also have impact on ERP implementation success, along with difficulty of the system. The results showed that the firms with high technical readiness had smoother implementation while the firms with low ICT readiness had problems in using and adapting the system. The following issues were recognized as factors that could help support organizations during implementation: environmental factors, particularly vendor support.

In addition, the study highlights the sectoral variation where SMEs in the textile sector have comparatively better ERP outcomes in comparison to the retail sector. This difference is primarily attributed to better organizational skills and readiness of textile companies. Furthermore, the results indicate that ERP is not a single transformation but is an ongoing, flexible process. The success of ERP systems is not only dependent on the initial adoption but also on continuous

learning, system usage and organizational alignment in the long term. The study suggests that SMEs need to take a holistic view and include both technological readiness and commitment and support systems to ensure sustainable ERP results. The results of this study are local and not generalizable at a statistical level; it seeks to achieve an analytical understanding rather than a statistical one.

5.2 Recommendations

Recommendations for SMEs

SMEs should focus on strong top management involvement in ERP implementation. Leadership commitment is essential in leading employees, providing resources, and ensuring successful adoption.

Firms should invest in employee training and skill development to enhance system usage and minimize resistance to change. Building ICT capability within the organization is essential for long-term success. It is also recommended that SMEs strategically select ERP systems that align with organizational needs as well as technical capacity to minimize system complexity issues.

SMEs should implement a systematic phased strategy to ERP system implementation to lower complexity, as well as allow employees adequate time to adapt. Continuous monitoring and feedback systems about how it can be used at its optimal level should also be implemented to enhance system utilization in the long run.

Apart from the above-mentioned recommendations, the SMEs need to prioritize the ERP implementation process as a part of their overall organizational changes rather than technology upgrade. A clear implementation plan with well-delineated objectives, timeframes and key performance indicators (KPIs) can help firms monitor progress and monitor gaps in the process of implementation. This systematic process helps to minimize uncertainty and maximizes chances of successful implementation.

In addition, SMEs should foster a culture of continuous learning and flexibility in the organizations. ERP systems often require ongoing changes and optimizations, requiring staff to be agile and adaptable. Feedback sessions and internal assessment can be carried out on a regular basis to find out challenges users have and improve the use of the system over time.

Another key aspect is resource allocation. SMEs need to allocate financial and human resources wisely before implementation and should not be disturbed during the implementation. Spending money on training, system maintenance activities, and vendor support is crucial to sustainable operations. An underestimate of these requirements can lead to difficulties in realizing the desired results.

Recommendations for ERP Vendors

ERP vendors should offer uniform technical help to the SMEs especially in early implementation. The adoption and satisfaction of the system can be enhanced through customized solutions and user-friendly system design. A focus on long-term relationships with SMEs should be encouraged so that the vendors can assist in the enhancement of the system and further improvements.

For ERP vendors, it is important to focus on creating sector-specific solutions built to meet the needs of small and medium-sized businesses. Standard ERP systems may not be as fully functional as what an SME would require, resulting in usability troubles. Vendors can offer a more industry-specific system with customized features, improving system alignment and user experience.

In addition, vendors should provide ongoing support beyond the first go round and not just for implementation. Ongoing technical support, software updates and user education can make significant contributions to the long-term effectiveness of the system. Vendors can also have feedback systems in place to determine client's needs and improve services.

Policy Implications

Government and policymakers need to encourage digital transformation of SMEs by offering training programs, technical support, and financial assistance for ERP implementation. Improving the ICT infrastructure and cooperation between SMEs and ICT system providers can further enhance the implementation of ERP in Nepal.

Furthermore, policy makers should highlight training and awareness building to increase the digital skills of SME employees. There is numerous implementation challenges related to lack of technical skills which can be addressed or reduced through targeted skill building. Such efforts can be improved by the cooperation of government agencies, educational institutions and industry.

Another key policy implication is the development of a supportive digital environment. It includes enhancing IT infrastructure, promoting standardization and fostering the development of local ERP vendors. A solid eco system can help to enhance access to technological resources, thereby reducing reliance on external resources.

5.3 Implications of the Study

This study contributes to the academic literature through the use of TOE framework to the context of Nepalese SMEs. Moreover, the study extends TOE applications as it shows that the TOE framework could be applied to the ERP implementation in the context of SMEs in developing countries. It highlights the importance of taking account of contextual factors as well as technical factors, often overlooked in studies of large organizations. It offers empirical evidence of the interactions among technological, organizational, and environmental factors and their effect on ERP outcomes.

The results offer practical guidance to the ERP vendors, government authorities and SME managers to enhance ERP implementation strategies and outcomes. The results can be helpful for managers to create more effective strategies for change management, enhancing employee

readiness, and seeking external assistance. The research emphasizes the need to fit ERP implementation with business goals to reap the maximum benefits.

5.4 Contribution of the Study

This study contributes to ERP implementation studies by providing empirical evidence from Nepalese SMEs and expanding the use of the TOE framework within the context of developing countries, providing a practical contribution, recognizing major obstacles and major success determinants that support SME managers and ERP vendors during the process of ERP implementation.

5.5 Limitations of the Study

The present study has certain limitations. The sample size is not large and only covers the retail and textile industries; there is a risk of not being representative. The study relies on subject matter data, which could be a source of bias. Moreover, due to time constraints, the study cannot analyze the ERP performance over the long term. Furthermore, the results are drawn on a specific industry and regional context and may not be applicable to other contexts. Limited time also restricted the amount of in-depth analysis of the ERP results.

The multi case study method has allowed in-depth analysis, but the results are based on limited number of cases and cannot be generalized for all SMEs in Nepal and other contexts. Thus, the results may be interpreted as analytical observations (not generalizations). While this has been attempted using triangulation and comparative case analysis, personal views and experiences are still likely to influence the findings. This may be influenced by differences in roles and perspectives of participants.

However, another drawback is the cross-sectional study design. This study is based on ERP implementation at a certain time, and it does not account for any changes that might occur over time. It is likely that ERP will take time to deliver maximum benefits and a longitudinal study would yield greater insights into the changes in performance.

5.6 Suggestions for Future Research

Future studies can increase the sample sizes and/or add other sectors to make the findings more generalizable. Longitudinal studies can be conducted to study the long-term effects of ERP implementation. Further research can also examine additional factors, such as organizational culture, as well as digital maturity, in influencing ERP implementation success.

Furthermore, research can also analyse how new technologies like cloud ERP can improve access and reduce costs for SMEs. Investing in understanding the dynamics of organizational culture and leadership effectiveness that affect ERP success can improve the pre-implementation understanding of the dynamics. Researchers can include objective performance metrics, such as financial information, productivity metrics and system utilization data. The subjective views will be more accurate and reliable if they are combined with quantitative data.

The study of sector-specific ERP challenges is another important area that is yet to be explored. Industry differences may also exist and may have some limitations, so studying these differences may be able to give some specific recommendations for implementation. Moreover, future studies can investigate the role of new technologies including cloud-based enterprise systems and the digital technologies in SMEs. Reviewing technologies/innovations that impact ERP implementation and system performance can complement and enrich more current and relevant studies.

Lastly, comparing experiences from different countries/regions may give insights into the impact of institutional and economic environments on ERP implementation. This would contribute to the broadening of the view on the implementation of ERP in developing countries.

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