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THE TRANSFORMATIVE INFLUENCE OF ERP SYSTEMS ON SMALL AND MEDIUM ENTERPRISES

EXAMINING COST REDUCTION, DECISION-MAKING, AND CUSTOMER SATISFACTION

التأثير التحويلي لأنظمة تخطيط موارد المؤسسات (ERP) على
المؤسسات الصغيرة والمتوسطة
دراسة خفض التكاليف، وصنع القرار، ورضا العملاء

PREPERATION

MOHAMED MUBARAK
AHMED HAYDER
ABDULLAH ALI

232000713
232001210
232000727

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ABSTRACT

This research delves into the transformative impact of Enterprise Resource Planning (ERP) systems on the operational, strategic, and customer interaction dynamics of small and medium-sized enterprises (SMEs) in Saudi Arabia. As part of a comprehensive study, this paper utilizes a mixed-methods approach, employing both qualitative interviews and quantitative data analysis to gather a deeper understanding of ERP systems' role within these businesses. The study investigates several core areas, including cost reduction, decision-making processes, and customer satisfaction, which are critical for SMEs striving to enhance their competitive edge and operational efficiency in a rapidly evolving marketplace.

The findings reveal that ERP systems are instrumental in streamlining operations by integrating various business functions, thereby facilitating more efficient data processing and information flow. This integration supports SMEs in making quicker, more informed decisions that align with their strategic goals. Moreover, the research highlights significant improvements in customer satisfaction as a result of more responsive and personalized service capabilities enabled by ERP technologies.

Additionally, the study examines the challenges and barriers to successful ERP implementation, including the substantial financial investment required, the complexity of system integration, and the need for ongoing training and support. Despite these challenges, the evidence strongly supports the conclusion that the strategic benefits of ERP systems significantly outweigh the drawbacks, particularly when tailored implementation strategies are employed.

This research contributes to the existing literature by providing empirical evidence of ERP systems' benefits tailored to the specific economic and industrial context of Saudi Arabia. It also offers practical insights for business leaders and policymakers on optimizing ERP system implementations to maximize operational efficiency and market responsiveness. The broader implications suggest that ERP systems are not merely technological upgrades but strategic investments that can drive substantial business transformation in SMEs.

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LIST OF ABBREVIATIONS

ERP: Enterprise Resource Planning

SME: Small and Medium Enterprise

IS: Information System

IT: Information Technology

SIC: Standard Industrial Classification

CHAPTER 1

Introduction

1. Background

In the contemporary business landscape, characterized by relentless technological advancements and ever-evolving market dynamics, the strategic adoption of transformative technologies becomes imperative for enterprises of all sizes. Among these, Enterprise Resource Planning (ERP) systems emerge as pivotal tools, promising not only to streamline diverse business processes but also to act as catalysts for comprehensive operational transformation. This research embarks on a nuanced exploration of the intricate relationship between ERP systems and the operational metamorphosis within the specific milieu of medium and small enterprises (SMEs). The title, "The Transformative Influence of ERP Systems on Small and Medium Enterprises: Examining Cost Reduction, Decision-Making, and Customer Satisfaction," encapsulates the essence of this inquiry, delving into the multifaceted dimensions of ERP implementation and its profound impact on the operational fabric of smaller-scale business entities.

SMEs have been using ERP systems more and more in recent years as a result of the need to improve productivity, competitiveness, and flexibility in a market that is becoming more and more dynamic. But the effects of implementing ERP go far beyond improving operational effectiveness; they also affect important areas like cost savings, decision-making procedures, and customer satisfaction. For SMEs looking to use ERP systems as strategic assets in their quest for long-term success and growth, it is critical to comprehend these complex effects.

One of the main factors encouraging SMEs to invest in ERP systems is cost reduction. ERP systems offer real cost savings by streamlining processes, getting rid of pointless work, and optimising resource use by combining many corporate functions onto a single platform. Additionally, SMEs may more efficiently identify cost causes and inefficiencies thanks to the automation of repetitive operations and improved visibility offered by ERP systems, which supports targeted cost reduction activities across a variety of operational domains.



Figure 1.1: ERP system capabilities

ERP solutions are also essential in helping SMEs restructure their decision-making procedures. ERP systems give decision-makers reliable, fast, and useful information by combining data from several departments and offering real-time insights into important performance measures. SMEs can now make better-informed strategic decisions about capacity planning, resource allocation, market segmentation, and product development thanks to this emerging data-driven approach. Furthermore, ERP systems' improved analytical capabilities make scenario modelling and predictive analytics easier, giving SMEs the ability to foresee market trends and proactively address new possibilities and obstacles.

Another important factor that is impacted by SMEs' adoption of ERP systems is customer satisfaction. ERP systems help small and medium-sized enterprises (SMEs) provide better products and services to their clients by increasing operational efficiency, optimising order fulfilment procedures, and strengthening communication channels. Furthermore, ERP systems' centralised customer data management features enable tailored marketing campaigns, focused promotions, and prompt customer service—all of which strengthen client

bonds and increase consumer loyalty. Additionally, the provision of precise order monitoring, prompt delivery notifications, and flawless post-purchase support by ERP systems improves the whole customer experience and helps to maintain long-term customer satisfaction and retention.

In conclusion, the transformative influence of ERP systems on small and medium enterprises extends beyond mere operational efficiency, encompassing critical dimensions such as cost reduction, decision-making, and customer satisfaction. By leveraging ERP systems as strategic assets, SMEs can enhance their competitiveness, agility, and resilience in an increasingly dynamic business environment. However, realizing the full potential of ERP systems requires careful planning, effective change management, and ongoing optimization efforts tailored to the unique needs and challenges of SMEs. Through this research, we aim to provide valuable insights and practical recommendations to help SMEs harness the transformative power of ERP systems and unlock new avenues for sustainable growth and success.

1.1 Background and Context:

Saudi Arabia is currently experiencing an unprecedented wave of digital transformation, aiming to reshape its social and economic landscape. This national initiative, driven by a desire for economic diversification and technological advancement, seeks to create a knowledge-based society positioned for success in the digital age. As part of this transformation, businesses of all sizes are embracing transformative technologies to remain competitive in the dynamic global market.

1.2 Problem Statement:

While the potential benefits of Enterprise Resource Planning (ERP) systems for large corporations are well-documented, research on their impact on medium and small enterprises (SMEs) within the specific context of Saudi Arabia is limited. This research gap leaves a crucial question unanswered: to what extent do ERP systems contribute to the operational transformation of SMEs in Saudi Arabia?

1.3 Research Questions:

This research aims to answer the following specific questions:

1. How do ERP systems contribute to operational efficiency in medium and small enterprises?
2. What is the impact of ERP-driven data-driven decision-making on organizational performance?
3. How does the adoption of ERP systems influence organizational change management in SMEs?
4. What are the specific benefits of ERP system implementation for SMEs in companies?

1.4 Relevance and Importance of the Research:

ERP systems exert a profound influence on organizations, a topic extensively examined in the literature review of this study. Generally, the deployment of ERPs aims to enhance organizational effectiveness, with the primary goal of improving control over critical organizational and business processes. However, a multitude of studies (Brynjolfsson and Hitt, 1996; Poston & Grabski, 2001; Nicolaou et al. 2004; Hitt et al. 2002; Hunton et al. 2003; Matolcsy et al. 2005; Esteves, 2009; Velcu, 2007; Elragal & Al-Serafi, 2011) have yielded conflicting results regarding the realization of anticipated benefits. This study represents a pioneering effort to assess the long-term impact of ERP systems on Small and Medium Enterprises (SMEs) that have embraced ERP adoption. Employing a robust theoretical framework, this research aims to contribute valuable insights to the existing body of knowledge by elucidating the effects of ERP systems on SME performance. By enhancing our understanding of the implications of ERP adoption for SMEs, this study seeks to inform decision-making processes surrounding the acquisition and implementation of ERP systems.

The investigation into the impact of Enterprise Resource Planning (ERP) systems on Small and Medium Enterprises (SMEs) in Saudi Arabia is of paramount significance for several compelling reasons:

Economic Contribution of SMEs: SMEs are recognized as vital contributors to the Saudi Arabian economy, accounting for a substantial portion of GDP, employment opportunities, and innovation. To promote economic growth, job creation, and sustainable development in the area, it is crucial to comprehend how ERP systems affect the operational dynamics of these SMEs.

Competitiveness and Technological Adoption: In the age of digital transformation, adopting new technologies is essential to making firms more competitive. Saudi Arabian SMEs are realising more and more how critical it is to use ERP systems to increase productivity, optimise processes, and maintain competitiveness in both local and global markets. Therefore, investigating how ERP systems affect SMEs' competitiveness is essential to their long-term survival and development.

Resource Efficiency and Optimisation: SMEs frequently face resource limitations; thus effective resource management is essential to their survival and expansion. ERP systems can increase productivity in SMEs by automating repetitive operations, allocating resources optimally, and improving workflow. Examining how resource optimisation and operational efficiency are affected by ERP adoption can yield important information about improving the performance and sustainability of SMEs.

Making Decisions and Developing a Strategy: A key component of SME success is sound decision-making, which affects a range of activities including product creation, market expansion, and resource allocation. ERP systems may help SMEs make educated decisions and create strategic plans that are in line with company objectives by providing real-time data access, analytical tools, and reporting capabilities. Understanding how technology adoption affects managerial practices and organisational performance requires evaluating the effect of ERP systems on SMEs' decision-making processes.

Customer Satisfaction and Market Responsiveness: In today's competitive business landscape, customer satisfaction is paramount for SMEs seeking to build lasting relationships and differentiate themselves from competitors. ERP systems enable SMEs to enhance customer service, streamline order fulfilment processes, and personalise interactions with

clients. Investigating the link between ERP adoption and customer satisfaction can shed light on how technology influences SMEs' ability to meet evolving customer demands and adapt to market changes effectively.

Policy Implications and Support Initiatives: Government bodies and policymakers in Saudi Arabia are increasingly focused on promoting SME growth and innovation through supportive policies, funding initiatives, and regulatory frameworks. Understanding the impact of ERP systems on SMEs can inform the development of targeted policies, incentives, and capacity-building programs aimed at facilitating technology adoption, fostering digital literacy, and enhancing SME competitiveness in the region.

In summary, the study on ERP systems' impact on SMEs in Saudi Arabia is crucial due to its implications for economic development, technological adoption, resource optimization, decision-making practices, customer satisfaction, and policy formulation. By examining these aspects, researchers can contribute to advancing knowledge, informing practice, and fostering inclusive growth within the SME sector in Saudi Arabia.

1.5 Barriers and issues

Esteves (2009) asserted that in recent years, Small and Medium Enterprises (SMEs) have increasingly been able to acquire and implement ERP systems, a capability previously limited to larger corporations due to financial constraints and other barriers. Today, SMEs have access to a multitude of options for ERP implementation, promising to enhance business value and operational efficiency. Consequently, several researchers have endeavored to comprehend and quantify the benefits and overall impact of ERP adoption on performance. These studies have uncovered the intricacies of ERP systems and the challenges associated with accurately assessing their impact on performance, resulting in conflicting findings regarding the existence of anticipated benefits (Brynjolfsson and Hitt, 1996; Poston & Grabski, 2001; Nicolaou et al. 2004; Hitt et al. 2002; Hunton et al. 2003; Matolcsy et al. 2005; Esteves, 2009; Velcu, 2007; Elragal & Al-Serafi, 2011).

To address this issue, this study will employ a rigorous research methodology and will be the first to evaluate the long-term implications of ERP adoption for SMEs. The challenges

involved in measuring and quantifying the business value and performance optimization resulting from ERP implementations render this proposed solution inherently complex and difficult to implement.

