



## Comparative Analysis of Critical Factors for ERP Implementation in Private and Public Organizations in Ethiopia: A Pareto Approach

**Sisay Msganaw**

Lecturer, Department of Information Systems,  
Institute of Technology, Wollo University, Ethiopia

**Lemma Lessa**

Assistant Professor, Department of Information Systems,  
School of Information Science, College of Natural and Computational Sciences,  
Addis Ababa University, Ethiopia

### **Abstract:**

*The main goal of this research is to understand the difference between critical success factors of ERP implementation in private and public organizations in Ethiopian context and identified the top critical factors in private and public organizations independently. Understanding this subject can help us to implement ERP systems properly in private and public organizations. This is a qualitative case study that mainly employed interviews and document review as data collection instrument. To identify the top critical factors that affect ERP implementation in both organizations, Pareto approach was applied. Purposive sampling technique was used to collect the data in both cases because the researcher selected key respondents in order to answer the research questions properly. This research showed that availability and facilitation of IT infrastructure, teamwork composition, top management support and commitment are crucial issues that were identified in both cases. However, business process reengineering and software configuration, training and support for users, end user involvement, and existence of communication plan, consultant selection and relationship are identified as the crucial factors that were found in private organization. On the other hand, budgetary constraints, financial plan, implementation strategy and time frame, customization/localization of software according to environment are identified as the topcritical factors that found in public organization. Accordingly, recommendations are forwarded for private and public organizations in order to enhance their ERP implementation.*

**Keywords:** ERP implementation, private organization, public organization, pareto approach

### **1. Introduction**

Now a day, organizations across the world needed to integrate their primary business processes in order to make flexible and intimate relations with customer's product or service requirements. Many researchers argued that organizations are using technologies for the purpose of improving the effectiveness and efficiency of their business process. To that end, both private and public organizations are trying to use the technology (Vafaei et al., 2014). Competitiveness and innovations are keys for success of any business organizations. Both components are requiring a high dependence on organizations business process and IT solutions (AlQashami& Mohammad, 2015).

However, there are many challenges to which organizations not to be enhance their business process. Difficulty in attaining, accurate information and lack of applications that improve existing business practices are few of such challenges. Indeed, traditional disintegrated IT based solutions cannot support such demands for real time integrations and decision

making as businesses grow and become complex (Stanciu&Tinca, 2013). Due to these reason, integrated IT based solution emerged as a way out of such organization challenges. The independent legacy systems are not capable to solve some of the key organizational problems within the internal business process (Tenkorang, 2011).

Enterprise Resource Planning (ERP) systems have been considered as one of the best widely used IT based solutions for different organizational challenges. It can be address these challenges by integrating the business processes and resource of organizations (Kalbasi, 2007). ERP is powerful system that applies a set of resource planning tools across the entire enterprise and connects resource plan approaches to the extended supply chain of customer and suppliers. Adopting ERP systems has to meet the existing challenges in relation to information handling and for competitive advantages. It facilitates organizations to get the key business processes to be automated, integrated and flow of information among different parts of the organization (Jidong, 2010). The rest of the paper is organized as follows: The next section reviews the literature on critical success factor of ERP implementation, the third section presents the research design employed; the section that follows details the findings are analyzed and discussions of the findings. Finally, conclusions and recommendation are forwarded.

ERP systems are sometimes failed to achieve the organization's target and desired outcome. There are a number of challenges that organizations may encounter in implementing ERP systems. Some literature indicates that, the failure of ERP implementations was not caused by the ERP software itself, a high degree of complexity from the enormous causes in organizations may also get challenges. Due to changes in business processes across an organization, resistance to adopt the ERP system is a key factor for the failure of ERP system (Seo, 2013). Some researches were conducted for comparatives in developed countries, but institutional and environmental factors result in variations across nations and organizations. ERP software packages are not purposely developed for private organizations or public organizations. But, it makes difference for organizations across different levels. Therefore, we tried to address which factors are critical factors in the private organization and which factors are critical factors in the public organization in contexts to Ethiopia.

