

# LEADER COMMITMENT ON THE ERP PERFORMANCE THROUGH INFORMATION TECHNOLOGY CAPABILITY AND INVENTORY MANAGEMENT

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**ABSTRACT:** *This study examines the effect of leader commitment on ERP performance through information technology capability and inventory management. The research used 63 samples from the managerial level of the manufacturer industry in the province of East Java, Indonesia. Data collection was conducted using a grant from the Government of Indonesia. The questionnaire is designed with a five-point Likert scale. Data analysis was conducted using the partial least square technique with Smart PLS software. The results of the study revealed that leader commitment affects IT capability, ERP performance, and inventory management. Furthermore, IT capability influences inventory management and ERP performance. Inventory management also affects ERP performance. One of the interesting findings is proof that IT capability and inventory management mediates the effect of leader commitment on ERP performance. These results of the study provide a significant contribution to the supply chain theory and practice. The result of the study also provides a managerial implication in enhancing the ERP performance by improving leader commitment, enhancing IT capability, and applying excellent inventory management.*

**Keywords:** leader commitment, information technology capability, ERP performance, inventory management

## 1. INTRODUCTION

Supply chain management is an approach that is built by the company to link customers with suppliers to produce efficiency and effectiveness. The company links the three components to be able to manage the information flow, the financial flow, the flow of material from the three components, and the planning of the three components. The company builds partnerships with customers and with suppliers to provide minimized costs and appropriate service levels [1]. The company integrates suppliers, factories, distributors, and customers regulate the flow of information, finance, materials, and planning. The company builds partnerships with customers and suppliers to provide an efficient cost and maximum service level. Partnerships formed between companies and their external parties will be more effective when using data integration. The company can build data integration, both internally and externally, to improve company performance. Integration internally for companies by integrating data between functions within the company. External integration means that it is done between organizations either from suppliers, distributors, or customers who are associated with the company [2].

Data integration within internal and external companies used information technology. The information technology used can provide an integrated data system between departments and also perform automatic data integration. The use of information technology will build excellent communication and collaboration between companies and their customers and suppliers. Information technology used by companies will be able to build a supply chain practice because they can share information and communicate in two directions and in real-time [3]. This information technology can provide increased profits for the company because it can build data integration in the supply chain flow so that it can make the system effective and efficient. Information technology is an essential resource for company management because it involves the company's data and reports so that it can provide

the company's internal conditions and provide the right data to help make decisions that are strategic for the development of the company. Information technology has been widely used by the Indonesian manufacturing industry in the form of information technology packages in the form of enterprise resource planning (ERP). Chang et al. [1] stated that ERP systems are the use of information technology that plays a role in integrating and automating the company's work processes related to the company's operational functions (marketing functions, production functions, purchasing functions, warehouse functions, distribution functions, transportation functions, the function of quality and others) with corporate administration functions. The ERP system is integration within the company and can also develop into integration with external companies [3].

Information technology applications enable leaders to control complex business activities because leaders get information in real-time from operational business units. Thus, management can make the right decision. Information that is relevant, detailed, specific, and complete, will result in a better and more beneficial administrative system for company leaders [4]. The use of ERP systems in manufacturing companies is a necessity in the company's business development. The leader of the company realizes that ERP is beneficial for monitoring employee work activities and also for appropriate decision making. ERP implementation enables management to know and update information in real-time according to the needs of the company's department or division. Thus, ERP systems contribute in the form of increased efficiency for companies, labor, and management of finished goods, raw materials. The ERP system can also improve the performance of the company's administrative systems and accounting systems. ERP directly influences directly or indirectly, the management control system [5].