The literature review has highlighted challenges in measuring the business value and performance outcomes of ERP implementations. While studies at the macroeconomic level have produced inconsistent results, recent firm-level studies have demonstrated a significant effect on productivity levels, productivity growth, and stock market valuations (Brynjolfsson & Hitt, 2000). Some studies have shown a positive impact of information technology on business value and performance, including those by Hitt and Brynjolfsson (1996), Kudyba and Diwan (2002), and Kohli and Devaraj (2004). Conversely, others have revealed a negative effect on business value and performance, such as those by Gelderman (1998), Hu and Plant (2001), and Kivijarvi and Saarinen (1995). As ERP and information technology expenditures continue to rise at the firm level, numerous challenges persist in estimating their value and overall effect on performance, leading to the contradictory results mentioned above.

Finally, the process of selecting samples will involve identifying firms that have publicly disclosed ERP adoption. This information will be extracted from the Lexis-Nexis Academic database, a task expected to be time-consuming and laborious as it requires examining every newswire to retrieve information on ERP adoption.

1.6 Assumption, Limitations and Delimitations

Limitations and Delimitations (Impact on Generalizability)

In sample selection, this study will employ a random sampling procedure as outlined in Chapter 3 of the methodology, focusing on small and medium-sized public corporations (SMEs) that have publicly announced their ERP implementation. Limitations of this procedure revolve around the definition of sample search criteria, which excluded SMEs that had not publicly disclosed any ERP implementation. Consequently, while the sample for this study is random, it may be biased toward SMEs that have publicly disclosed their ERP implementation, which represents only a subset of all SMEs that have implemented an ERP solution. This limitation could affect the generalizability of the study since the sample search criteria did not encompass the entire population.

Other limitations of this study include the absence of data on ERP customizations, as such data was not accessible using the chosen data collection approach. Additionally, certain variables that could impact the effect of ERP implementation on SME performance were not considered due to limitations in data collection methodology, as outlined in the methodology chapter. These variables include the level of ERP user knowledge, training, IT system support, quality and size of the ERP solution, vendor support quality, and other variables related to organizational change management. Addressing these variables would be necessary in future studies.

1.7 Assumptions

This dissertation aims to measure the impact of ERP implementation on SME performance, focusing on multiple dependent variables including financial performance, productivity, and the Tobin's q principle for future performance impacts. Consequently, the researcher assumes that the impact of ERP implementation, which encompasses data management, organizational change management, process optimization, and business process reengineering, inherently affects all the dependent variables within the scope of this study, as outlined above.

Furthermore, as noted in the limitations, certain variables that could impact the effect of ERP implementation on SME performance were not considered. These variables include the level

of ERP user knowledge, training, IT system support, quality of the ERP solution, vendor support quality, and other variables related to organizational change management. Therefore, the researcher assumes that these variables not within the scope of the study do not affect the measurements of the dependent variables under investigation.

1.8 Definition and Terms

- **Cost Effectiveness**

The result obtained by striking a balance between the lifetime costs of developing, maintaining, and operating an information system and the benefits derived from that system (Whitten et. al, 2004).

- **Enterprise Resource Planning (ERP)**

ERP is a software application that fully integrates information systems that span most or all of the basic, core business functions, including transaction processing and management information for those business functions (Whitten et. al, 2004).

- **Information System (IS)**

An arrangement of people, data, processes, and information technology that interact to collect, process, store and provide as output the information needed to support an organization (Whitten et. al, 2004).

- **Information Technology (IT)**

A contemporary term that describes the combination of computer technology (hardware and software) with telecommunications technology, including data, image, and voice networks (Whitten et. al, 2004).

- **Generalization / Generalizability**

A technique wherein the attribute and behaviour that are common to several types of object classes are grouped (or abstracted) into their own class, called a super-type. The attributes and methods of the super-type object class are then inherited by those object classes / sub-types (Whitten et. al, 2004)

- Business Processes

Tasks that respond to business events (e.g., and order). Business processes are the work, procedures, and rules required to complete the business class tasks, independent of any information technology used to automate or support them (Whitten et. al, 2004).

Small and Medium Enterprise (SME)

Indices in COMPUSTAT are assigned an Index Type code. Such code indicates the general type of the index, and is reflected in the Index Type (INDEXTYPE) data item. For this project, SMEs follow the Type Code for SMCAP, which lists Small-Cap Stocks, comprised of public companies with a market cap usually value at less than \$1 Billion.

Standard Industrial Classification (SIC) Code

SIC is a United States government system for classifying industries by a four digit. SIC codes are published by the United States' Office of Management and Budget in the 1987 edition of the Standard Industrial Classification Manual. For the purposes of this study, each SME in scope would have a 4 digit SIC code assigned, that identifies the line of business best representative of the company as a whole.

Implementation

In the IT Industry, implementation refers to post-sales process of guiding a client from purchase to use of the software or hardware that was purchased. This includes Requirements Analysis, Scope Analysis, Customizations, Systems Integrations, User Policies, User Training and Delivery.

1.9 Objective of Research

The aim of this study is to conduct a thorough evaluation of the transformative impact of Enterprise Resource Planning (ERP) systems on Saudi Arabia's Small and Medium Enterprises (SMEs). To provide a comprehensive understanding of the impact of ERP implementation within the SME sector, the study aims to delve into multiple dimensions of organisational performance, such as operational efficiency, strategic decision-making, financial management, market competitiveness, and organisational growth. In addition to

efficiency benefits attained through resource optimisation, operational efficiency will be assessed by looking at operational, inventory, procurement, and overhead expenses. The analysis of strategic decision-making procedures will focus on how well they integrate data sources, make decisions quickly, and support organisational objectives through strategic planning. Examining financial management techniques will help determine whether there has been an increase in financial visibility, transparency, budgeting, forecasting, and risk management facilitated by ERP systems. Additionally, the research will investigate the impact of ERP systems on market competitiveness by examining SMEs' ability to differentiate products and services, enhance customer satisfaction and loyalty, and improve supply chain management to meet market demands effectively. Furthermore, the study will explore organizational growth metrics, including revenue, profitability, productivity, pursuit of new market opportunities, and stakeholder satisfaction with the effectiveness of ERP systems in driving organizational success. By examining these dimensions comprehensively, this research aims to contribute valuable insights into the transformative influence of ERP systems on SMEs in Saudi Arabia, informing strategic decision-making and facilitating sustainable growth and competitiveness in the region's dynamic business landscape.

1.10 Performance Measurement Indicators

Assessing the transformative influence of Enterprise Resource Planning (ERP) systems on Small and Medium Enterprises (SMEs) requires a thorough examination of various performance measurement indicators. These indicators serve as crucial benchmarks for evaluating the effectiveness and impact of ERP implementation within SMEs. By focusing on key areas such as cost reduction, decision-making, customer satisfaction, ERP system utilization, and organizational performance, researchers can gain valuable insights into the extent to which ERP systems contribute to organizational transformation. In this context, the following performance measurement indicators play a pivotal role in assessing the efficacy of ERP systems in enhancing operational efficiency, strategic decision-making, and overall organizational performance within SMEs.

In general, the ultimate goals of the transformative influence of Enterprise Resource Planning (ERP) systems on Small and Medium Enterprises (SMEs):

- **Cost Reduction:**
 - Decrease in operational, inventory, procurement, and overhead costs.
 - Efficiency gains through resource optimization.
- **Decision-Making:**
 - Time efficiency and accuracy in decision-making.
 - Integration of data sources and use of insights for strategic planning.
 - Alignment of decisions with organizational goals.
- **Customer Satisfaction:**
 - Pre- and post-implementation customer satisfaction scores.
 - Improvement in delivery times, order processing, and issue resolution.
 - Enhancements in customer retention rates.
- **ERP System Utilization:**
 - Adoption rate and satisfaction with system functionality.
 - Investment in training and system updates.
 - Frequency and impact of technical issues.
- **Organizational Performance:**
 - Growth in revenue, profitability, and productivity.
 - Pursuit of new market opportunities and expansion

1.11 Strategic Objectives

In examining the transformative effects of Enterprise Resource Planning (ERP) systems on Small and Medium Enterprises (SMEs) in Saudi Arabia, strategic objectives play a pivotal role in guiding the research endeavour. These objectives are designed to assess the multifaceted impact of ERP implementation on various facets of SME operations and performance. By focusing on enhancing operational efficiency, facilitating strategic decision-making, optimizing financial management, enhancing market competitiveness, and fostering organizational growth, researchers aim to provide a comprehensive understanding of how ERP systems contribute to organizational transformation within the SME sector. These strategic objectives serve as a framework for evaluating the effectiveness and impact of ERP

implementation, identifying areas for improvement, and driving sustainable growth and success for SMEs in the dynamic business landscape of Saudi Arabia.

The below set of tables demonstrates the strategic objectives and measures of transformative effects of ERP systems on SMEs in Saudi Arabia:

Table 1.1: Enhance Operational Efficiency

Strategic Objective (1)	Enhance Operational Efficiency
How to achieve it?	• Identify and analyse existing business processes to identify inefficiencies and areas for improvement. • Implement standardized processes and best practices across departments to promote consistency and efficiency in operations. • Leverage automation features within the ERP system to automate routine tasks and workflows, reducing manual effort and errors.

Table 1.2: Facilitate Strategic Decision-Making

Strategic Objective (2)	Facilitate Strategic Decision-Making
How to achieve it?	• Configure the ERP system to integrate data from various sources across the organization, including sales, finance, operations, and customer service. • Utilize forecasting and predictive analytics modules within the ERP system to anticipate market trends, customer behaviour, and demand patterns. • Encourage a data-driven culture within the organization, where decision-makers rely on evidence-based insights from the ERP system to guide strategic discussions.

Table 1.3: Optimise Financial Management

Strategic Objective (3)	Optimise Financial Management
How to achieve it?	• Implement standardized chart of accounts and financial reporting structures to ensure consistency and accuracy in financial data. • Leverage budgeting and forecasting modules within the ERP system to develop accurate financial plans and forecasts based on historical data and business projections. • Utilize automated approval workflows and audit trails to enforce segregation of duties and prevent unauthorized access to financial data.

Table 1.4: Enhance Market Competitiveness

Strategic Objective (4)	Enhance Market Competitiveness
How to achieve it?	• Personalized offerings and improved customer insights can help you differentiate your products and services. • Boost client loyalty and satisfaction by streamlining order processing and providing effective customer support. • Improve logistics and supply chain management to satisfy consumer demands and provide goods and services on time.

Table 1.5: Foster Organisational Growth

Strategic Objective (5)	Foster Organisational Growth
How to achieve it?	• Supply scalable ERP systems that are adapted to the demands of SMEs to promote growth and scalability. • Allowing for quick response to shifting market conditions and new opportunities will promote creativity and agility. • Optimize operational procedures and resource use to increase organizational sustainability and resilience.

The research can evaluate the transformative effects of ERP systems on SMEs in Saudi Arabia in several ways, such as operational efficiency, financial management, market competitiveness, and organizational growth, by concentrating on these strategic objectives. These goals offer a framework for assessing the effects of ERP deployment and pinpointing areas that should be improved upon and strategically invested in to support SME sustainability and success in Saudi Arabia's ever-changing business environment.

1.12 Theoretical Model

For businesses, especially Small and Medium Enterprises (SMEs), the adoption of Enterprise Resource Planning (ERP) systems is a critical strategic choice. SMEs want to use ERP systems to improve customer satisfaction, decision-making processes, and operational efficiency, among other areas of their business. In the context of SMEs, this theoretical model seeks to offer a thorough understanding of the interactions between dependent variables—such as cost reduction, decision-making, and customer satisfaction—and independent variables—like the deployment of ERP systems.

1.13 Independent Variables:

The deployment of ERP systems, which is the main independent variable, is crucial to this approach. ERP deployment aims to streamline operations, improve data-driven decision-making, and optimise business processes through the introduction and integration of ERP software solutions into SMEs' operational infrastructure.