ERP systems are application packages including several modules supporting all operation areas: planning, production, sale, marketing, distribution, accounting, financial, human resources, project management, stocks, service and maintenance, logistics and e-business. System architecture facilitates transparent module integration, guaranteeing, at the same time, the information flow between all enterprise functions in an extremely transparent manner. The choice of an adequate ERP system enables the beneficiary to implement a single integrated system, by the replacement or redesign of the existing operation systems. In addition, ERP systems are very huge software programs that comprise marketing and accounting software (MAS), supply chain management (SCM), human resource management (HRM), and customer relationship management (CRM). It coordinates and integrates every aspects of organizational business process to accounting supply to human resource (Soliman&Karia, 2016; Almishal, 2015; Hurbean, 2008).

According to Wanjiru (2013), ERP system links customers and suppliers in to a computer supply chain that employee supported for decision making, coordinate sales, marketing, product development and human resource. ERP system manages all business process and provides timely and reliable information in order to make the decision. It is used to integrate the internal business process to support organizational procedures and tasks, removed unnecessary systems as well as support wide range of industries. Various studies have been conducted on the ERP implementation impacts in different organizations. Public organization is one of the area in which ERP system is adopted. ERP is considered as new technology that includes almost the whole business process and business activities. When implementing an ERP system in public organizations, a lot of challenges to be occurred. Implementing the system in public sector requires more effort from different aspects. Hence, change management, business process re-engineering, data migration, user training and some other related issues needshighly effort from the organizations. Furthermore, the need of having new technology increases rapidly and the interest of government organizations for moving to technology and providing services online becoming a driver for more investment on the information technology field (Almishal&Almashari, 2015).

Some literature identified issues affecting ERP implementation in private organizations. Maria et al. (2012) suggest the main motivators of ERP system in private organizations. Hence search for the new system integration, increasing demands for real time information, demands for integration with information systems, needs to generate decision making and increase competitiveness for marketing are the main issues needs to focus when ERP implementation in private organization. On the other hand they argued that integration and correlation of modules and the time spent in implementation of the ERP system should focus attention for managing and coordinating the system. Several private organizations have adopted ERP implementation by requiring the experience of public organizations (Maria et al., 2013). This implies that understanding the differences of private and public organizations that affect ERP implementation is important. They argued that deploying large scale ERP software is increasing the complexity when integrating large numbers of users and multiple ERP modules in private organizations.

## 2. Research Design

The study used descriptive survey design to identify the more critical factors that affect ERP implementation in private and public organizations in context to Ethiopia. Descriptive study seeks to obtain information that describes phenomena by asking individuals about their perception, attitude, behavior or values and it includes surveys and fact-findings to investigate of different kinds (Lochilit, 2014). Quantitative data source obtained through questionnaire in both cases.

Statistical Package for the Social Sciences for Windows (SPSS V-20) was used as the main tool to manipulate the data. Survey questionnaire was analyzed using descriptive statistics such as frequencies and percentage. Hence, the analyzed data was presented in the form of tables. On the other hand, qualitative data was analyzed by explaining and interpreting the collected data. In this study, two cases were selected for comparison: public sector organizations and private sector organizations. Total of 40 power users were considered for the survey (24 from the public organizations and 16 from private organizations).

In order to identify the critical factors that found in both cases, we have applied Pareto approach (80-20 rule). The data collected and analyzed was ranked according to their frequencies and prioritize their order. Finally discussed the data obtained to made similarities and differences in the two cases. The principle of Pareto approach is by selecting limited number of tasks that produce significant overall effects. It uses the concept based on identifying the top 20% of causes that need to be addressed in order to solve 80% of the problems. This can be applied when large majority of problems (80%) are produced by a few key causes (20%), if we solve those factors we will safe 80% of the system. Therefore, the researcher found the critical factors for ERP implementation from the literatures, and would be taken respondents from interview and survey questionnaires in both cases. Finally, identifying key critical factors that affect to implement ERP system in private and public organizations.

