

# Evaluating Critical Success Factors of ERP Implementation in SMEs



Talluri Sai Kiran, A Vasu Deva Reddy

**Abstract:** *This paper is aimed at reviewing present state of the art (1998-March 2019) on the impact of Enterprise Resource Planning (ERP) implementation in Small and Medium Enterprises (SMEs). It includes critical success factors and critical failure factors. The technique depends on writing survey for optional information gathering. It characterizes the expressions that are utilized to get explore papers from databases and advanced studies on the ERP implementation in SMEs. It additionally incorporates the consideration and prohibition criteria to improve nature of papers. At that point methodical audit is made on the accessible papers to research the effect of ERP usage in SMEs. Critical factors are identified for success and failure of ERP implementations and actual impact of the same on SMEs (add actual success and failure factors here besides impact). The research found in this paper has limitations in terms of the period of which research papers have been reviewed. An implicit limitation is that it does not consider an empirical study except focusing on the state of the art found in the research area. However, its insights will have potential benefits and the directions for future work helps in further scope of the research. This paper contributes to the research on the impact of ERP implementation on SMEs either positively or negatively. It discovers critical success factors, critical failure factors and impact through secondary data collection method. The insights will help SMEs and stakeholders of SMEs and ERP service providers to know the reasons for failure or success and take necessary course of action.*

**Keywords:** *Enterprise Resource Planning (ERP), small and medium enterprises, ERP implementation, failures, success factor.*

## I. INTRODUCTION

Small and Medium Enterprises have been striving to get up to date with new technological trends. With respect to various functions associated with different departments, it is understood that they are in need or more comprehensive technology or application like ERP. The following sub sections provide more details.

### 1.1. Role of SMEs

SMEs have been playing vital role in the economy of countries in the world. They contribute substantially to the national economy and employment (Alshawi, Themistocleous and Almadani, 2004; Seethamraju, 2015).

SMEs in India are no exception to this as they have very strategic importance (Bhawarkar and Dhamande, 2012). The contributions include the leverage of manufacturing sector and country's GDP significantly. They can contribute in the export promotion through balance of payment accounts. Unlike large scale organizations that may lead to inequalities in terms of income and wealth, SMEs help in equal distribution of wealth and income. Moreover, small sectors increase in providing opportunities to a large number of entrepreneurs. They can also help in releasing scarce capital for productive use. Moreover, the element of risk is low in SMEs and the resource employment can be done in terms of relatively large number of workforce (Hashi, 2019). SMEs can be of two kinds basically. The first category is the traditional cottage industries like coir industries, handicrafts and village industries while the second category is modern SMEs. The former is mostly unorganized and located in semi urban and rural areas. They may not need power operated equipment and need less investment and technology. However, they are crucial in providing employment, at least part time, to large number of population in a country. Those SMEs are capable of supplying essential products that can be consumed by masses and even they can be exported. The latter on the other hand are relatively large in size of workforce and investment. There are small scale sectors that will have specific contributions (Hashi, 2019).

### 1.2. SMEs and Technology Adoption

Modern SMEs exploit technology innovations through Technology adoption. The Indian SMEs have been striving to use technologies for improving productivity (Bhawarkar and Dhamande, 2012). As far as usage of new technologies is concerned, SMEs have been on the raise of late with the adoption of technology (Ruivo, 2013). In the manufacturing especially like pharmaceuticals there has been increased usage of technologies and modern equipment for improving productivity (Woo, 2007).

### 1.3. Enterprise Resource Planning in SMEs

Enterprise Resource Planning (ERP) refers to an integrated and cross –functional system that helps in managing all operations of a company (Al-Mashari, 2002). ERP system is backbone to many enterprises across the globe (Alshawi, Themistocleous and Almadani, 2004). Of late there has been focused research on the ERP implementations in SMEs. They are found to be highly complex and risky for implementation in enterprises (Aloini, Dulmin and Mininno, 2007). Instead of using separate application for each department, it is better idea to have ERP implementation that drives all functionalities in an integrated fashion (Alshawi, Themistocleous and Almadani, 2004).