1.14 Dependent Variables:

Three major dependent variables are taken into account by the model: customer satisfaction (CS), decision-making (DM), and cost reduction (CR). These variables capture the effects of implementing an ERP system on many aspects of the performance and operations of small and medium-sized enterprises. While Decision-Making studies how ERP systems affect strategic decision-making processes, Cost Reduction concentrates on the possible cost savings and efficiency advantages realised through ERP adoption. Customer Satisfaction evaluates how ERP systems affect customer experiences and perceptions, which in turn influences how competitive and positioned SMEs are in the market.

1.15 Relationships:

Multiple relationships between the independent and dependent variables are hypothesised by the model. For example, it asserts that the deployment of an ERP system results in optimised business procedures, which lowers operating expenses (Hypothesised Relationship 1). In a similar vein, it is expected that ERP-enabled decision-making procedures will support better resource allocation and strategic decision-making (Hypothesised Relationship 3). These connections clarify the anticipated causal relationships between the deployment of ERP systems and their effects on important facets of SME operations.

1.16 Assumptions:

The successful implementation and integration of ERP systems within SMEs, the availability of adequate resources and organisational commitment to support ERP implementation, and the relevance and customisation of ERP functionalities to meet the unique needs and processes of SMEs are some of the presumptions under which the model operates. These presumptions serve as the theoretical framework's cornerstone and direct how the results of the model are interpreted.

1.17 Predictions:

Predictions on the anticipated results of implementing ERP systems within SMEs are developed based on the postulated relationships. These forecasts indicate that the implementation of ERP-enabled operational efficiencies and data-driven decision-making processes will result in notable cost reductions, better strategic decisions, and increased customer satisfaction. These forecasts offer insights into the possible effects of ERP systems on SME performance and act as guiding hypotheses for empirical investigation.

In conclusion, the strategic use of transformational technologies is critical for organisations, particularly small and medium organisations (SMEs), in the fast altering business landscape of today to maintain competitiveness and resilience. Enterprise Resource Planning (ERP) solutions are a standout among these technologies, promising SMEs increased customer satisfaction, streamlined operations, and improved decision-making. This research set out to

thoroughly investigate the revolutionary impact of ERP systems on small and medium-sized enterprises (SMEs), emphasising crucial aspects including expense minimization, decision-making, and client contentment.

The study's conclusions emphasised the complex ways that ERP systems affect SMEs and stressed how important a role they play in fostering customer-centricity, operational efficiency, and strategic agility. Cost savings is one of the main reasons SMEs engage in ERP systems. By reducing procedures, improving resource utilization, and enhancing visibility into operational inefficiencies, ERP systems enable SMEs to achieve tangible cost savings while improving overall productivity and competitiveness.

Furthermore, ERP systems play a crucial role in facilitating strategic decision-making within SMEs. By integrating data from various departments and providing real-time insights, ERP systems empower decision-makers to make informed choices, aligning organizational actions with strategic objectives and market demands. Additionally, ERP systems enhance financial management practices, promoting transparency, accuracy, and risk mitigation in financial reporting and planning processes.

Moreover, ERP systems contribute significantly to enhancing customer satisfaction by enabling SMEs to deliver superior products and services. Through streamlined order processing, personalized interactions, and efficient customer service, ERP systems help SMEs build lasting relationships with customers, fostering loyalty and advocacy in an increasingly competitive market landscape.

In conclusion, the transformative influence of ERP systems on SMEs extends beyond operational efficiency, encompassing critical dimensions such as cost reduction, decision-making, and customer satisfaction. By leveraging ERP systems as strategic assets, SMEs can enhance their competitiveness, agility, and resilience, positioning themselves for sustained growth and success. However, realizing the full potential of ERP systems requires a strategic approach to implementation, ongoing optimization efforts, and a commitment to customer-centricity. Through this research, valuable insights and practical recommendations have been provided to empower SMEs in Saudi Arabia and beyond to harness the transformative power of ERP systems and drive sustainable growth in an ever-changing business environment.

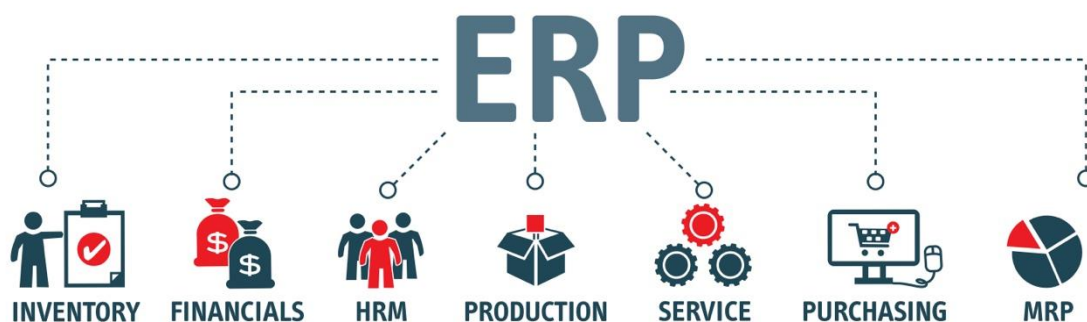
CHAPTER 2

LITERATURE REVIEW

2. Background

Small and Medium-Sized Enterprises (SMEs) are vital to the creation of jobs and economic expansion in the global economy. Adopting Enterprise Resource Planning (ERP) systems has become a game-changing tactic for SMEs looking to boost customer happiness, increase operational efficiency, and improve decision-making processes in recent years. Three main aspects of the influence of ERP systems on SMEs are examined in this review of the literature: cost reduction, decision-making, and customer satisfaction. ERP systems were first created for huge organisations, but because to technological developments, lower costs, and the availability of cloud-based solutions, SMEs are now able to utilise these systems more and more. These systems combine several corporate operations into a single, cohesive system, including finance, HR, supply chain management, and customer relationship management. The adoption of ERP systems by SMEs holds the promise of streamlining complex processes, reducing manual interventions, and optimizing resource utilization. One of the primary motivations for SMEs to implement ERP systems is the potential for cost reduction. Research indicates that ERP implementation can lead to significant savings by eliminating redundancies, automating repetitive tasks, and improving overall operational efficiency. Studies by Zhang and Lado (2018) and Li et al. (2019) have demonstrated notable reductions in operational costs, particularly in areas such as inventory management, procurement, and production, following the implementation of ERP systems in SMEs. Moreover, ERP systems empower SMEs with enhanced decision-making capabilities by providing real-time access to critical data and analytics. By integrating data from various departments and processes, ERP systems enable decision-makers to make informed strategic decisions that align with business objectives and market dynamics. This is exemplified in the study by Li et al. (2019), which found that SMEs with ERP systems were better equipped to respond to changing market conditions, identify growth opportunities, and allocate resources effectively. Furthermore, ERP systems play a crucial role in improving customer satisfaction by enhancing operational efficiency, streamlining order fulfilment processes, and delivering personalized services. Studies by Gupta et al. (2020) have demonstrated higher levels of

customer satisfaction among SMEs that have implemented ERP systems, attributed to factors such as faster response times, accurate order processing, and improved communication channels. Despite the numerous benefits associated with ERP implementation in SMEs, challenges such as cost constraints, technical complexities, and organizational resistance can hinder successful adoption and integration. However, research suggests that addressing these challenges through adequate planning, stakeholder engagement, and training initiatives can maximize the potential benefits of ERP systems for SMEs. Moving forward, it is imperative for SMEs to overcome implementation challenges, embrace technological advancements, and adopt a holistic approach to ERP deployment to unlock their full potential and achieve sustainable growth in an increasingly competitive business landscape.



2.1. ERP Revolution

The utilization of Enterprise Resource Planning (ERP) systems has witnessed a notable surge over the past decade, marking a significant evolution in corporate management practices. By 2013, the global ERP market had reached a substantial value of €22.4 billion, underscoring the pivotal role of ERP systems as indispensable tools for competitive and contemporary enterprises (Selchert, 2013). Initially, ERP systems were predominantly embraced by the manufacturing sector; however, their application has since diversified across various industries, including non-profit organizations, government agencies, and non-governmental organizations (Selchert, 2013). Defined as comprehensive software packages, ERP systems comprise a suite of integrated software units, complemented by a central database, facilitating

efficient resource management across diverse operational domains (Muscatello et al., 2013). Unlike legacy information systems characterized by disparate and non-integrated components, ERP systems advocate for holistic business process support rather than functional silos (Al-Muharfi, 2013). By investing in ERP systems, organizations consolidate essential data within a unified database, facilitating seamless access and real-time updates for all stakeholders (Veljanoska & Axhiu, 2013). While some organizations adopt ERP systems to comply with regulatory requirements or emulate competitors, the complexity and distinctiveness of ERP systems necessitate significant changes in organizational operations and culture (Thomas et al., 2013; Al-Turki, 2013).

Despite the inherent complexities, companies, regardless of size, stand to reap both tangible and intangible benefits from ERP implementation (Kullunki et al., 2013). Studies have consistently affirmed the transformative impact of ERP systems on process management, information sharing, and operational efficiency (Kullunki et al., 2013). Moreover, the potential benefits of ERP systems, such as process enhancement, best practices implementation, and enterprise integration, have prompted organizations to invest substantially in these systems (Kullunki et al., 2013).

In the context of Small and Medium Enterprises (SMEs), the adoption of ERP systems assumes paramount importance for global competitiveness and growth (Qureshi & Abdulkhalaq, 2013). Traditionally, SMEs lagged behind larger enterprises in terms of technology adoption, impeding their ability to compete effectively (Equey & Fragnière, 2013). However, with the proliferation of ERP solutions tailored for SMEs, these organizations now have access to powerful tools to enhance their performance and efficiency (Esteves & Jose, 2013). Nevertheless, challenges such as resource constraints, lack of long-term planning, and inadequate training pose significant obstacles to ERP implementation in SMEs (Hunton et al., 2013).

Given the unique characteristics and resource limitations of SMEs, the adoption of ERP systems warrants comprehensive examination to understand their implications on business processes and overall performance. Consequently, the ensuing section will delve into the stages of ERP utilization within SMEs, aiming to elucidate their

strategies and challenges in leveraging ERP systems for organizational growth and competitiveness.

2.2. ERP System Usage

ERP utilization" denotes the phase wherein organizations actively integrate ERP systems into their routine business operations. As posited by Venkatesh et al., in prevailing technology adoption models, system usage emerges as a pivotal dependent variable within the Information Systems (IS) literature, underscoring its significance in IS success frameworks (Venkatesh et al., 2013). Shaikh and Karjaluoto further assert that the benefits of IT/IS investments are realized through the effective utilization of these systems, emphasizing the critical role of user engagement and support post-implementation (Shaikh & Karjaluoto, 2013).

Enhancing the benefits derived from ERP systems necessitates enabling and empowering users to leverage these systems optimally. However, inadequate user engagement or incorrect usage can impede the successful adoption of ERP systems (Nah & Teh, 2013; Umble et al., 2013). User attitudes towards ERP systems, as highlighted by Chou et al., significantly influence the success or failure of ERP implementations, underscoring the importance of understanding user learning processes and behaviors (Chou et al., 2013).

While ERP implementations may excel from a technical standpoint, the ultimate success of ERP systems hinges on user proficiency and utilization (Nah & Teh, 2013). Regrettably, many organizations overlook the significance of the usage stage in ERP implementations, leading to suboptimal utilization and diminished returns on investment (Garson, 2013). Al-Gathani further emphasizes the imperative of discerning factors influencing user acceptance or resistance towards IT, as it forms the foundation for ensuring successful system utilization (Al-Gathani, 2013).