### 3. Findings and Discussion

The objective of the study was identifying critical factors that found in private and public organizations by applying Pareto approach (80-20 Rule). Therefore, it has been selected and ranked 8 issues out of 32 are contributing 80% of the total percentage contribution in private organizations. Therefore, those 8 issues are regarded as key critical factors for implementing ERP system in private organizations. Similarly, in public organization 7 issues have been selected which is contributing 80% of the total percentage. Hence, 7 issues are identified as critical factors for implementing ERP system in public organizations.

#### 3.1. Factors That Are Found in Public But Not Private Organizations

From the survey questionnaires and applying Pareto analysis, we have found that 8 factors to be identified as the critical factors responsible for the success of ERP implementation in private organization and 7 factors are considered as critical factors in public organizations as well as 3 factors were identified in both categories. But some factors that are found to be critical for private organizations may not be critical for public organizations. The objective of this study was to find out those critical factors that have exclusively and commonly found in private and public organizations. Issues that are found to be critical factors for private organization but not public organizations are: business process reengineering and software configuration, training and support for users, end user involvement, existence of communication plan, and consultant selection and relationship.

##### 3.1.1. Business Process Reengineering and Software Configuration

When implementing ERP system, the organization should be reengineered to use ERP system functionalities properly. As the survey result indicates that, business process reengineering and software configuration is considered as the critical factors that needed to give special attention while implementing ERP system in private organizations. Although, all issues were listed on the above section in both public and private organizations, BPR is found to be more closely impacts on the success of ERP system in private organizations.

Some studies provide indications of numbers of significance difference between public and private organizations in terms of BPR. According to (Alves&Mathos, 2012), the results for implementing ERP system, the private organization respondents indicated "BPR" (26 %) and the public organization respondents indicated "BPR" (38 %). This indicates that BPR is the most significant factors in public organizations than private organizations. But in context to our country, the successful of ERP implementation is quoted from the significant frequency and percentage of respondents "BPR" (frequency = 12 and percentage = 85.7 %). This implies that, private organizations are more achieve their internal business process reengineering program as compared with public organizations. Hence, public organizations are less exposed to the market, resulting in less incentive for effectiveness and more legal and formal constraints as well as higher political influences that lead to affect ERP implementation as compared with private organizations.

In order to reengineer the business process, private organization can provide special consideration in the organization development aspects and work flow process as well as different operations than public organizations. Whereas, the higher level of bureaucracy and more numbers of decision making levels in public organization posed some challenges in BPR.

##### 3.1.2. Training and Support for Users

Training and support of the users are found to be the most significant factors in private organizations as compared in public organizations. Most of the private organization respondents have strongest arguments on training and support of users that makes difference in private and public organizations. Although ERP systems are successfully implemented, the system is technically complex and difficult for the users. Moreover, the users have lack of awareness for the use and utilize of the system

that may result to resist ERP implementation. Therefore, training should be required for all users who are involved with the organization. This implies that, private organizations provide training for their users simply because they are highly dedicated for the business process.

### 3.1.3. End User Involvement

The common problems that encountered in implementing ERP system at any organization is end user involvement. However, the survey result indicates that, end user involvement is considered as a critical factor that needs to provide concentrations for the success of implementing ERP system at private organizations. As indicate the above table 4.3, the result of end user involvement is putting in the higher levels of frequency (i.e frequency= 13 and percentage= 61.9 %) and ranked as the first level. This shows us to consider the critical factor that may affect ERP implementation in private organization than public organization. Additionally, the interview result indicates the users should highly involve for accepting and supporting when implementing ERP system. This implies that, private organization users are highly motivated and involved with the system whereas public organization users are less resist to involve the system due to the fear of losing their jobs.

### 3.1.4. Existence of Communication Plan

This factor is found to be the most significant factor in private organization than public organization. Among the private organization, 85.7 % respondents did expect to achieve the project and realized the success of ERP implementation by applying good communication plan at various levels the organization.

