



A Study on Enterprise Resource Planning (ERP) Systems and Their Impact on Supply Chain Performance

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Abstract

Businesses are increasingly using Enterprise Resource Planning (ERP) systems for unifying the various activities that take place in their businesses and for making information accessible. This study explores the employees' perception of the efficacy of ERP in relation to supply chain performance. The focus was given to inventory management, real-time information, coordination, operating costs, procurement and information sharing. A descriptive quantitative method was used based on responses from 50 individuals. The primary data collection tool was a structured questionnaire that consisted of questions about respondent's characteristics, the usage of ERP in business and supply chain performance. The performance was assessed through different statements using a five-point scale, and the analysis of the data was conducted using percentages. According to the results, generally, the perceptions were positive. Nearly 80% of the respondents think that ERP improves the efficiency of inventory management, and 76% confirmed that it provides them with accurate real-time information. 66% agreed that they can achieve better coordination in the work of departments, while 74% of the respondents confirmed that ERP reduces the operating costs. The research shows that respondents participate in such ERP usage on a regular basis. In sum, the results demonstrate that ERP systems provide greater visibility of information along with improved inventory tasks, procurement processes, and supply chain collaboration. More frequent training, upgraded systems, secure data management, support

for users, analytic techniques, employee participation, and standardized processes can enhance the effectiveness of ERP use.

Keywords

Enterprise Resource Planning, ERP Systems, Supply Chain Performance, Inventory Management, Procurement, Real-Time Information, Supply Chain Visibility, Digital Transformation

1. Introduction

The use of ERP systems has become indispensable for the smooth functioning of businesses since practicability of ensuring all necessary functions in one system has improved processes and increased productivity. The need to process orders efficiently, manage inventory, coordinate logistics, and undertake financial and production activities made many organizations to adapt ERP.

Coordination is crucial in supply chain management since people need timely information to perform their activities properly. A delay in processing the order on behalf of suppliers or errors in the documents can lead to



misunderstandings because information required for further operations is not available.

This paper, therefore, focuses on how employees perceive benefits of ERP, with particular attention paid to such aspects as inventory management and use of ERP in the processes of using real-time information, coordination among departments, cost control, inventory alterations, still use of ERP, decision-making based on reports, processing of purchase order, and information exchange.

1.1 Research Objectives

- To analyze the influence of ERP systems on performance in the field of supply chains.
- To learn the definition and main characteristics of ERP systems.
- To investigate the significance of ERP systems in supply chain management.
- To determine the advantages that come with ERP implementation.
- To analyze the attitudes of employees about ERP use.
- To establish the functions of ERP in supporting activities in supply chain operations.
- To present practical recommendations for enhancing ERP efficiency.

1.2 Statement of the Problem

Supply chain activities rely on information that is both accurate and timely. Some of the issues organizations face include discrepancies in inventories, outdated information submission, bad coordination, poor purchasing process and the unavailability of required business performance information. ERP systems are designed to link these activities together but installation of an ERP system does not ensure success on its own. Its usefulness is also dependent on employee usage, quality of data, user skills and compatibility of the system with current business processes. That is why the objective of the study is to find out the way employees view the role of ERP in improving supply chain performance..

2. Review of literature

According to Davenport (1998), ERP systems can develop a unified information environment wherein various components of the organization can cooperate efficiently.

As noted by Umble, Haft and Umble (2003), successful realization of ERP requires efficient management of projects, proper training for staff members, and support for management.

Al-Mashari (2003) brought up the idea of using ERP to facilitate organizational change while emphasizing the importance of change management during the implementation of such systems.

Jacobs and Weston (2007) defined ERP as a system that can boost the availability of information, utilization of resources, and overall performance of the firm.

According to Botta-Genoulaz and Millet (2006), the implementation of ERP system can facilitate production planning, inventory management, and cooperation during the coordination of supply chain operations.

As stated by Madapusi and D'Souza (2012), ERP can help improve operations, improve visibility, and reduce operating costs.

According to Dezdar (2012), user engagement, communication, and adequate training are important factors in the successful implementation of ERP systems.

According to Tarhini, Ammar, and Tarhini (2015), technology readiness, organizational culture, and management support play a significant role in ERP adoption and organizational performance.

Gupta and Kohli (2006) discussed the contribution of ERP in enhancing data accuracy, decision making support, and process integration, including connections with supply chain operations.



Sharma and Daniel (2021) discussed the importance of ERP in real-time management of data and analytics of the supply chain together with the importance of cloud ERP systems.

2.1 Research Gap

Earlier research has been done on the topic of ERP implementation, adoption drivers, organizational performance, and benefits of operations. But still, it makes sense to analyze employee experiences of ERP in their daily supply chain business activities. Aspects like inventory control, procurement, information sharing, coordination, and decision-making are closely tied to everyday duties. This work studies that practical issue through responses collected from 50 interviewees.

3. Research Design and Methodology

The research utilizes a descriptive quantitative research design. The main objective is to reveal how workers perceive ERP application and its importance in enhancing supply chain performance. Data was gathered utilizing a structured questionnaire and was presented in an article-based research style.