**Revised Manuscript Received on 30 July 2019.**

\* Correspondence Author

**Talluri Sai Kiran\***, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur, A P, India.

**A Vasu Deva Reddy**, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur, A P, India.

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](https://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC-BY-NC-ND license <http://creativecommons.org/licenses/by-nc-nd/4.0/>

There are many ERP products of different vendors and Their usage across the world reflects frequency and percentage as shown in Figure 1 (source: Ehie and Madsen, 2005). SAP is found to be very famous with more number of implementations and also frequency of usage. As there is growth in business, there is need for ERP technology that will drive home productivity and efficiency in operations. There have been customizations in ERP implementations to meet the size and scales of operations in different organizations (Baker and Yousof, 2017). This is an important reason which makes ERP implementation in SMEs is possible. Moreover, ERP implementations optimize overall performance of organizations (Ash and Burn, 2003). ERP systems help in business continuity with data and application availability, scalability and reliability. This will enable enterprises to be truly competitive in business (Nijaz and Moon, 2009).

## II. LITERATURE REVIEW

### 2.1 *Small and Medium Enterprises and Technology Perspective*

#### 2.1.1 *Small and Medium Enterprises*

Kamakura et al. (2012) studied about SMEs in the context of internationalization and emphasized the need for using technologies to operate globally and spreading into new markets faster. With technology adoption, they opined there is much scope to operate a business at international level. Innovation in SMEs is essential for considerable growth in business. However, they found some barriers to innovation in SMEs. Which includes public support systems, tax burden, laws and regulations, access to financing and competition fairness (Shu et al., 2012). Open innovations in SMEs and large enterprises (Spithoven et al., 2012) and innovations in SMEs with market orientation and entrepreneurial orientation are found (Zortea-Johnston et al., 2012).

#### 2.1.2 *Opportunities and Growth*

The Micro & Small Enterprises (MSEs) Sector continue to be a vibrant sector of the Indian economy. This sector has consistently registered a higher growth rate than the rest of the industrial sector. There are over 6500 products ranging from traditional to high-tech items, which are being manufactured by the small enterprises in India. After agriculture, the MSEs sector provides the maximum opportunities for both self-employment and jobs in the country. The small enterprises sector in India holds great potential for further expansion and growth in the future. In fact, the employment potential of the sector is un-matched by any other sector of the economy.

#### 2.1.3 *Effects of Globalization in SMEs in India*

With the liberalisation and globalisation of the Indian economy, the small enterprises in India have unprecedented opportunities, on the one hand, face serious challenges. While access to global market has offered a host of business opportunities in the form of new target markets, possibilities to exploit technological advantage, etc., the challenges in this process have flowed mainly from their scale of operation, technological obsolescence, inability to access institutional credit and intense competition in marketing.

The Government of India is fully aware of the challenges of globalisation and has taken appropriate measures for preparing the Micro & Small Enterprises (MSEs) to meet

the challenges of liberalisation and globalisation. Taking a view of the whole situation, the Government has put in place several measures to help small enterprises to become globally competitive. These include programmes for technology upgradation, development of clusters of such industries, making collateral free bank credit available up to US\$ 1,25,000, creating awareness among these industries regarding export-related issues, etc. The Ministry of Micro, Small & Medium Enterprises (MSME) in India also conducting workshops on various aspects of WTO, Anti-dumping, IPR, etc. to sensitize the MSEs entrepreneurs and other stakeholders about the likely impact of liberalisation and globalisation. The Micro Small and Medium Enterprises Development (MSMED) Act, 2006 has been formulated as a response to the long-standing demand of the MSE sector, the emergent need to provide a legal framework to address the developmental concerns of what is globally known as “small and medium enterprises”. The Act, inter-alia, provides the first-ever legal framework to facilitate the promotion and development of micro, small and medium enterprises (MSME), which comprises both manufacturing and services entities. It defines ‘medium enterprises’ for the first time and seeks to integrate the three tiers of these enterprises, namely, micro, small and medium. Establishment of specific Funds for the promotion, development and enhancing competitiveness of these enterprises, notification of schemes/ programmes for this purpose, progressive credit policies and practice, more effective mechanism for mitigating the problems of delayed payments to MSEs, etc. are some of the other features of this Act. The Ministry of MSME has also taken a view, in the light of liberalized provisions of the MSMED Act, 2006 to do away with the restrictive 24 per cent ceiling prescribed for equity holdings by industrial undertakings, whether domestic or foreign, in the erstwhile Small Scale Industries (now SMEs). This coupled with an expected legislation on Limited Liability Partnership (introduced in the Parliament by the Ministry of Corporate Affairs) is expected to pave the way for greater corporatisation of the Small & Medium Enterprises- thereby enhancing their access to equity and other funds from the markets of these products in keeping with the global standard.