Although communication is needed and vitally important factor that involves between different levels of the organization, private organization should strongly have focused on this issue when implementing ERP system in context to our country. There is no doubt that when an organization possess effective communication among its stakeholders internally and externally for the success of ERP system implementation. Also, the communication between team members and in between end users from different department has critical impact on the successful implementation of ERP system.

### 3.1.5. Consultant Selection and Relationship

Most of the private organization respondents are agreed on this factor is crucial and more significant factors to adopt ERP system properly. During interviews, the informants are pointed out incompetent consultant and unskilled project persons were major challenges for ERP system implementation. In addition, finding the right people and keeping them through the implementation was the main challenge. They provide that, consultants with specific industry knowledge, such as private organizations, are fewer in number.

Organizations should give priority for consultants who have the ability to offer before and after the implementation to make the system is high quality, keep track with the updated technological changes, troubleshooting, support and maintenance. Therefore, for the success or failure of the project depends on how the organizations manage and smoothly related with consultants as well as applying the necessary knowledge transferring between the consultant and the internal employees.

### *3.2. Factors That Are Found in Public But Not Private Organizations*

The factors found to be more critical for public organizations but not private organizations are: Budgetary constraints, financial plan, implementation strategy and time frame, and customization/localization of software according to environment

#### 3.2.1. Budgetary Constraints

ERP systems are very complex and huge software packages; it needs highest investment to implement the system in any organizations. Among public organizations 90.5 % respondents are highly agreed on the budgetary constraints can affect ERP implementation. Therefore, this issue is considered as the backbones whether the failure or success ERP implementation. In the private organization 71.4 % respondents are agreed on budgetary constraints are considered as the factor of ERP implementation. It was concluding that; public organization members were more agreed with budgetary constraints than private organizations members. This implies that, in cost of implementing ERP system may make it prohibitive in private organizations whereas public organizations are highly focused on cost in ERP system implementation.

#### 3.2.2. Financial Plan

Financial plan is also identified as very essential factor for implementing ERP system in public organization than private organization. The result of this study indicates that, 78.6 % of the private organization respondents are agreed on financial plan is the factor for implementing ERP system, but in public organization 90.5 % of respondents are agreed on financial plan is considered as more critical for implementing ERP system.

According to (Harrison, 2004), clearly financial cost associated with ERP implementation should focused on the cost components of IT projects like software, support software, support infrastructure, customization, implementation, training and change management. Therefore, defined financial plan should exist in order to implement ERP system successfully.

### 3.2.3. Implementation Strategy and Time Frame

The 85.7% of public organization respondents agreed up on, implementation strategy is the most critical success factor for ERP implementation while 42.9 % of private organization respondents are agreed as implementation strategy is considered as critical factor for ERP implementation. This implies that, in public organization Implementation strategy can be fulfilled a Pareto approach (i.e 80-20 Rule). Therefore, we conclude that implementation strategy is the more critical success factor than private organization.

There are different fundamental strategic approaches for implementing ERP system that organizations must decide to adopt based on their time and budget. These are: Big-bang approach (all at once end to end), vanilla approach (use ERP core functionality), and phase wise approach (incremental and module wise) (Upadhyay et al., 2010). In order to implement the ERP system successfully, the management should decide to how the ERP system is to be implemented.

### 3.2.4. Customization/Localization of Software According to Environment

Numerous studies of critical issues on ERP implementation conclude that, the preferable way to implement ERP software is modification (Upadhyay et al., 2010). In this study, most of the public organization respondents conclude that customization as one of the critical factor in ERP implementation. Hence, 85.7 % of public respondents agreed on customization are critical factor to affect ERP implementation. This implies that, public organizations should care about the customization during the whole process of implementation. In addition, the interview informant provides that customization is the hottest issues in ERP system. Because the organization business process and the software are not fit each other. Due to this reason the software should needs to minimal customization in order to fit the business.