ERP implementation in manufacturing companies in East Java has undergone adjustments between the company's work processes and ERP systems and can support business

functions and increase company productivity. The information technology used by the company was initially an ERP module that was separate from the company's operational system. ERP, which initially as a complementary system of the company, turned into the company's primary system. The ERP system that has been running in manufacturing companies for more than six years has met the needs of the company and has provided changes in the way the company works to produce benefits for the company. The ERP used by the company provides benefits in the category of reducing the number of workers and increasing productivity. Manufacturing companies in East Java are manufacturing companies in the first category, namely transforming natural raw materials into semi-finished materials and ready-to-market finished goods. Primary companies are generally very dependent on the influence of the rainy and summer seasons. Primary companies tend to have raw materials planned to meet production needs in a long enough period of at least four months of the production process so that company funds are considered in the form of inventory.

Many studies discuss ERP implementation. Ifinedo *et al.*, [6] state that system quality, service quality, individual impact, workgroup impact, organizational impact relevant to the success of corporate ERP implementation. The success of ERP implementation is determined by implementation quality, which consists of ERP project management and system configuration, and organizational readiness consisting of leadership involvement and organizational stability. As for external support, ERP implementation does not have a positive effect. ERP implementation success requires quality information, a sound system, user support, and positive perceptions [7]. ERP implementation needs to pay attention to the local business processes of the company compared to the standard conditions provided by the ERP module, so that there is no conflict between parent organizations and subsidiaries, especially in multinational companies due to cultural and business diversity that cannot be equated [8]. Comparison of ERP pre-implementation compared to post-implementation found a significant difference in the category of capability ERP, the value of ERP, and timing ERP; while acceptance of ERP does not have a difference because employees need continuous training in the Midwest [9].

There is still little research that discusses the effect of integrated information technology implementation in the context of ERP for managing company inventory levels. Arrangement of inventory levels on companies has an impact on the efficiency and effectiveness of the company's work. Information about physical inventory is vital for the company because it involves the use of the most substantial company fund in terms of material. Also, all departments need information on inventory availability to ensure the availability of goods needed by their department. The smoothness of the production process is determined by the speed of the warehousing department to provide material requests, and the accuracy and speed of service delivery of goods are determined by inventory availability. However, on the other hand, the excess inventory level will result in high costs, and the process in the company is not effective and efficient. The company leaders must be committed to

regulating and controlling the company's inventory level through the use of information technology applications that are used to be able to have an impact on ERP performance. ERP performance has an impact on the company's financial performance and non-financial performance. This study examines the effect of leader commitment on ERP performance through the mediating role of the information technology capability and inventory management.

## 2. GRAND THEORY

### A. Leader Commitment

The top management of the company, as a leader, is obliged to empower resources, including employees, to ensure and keep the ERP function running continuously. Abdinnour and Saeed [9] stated that management needs to do away to minimize the negative perceptions of ERP users so that ERP benefits continue to contribute to the company by conducting continuous training. The success of ERP implementation is determined by the commitment of the top management of the company in providing support for employees because top management is a leader in the company [10]. The commitment of top management is to overcome the conflicts that occur during pre and post-implementation of ERP and provide adequate resources as needed in order to succeed in implementing ERP systems on an ongoing basis. Leaders must be able to maintain IT excellence and performance, despite the many changes that occur in the internet and interfaces [11]. The leadership level of the Chief Financial Officer (CFO) is responsible and interacts a lot in IT (information technology), and its development determines the success of ERP system adoption in the company as a strategic IT outcome [12]. The leader commitment is measured with, i.e., 1) leader is committed to run the company's pre-determined goals, 2) the leader coordinates with all organizational functions regularly, 3) the leader is consistent with the decision, and 4) the leader supports the system development budget.

### B. Information Technology Capability

Information system capability is the ability of an organization to meet the demand for information and the availability of information systems that support the implementation of an organization's business strategy. This information system strategy focuses on setting how information media can support in meeting the need for information and information systems. The development of information technology in the form of ERP must be by the business run by the company. Companies that have information technology must routinely improve their information systems so that they are in line with the development of the organization's needs, must be able to care for, overcome system problems, and develop infrastructure it.