3.1 Data Sources

Primary data were gathered from respondents via a structured questionnaire, while secondary data were obtained from sources such as books, academic journals, publications, as well as supplementary materials used in the internship report.

3.2 Sampling Technique and Sample Size

Due to the ease of access and the willingness of the respondents to join, convenience sampling was employed in this study. A total of 50 respondents who were somehow involved in the ERP application and supply chain activities were surveyed in this study.

3.3 Research Instrument

The demographic data, ERP use, and supply chain function were assessed by the two-way questionnaire. There are a number of performance variables that were measured by regression and a five-point Likert scale that goes from Strongly Agree to Strongly Disagree.

3.4 Statistical Methods

A percentage analysis was conducted in order to determine the characteristics of the survey participants and to obtain the distribution of their answers. In addition, the use of chi-square analysis statistical method has been defined in order to see the correlation between the different variables.

3.5 Results and Interpretation

The following results have been obtained from the analysis.

3.6 Ethical Considerations and Limitations

Participation was voluntary, the anonymity of the participants was preserved, and the data was collected only for the purpose of academic research. The research has its limitations. The sample size is small, the method of convenience sampling was used to collect the data, and the outcomes are based on employees' opinions. Consequently, the results must be assessed in terms of the participant respondents but cannot be treated as valid for companies or fields as a whole.

4. ERP SYSTEMS AND SUPPLY CHAIN PERFORMANCE

ERP systems allow organizations to relate data and operations in one digital setting. In supply chain management, it includes such components as purchasing, warehousing, transport operations, manufacturing, order processing, finance, and information flows. This research focuses on the following processes: tracking of inventories, purchasing, financial reporting, interaction with customers, and data integrating.

The research takes into account the indicators of supply chain functioning: inventory performance, data accuracy, coordination between divisions, reduction of operational costs, prompt updating of inventories, regularity of system application, data-driven decision making, processing of orders, and sharing of supply chain data. All of them allow for depicting how ERP is linked to the operations of the supply chain.



5. DATA ANALYSIS AND INTERPRETATION

The analysis is based on 50 questionnaire responses. The frequencies and percentages below are retained from the supplied article.

5.1 Demographic Profile

Variable	Category	Frequency	Percentage
Age	Below 25	28	56%
	25–35	15	30%
	36–45	4	8%
	Above 45	3	6%
Gender	Male	28	56%
	Female	22	44%
Department	Procurement	6	12%
	Logistics	10	20%
	Warehouse	11	22%
	Production	7	14%
	Sales	3	6%
	Finance	6	12%
	Other	7	14%
Experience	Less than 1 year	21	42%
	1–3 years	20	40%
	4–6 years	4	8%
	More than 6 years	5	10%

Most of the people in the research group are young employees. About fifty percent are below the age of twenty-five, and thirty percent are in the age group of twenty-five to thirty-five. In terms of department, the majority of warehouse workers and logistics workers belong to 22% and 20%, respectively. Regarding experience, it was noted that eighty-two percent of people don't have more than three years of work experience.

5.2 ERP Usage Profile

Measure	Category	Frequency	Percentage
ERP adoption	Yes	47	94%
	No	3	6%
ERP duration	Less than 1 year	19	38%
	1–3 years	20	40%



	4–6 years	6	12%
	More than 6 years	5	10%
Most-used module	Inventory Management	6	12%
	Procurement	4	8%
	Logistics	15	30%
	Production Planning	8	16%
	Finance	6	12%
	Other	11	22%
Usage frequency	Daily	37	74%
	Weekly	7	14%
	Monthly	4	8%
	Rarely	2	4%
Formal training	Yes	43	86%
	No	7	14%

Most of the respondents are using ERP, and around 94% of them are presently working in companies that are using ERP software. Logistic module is the most widely utilized module at around 30%.

Daily usage of ERP by participants is reported to be at 74% while formal training in ERP is received by 86% of respondents. The responses suggest that ERP has become a part of facilities operations for many.

5.3 ERP and Supply Chain Performance

Statement	Response	Frequency	Percentage
ERP improves inventory-management efficiency	Strongly Agree	31	62%
	Agree	9	18%
	Neutral	10	20%
	Disagree	0	0%
	Strongly Disagree	0	0%



ERP provides accurate real-time data for decision-making	Strongly Agree	15	30%
	Agree	23	46%
	Neutral	12	24%
	Disagree	0	0%
	Strongly Disagree	0	0%
ERP improves coordination between departments	Strongly Agree	16	32%
	Agree	17	34%

	Neutral	16	32%
	Disagree	1	2%
	Strongly Disagree	0	0%
ERP helps reduce operational costs	Strongly Agree	18	36%
	Agree	19	38%
	Neutral	12	24%
	Disagree	1	2%
	Strongly Disagree	0	0%

The four primary statement of performance got favorable responses. Eighty percent of respondents affirmed or strongly affirmed that ERP enhances inventory management efficiency. Seventy-six percent gave the same answer with respect to accurate real-time information for decision-making purposes. As far as inter-departmental coordination is concerned, 66% (sixty-six percent) agreed or strongly agreed. Moreover, 74% gave the same response with respect to ERP contributing into reduction of operational costs.