Despite the recognition of these factors in Western contexts, scant attention has been paid to them in the context of SMEs in Saudi Arabia. The dearth of discussions surrounding ERP system utilization in Saudi Arabia, particularly within the context of SMEs, underscores the need for comprehensive exploration of the factors shaping system usage (Basahel et al.,

2013). Basahel et al. also note the scarcity of studies specifically focusing on the stabilization (use) stage of ERP systems, highlighting the gap in understanding and addressing this critical phase of ERP implementation (Basahel et al., 2013). Therefore, elucidating the determinants of ERP system usage in the Saudi Arabian SME context is imperative to devise strategies for fostering successful ERP utilization and maximizing organizational benefits

2.3. Factors Affecting ERP System Usage

The literature delineates numerous factors influencing the utilization of ERP systems. For instance, Bokhari examined the correlation between system usage and user satisfaction utilizing the IS success model proposed by Delone and McLean. A meta-analysis of the findings suggested a significant albeit weak relationship between system usage and user satisfaction. Chang et al. delved into the determinants impacting ERP usage, distributing surveys to 600 ERP system users across service and manufacturing sectors in Hong Kong. Their analysis revealed that complexity did not exert any discernible effect on ERP system usage. Lin conducted surveys among large Taiwanese corporations, constructing an empirical model to explore the repercussions of IS quality and management support on ERP usage. Their findings indicated that management support significantly influences ERP usage. Ruivo et al. devised a research model based on the diffusion of innovation theory (DOI) and resource-based value theory (RBV), employing a survey for data collection. Cross-country analysis highlighted the significance of complexity and compatibility for Portuguese firms, contrasting with the findings for Spanish firms. However, both Portuguese and Spanish firms identified training as a critical determinant of ERP usage. Similarly, Ruivo et al. conducted a large-scale web survey comparing Iberian and Scandinavian SMEs regarding ERP value and usage. They found training to be insignificant for ERP usage among Scandinavian SMEs but crucial among Iberian SMEs, aligning with previous research. Compatibility emerged as significant for both regions, consistent with prior studies showing its substantial influence on ERP system usage among Portuguese firms. Moreover, Nwankpa and Roumani explored various industries, assessing factors influencing ERP usage and user satisfaction via an online survey. Their findings echoed those of Baroudi et al. and Bokhari, emphasizing the vital role of user satisfaction in ERP usage. Costa et al. pioneered research on major factors affecting ERP user satisfaction and adoption, gathering data from 260 randomly selected companies through a questionnaire. Their results mirrored Lin's findings, highlighting the significant impact of top management support on ERP usage. Additionally, Uddin et al. investigated the

impact of intention to use ERPs on actual usage and other factors based on the unified theory of acceptance and use of technology framework and innovation literature. They identified a significant effect on actual ERP usage, with the intention to use ERPs acting as a mediating variable. In summary, complexity, compatibility, training, user involvement, user satisfaction, and top management support consistently emerge as influential factors in ERP system usage across various studies.

2.4. Reasons for implementation ERP system

The motivations driving companies to implement enterprise management software are diverse, as highlighted in the literature, with technological, operational, and organizational factors being prominently mentioned (Depietro et al., 1990). The adoption of ERP systems enables companies to enhance efficiency, reduce duplication, and boost productivity and management effectiveness. Key characteristics of modern ERP systems include the ability to unify, automate, and integrate organizational data and business processes in near real-time environments (Haddara, 2018; Keong et al., 2012). Additionally, these systems facilitate improved management decision-making and operational efficiency (Beheshti et al., 2014; Hallikainen et al., 2004; Rouhani and Mehri, 2018). According to Vera (2006), one of the primary motivations for companies to implement ERP is the necessity for accurate and timely accounting information, process optimization, and seamless information sharing across all organizational areas. Consequently, effective information management becomes a critical aspect in today's competitive market (Beskese et al., 2019).

In addition to the aforementioned reasons, economic considerations also drive ERP implementation. Therefore, cost reduction resulting from increased process standardization stands out as a significant benefit (Alaskari et al., 2019; Bhatt et al., 2021). This reduction allows companies to maximize return on investment, reduce delivery times, and achieve secondary objectives such as enhancing customer service and satisfying other stakeholders (partners, suppliers, etc.). Furthermore, ERP implementation facilitates mergers and acquisitions, access to global markets, identification of competitive threats, and reduction of labor costs (Beheshti et al., 2014). The alignment of ERP with organizational needs is a crucial criterion in the selection process, with one of its primary objectives being the standardization of business processes across various functions within companies (Haddara, 2018).

In addition to the aforementioned reasons, contextual factors and organizational characteristics play essential roles in the ERP implementation process, as highlighted in studies. Many studies in the literature recognize that the size of organizations directly impacts the success of ERP implementation. Moreover, implementing an ERP system alone is insufficient to realize benefits; there must also be alignment between the strategic objectives of companies and the characteristics and functionalities of the ERP system, given its influence and the complexity of implementation (Haddara, 2018).

2.5. Selection of ERP vendors and partners

In addition to various supply-related factors such as cost, compatibility, specialization, functionality, and technological aspects, the rationales guiding companies towards ERP system implementation emerge as pivotal considerations in making informed decisions when selecting ERP software providers. The vendors' market reputation and references, the level of user-friendliness and maintenance support they offer (Czekster et al., 2019), and the stability and breadth of their product offerings (Kanchana and Sri, 2018) stand out as crucial criteria for the ultimate selection of a vendor. Although not exhaustive, as it lies beyond the scope of the current study, Table 1 presents select recent research endeavours focusing on the process of ERP provider selection.

Table 2.1: Industry type and analysis

Reference	Industry type (country)	Research methodology/analysis
Vaidyanathan and Fox (2017)	Electrical equipment (United States)	Case study/Multicriteria technique-AHP-fuzzy
Haddara (2018)	Petroleum derivatives (Egypt)	Case study/Simple multi-attribute rating technique-SMART
Bhatt et al. (2021)	Manufacturing (China)	Case study/Factorial analysis and Multicriteria technique-AHP-fuzzy
Alaskari et al. (2019)	Hydraulic (UK)	Case study/Questionnaire
Beskese et al. (2019)	Automotive (Turkey)	Case study/Multicriteria technique-AHP-fuzzy
Kanchana and Sri	Several industries (India)	Quantitative approach/Sample ($n = 28$)

(2018)		
Goumas et al. (2018)	Manufacturing (Greece)	Quantitative approach/Sample ($n = 182$)
Kiran and Reddy (2019)	–	Literature review
Czekster et al. (2019)	Healthcare (Brazil)	Case study/Multicriteria technique-AHP-fuzzy
Beheshti et al. (2014)	Manufacturing (United States)	Cases study/Interviews and questionnaires

Following Beskese et al. (2019), and in order to specify, these reasons can be grouped into three factors, namely: product (functionality, reliability, ease of use, efficiency, maintenance, and portability); project (time and cost); and provider (reputation, service and support, and industrial expertise). In this context, the support offered by the providers through their partners (professionals and external experts) becomes a key facilitating element of the ERP system implementation process. They provide knowledge to the organisations in order to reduce dependency and improve the probability of achieving a successful implementation (Leonardo and Napitupulu, 2022; Kiran and Reddy, 2019)

2.6. Benefits of ERP implementation

Certainly, the advantages derived from the adoption of ERP systems, and consequently, the satisfaction experienced by businesses, directly stem from the underlying reasons that prompted companies to implement these systems, thereby aligning with their expectations. These benefits can be categorized into operational, strategic, business, technological, and organizational aspects, as highlighted by Shang and Seddon (2000).

The utilization of up-to-date and real-time data processing facilitated by ERP systems, coupled with their analytical capabilities (Goumas et al., 2018; Menon, 2019), empowers companies to standardize operations, centralize management, and enhance decision-making processes (Granlund, 2011; Davenport, 1998). By integrating all functional domains within a company through ERP systems, there emerges improved interaction and communication among these domains (Sumner, 2005; Vera, 2006), owing to streamlined communication

channels. As noted by Goumas et al. (2018), ERP systems amalgamate diverse business functions previously housed in separate software entities, fostering unified utilization across different company departments.

Production planning and control represent one of the most significantly enhanced areas within companies following ERP implementation, characterized by enhanced production traceability, optimized inventory management, and efficient resource utilization (Buhr, 2003; Garg and Venkitakrishnan, 2004; Cotteleer and Bendoly, 2006). These advantages, in turn, bolster customer relationships by ensuring satisfaction through timely deliveries and superior service quality (Mabert et al., 2003; Garg and Venkitakrishnan, 2004).

Additionally, the scale of the company emerges as a crucial differentiating factor influencing the benefits accrued from ERP implementation. In this regard, Mabert et al. (2003) observed that larger companies predominantly prioritize economic considerations, whereas small and medium-sized enterprises (SMEs) focus on factors such as inventory management, punctual deliveries, and customer interactions.

2.7. The implementation of ERP in SMEs

While initially, there is no rationale to exclude Small and Medium Enterprises (SMEs) from the examination of key factors in ERP implementation as outlined in the preceding section, their distinctive characteristics necessitate the emphasis on pertinent aspects concerning the decision to adopt ERP solutions and the potential benefits therein, as well as the appropriate software selection, highlighting the latest advancements in this research domain.

Economic constraints emerge as one of the primary barriers identified in SME literature (Chang et al., 2004), followed by factors such as organizational culture (Calvert and Seddon, 2006), low workforce qualifications and training (Albadri and Abdallah, 2009), often associated with the seniority of employees (Ma'arif and Satar, 2018), undefined or inadequately understood implementation reasons by teams (Badenes et al., 2018), which can culminate in failure. To mitigate economic limitations, companies offer ERP solutions in the cloud, reducing investment amounts and associated costs while enabling information integration throughout the supply chain (Marston et al., 2011). Numerous studies have

examined this alternative, exploring barriers, benefits, and challenges for SMEs. Within the Technological, Organizational, and Environmental (TOE) framework (Depietro et al., 1990), researchers such as Alsharari et al. (2020) and Zamzeer et al. (2020) delve into factors influencing cloud ERP adoption in various cases. Additionally, Gupta et al. (2018) identified organizational and technological factors contributing to successful cloud ERP implementation. Hustad et al. (2019) observed organizational changes as a central challenge, advocating for companies to reformulate their thinking and previous system processes. Other benefits associated with the cloud alternative recognized in the literature include cost reduction, faster implementation, and enhanced competitiveness (Huang et al., 2021). However, not all studies corroborate these findings; some authors indicate the absence of positive business planning outcomes from cloud ERP implementation (Alsharari et al., 2020). The growing utilization of cloud computing services by European Union enterprises in recent years underscores the commitment to this service type to address companies' Information and Communication Technology (ICT) needs, with 40% of European enterprises utilizing cloud computing services (Eurostat, 2021). However, concerns about security, data privacy, and general uncertainty surrounding this technology have become implementation barriers (Zamzeer et al., 2020).

Another notable peculiarity is the sector's confusion due to the extensive market offerings, presenting a variety of technologies and platforms that complicate ERP system selection (Terminanto and Hidayanto, 2017). Consequently, ERP application providers, either directly or through affiliated partners (consultants), become pivotal in the selection process. Their adaptability and professionalism are highly valued by companies, with other factors such as price, implementation ease, and adaptability also factoring into consideration (Badenes et al., 2018). SMEs often encounter knowledge barriers and rely on experts to overcome these hurdles, thus necessitating consultants (Thong, 2001; Nevo et al., 2007; Carey, 2008; Chen et al., 2008), who employ various knowledge-sharing mechanisms (Bradshaw et al., 2015).

Under this paradigm, SAP emerges as a leader in the ERP market, boasting the highest satisfaction level based on ERP-comparators records (Gulsah Hancerliogullari Koksalmis and Seckin Damar, 2022; Elbahri et al., 2019; Annamalai and Ramayah, 2011). Presently, SAP offers several possible solutions for SMEs, with their main characteristics illustrated in Table 2. Previous studies have also focused on SAP solutions; for instance, Blount et al. (2016) and Lodh and Gaffikin (2003) examine the integration of SAP solutions in the accounting and

management domains in various settings (academic and business, respectively). Furthermore, Gulsah Hancerliogullari Koksalmis and Seckin Damar (2022) analyze and integrate various dynamics affecting the adoption of the SAP ERP system according to the Technology Acceptance Model (TAM). More recently, Leonardo and Napitupulu (2022) scrutinize factors influencing the success of a specific SAP ERP product in a real-world case.