Abdinnour and Saeed [9] stated that the capability of ERP information technology enables companies to obtain information in real-time, accurate, easy to use because the ERP system is easy to make adjustments to companies that adopt ERP. Excellent IT capability enables companies to get information about the internal and external environment so that they can make innovative and competitive changes to the company's new business model. IT capability provides

information in the information system automatically so that the company can take initiatives in order to face future competition. Excellent IT capability can provide improvements to company performance through system automation, provision of data/information, and enables companies to carry out business process transformation in the company [11]. IT is a computer application that can be used to communicate and collaborate to store information, send information, and process data for the company's business interests. IT is used by companies to transform the business processes of companies to improve work effectiveness and productivity. Information technology is divided into two functions, namely, IT strategy and IT infrastructure [13]. IT strategy is related to the use of external information networks to identify the company's internal needs, know information technology used by competitors, keep abreast of information technology, and use information technology to follow rapid environmental changes. Whereas for IT infrastructure is related to the use of updated information technology, the foremost in the use of information technology, information technology development by the corporate culture, having adequate human resources, and being able to identify the company's organizational needs, and information technology used by the strategic company. Four indicators are used to measure, namely, 1) information technology capability is aligned with business process, 2) IT is able to provide the information needed by the company, 3) IT is able to integrate data between departments, 4) IT is able to provide reports as needed, and 5) IT provide updated company information.

**C. Manage Inventory Level**

Companies engaged in manufacturing are always inseparable from regulating the amount of inventory owned by the company. Inventory consisting of parts, product components, work in process (WIP), raw materials, and others. While the independent inventory consists of materials into companies. The company always tries to regulate the company's inventory level so that there is no inventory shortages or excesses because these two things will have an impact on increasing the company's profit. If there is a shortage of inventory will result in a disruption in the company's production process while in the event of excess inventory will result in the company's costs in handling the company's inventory costs so that it needs to be managed company-level inventory. The company's inventory has the cost of purchasing material that is issued by the company, the cost of handling and storing material in the warehouse, the cost of order costs made by the company, and shortage costs [14]. The amount of inventory in the company's warehouse is controlled and regulated by an integrated information technology system. Data warehouse integration many departments can access including accounting department can access, purchasing department can access material and other related supplies, the marketing department can access WIP inventory and finish Good, a production department can access material, WIP and finish product. All function departments in the company require company inventory data. Measure inventory management are: 1) relevant department can access inventory data, 2) the company has a clear standard operating procedure for material procurement, 3) the company has a clear SOP for material sourcing, and 4) the

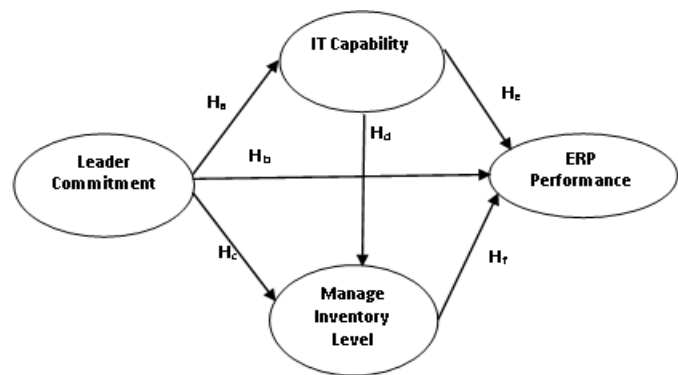
company has set the level of inventory level for each product item.

**D. ERP Performance**

ERP implementation in companies with the hope of being able to provide efficiency and effectiveness of the company. The company leaders are trying to optimize the ERP system adapted to be applied to the company. Extended Enterprise resource planning is the development of the integration of all functions within the company and external companies related to suppliers and channel members [1]. Research conducted by Tarigan *et al.*, [15] ERP performance indicators are stated to facilitate decision making, shorten the company's business processes, facilitate the management of company resources, reduce the number of inventory levels and facilitate the analysis of the company. Extended ERP systems can have an impact on supply chain performance and collaboration with external companies. The indicator used to measure ERP performance are 1) real-time information system, 2) efficient system costing, 3) quality information, 4) flexibility system, and 5) excellent service.