### *3.3. Critical Factors That Are Found in Both Private and Public Organizations*

Issues that are found to be critical for both private and public organizations are: availability and facilitation of IT infrastructure, teamwork composition, and top management support and commitment.

#### 3.3.1. Availability and Facilitation of IT Infrastructure

From this study, we have identified availability and facilitation of IT infrastructure is the more critical success factors that appear in both private and public organizations. In private organization majority (85.7 %) of respondents indicated that availability and facilitation of IT infrastructure can affect implementation of ERP system. On the other side, majority (85.7 %) of respondents also indicates that availability and facilitation of IT infrastructure can affect ERP system. This indicated that, both private and public organizations are similar in availability and facilitation of IT infrastructure that needs to focus when implementing ERP system. If there is no IT infrastructure, any organization is not able to implement ERP system. Because ERP system is should be run using IT infrastructure.

IT infrastructure should available in both organizations in order to implement ERP system successfully. According to (Yousaf, 2015), availability and IT infrastructure has always been the critical factor in any organization. Therefore, the organization should check the preparedness and the current strength of IT infrastructure before implementing ERP system.

#### 3.3.2. Teamwork Composition

Teamwork composition was the common issue in both private and public organizations that found as critical factor in implementing ERP system. Majority (85.7%) of private organization respondents are agreed teamwork composition is considered as critical factor and majority (85.7%) of respondents also equally agreed on this factor is considered as critical for ERP implementation. From this, we conclude that teamwork composition is cannot make difference among in private and public organization.

According to (Lochilit, 2014), lack of teamwork composition among managers, IT staff, project teams and different cross functional department may negatively affect ERP system. Therefore, ERP system needs adequate knowledgeable and experienced team for successful implementation of the project. Although many project team members and project managers felt that their implementation was a success, some others did not achieve their expected success (Lorraine, 2004). Therefore, to implement ERP system in any organization, the organization give emphasize on the team composition so as to know and understand the business process behind the system as well effectively accomplished the project.

#### 3.3.3. Top Management Support and Commitment

In this study, top management support and commitment was listed as one of the most critical factors factor to the success of ERP implementation within private and public organizations. Majority (85.7%) of private organization respondents are indicated that top management support and commitment is more critical and majority (85.7%) of public organization respondents are also equally agreed on this factor is considered as critical. The responses implied that, top management support and commitment is needed throughout the implementation. In addition, both private and public organization interviewees reported that top management support may result successfully implement ERP system. If an implementation doesn't have top management support and involvement, the implementation can fail to meet desired expectation. According to (Lorraine, 2004), top management support and commitment was listed as one of the most critical factor listed in both private

and public organizations. Private organization respondents were 79.0% and public organizations respondents were 76.0%. These results were consistent among both private and public organizations. But in this study, top management support and commitment is the most critical factors that are equally appear in both private and public organizations in context to Ethiopia. In general, any organization should be given priority for top management in order to implement ERP system successfully. According to (Swaminathan, 2011), the project must receive approval from top management system before starting implementation. Top management needs openly and clearly identify the project as a top priority. Hence, senior management should be committed with its own willingness and involvement to allocate valuable resource for ERP system implementation effort. Therefore, we conclude that there is no difference among private and public organizations for top management support and commitment.

#### 4. Conclusion and Recommendations

From the findings of this research, the perspectives of managers, users, implementers and holds significance for any private and public organizations that needs to influence the integration of the business process by implementing ERP system in their organization. Hence, public organization should be focused on the availability and facilitation of IT infrastructure, teamwork composition, top management support and commitment while private organizations should be focused on business process reengineering and software configuration, training and support for users, end user involvement, and existence of communication plan, consultant selection and relationship. On the other hand, both private and public organizations are should give priorities for budgetary constraints, financial plan, implementation strategy and time frame, customization/localization of software according to environment when implementing ERP system. Finally, we conclude that there are similarities and differences among private and public organization regarding to ERP implementation success factors. The implementers and any decision makers should be concentrated on these issues while implementing ERP system.