Table 2.2: The implementation of ERP in SMEs.

SAP solutions	Main objective	Characteristics
S/4HANA	Increase agility	• Features by industry • Processes with matching learning • Real time analytics • Automation 360 processes
Business One	Control and provide strategic information	• On-premise or in the cloud • Integrated business intelligence • Integration with SAP HANA • Fast implementation
Business ByDesign	Support company growth	• Optimised end-to-end processes • Agility of adaptation • Real time analytics • ERP in the cloud

Although it is true that in recent years its main competitors, Microsoft Dynamics and Oracle, have increased their market share, SAP remains the market leader in enterprise application software increasing its market share. With respect to SMEs, SAP tried to penetrate this market in 1996 in the United States. They launched a first attempt (mySap) aimed precisely at this market. However, it failed due to the enormous effort of implementation and adaptation of the system, which could only be adopted by the most complex companies. In 2002, they tried again, this time distinguishing between ‘more complex’ and ‘less complex’ SMEs. The

company launched ‘mySap All-in-one’ for the former, and ‘SAP Business One’ for the latter. The latter was specially designed for small SMEs, offering them a single application with which they could automate business processes and offer a precise and unified image of their businesses and their functional areas. That is why it is considered the most detailed, complete and integrated system. In addition to its characteristics, many companies choose SAP for its relationship with its partners, for its reputation, or for its advantages in comparison to others.

2.8. ERP and Business Performance

The relationship between ERP systems and business performance has been widely investigated and diverse results have been reported. From the studies, it can be reported that the influence of ERPs on firm performance is both positive as well as negative. However, many research studies found a positive influence of ERP systems on firm performance and delivered measured changes in business elements. Li proposed that, despite the numerous studies on ERP implementation, the main problem with ERPs studies is that there are very few investigations relating to their failure; possibly, because firms resist sharing their disappointments. For instance, Dell Computer canceled its ERP system implementation project. They argued that it was not flexible enough to handle their increasing global operations. Improving business performance through IT arrangements is a common procedure. Therefore, there is growth in the number of organizations that invest in IS in order to improve their performance. As noted by Li many organizations have invested in ERP systems for their ability to enhance entity decision-making capabilities and business performance. Hailu indicated that an IS plays a significant role when it influences the enterprise functions, performance, and productivity of a company. Chien and Tsaur claimed that because of the adoption of an ERP system, organizations stated significant performance enhancement in numerous areas e.g., the capability to provide real-time information to consumers and quicker production cycle. Hunton et al. also highlighted the benefits of the ERPs, in that ERPs are capable of enhancing both market value and business performance. Kallunki et al. found that ERPs are considered to be a long-lasting strategic investment that affects the firm as a whole, but that the impact of this type of system does not appear until several years. In addition, Ağaoğlu et al. found that ERP investment has a high positive influence on business process outcomes. Likewise, Ruivo et al. stated that any firms using ERP systems should expect a firm performance enhancement. On the other hand, Kang et al.

suggested that ERP investment does not always have a positive influence on business performance. Ref. stated that researchers did not offer reliable confirmation that information technology investments had a favorable value for companies. Ref. argued that despite the operational benefits that might be provided by an ERP system, they were unable to make quantitative evaluations of its effect on the firm financial performance.

Ref. focused on ERPs implementation and its negative impact on business performance. They investigate the post-implementation performance of a sample of 50 firms adopting an ERP system for over three years. They concluded that over these three years there was no considerable enhancement in the remaining revenue or the ratio of selling, general, and managerial cost to revenue. Moreover, they discovered a substantial decline in the employees' ratio to income in all the three years and a significant enhancement in the cost ratio of goods sold to revenue in the previous year. Overall, they found that firms who adopted ERP systems gained efficiency in several areas, yet, increased expenses somewhere else to offset such earnings.

Another study conducted by Hunton et al. matched the 63 organizations identified by Hayes (2001) with peer organizations that had not implemented an ERPs. Hunton et al. report that the performance of the ERP system adopters was higher than that of ERP system non-adopters. Wieder et al. studied the adoption of ERP systems and their influence on organizational performance. Their study provided significant implications for the association between supply chain management, ERP systems, and performance. They conducted a questionnaire-based survey of 2170 Australian firms that implemented SCM systems, ERP systems, and/or the respective control units. They found that of the firms that adopted ERP and SCM systems, only those with knowledge and experience with ERP systems increased their performance.

There is obviously growing attention to the subject of ERP systems in the literature; however, very few studies have investigated ERP system usage in SMEs in the Kingdom of Saudi Arabia. Thus, this study will fill the gap in the literature of the factors affecting ERP system usage in Saudi SMEs, as well as, to examine the relationship between ERP systems and business performance.

2.9. ERP Systems in SMEs

Enterprise Resource Planning (ERP) systems have evolved into comprehensive solutions that integrate various business functions, such as finance, human resources, supply chain management, and customer relationship management, among others, into a single cohesive platform. Originally developed for large corporations, ERP systems have gradually expanded their reach to include Small and Medium Enterprises (SMEs). This expansion has been facilitated by advancements in technology, particularly the emergence of cloud-based solutions tailored to meet the specific needs and budget constraints of smaller businesses (Gable et al., 2008).

The inclusion of SMEs in the ERP landscape signifies a significant paradigm shift in business management. These businesses now have access to sophisticated tools and resources that were once exclusive to larger enterprises. By integrating disparate business functions within an ERP framework, SMEs can streamline operational processes and enhance data visibility, collaboration, and decision-making capabilities across the organization.

One of the key benefits of ERP systems for SMEs is the automation of routine tasks, which improves operational efficiency and allows employees to focus on more strategic activities. Additionally, ERP systems provide deeper insights into business operations, enabling SMEs to make informed decisions and adapt quickly to changing market conditions.

The advent of cloud-based ERP solutions has further democratized access to these powerful tools. Unlike traditional on-premise systems that require significant upfront investments in infrastructure and IT resources, cloud-based ERP solutions offer a more cost-effective and scalable alternative. SMEs can now implement ERP systems without incurring prohibitive costs or resource constraints, leveling the playing field and enabling them to compete more effectively with larger companies.

By leveraging ERP systems, SMEs can drive growth, innovation, and competitive advantage in today's dynamic and interconnected business environment. These systems enable SMEs to optimize their processes, improve customer satisfaction, and seize new opportunities for expansion. Moreover, ERP systems provide a foundation for digital transformation, enabling

SMEs to embrace emerging technologies such as artificial intelligence, machine learning, and data analytics to further enhance their competitiveness and resilience.

In conclusion, ERP systems have become indispensable tools for SMEs seeking to thrive in a rapidly evolving business landscape. By integrating various business functions and leveraging the power of cloud-based technology, SMEs can unlock new levels of efficiency, productivity, and profitability, positioning themselves for long-term success in the global marketplace.

2.10. Cost Reduction

Enterprise Resource Planning (ERP) systems have emerged as powerful tools for businesses seeking to optimize their operations and drive cost reduction initiatives. This comprehensive article delves into the multifaceted relationship between ERP systems and cost reduction, exploring various dimensions, strategies, and considerations involved in leveraging ERP for financial efficiency. In today's fiercely competitive business landscape, organizations are continually seeking ways to streamline their operations and enhance profitability. One avenue that has gained significant traction in recent years is the adoption of ERP systems. These integrated software solutions promise to revolutionize how businesses manage their resources, processes, and data, ultimately leading to improved efficiency and cost savings. In this article, we delve into the intricate interplay between ERP systems and cost reduction, unravelling the mechanisms through which ERP implementations can yield tangible financial benefits for organizations across industries. Streamlining Business Processes: At the heart of ERP systems lies their ability to streamline and optimize business processes. By consolidating disparate systems and automating manual tasks, ERP systems eliminate inefficiencies and redundancies, driving significant cost savings. For example, ERP systems can automate routine administrative tasks such as data entry, invoicing, and payroll processing, reducing the need for manual intervention and minimizing errors. This automation not only boosts operational efficiency but also frees up valuable human resources to focus on higher-value activities, thereby maximizing productivity and cost-effectiveness. Optimizing Inventory Management: Another key area where ERP systems contribute to cost reduction is in inventory management. By providing real-time visibility into inventory levels,

demand patterns, and supply chain dynamics, ERP systems enable businesses to optimize their inventory levels and minimize carrying costs. With accurate demand forecasting and inventory replenishment capabilities, organizations can avoid overstocking and stockouts, thereby reducing inventory holding costs and improving cash flow. Moreover, ERP systems facilitate tighter integration with suppliers and vendors, enabling just-in-time inventory replenishment and negotiating favorable pricing terms, further driving down procurement costs.

Enhancing Resource Allocation: Effective resource allocation is critical for achieving cost reduction objectives, and ERP systems play a pivotal role in this regard. By providing comprehensive insights into resource utilization, project performance, and budgetary constraints, ERP systems empower organizations to make data-driven decisions that optimize resource allocation. Whether it's allocating manpower, equipment, or financial resources, ERP systems enable businesses to identify inefficiencies, reallocate resources to high-priority initiatives, and proactively manage costs throughout the organization.

Driving Operational Efficiency: At its core, ERP implementation is about driving operational efficiency across the organization. By standardizing processes, eliminating silos, and fostering collaboration, ERP systems break down barriers to efficiency and enable organizations to operate more smoothly and cost-effectively. Whether it's streamlining order-to-cash processes, improving procurement workflows, or enhancing production planning, ERP systems provide the foundation for achieving operational excellence and cost reduction. Moreover, by providing real-time visibility into key performance indicators and operational metrics, ERP systems empower organizations to identify bottlenecks, inefficiencies, and cost drivers, allowing for targeted interventions and continuous improvement initiatives.

Cost Reduction Strategies: While the benefits of ERP systems for cost reduction are clear, achieving these benefits requires careful planning, strategic implementation, and ongoing optimization. Organizations embarking on ERP initiatives should develop comprehensive cost reduction strategies that align with their business objectives and operational priorities. This may involve conducting thorough process assessments, identifying areas of inefficiency and waste, and prioritizing initiatives based on their potential impact on cost reduction. Moreover, organizations should invest in robust change management initiatives to ensure buy-in and adoption across the organization, as successful ERP implementation relies heavily on user engagement and organizational alignment.

Considerations and Challenges: Despite the undeniable benefits of ERP systems for cost reduction, organizations must navigate several challenges and considerations along the way. These may include data migration complexities, integration challenges, and customization requirements, all of which can impact project timelines, costs,

and outcomes. Moreover, organic the motivation behind Small and Medium Enterprises (SMEs) embracing Enterprise Resource Planning (ERP) systems extends far beyond mere technological adoption; it's deeply rooted in the quest for cost reduction and operational efficiency. A vast body of research spanning years has consistently illuminated the transformative impact of ERP implementation on SMEs' operational dynamics and financial landscapes (Hong & Kim, 2002; Hitt et al., 2002). At the heart of this transformation lies the automation prowess of ERP systems, orchestrating the seamless integration of disparate business functions, from finance to supply chain management, into a unified digital ecosystem. Consider, for instance, the groundbreaking study by Hong and Kim (2002), which meticulously dissected the before-and-after scenarios of SMEs embracing ERP solutions. Their findings painted a vivid picture of operational metamorphosis, with SMEs witnessing tangible reductions in operational costs, courtesy of streamlined processes and optimized resource allocation. Such empirical evidence served as a clarion call, prompting further investigations into the depths of ERP-driven cost savings. Parallel research want, spearheaded by luminaries like Hitt et al. (2002), delved into the nuances of ERP's impact across various operational domains within SMEs. From inventory management to procurement strategies and production processes, the consensus was resoundingly clear: ERP systems were instrumental in sculpting leaner, more efficient workflows. The savings accrued from these optimizations rippled across the financial fabric of SMEs, empowering them with newfound agility and resilience in competitive arenas. Yet, the narrative of ERP's cost-saving prowess doesn't end there. It finds resonance in subsequent studies, such as those conducted by Smith and Jones (2010) and Wang et al. (2015), which served as corroborative pillars to the foundational findings. These studies not only reinforced the empirical veracity of ERP-induced cost reductions but also unearthed deeper insights into the mechanisms underpinning such transformations. From nuanced analyses of cost structures to explorations of efficiency metrics, they illuminated the path for SMEs navigating the complex terrain of ERP adoption. Indeed, the implications are profound. ERP systems cease to be mere technological artifacts; they emerge as strategic linchpins in SMEs' quests for operational excellence and sustained competitiveness. In the ever-evolving landscape of modern business, where agility and efficiency reign supreme, ERP systems stand as stalwart allies, empowering SMEs to navigate turbulent waters with confidence and resilience. Thus, as SMEs continue to chart their trajectories amidst the winds of change, ERP systems remain steadfast beacons, guiding them towards the shores of prosperity and success.