#### 2.1.4 *Technology Perspective of Enterprises*

Adoption of Software as a Service (SaaS) by SMEs has association with critical factors that led to ERP implementation in SMEs (Seethamraju, 2015; Chang et al., 2012). Project planning practices with respect to ERP implementation in SMEs is studied by Tasevska et al., (2013). The issues pertaining to large scale implementation of ERP in SMEs are explored by Upadhyay et al. (2010). The level of acceptance of ERP in SMEs is focused by Adam et al. (2011). Critical failure factors of ERP implementation in SMEs is the focus of Ganesh & Mehta (2010) while the successful implementation of ERP in SMEs is the study found by Safavi et al. (2014). From the literature, it is understood that ERP implementation in SMEs is still an ongoing process and much research is needed to ascertain facts and make recommendations for the faster implementation of ERP in SMEs.

### III. SUCCESS FACTORS OF ERP IMPLEMENTATION

This section provides different factors that lead to successful ERP implementations in SMEs. From the literature it is understood that there are certain factors which supports successful implementation of ERP.

#### 1.4. Organisational Factors

ERP implementation needs strong commitment from organization and have strong change management program in presence of people with diversified culture in the organization. When there is organizational commitment, it leads to positive influence on the implementation process. There will be effective management of structural and cultural changes at organization level and workforce level (Rosario, 2000). It is also found in the failure cases that when there is budget overrun, management cut the costs involved in future trainings. Therefore, it is essential to involve end-users while planning design and implementation of ERP system. Smooth transition is possible with effective change management procedures (Holland and Light, 1999).

#### 3.1 Top Management Support

Leadership is provided by top management which is crucial for the success of ERP implementation. Resource allocation and priority to ERP implementation project need support from top level management. Senior management can envisage issues if any and take necessary steps proactively (Sheuet et al., 2004).

#### 3.2 BPR with Minimum Customization

ERP systems have many software modules. Accordingly, organizations need to align their business processes to exploit software modules with industry best practices leading to minimum customization. The rationale behind large scale customization of ERP system may render it handicapped (Rosario, 2000). Company's vision and plan should consider full utilization of ERP software. There needs to quantifiable goals and planning needs to be there with risk management procedures in place. Benchmarking practices are to be used in order to have benefits of ERP implementation (Al-Mudimighet al., 2001). In the process project management and its identification of milestones and critical paths to success is very important and also very active monitoring of project implementation (Somers and Nelson, 2001).

#### 3.3 Communication

Communication needs to be effective to disclose progress from time to time to all stakeholders. Timeline and implementation strategy need to be explicit. Many researchers opined that ERP implementation is made either centralized or decentralized. This decision is also crucial. Based on this decision cost will be influenced. There are unforeseen costs associated with ERP implementations. Therefore, budget needs to be flexible and should not have assumptions and speculations (Al-Mudimighet al., 2001).

#### 3.4 ERP Selection

There are many ERP packages from different vendors. Selection of ERP package is crucial. The ERP software that aligns well to the processes of organization needs to be selected. Selecting consultants and maintaining relationship with them is to be given importance. An external and expert

consultant is a necessity for successful ERP implementations. The consultant needs to provide sufficient Knowledge Transfer (KT) to the organization to increase reliance and enhance probability of success (Motwaniet al., 2002). Apart from the above, according to Skibniewski et al. (2008), ERP success factors include planning, training, top management support, software selection process, participation, consulting capabilities and consulting support. ERP implementation success also depends on cost, time, performance and benefits (Hong and Kim, 2002). ERP implementation challenges include inadequate change management, lack of commitment from top management, more customizations, misalignment, lack of sufficient training and lack of understanding of business needs (Momoh, Roy and Shehab, 2000). There are 11 factors for successful implementation of ERP. They include teamwork, support from top management, business plan and vision of organisation, effective communication, project management, project champion, usage of legacy systems, change management, BPR, development and troubleshooting, monitoring and evaluation (Kuang, 2001). According to Woo (2007), success factors include top management, project management, process change, education and training and communication. The factors affecting success in ERP implementation in SME include characteristic of SME, management and its knowledge, products and services, vision and cooperation, resources and finance (Philip, 2010). According to Leyh (2014) critical success factors include ERP system configuration, ERP system tests, organizational fitness for ERP, project management, support from top management and user training.