Based on the finding, the following recommendations has to be posed:

- We recommend that the managers, users and any stakeholders should be focused on the availability and facilitation of IT infrastructure, teamwork composition, top management support and commitment should be give prior attention when implementing ERP system in any organizations.
- It recommended that, business process reengineering and software configuration, training and support for users, end user involvement, existence of communication plan, consultant selection and relationship need special concentration in implementing ERP system at private organization.
- It recommended that budgetary constraints, financial plan, implementation strategy and time frame customization/localization of software according to environment should be considered as the key issues in ERP implementation at public organizations.
- Every organization should be communicated and share their knowledge and experience while implementing ERP implementation that leads to adopt successfully.
- As both cases respondents indicated that, adequate training is mandatory to provide for the internal staffs in order to minimize the complexity of the system.
- Finally, it recommended that ERP implementation is very important system that every organization must adopt in order to improve their business process.

#### 5. Limitations of the Study

The sample size is limited, but when taking more may provide detail understanding of the ERP system. The scope is limited to single private and public organization. This leads to lack of enhancing the study by taking in to consideration different type of organizations like manufacturing and industries and obtaining more detail results by extending number of respondents.

#### 6. Suggestion for Future Research

This study was carried out in private and public organizations in Ethiopia. The study focused on identifying the more critical factors in private and public organizations and also identifies the similarity and difference among private and public organizations regarding ERP implementation success factors. We recommend that other multi case studies need to be conducted to obtain more factors in relation to the issue under consideration. This study focused on comparing only identifying factors that appear in both cases. But, another research should be needed on ERP implementation in both cases to determine the extent of presence of critical factors in pre-implementation stage, during implementation and post implementation. Which issues are found in pre-implementation stage and which issues are appeared during implementation as well as which issues are appeared in post implementation stage is another research area.