**E. Research Conceptual Model**

Information technology is a crucial requirement for business practices. Leaders in companies always need relevant company information in determining business strategies in the pursuit of changes in the global industry. The information needed is the integrated information from cross-functions in the form of a comprehensive report facilitating the decision making by the management. Leader support in IT implementation is essential. The support enables the collaboration of companies in a supply chain in integrating information. Through this collaboration, the supply chain can share information and common goals. Information technology capability determines the extent to which the company's capability of communicating with partners, coordinating with other organizations, analyzing data, and assisting in decision making [3]. Tan and Cross [16] stated that reasonable inventory control could improve company performance. Commitment leaders and information technology can support company inventory managers in managing the company's inventory in the pursuit of improving ERP performance. Based on the explanation above, a research model (Figure 1).



**Fig (1) The research Models**

### 3. RESEARCH METHOD

The population of this study consists of 73 manufacturers located in the province of East Java, Indonesia. Those companies have using Information Technology in the form of ERP. Each manufacturer was represented by one from the managerial level, such as a supervisor or higher level since they are considered to the most knowledgeable persons of their firm. Data collection was performed using the self-administered questionnaire distributed to the 73 samples. The questionnaire was designed using subjective assessment with a five-point Likert scale. The data collection was funded by the grant provided by the Indonesian Government through the Directorate General of Research. Of the 73, 63 respondents have correctly completed the questionnaires representing a response rate of 86.3%. An interview and discussion were conducted with particular respondents when considered necessary. Data analysis was conducted using Smart PLS software ver.3.0. PLS is an appropriate tool for analyzing the data mainly in the case of small sample size and limited theoretical knowledge such as on this study.

### 4. RESULTS AND DISCUSSION

The first step is to examine the measurement model by assessing the convergent and discriminant validity of each indicator and the reliability of the block indicators of each variable. The result of measurement model evaluation. All indicators are considered valid in terms of convergent validity since all factor loadings exceed the acceptable minimum value of 0.50 (range 0.597 up to 0.830). The indicators are also considered valid in terms of discriminant validity as the cross-loadings indicate that the loading of each indicator with its construct is higher than that with other constructs. Table 1 shows the analysis result for constructs' reliability.

**Table 1.**  
**Reliability**

Variable	Cronbach's Alpha	Composite Reliability
ERP Performance	0,807	0,868
IT Capability	0,786	0,854
Leader Commitment	0,800	0,869
Inventory Management	0,819	0,880

The composite reliability (C/R) and Cronbach Alpha exceeds the minimum recommended value of 0.7. Furtherly, those four constructs are considered reliable. The PLS is a non-parametric estimation procedure.

**Table 2.**  
**Original Sample and Hypothesis Test**

Direct Effect	Original Sample	T-Statistics
Leader Commitment -> IT Capability	0,613	8,132
Leader Commitment -> ERP Performance	0,330	3,763
Leader Commitment -> Inventory Management	0,446	4,264
IT Capability-> Inventory Management	0,365	3,09
IT Capability -> ERP Performance	0,374	3,205
Inventory Management -> ERP Performance	0,244	2,121