### IV. FAILURE FACTORS OF ERP IMPLEMENTATION

ERP implementation in SMEs is a challenging task which involves people to deal with pre and post implementation. The SME which needs ERP implementation has to take care of effective change management steps at every phase of it. Very good communication, management and training are essential. Many factors may influence failure of ERP implementation. The factors may be many associated with internal staff adequacy, training and change management. There are specific factors that are identified for failure of ERP implementations. They include employee resistance, lack of commitment from top level management, inadequate training. Employee Resistance is an important factor as any project fails if personnel are not educated about their perceived benefits. Proper communication, training and involvement of employees is essential. The management also needs to provide job security to employees as the employees will have misconceptions and try to resist or sabotage the efforts of ERP implementation. Lack of commitment from top level management is another factor for failure. The rationale behind this is that without full support from management, the ERP implementation results in many issues. Clearing employee doubts, assuring job security and explaining benefits of ERP system can be done by management effectively. Inadequate training and educational also cause failure of ERP implementation.

As the work force constitutes diversified culture, proper training and education can help them understand the need for implementation and usage of it after implementation. Different people need different level of training and managers need to have such programs to ensure knowledge transfer as one size does not fit for all.

However, everyone needs to have ERP basics, need for automation and the processes involved in it besides involving in change management. When employees are not fully aware of the new system, they hesitate to use it or they cannot use it optimally. This can lead to failure of the ERP system as the users are not trained well. Another factor is inadequate requirements definition. When requirements are very clearly stated, the implementation team will do it accordingly. Since ERP system is very complex, inadequate resources is another factor for failure. The implementation is time taking, lengthy and incurs much cost to organization. Often the expected budgets may not be sufficient and there might be hidden and unexpected costs. This has to be kept in mind when budget is allocated, and resources are to be planned. Costs, budgets, manpower needs, and infrastructure are to be estimated correctly besides having contingency plans to ensure success of ERP implementation. Software packages and business processes incompatibility is another cause of failure. There is poor fit between what organization needs and what is being implemented. When the processes in the organization are very strong and there is no optimal package in ERP, then it is indispensable to have customization. However, customization is often error-prone and costly affair. Therefore, it is important to choose appropriate ERP package from right vendor. Unrealistic expectations with respect to ROI is yet another factor for failure of ERP. Though ERP system improves productivity dramatically, it is required to have realistic expectations on ROI. Miracles cannot be expected from ERP unless the company has its projected growth and customer prospects. Selection of ERP package is another factor for failure. When the best suitable package is not selected, it will cause many implementation and customization problems and eventually lead to failure. Therefore, it is essential to ensure that there is best fit between organization processes and the ERP package. Such ERP software need to fulfil the basic needs of an organization. As mentioned above, extensive customization, leads to failure of the system. When there is over-customization, it adds more cost and time and will continue causing issues in future versions. Such system finally makes it increasingly costly and difficult. Change management is one of the most influencing factors. If there is no adequate procedure in place for change management, it leads to failure of ERP implementation. When change management is not done with standard procedures, it will cause employees to suspect and behave against the implementation of ERP. With respect to heavy customization also change management becomes very complex in future. That will be a problem to organization as it results in difficulties to deal with newer versions of ERP software in future. The ERP implementation needs to support evolving business needs. The rationale behind this is that, there might be changes to be incorporated in future and Business processes may be subjected to change.

### V. TECHNICAL CHALLENGES IN ERP IMPLEMENTATION

There are many possible technical challenges identified in the literature. The challenges include difficulty in customization, functional complexity in ERP software, application management complexity involved, issues with lack of support from vendors, multi-vendor complexity related to software, hardware and consultants, integrating with legacy systems, security concerns, insufficient IT infrastructure and problems associated with interconnecting functional systems (Kamhawi, 2008).

### VI. CONCLUSIONS AND FUTURE SCOPE

ERP implementation in SMEs is found appropriate when the SMEs have compatible IT infrastructure and information systems to exploit. Besides it is essential to follow industry best practices. ERP solutions are found to be more useful when full range of its services are used across organization. There has been increase in the usage of ERP in SMEs. However, it is understood from the literature that most of the ERP implementations are not successful. This paper has investigated through secondary research and provided insights on success factors, failure factors and impact of ERP implementations. Success factors of ERP implementations include organizational commitment, full support from top level management, BPR with minimum customization, communication procedures, of ERP package selection and adequate training and change effective management. ERP failure factors include employee resistance, lack of inadequate commitment from top level management, inadequate training and education, inadequate requirements definition, inadequate resources, incompatibility between organization business processes and ERP software, unrealistic expectations on ROI. It is found that many ERP modules are not flexible to changing and evolving business processes. An ERP system that works well today may need major overhaul in future.