#### 7. Conflict of the Interest

The authors declare that we have no competing interests in this work

## 8. References

- i. Abbas, M. 2013. ERP implementation in SMEs consultant-client view on critical success factors. Turunliopisto University of Turku.
- ii. Almishal, A., & Almashari, M.A. 2015. "Implementing ERP Systems in Government: Case Study of Saudi Organization," Lecture Notes on Software Engineering, (3:2).
- iii. Alqashami, A., Mohammad, H. 2015. Critical Success Factors (CSFs) Of Enterprise Resource Planning (ERP) System Implementation In Higher Education Institutions (HEIS): Concepts And Literature Review. Jan Zizka et al. (Eds) : ICAITA, SAI, CDKP, Signal, NCO – 2015 pp. 81-98.
- iv. Alves, M.C. & Mathos, S.A. 2012. "ERP adoption by public and private organizations a comparative analysis of successful implementations," Journal of Business Economics and Management.
- v. Anwar, S., & Mohsin, R. 2011. "ERP Project Management in Public Sector – Key Issues and Strategies," Proceedings of the 44th Hawaii International Conference on System Sciences – 2011.
- vi. Arvidsson, J & Kojic, D. 2017. "Critical Success Factors in ERP Implementation. MASTER THESIS WITHIN: Business Administration. PROGRAMME OF STUDY," International Logistics and Supply Chain Management.
- vii. Ayazi, E. 2013. "Critical Success Factors In Enterprise Resource Planning Implementation," Industrial Organizations: Case Study (Esfahan Steel Company).
- viii. Barker, T., & Frolick, F.M.(n.d.) "ERP implementation failure: a case study"
- ix. Boltanaa, S.A., & Gomez, J.M. 2012. "A Successful ERP Implementation in an Ethiopian Company: A case Study of ERP Implementation in Mesfine Industrial Engineering Pvt. Ltd".
- x. Derese, A. (2013). Ensuring Successful Implementation of Enterprise Resource Planning (ERP): The Case of Ethio-Telecom
- xi. Ehrenhard, M.L.(n.d). Implementing ERP system in public sectors. University of Twente, The Netherlands.
- xii. Fang, L. 2005. Critical Success Factors in ERP Implementation. Paper within IT and Business Renewal. Jönköping June 13, 2005.
- xiii. Fernandez, D., Zainol, Z., & Ahmad, H. 2016. "The impacts of ERP systems on public sector organizations. 8th International Conference," Advances in Information Technology, IAIT2016, 19-22.
- xiv. Foziya, A. 2017. Factors affecting the implementation of enterprise resource planning at commercial bank of Ethiopia, MSc thesis at School of information science, Addis Ababa University. Addis Ababa, Ethiopia.
- xv. Gupta, H. K., Aye, T., Balakrishnan, R. S. & Rajagopal, Y. 2014. "A Study of Key Critical Success Factors (CSFs) for Enterprise Resource Planning (ERP) Systems," International Journal of Computer and Information Technology, (3:4).
- xvi. Jen-Her, W., & Wang, Y.M. (n.d). Enterprise Resource Planning Experience in Taiwan: An Empirical Study and Comparative Analysis. Department of Information Management, National Sun Yat-sen University. Hsi-Tze Wan, Kaohsiung, Taiwan.
- xvii. Jidong, Z., & liyan, W. 2010. ERP implementation: A corporate governance Perspective international Journal of Public Information Systems.
- xviii. Kalbasi, H. 2007. Assessing ERP implementation critical success factors. MSc. program marketing and electronic commerce joint.
- xix. Kibework A. 2015. The Challenges and Current Status of ERP Implementation: The case of Mugher and Derba Cement Industries.
- xx. Kothari, C. R. 2004. Research Methodology, 2nd ed. New Delhi: New age international limited.
- xxi. Kumar, S.M, & Rawani, A.M. 2016. ERP System Implementation Issues and Challenges in Developing Nations. (11:12), ISSN 1819-6608.
- xxii. Lochilit, A.P. 2014. Factors influencing implementation of enterprise resource planning in firms: a case of geothermal development company in Nairobi, Kenya.
- xxiii. Lorraine, J. H. 2004. Motivations for Enterprise Resource Planning (ERP) System Implementation: Public versus Private Sector Organizations.
- xxiv. Maria, D.C, Ivo, S., & Matos, A. 2013. "ERP Adoption by Public and Private Organizations. A Comparative Analysis Of Successful Implementations," Journal of Business Economics and Management, 14(3): pp. 500-519. doi:10.3846/16111699.2011.65297
- xxv. Mishra, A & Mishra, D. 2011. ERP Project Implementation: Evidence from the Oil and Gas Sector. Department of Computer Engineering, Atılım University. Incek 06836, Ankara Turkey Acta Polytechnica Hungarica, (8:4).
- xxvi. Mohamed, O.B., Mohammad, R., & Wadi, A. 2016. "Factors Influencing the Success of ERP System Implementation in the Public Sector in the Kingdom of Bahrain," International Journal of Economics and Finance, (8:12).
- xxvii. Moohebat, M.R., Asemi, A., & Jazi, M.D. 2010. "A Comparative Study of Critical Success Factors (CSFs) in Implementation of ERP in Developed and Developing Countries," International Journal of Advancements in Computing Technology, (2:5).