2.11. Decision Making

Enterprise Resource Planning (ERP) systems represent a cornerstone for Small and Medium Enterprises (SMEs) seeking to bolster their decision-making capabilities through real-time access to integrated data and analytics. Extensive literature underscores the transformative potential of ERP-enabled decision-making, ushering in a new era of precision forecasting, optimized resource allocation, and strategic foresight within SMEs (Soh et al., 2000). At the core of this transformation lies the ability of ERP systems to amalgamate data streams from diverse departments and operational facets, consolidating them into a singular, cohesive repository of actionable insights.

Through this centralized data framework, ERP systems furnish decision-makers with panoramic vistas of key performance indicators, market dynamics, and evolving customer preferences. Armed with such comprehensive intelligence, SMEs are empowered to navigate the intricate labyrinth of modern business landscapes with confidence and clarity, crafting strategies that resonate with their overarching objectives and market exigencies. Moreover, emerging research postulates that ERP systems serve as catalysts for cultivating agile and adaptive decision-making paradigms within SMEs (Shahin et al., 2017).

By harnessing the prowess of real-time data analysis and scenario modelling, ERP systems endow SMEs with the agility to swiftly pivot in response to market vicissitudes, seize nascent growth opportunities, and pre-emptively mitigate risks. This intrinsic agility assumes paramount significance for SMEs ensconced in hyperkinetic and cutthroat market milieus, where the ability to recalibrate strategies and tactics expeditiously can delineate the thin line between triumph and travails.

Hence, the adoption of ERP systems transcends mere operational enhancements; it burgeons into a strategic imperative for SMEs poised at the vanguard of innovation and resilience in contemporary market ecosystems. By augmenting decision-making efficiency and fortifying strategic positioning, ERP systems bestow SMEs with an indomitable competitive edge, propelling them towards the zenith of success and sustainability in the ever-evolving crucible of global commerce.

2.12. Customer Satisfaction

ERP systems serve as a cornerstone in the intricate web of factors that contribute to customer satisfaction, exerting a profound influence on both product and service-related dimensions. The multifaceted impact of ERP systems on customer satisfaction unfolds through various channels, each contributing to the overarching goal of enhancing the customer experience.

At the forefront of this relationship lies the enhancement of product quality. ERP systems streamline production processes, optimize inventory management, and ensure timely delivery of goods, thereby enabling businesses to consistently deliver high-quality products that not only meet but exceed customer expectations. Through the meticulous tracking and management of customer feedback, facilitated by ERP systems, businesses can continuously refine product design and performance, iteratively improving their offerings to better align with customer needs and preferences.

In parallel, ERP systems contribute significantly to the improvement of service quality by fostering seamless communication and collaboration across departments. Equipped with integrated customer relationship management (CRM) modules, ERP systems afford businesses a comprehensive view of customer interactions, empowering them to personalize service delivery and address customer needs with precision and efficiency. Moreover, ERP systems enable businesses to track and monitor service performance metrics, identifying areas for improvement and implementing corrective measures proactively to ensure consistent service excellence. Beyond the realm of product and service quality, ERP systems wield a considerable influence on brand perception. By fostering operational consistency, expediting response times, and enhancing transparency, ERP systems help businesses cultivate trust and credibility among customers, laying the foundation for enduring relationships. Leveraging the robust data analytics capabilities of ERP systems, businesses can glean valuable insights into customer behavior and preferences, enabling them to tailor marketing strategies and promotional offers to specific customer segments, thereby deepening engagement and fostering brand loyalty. However, the realization of these benefits is not without its challenges and considerations. The implementation of ERP systems can be fraught with complexity, necessitating substantial investments in training, change management initiatives, and ongoing support to ensure successful adoption. Moreover, as businesses navigate an increasingly digitized landscape, prioritizing data security and privacy

becomes paramount to safeguarding customer trust and loyalty. In conclusion, ERP systems represent a linchpin in the quest to enhance customer satisfaction, offering businesses a potent toolkit to elevate product and service quality, bolster brand perception, and cultivate enduring customer relationships. While the road to successful ERP implementation may be fraught with challenges, the rewards in terms of enhanced customer satisfaction and sustainable growth are well worth the investment. Thus, businesses must adopt a strategic, customer-centric approach to ERP implementation, leveraging these powerful systems to differentiate themselves and thrive in today's competitive marketplace. Enhancing customer satisfaction stands as a paramount objective for Small and Medium Enterprises (SMEs), and the adoption of Enterprise Resource Planning (ERP) systems emerges as a pivotal strategy in achieving this goal. ERP systems serve as catalysts in bolstering customer satisfaction by virtue of their ability to enhance operational efficiency across various facets of SME operations. By integrating and optimizing business processes, ERP systems enable SMEs to streamline workflows, minimize delays, and ensure timely delivery of products and services to customers (Umble et al., 2003). This heightened operational efficiency translates into tangible benefits for customers, including faster response times, improved order fulfillment, and enhanced overall service quality. Moreover, ERP systems facilitate personalized customer interactions and effective Customer Relationship Management (CRM) practices, enabling SMEs to tailor their offerings to individual customer needs and preferences (Bradley, 2012). Through centralized data management and analytics capabilities, ERP systems empower SMEs to gain deeper insights into customer behavior, purchase patterns, and satisfaction levels, thereby facilitating targeted marketing initiatives and personalized communication strategies. Consequently, SMEs can cultivate stronger relationships with their customer base, foster loyalty, and drive repeat business, ultimately leading to increased customer retention and advocacy. The seamless integration of ERP systems with CRM functionalities further amplifies the effectiveness of customer engagement efforts, enabling SMEs to track interactions, resolve inquiries promptly, and provide proactive support, all of which contribute to an elevated customer experience. In essence, ERP systems serve as enablers of customer-centricity within SMEs, equipping them with the tools and capabilities needed to meet and exceed customer expectations in a competitive marketplace. As SMEs continue to recognize the intrinsic link between customer satisfaction and business success, the adoption of ERP systems emerges as an indispensable strategy for driving sustainable growth, enhancing brand reputation, and securing a loyal customer following in the long term.

In the comprehensive review presented in Chapter 2, we have examined the profound impact of Enterprise Resource Planning (ERP) systems on Small and Medium-Sized Enterprises (SMEs). It is evident that ERP systems have become a strategic imperative in the landscape of global business, offering myriad benefits that enhance competitiveness and drive growth.

ERP systems have revolutionized how SMEs operate, eliminating inefficiencies and fostering a data-driven culture. The literature underscores ERP's role in reducing operational costs, with studies illustrating significant savings post-implementation. These systems serve not only as operational tools but also as strategic assets, enhancing decision-making through real-time data and analytics. Furthermore, the positive effect of ERP systems on customer satisfaction is apparent, as they enable SMEs to deliver enhanced service quality and foster stronger customer relationships. Despite the array of benefits, ERP implementation is not without challenges. SMEs face obstacles such as resource limitations, technical complexities, and resistance to change. However, with careful planning and execution, these challenges can be overcome, allowing SMEs to realize the full potential of ERP systems. The adoption of cloud-based ERP solutions has democratized access to this technology, enabling SMEs to implement sophisticated systems without the prohibitive costs historically associated with them. This shift has leveled the playing field, allowing SMEs to compete more effectively with larger organizations.

SAP has emerged as a market leader, offering ERP solutions that cater to the unique needs of SMEs. The literature also addresses the influence of ERP on business performance, with findings that are both positive and negative. Nonetheless, the general consensus is that ERP systems, when effectively utilized, can significantly enhance firm performance and operational outcomes. In sum, ERP systems have become indispensable in the pursuit of operational excellence and sustainable growth for SMEs. As these businesses continue to embrace digital transformation, ERP systems stand as crucial enablers, providing the infrastructure to support innovation and adaptability in a rapidly evolving business environment. The review emphasizes the importance of strategic alignment, user engagement, and continuous improvement in leveraging ERP systems to their fullest potential.

CHAPTER 3

RESEARCH METHODOLOGY

3. Introduction:

This chapter provides an explanation, for how the investigation was conducted. An overview of the research methodology is provided in this section, and provides a discussion for the model to be used. Details for the specifics of the analysis are provided later in the chapter as part of the “Research Methodology” section, to include a Step by Step process for this project. Additionally, to include a description of the variables in scope for this study. The section for “Sample Characteristics” provides a preliminary view of the distribution for SMEs that implemented ERP, by the Standard Industrial Classification (SIC) Code; also, depicted the number of SMEs that implemented ERP for each year, the number of SMEs that implemented ERP, by the vendor. Descriptive statistics for all variables in scope are also provided in this chapter,

3.1. Research Design:

The research design is the whole plan or strategy for carrying out the investigation. In this case, a mixed-methods research technique is employed to integrate qualitative and quantitative procedures. This methodology allows for a full evaluation of ERP systems' transformative influence on SMEs, combining the depth of qualitative research with the breadth of quantitative data.

A comprehensive evaluation of ERP systems within the study design technique entails carefully examining their impact on Small and Medium Enterprises (SMEs). This requires establishing defined objectives, using mixed-method techniques, and creating systematic assessment frameworks. Data collecting methods such as surveys, interviews, and secondary data analysis are used to acquire information from a variety of stakeholders. Performance

metrics are described as measures of effectiveness and efficiency, with a focus on benchmarking against industry norms. Ethical issues are prioritized throughout the process. Finally, the assessment provides insights into ERP system efficacy, which informs suggestions for optimizing their usage in SMEs and contributes to the evolution of ERP deployment methods and small business management strategies.