5.4 Operational Use of ERP

Indicator	Category	Frequency	Percentage
Inventory data updated promptly	Always	23	46%
	Often	12	24%
	Sometimes	15	30%
	Rarely	0	0%
	Never	0	0%
Employees use ERP for daily operations	Always	18	36%
	Often	22	44%
	Sometimes	10	20%
	Rarely	0	0%
	Never	0	0%
ERP reports used for decision-making	Always	18	36%
	Often	17	34%
	Sometimes	14	28%
	Rarely	1	2%
	Never	0	0%
Purchase orders processed through ERP	Always	10	20%
	Often	21	42%
	Sometimes	19	30%
	Rarely	0	0%
	Never	0	0%
Supply chain information shared through ERP	Always	15	30%
	Often	17	34%
	Sometimes	18	36%



	Rarely	0	0%
	Never	0	0%

Responses about operational use illustrate how ERP is integrated into routine activities. A total of 70% of respondents say inventory information is updated frequently or very frequently. Eighty percent of respondents reported that ERP is used frequently or very frequently in everyday procedures. Further, 70% stated that they use ERP reports whenever they make an important decision. About 62% of respondents said they prepare purchase orders through ERP frequently or very frequently. All respondents have stated they have shared supply chain information through ERP, and 64% of the respondents have indicated they have shared information in this way frequently or very frequently.

6. DISCUSSION

The findings presented in this study are in line with the research found in the literature whereby ERP is seen as a comprehensive system providing coordination and making choices. The article emphasizes the efforts made towards practical supply chain operations, and not just the financial implications of them.

As for the role of ERP in inventory management, the population sampled expressed significant insights inviting the firm to see ERP benefits in this area. About 80% of the respondents share the opinion that ERP enhances the efficiency of inventory management, whereas 70% indicate that the information about inventory is updated all the time or often.

Another area identified is real-time information. Seventy-six percent of respondents agreed or strongly agreed that ERP provides correct real-time information for decision-making. The frequent use of ERP reports indicates that ERP is used for more than just recording transactions; ERP supports operational decisions as well.

Responses also indicate the importance of ERP usage for the coordination of departments. Sixty-six percent of respondents agreed or strongly agreed that ERP improves coordination of departments, while 64% indicated that information related to the supply chain is always or often exchanged. Thus, the shared information system makes use of industry activities possible.

The results of the query about operating costs were also positive. Seventy-four percent of respondents agree or strongly agree that ERP contributes to lowering operational costs. However, this means that the views of employees are considered. This research did not calculate savings based on objective data, so it can be interpreted only as the perceived value for people.

7. FINDINGS

- Out of all participants, 56% are below 25 years old, and warehouse respondents are the largest department group at 22% , followed by 20% of respondents being a part of the logistics department.
- 56% of the participants have less than three years of work experience in their field while 94% of the participants affirm that their companies have adopted ERP.
- Logistic ERP module is the most used module at 30%.
- 74% of the participants use ERP daily and 86% of them received training in ERP systems.
- 80% of the participants agree or strongly agree that ERP can enhance inventory management.
- 76% of the participants agree or strongly agree that ERP can provide up-to-date information for decision-making.
- 66% of the respondents agree or strongly agree that ERP can facilitate interdepartmental coordination.
- 74% of the respondents agree or strongly agree that ERP can lower operational costs.



- 80% of the respondents claim to use ERP for their daily activities very often or always.

8. SUGGESTIONS

- Carry out routine training of employees so that users are able to leverage full potential of ERP functionalities.
- Review ERPs regularly in order to keep them updated and improve their efficiency.
- Increase data safety measures in order to safeguard operational and business information.
- Implement dedicated customer support in order to deal with IT and technical issues quickly.
- Use ERP analytics more extensively in order to forecast, manage inventory and make supply chain decisions.
- Include employees in ERP advancements since they are the ones using the system.
- Standardize business processes wherever possible in order to make ERP functioning uniform.
- Enhance integration of procurement, inventory, logistics, finance and other functions.
- Analyze ERP productivity through indicators like inventory accuracy, procurements time frame, information timeliness and order processing efficiency.

9. CONCLUSION

This research reviewed the effect of ERP techniques on the supply chain performance with the opinions of fifty respondents. The ERP application was widespread in the examined sample, and closely related to the daily supply chain activities. In general, the respondents reported favorable results in terms of the inventory control, real time information provision, coordination between departments and the decrease in operating costs.

The evidence suggests that ERP is used in day to day operations, making decisions, entering orders and exchanging information, which implies that ERP can perform more functions than merely recording transactions, but also act as a common coordinating and information sharing platform in the supply chain. In addition, convenience sampling as well as employees' attitude towards the usage of ERP should be considered.

In conclusion, one cannot say that about effective use of ERP is just about software installation and implementation. Other than that, regular training of employees, data reliability, assistance to users, uniform processes, development of systems, and employees' involvement into ERP should be taken into account.