A bootstrapping method is used to assess the t-value for each relationship, and furtherly to examine the significance level of the hypotheses. Table 3 lists the path coefficient and t-value for each hypothesis. For the significance level of 5% or t-value of 1.96, the results reveal that all the six hypotheses are supported since the t-value is higher than 1.96. As shown in Table 3, the first hypothesis, stating that leader commitment influences the IT capability, is supported as the t-value equals to 3.205 and the path coefficient of 0.613. This research is in line with the research of Chae *et al.*, [11], stating that the IT Leader group can improve IT capability in the industry. The Leaders have the authority to coordinate all organizational functions within an organization regularly to enhance the IT capability. Improved IT capability enables the organization to build a more reliable data integration across departments within the company, and even data sharing and integration with external partners. The second hypothesis, as expected, that leader commitment affects ERP performance is also supported as the t-value is 3.09 with the path coefficient of 0.330. This finding reveals that leaders of an organization who are always consistent in carrying out joint decisions will be able to obtain better ERP performance in cost efficiency and flexibility of the system. The third hypothesis proved that leader's commitment has a positive influence on inventory management with a path coefficient of 0.244 and a t-value of 4.264. This finding proved that a committed leader who performs his best to achieve the company goals through managing the inventory level is always at the optimal level. Leaders are also able to establish a user-friendly standard operating procedure (SOPs) on material sourcing and procurement. The fourth hypothesis, namely IT capability, influences inventory management. The t-value of 3.09 proved that the hypotheses are supported and the path coefficient of 0.365 means that IT capability positively affects inventory management. This research is in line with research conducted by Abdinnour and Saeed [9], stating that information technology capabilities can provide data in real-time, accurate, and easy to customize the ERP. The organization has excellent IT capability capable of achieving the best inventory management practices in terms of inventory level management, effective sourcing, and procurement. An excellent IT capability also enables the organization to integrate data, from across departments and provide comprehensive and updated information. This updated information allows the relevant departments to access inventory data, and furtherly, to determine the optimum level of inventory for each product element.

As expected, the fifth hypothesis stating that IT capability affects ERP performance is also accepted as the t-value is 3.205, and the path coefficient 0.374. This study supports the study of Sundram *et al.*, [2], which states that the supply chain information system provides an improvement in manufacturing performance in terms of cost efficiency and process flexibility. This research is also in line with the research of Chae *et al.*, [11], which states that IT capability can provide improved company performance. Improved IT capability enables the company to align cross-functional business processes better. The IT capability allows departments to retrieve real-time information and quality information as needed so that leaders can make appropriate

decisions. The last hypothesis is the sixth hypothesis; namely, inventory management affects ERP performance. This hypothesis are accepted since the t-value is 2.121, and the path coefficient is 0.244. This result reveals that inventory management positively influences ERP performance. This research is in line with the research by Tan and Cross [16], which states that inventory management can provide improved company performance through improving data integration between functions and reducing response time. This finding state that the relevant department can access inventory data and has a clear SOP and establishes the level of inventory level for each product. Great inventory management enhances ERP performance concerning quality information, system flexibility, and excellent services. The above discussion is concerned primarily on the direct influence between two constructs. The model of this study, however, involved the presence of the mediating role of two constructs, i.e., IT capability and inventory management. As noted, those hypotheses are supported. These findings also imply that the mediating role of the two constructs is present. Hence, it can be withdrawn the conclusion that leader's commitment has an indirect influence on ERP performance through the mediating role of IT capability and inventory management. This finding is one of the most exciting results of this study. Leader's commitment is very crucial in enhancing ERP performance.

## 5. CONCLUSIONS

The present study was designed to examine the effect of leader commitment to ERP performance through information technology capability and inventory management of the effect. The findings indicate that the results are in agreement with the previous study. Based on the results of the above data analysis; the six hypotheses can be accepted. The results of the study are divided into three major parts, first the leader commitment to carrying out established corporate objectives, able to build coordination with all organizational functions on a regular basis, and support the system development budget to influence the use and development of IT capability in the company, control inventory level management and achieve ERP Performance. Second, IT capability that aligns with the company's business processes can identify the needs of the company and can integrate between departments within the company to influence proper inventory level management and ERP performance. Third, manage inventory levels by separating the relevant departments from accessing inventory data, companies have clear SOP, and companies determine the level of inventory level for each product element to improve ERP performance. This empirical result contributes to the on-going research in the supply chain study and provides a managerial implication in enhancing ERP performance. Thanks to DRPM and Higher Education Indonesia for providing grant funding this research [T/140/E3/RA.00/2019].

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