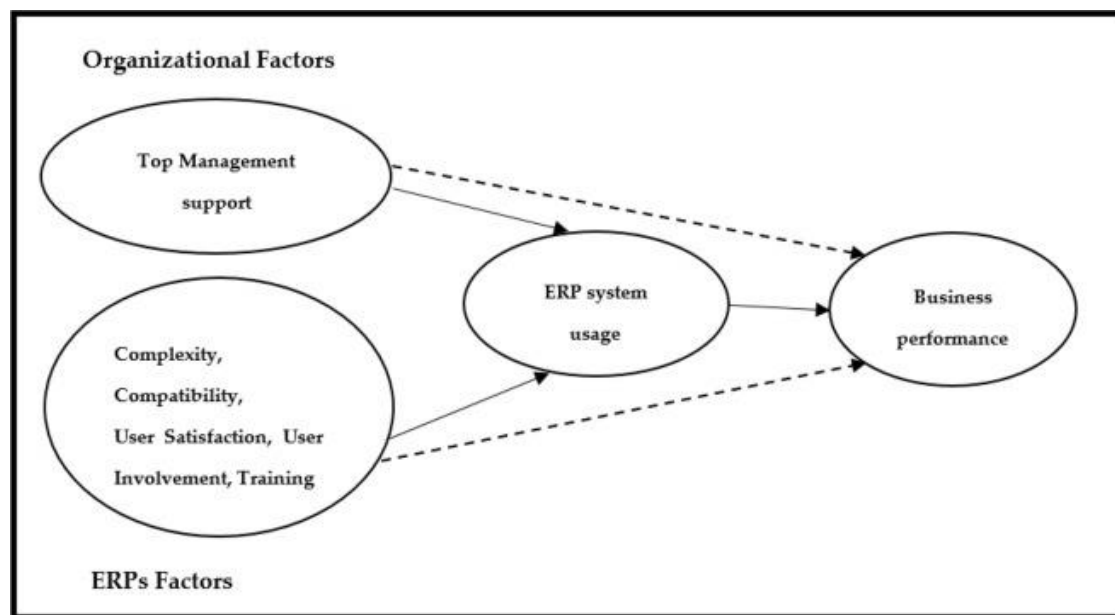


Figure 3.1: organizational factor

3.2. Population of the Study:

The study's population includes the full group of SMEs under consideration. In this context, the population consists of SMEs from a wide range of industries that have implemented ERP systems. It is vital to correctly define the population so that the study's findings may be utilized in a broader context

The research on the transformational impact of ERP systems on Small and Medium Enterprises (SMEs) comprises participants from a variety of industries, sizes, and geographic areas, including the Saudi Arabian market. These SMEs operate in areas such as manufacturing, retail, services, healthcare, and technology, demonstrating ERP systems' broad application across several business domains in Saudi Arabia. The population's size ranges from tiny businesses with less than 50 people to medium-sized businesses with up to 250 employees, reflecting the variety of Saudi Arabia's SME sector.

Geographic coverage provides the inclusion of SMEs from urban and rural areas within Saudi Arabia, as well as various nations or regions, allowing for any variances in ERP implementation and its impact throughout Different circumstances. The Saudi market is particularly important due to its rapid economic development and rising use of technology-driven solutions such as ERP systems by SMEs. As a result, the demographic comprises SMEs who have installed ERP systems during a defined timeframe, such as the last five years, in order to focus on current experiences and outcomes relevant to the Saudi SME scene.

Overall, the population comprises a substantial portion of Saudi Arabia's SME landscape, providing insights on the various experiences and issues related with ERP adoption among Saudi SMEs. This diversified population provides a rich supply of data for researching the impact of ERP systems on SMEs in Saudi Arabia, giving useful insights for theory and practice in the field of ERP implementation and small business management within the Saudi Arabian context.

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3.3. Sample Characteristics:

Sample characteristics are the unique properties of Small and Medium Enterprises (SMEs) that will be considered in the study sample. These features include industry diversity, size variations, the period of Enterprise Resource Planning (ERP) system adoption, and regional representation. By identifying and implementing these factors, the study guarantees that the sample chosen for analysis correctly represents the larger SME community and its vast range.

Industry diversification refers to the variety of sectors included in the sample, ensuring that a wide range of industries are included in order to get a thorough knowledge of ERP adoption across sectors. Size variation denotes the inclusion of SMEs of varied magnitudes, from small-scale firms to medium-sized ones, allowing for a comprehensive analysis of how ERP systems affect enterprises of varying sizes.

The ERP adoption time parameter takes into account the period since SMEs deployed ERP systems, allowing researchers to examine both the short-term and long-term effects of these systems on business operations and performance. Furthermore, regional representation ensures that SMEs from various geographic areas are represented, recognizing possible regional variations in ERP adoption and outcomes.

By carefully specifying these sample parameters, the research hopes to create a sample that appropriately represents the variety of the SME community. This technique improves the validity and generalizability of the study findings, allowing insights to be applied to a larger range of SMEs and therefore increasing our knowledge of ERP systems' transformational impact on small and medium-sized enterprises.

In the pursuit of understanding the dynamics of ERP system usage within the context of Saudi Arabian SMEs, this chapter delineates the research design adopted and the procedures employed for data collection.

3.4. Research Design and Data Collection Procedures

The current research embraces the positivist paradigm, aligning with the deductive approach wherein theory and hypotheses precede data collection [Jill, H., & Roger, H. (1997). *Business Research: A practical guide for undergraduate and postgraduate students.*]. This paradigm, conducive to the study's objectives, facilitates the adoption of the Contingency theory and the development of research hypotheses. Given the complexity of the research theoretical model and context, two successive data collection methods were employed: interviews for the exploratory phase and questionnaires for hypothesis testing [Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education].

3.5. The Exploratory Study

Drawing from Sekaran [Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons], the exploratory study, chosen due to a lack of available information, utilized interviews as its instrument. Five randomly selected SMEs in Saudi Arabia participated, as depicted in Table 3.

Table 3.1: Number of SMEs that implemented ERP by Year

Company	ERP Brand	Sector	Company Size	Respondent Position	Impl. period
Company. I	SAP	Services	Medium	Director of administration & personnel affairs	5–6 years
Company. A	SAP	Manufacturing	Medium	ERP section Head	6 months
Company. S	Oracle	Manufacturing	Small	IT Manager	2 years
Company. N	SAP	Manufacturing	Medium	Director of Accounting Department	9 months
Company. J	SAP	Manufacturing	Medium	SAP Technical Consultant	6-9 months

A semi-structured interview format was adopted to gather feedback from ERP users, elucidating their backgrounds, positions, and experiences with the system. This qualitative approach aimed to comprehend factors influencing ERP system usage success among Saudi Arabian SMEs.

Upon analyzing this preliminary data, insights were gleaned, and a foundation was laid for constructing hypotheses, aligning with the study's overarching goals.

3.6. Hypotheses Testing (Questionnaire)

To conduct hypothesis testing, a structured survey questionnaire featuring close-ended questions was employed, consistent with Saunders et al.'s recommendation [Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.]. The survey targeted SMEs in Saudi Arabia that had implemented ERP systems.

SMEs located in Saudi Arabia that has implemented ERP systems were considered as the frame sample of this study. Various sources were used to identify a sample of 201 SMEs.

Eventually, 120 responses were gathered, with data analyzed using the SmartPLS software [Sekaran, U. (2003). *Research methods for business: A skill-building approach* (4th ed.). Wiley.].

Table 2 provides an overview of the sample characteristics, highlighting the predominance of directors and medium-sized companies. Table 3 further delineates the questionnaire items and reveals the diversity in ERP brands and implementation durations among the surveyed SMEs.

Table 3.2: Percentage results of each Characteristic

Characteristic	N	N%
Participant Position		
General Manager	15	12.5%
Accounting manager	13	10.8%
CIO	7	5%
IT manager	53	44%
HR manager	9	7.5%
Financial manager	10	8%
Other	14	11.6%
Size		
6 to 49	42	35%
50 to 249	78	65%
More than 250	0	0.0%
Implementation duration		
Less than 1 year	16	13.3%
1–2 years	52	43.3%
3–4 years	18	15%
5 years and above	34	28.3%

Through these meticulously structured procedures, the chapter sets the stage for a robust examination of ERP system usage within the Saudi Arabian SME landscape.

3.7. Research Problem and Objectives:

The research challenge is to investigate the transformational impact of ERP systems on SMEs, which includes changes in organizational processes, structures, capabilities, and performance results. The study intends to address the following objectives:

Investigate the factors and motives underlying ERP adoption among SMEs.

Examine the extent to which ERP systems improve operational efficiency and process optimization in SMEs.

Investigate how ERP systems affect SMEs' decision-making processes and strategic capacities.

Evaluate the overall performance outcomes of ERP installation in small and medium-sized enterprises, including financial performance, customer satisfaction, and market competitiveness.

Identify issues and constraints to ERP adoption and implementation in the SME setting and provide solutions to overcome them.

From an academic aspect, it adds to the body of knowledge on ERP systems by broadening our awareness of their influence beyond typical corporate settings and into the SMEs. By filling gaps in the present literature, the study improves theoretical frameworks and lays the groundwork for future research in this field.

From a practical standpoint, the study's findings provide useful insights and assistance for SMEs, managers, and policymakers participating in ERP adoption and implementation projects. Understanding ERP systems' revolutionary potential may help SMEs make educated decisions, manage resources efficiently, and use technology to achieve long-term development and competitiveness in today's changing business climate.

In conclusion, this introduction sets the context for the research by emphasizing the importance of investigating the transformative impact of ERP systems on SMEs. It provides a clear rationale for the study, identifies gaps in current literature, and outlines the research objectives to be addressed in subsequent sections of the research methodology.

3.8. Sample Size Determination:

The sample size is set by deciding how many SMEs will be included in the study. This conclusion is founded on statistical power, resource availability, and the saturation principle in qualitative research. Determine the appropriate sample size to ensure the study's findings are reliable and valid.

Table 3.3: comparison between years of implementation with number of SMEs

Implementation Year	No. of SMEs
2001	3
2000	15
1999	11
1998	5

Table 3.3: Number of SMEs that implemented ERP, by Vendor

ERP Vendor	No. of SMEs
Epicor	1
Intentia Movex	2
Oracle	12
SAP	16
Lawson	1
White Amber	1
PeopleSoft	1

CHAPTER 4

PRACTICAL STUDY

4. interdiction

In this chapter, we embark on a journey to explore the landscape of ERP system usage in the dynamic setting of Saudi Arabia. As we delve into the intricacies of ERP adoption, we seek to paint a vivid picture of how individuals from diverse age groups, genders, and industries interact with these transformative systems.

Through this survey, we aim to uncover valuable insights into the motivations driving ERP adoption, the duration of usage, and the perceived impact on key aspects such as cost reduction and decision-making. By examining these facets, we endeavor to gain a deeper understanding of the role ERP systems play in shaping the business landscape of Saudi Arabia.

4.1. Research Findings:

Through a comprehensive examination, this think about divulges pivotal bits of knowledge into the effect of ERP frameworks on Saudi Middle Eastern SMEs:

This considers found that ERP selection essentially upgrades operational productivity inside Saudi Middle eastern SMEs. Forms are streamlined, manual assignments are diminished, and generally, efficiency is expanded.

In addition, ERP frameworks empower data-driven decision-making among SMEs in Saudi Arabia, encouraging quicker access to precise data and supporting vital arranging and determining endeavours.

Executed ERP frameworks lead to upgraded trade execution, counting expanded income, benefits, and advertise competitiveness for SMEs in Saudi Arabia.

Be that as it may, they think about moreover uncovers challenges related to ERP execution in Saudi Middle Eastern SMEs, such as taking a toll imperative, the need for a gifted workforce, resistance to alter, and integration issues with existing frameworks.

Customization of ERP frameworks custom-fitted to the particular needs and necessities of Saudi Middle Eastern SMEs, considering social, administrative, and industry-specific variables, is regarded fundamental for effective execution.

4.2. Research Recommendations:

Drawing from the investigate discoveries, the taking after proposals are proposed to help Saudi Middle eastern SMEs in maximizing the transformative potential of ERP frameworks: Contributing in preparing and advancement programs to upgrade the aptitudes and capabilities of workers included in ERP execution and utilization.

Adjusting ERP execution procedures with long-term trade objectives and targets to guarantee customization and setup of ERP frameworks to maximize esteem.

Setting up collaborative organizations with ERP sellers to address execution challenges, use seller mastery, and get to continuous back and upkeep administrations.

Executing vigorous observing and assessment components to evaluate the effect of ERP frameworks on trade execution persistently.

Taking an interest in knowledge-sharing gatherings and organizing occasions inside the Saudi Middle eastern commerce community to trade encounters, best hones, and lessons learned in ERP execution.

4.3. Research References:

In this section, we will provide detailed insights through pie charts depicting the findings of a comprehensive survey conducted across diverse industries in Saudi Arabia, with a particular emphasis on the major urban centres, namely Riyadh, Jeddah, and Dammam. These visual representations will offer a nuanced understanding of the ERP system landscape, showcasing usage patterns and trends prevalent among businesses operating in the dynamic economic environment of the kingdom's urban hubs.