- xxviii. Oluwafemi, O.F. 2014. "A Case Study Analysis of Factors (Success and Failure) Affecting Enterprise Resource Planning System Implementation in Nigeria," *International Journal of Managerial Studies and Research (IJMSR)*, (2:5), pp. 109-116.
- xxix. Rabaai, A. 2009. The impact of organizational culture on ERP systems implementation: lessons from Jordan. Queensland University of Technology (QUT).
- xxx. Ranjan,S., Kumar, V.J.,& Pal, P. 2016. "Literature review on ERP implementation challenges," *Int. J. Business Information Systems*, (21:3).
- xxxi. Sayed,E., Hubbard,M., Nick J. & , Nicoleta,T.S. 2013. Evaluating enterprise resource planning (ERP) post implementation problems in Egypt: Findings from case studies of governmental, multinational and private Egyptian organisations. University of Huddersfield Repository. <http://eprints.hud.ac.uk/19207/>.
- xxxii. Swaminathan, S. 2011. Critical Success Factors of ERP Implementation. Graduate Faculty as partial fulfillment of the requirements for the Master of Science Degree in Mechanical Engineering. The University of Toledo August 2011.
- xxxiii. Seo, G. 2013. Challenges in Implementing Enterprise Resource Planning (ERP) system in Large Organizations: Similarities and Differences between Corporate and University Environment. Working Paper CISL#.
- xxxiv. Seok, K.H. 2015. "Factors Affecting Successful Implementation of ERP Systems Towards Organizational Performance – Focused on SMEs in Vietnam," *European Journal of Business and Social Sciences*, (4:9), pp. 72-92.
- xxxv. Shanks,G., Parr, A., Hu, B., Corbitt,&Thanasankit.T. 2000. "Differences in Critical Success Factors in ERP Systems Implementation in Australia and China: A Cultural Analysis," *Proceedings European Conference on Information Systems (ECIS)*. <http://aisel.aisnet.org/ecis2000>.
- xxxvi. Sintayehu, D. 2014. Success Factors for Implementation of Enterprise Resource Planning System at Ethiopian Airlines, Unpublished MSc thesis, Addis Ababa University, Addis Ababa, Ethiopia
- xxxvii. Soliman, M., &Karia, N. 2016. "Enterprise Resource Planning (ERP) Systems in the Egyptian Higher Education Institutions: Benefits, Challenges and Issues," *Proceedings of the 2016 International Conference on Industrial Engineering and Operations Management*, Kuala Lumpur, Malaysia, March 8-10
- xxxviii. Stanciu,V.&Tinca, A. 2013. "ERP Solutions between Success and Failure," *Accounting and Management Information Systems*, (12:4), pp. 626-649.
- xxxix. Stephen C, Maryam M., and HritikGupta. 2014. "An investigation into enterprise resource planning implementation success: evidence from private and public sector organizations," *Association for Information Systems*. <http://aisel.aisnet.org/pacis2014>
- xl. Swaminathan, S. 2011. Critical Success Factors of ERP Implementation. The University of Toledo.
- xli. Tenkorang, R.,&Helo, P. 2011. "Enterprise Resource Planning (ERP): A Review Literature Report," *Proceedings of the World Congress on Engineering and Computer Science*, Vol II.
- xlii. Upadhyay, P., Basu, R., Adhikary, R., & Dan, P.K. 2010. "A Comparative Study of Issues Affecting ERP Implementation in Large Scale and Small Medium Scale Enterprises in India: A Pareto Approach," *International Journal of Computer Applications*, (8:3).
- xliii. Vafaei, H.B., Asefpour, M.V. &Mobarakabadi, H. 2014. "The Study of Critical Success Factors (CSF) in the Implementation of Enterprise Resource Planning (ERP) Systems," *Advanced Social Humanities and Management*, 1(3), pp. 5-12.
- xliv. Wanjiru,J.K. 2013. "Factors Affecting the Implementation Of Enterprise Resource Planning In State Corporations: A Case Study Of Nairobi City Water And Sewerage Company," *Institute of Interdisciplinary Business Research* (5:8).
- xlv. Yin, R. K. (2003), *Case study research - design and methods* (Third edition; Thousand Oaks, California: Sage Publication).
- xlvi. Yousaf, M.J. 2015. "Enterprise Resource Planning (ERP) Implementation In Pakistani Enterprises: Critical Success Factors And Challenges," *Journal of Management and Research*, (2:2).
- xlvii. Zeimba, E.,&Oblak, I.2013. "Critical Success Factors for ERP Systems Implementation in Public Administration". *Interdisciplinary Journal of Information, Knowledge, and Management* Volume 8, 2013
- xlviii. Zouine, A.,&Fenies, P.2014. "The critical success factors of the ERP system project: A Meta-Analysis Methodology," *The Journal of Applied Business Research* (30:5).