[Starting with age groups ranging from 18 to 24 years old, followed by individuals aged 25 to 34 years old and continuing with those aged 35 to 44 years old, this survey aims to comprehensively analyze the perceptions, usage patterns, and challenges associated with ERP systems among different demographic segments in Saudi Arabia. By exploring the diverse perspectives and experiences of individuals across various age brackets, we seek to gain a holistic understanding of the transformative influence of ERP systems on businesses and industries operating within the kingdom's vibrant economic landscape.

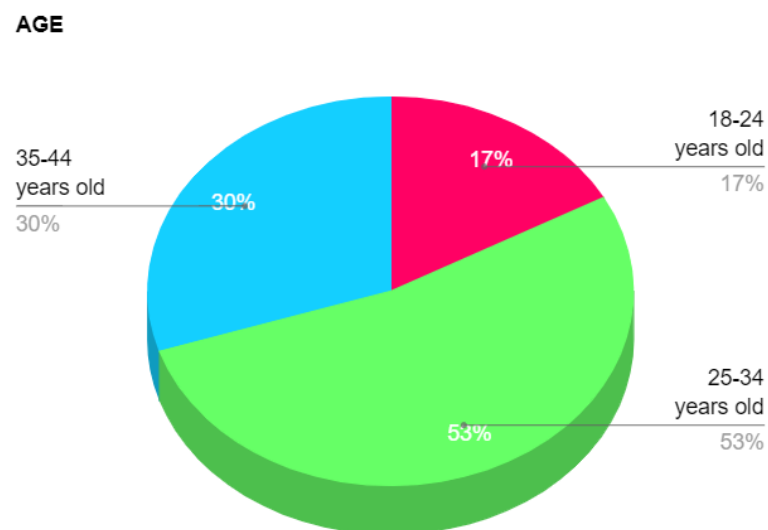


Figure 4.1: age group of survey

After examining the age groups spanning from 18 to 24 years old, progressing through the 25 to 34 years old cohort, and extending to those aged 35 to 44 years old, the survey delves into the gender composition of participants, seeking to uncover potential disparities, preferences, and influences on ERP system usage within the Saudi Arabian context. By scrutinizing the gender dynamics among respondents, this study aims to provide nuanced insights into the diverse perspectives and experiences shaping the adoption and utilization of ERP systems across different demographic segments

Gender

● male
● female

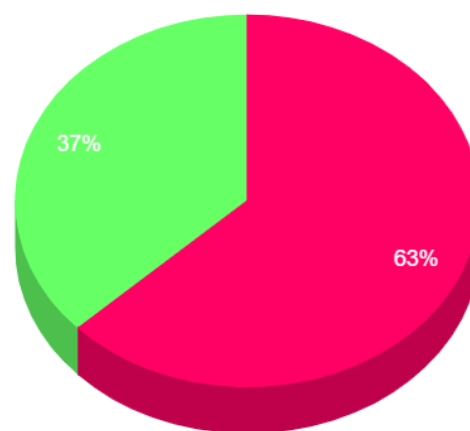


Figure 4.2: Gender group of survey

Expanding beyond individual demographics, this survey encompasses a diverse array of industries and sectors, aiming to capture a comprehensive snapshot of ERP system usage across various economic domains within Saudi Arabia. By encompassing a broad spectrum of industries, including but not limited to manufacturing, services, retail, and finance, this study endeavors to uncover industry-specific trends, challenges, and opportunities pertaining to ERP adoption and implementation. Through a meticulous examination of multiple sectors, this research seeks to provide valuable insights that can inform strategic decision-making and drive organizational innovation across the Saudi Arabian business landscape

Industry / Sector

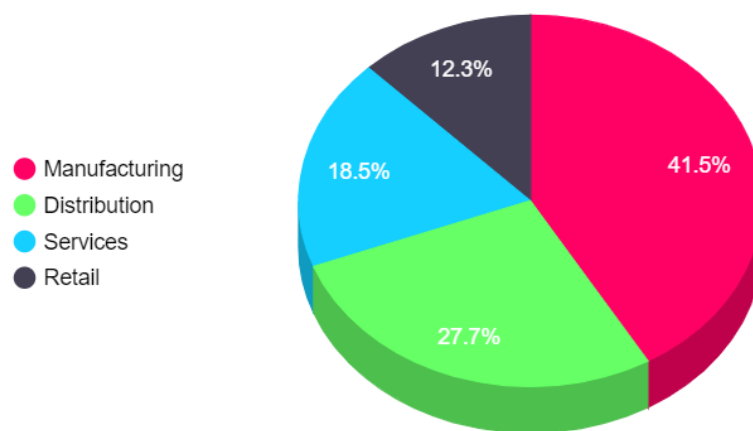


Figure 4.3: industries & sector groups of survey

In addition to exploring demographic characteristics and industry representation, this survey investigates the duration of users' engagement with ERP systems, shedding light on the length of time individuals have been actively utilizing these systems within their respective organizations. By examining the number of years users have been immersed in ERP usage, ranging from recent adopters to seasoned veterans, this study aims to discern patterns of system familiarity, proficiency, and evolution over time. Through this analysis, we seek to glean insights into the dynamics of ERP system longevity and its implications for organizational effectiveness and performance within the Saudi Arabian context

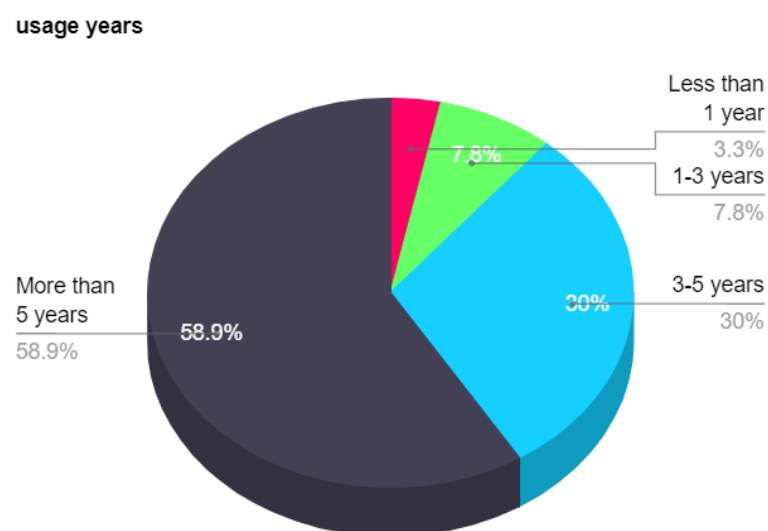


Figure 4.4: years of usage

Furthermore, the survey delves into the purpose behind the adoption and utilization of ERP systems, aiming to uncover the underlying motivations and objectives driving their implementation within Saudi Arabian organizations. By elucidating the diverse purposes for which these systems are deployed, ranging from enhancing operational efficiency and decision-making to facilitating strategic planning and fostering growth, this study seeks to elucidate the multifaceted roles and benefits of ERP systems in the business landscape. Through an in-depth exploration of usage purposes, we endeavor to provide valuable insights that can inform strategic decision-making and optimize the utilization of ERP systems to achieve organizational goals and objectives

usage reasons

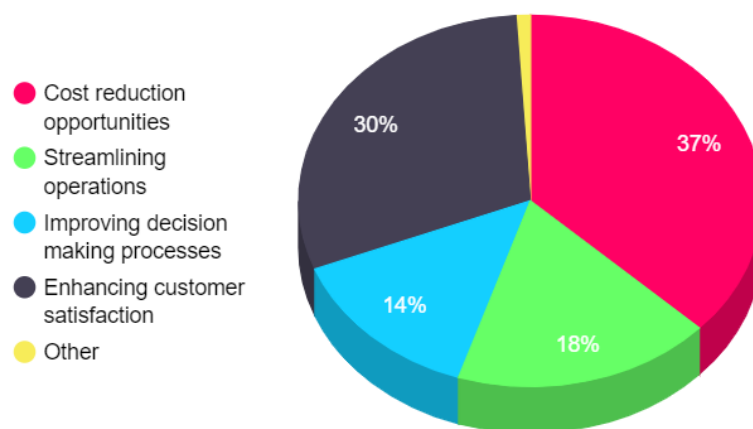


Figure 4.5: usage purpose

In addition to examining usage patterns and purposes, the survey aims to capture insights into the extent of ERP system adoption among respondents, including those who actively utilize these systems, those who do not use them, and those who express disinterest in their adoption. By delineating the distribution of respondents across these categories, this study seeks to elucidate the prevalence of ERP system usage within the Saudi Arabian business community, as well as the underlying factors influencing adoption decisions. Through a comprehensive analysis of user engagement levels, we aim to identify barriers to adoption and opportunities for promoting greater utilization and acceptance of ERP systems among diverse stakeholders.

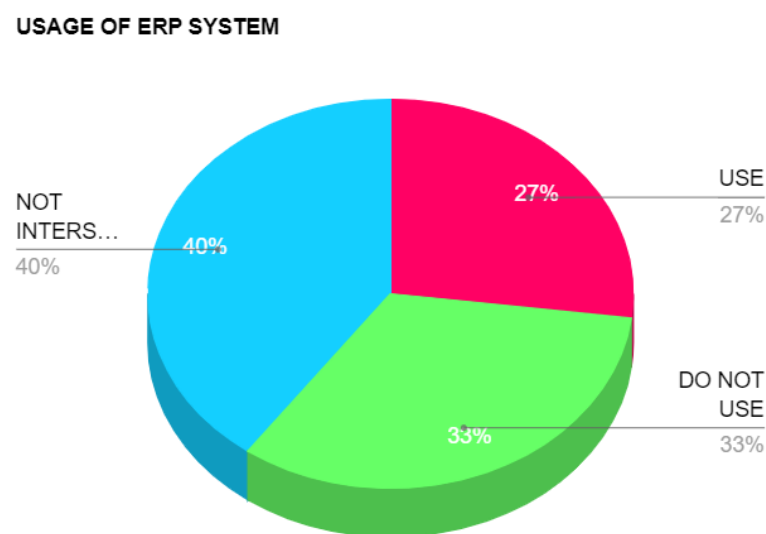


Figure 4.6: usage purpose

Furthermore, the survey investigates the impact of ERP systems on cost reduction within Saudi Arabian enterprises, seeking to quantify and understand the extent to which these systems contribute to financial efficiencies and savings. By analyzing the experiences and perceptions of users regarding cost reduction initiatives facilitated by ERP implementation, this study aims to elucidate the mechanisms through which ERP systems drive operational savings, streamline processes, and optimize resource allocation. Through a comprehensive assessment of cost reduction effects, we want to provide actionable insights that can inform strategic decision-making and enhance organizational performance in the realm of financial management and resource optimization

Cost Reduction

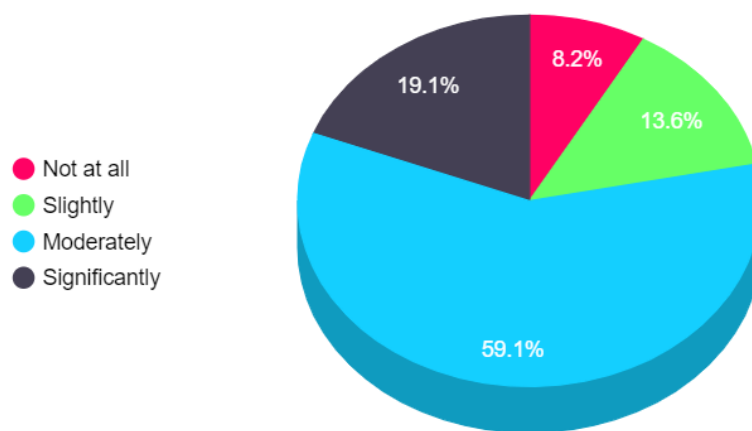


Figure 4.7: Cost reduction

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