### REFERENCES

1. Adjarayusuffaremu, Arfan Shahzad And Shahizan Hassan. (2018). Determinants of Enterprise Resource Planning Adoption on Organizations' Performance Among Medium Enterprises. *Log Forum*. 14 (2), 245-255.
2. Al-Mashari, M. (2003), "Enterprise Resource Planning (ERP) Systems: A Research Agenda", *Industrial Management & Data Systems*, 103 (1), 22-7.
3. Aloini, D., Dulmin, R. And Mininno, V. (2007), "Risk Management in ERP Project Introduction: Review of the Literature", *Information & Management*, 44 (6), 547-67.
4. Alshawi, S., Themistocleus, M. And Almadani, R. (2004), "Integrating Diverse ERP Systems: A Case Study", *The Journal of Enterprise Information Management*. 17 (6), 454-62.
5. Andrej Zach. (2012). ERP System Implementation in Small and Medium-Sized Enterprises. Faculty of Economics and Social Sciences, 1-197.
6. Ash, C. And Burn, J. (2003), "A Strategic Framework for the Management of ERP Enabled E-Business Change", *European Journal of Operational Research*, 146(2). 374-94.
7. Bajgoric, N. And Moon, Y.B. (2009), "Enhancing Systems Integration by Incorporating Business Continuity Drivers", *Industrial Management & Data Systems*, 109 (1), 74-97.
8. Basu, R., Upadhyay, P., Das, M. C., & Dan, P. K. (2012). An approach to identify issues Affecting ERP Implementation in Indian SMEs. *Journal of Industrial Engineering and Management*, 5(1), 1-22.

9. Carrington M Mukwasi and Lisa F Seymour. (2014). The Growing Trend of Small to Medium-Sized Enterprises Adopting Enterprise Resource Planning Systems: An Analysis of Business Cases In Zimbabwe and South Africa. *Journal of Emerging Trends in Economics and Management Sciences*. 5 (7), 138-145.
10. Chang S-I, Yen D.C, Ng C S-P, and Chang W-T (2012). An Analysis of IT/IS Outsourcing Provider Selection for Small- and Medium-Sized Enterprises in Taiwan. *Information & Management*, 49(5), 199–209.
11. Christian Leyh (2014). Critical Success Factors for ERP Projects In Small and Medium-Sized Enterprises – The Perspective of Selected German SMEs. *Proceedings of the 2014 Federated Conference on Computer Science and Information Systems*. 1181–1190.
12. Chung, B.Y., Skibniewski, M.J., Lucas, H.C. Jr And Kwak, Y.H. (2008), “Analyzing Enterprise Resource Planning System Implementation Success Factors in the Engineering-Construction Industry”, *Journal of Computing in Civil Engineering*, Vol. 22 (6).
13. Costa C. J, Ferreira E, Bento F, and Aparicio M, (2016). Enterprise Resource Planning Adoption and Satisfaction Determinants. *Computers in Human behaviour*, 63, 659–671.
14. Davenport, T.H. (1998), “Putting the Enterprise into the Enterprise System”, *Harvard Business Review*, 76(4). 121-31.
15. Dr. Khalid A. Fakeeh, Junaid Qayyum And Aiman J. Albarakati. (2014). Enterprise Resource Planning On Cloud For Small And Medium Sized Business. *International Journal of Computer Science And Mobile Computing*. 3 (10), 571 – 583.
16. Dr. Mathew Philip. (2010). Factors Affecting Business Success of Small & Medium Enterprises (SMEs). *Sri Krishna International Research & Educational Consortium*. 1 (2), 1-15.
17. Dr. S.Y. Patil. (2018). Enterprise Resources Planning in Small and Medium-Sized Enterprises: An Overview. *A National Research Journal*. 2 (2), 1-8.
18. Ehie, I.C. and Madsen, M. (2005), “Identifying Critical Issues in Enterprise Resource Planning (ERP) Implementation”, *Computers in Industry*, 56,(6), 545-57.
19. Elbertsen, L., Benders, J. and Nijssen, E. (2006), “ERP Use: Exclusive or Complemented?”, *Industrial Management & Data Systems*, 106 ( 6). 811-24.
20. Evansnjihia. (2014). The Effects of Enterprise Resource Planning Systems on Firm’s Performance: A Survey of Commercial Banks in Kenya. *International Journal of Business and Commerce*. 3 (8), 120-129.
21. Gurpreet Singh, Manpreet Singh Manna and Gurpreet Singh Bhasin. (2013). A Study of Impact of ERP and Cloud Computing in Business Enterprises. *Proceedings of the World Congress on Engineering and Computer Science*. 1, 1-4.
22. Hallikainen, P., Kimpimaki, H. and Kivijarvi, H. (2006), “Supporting The Module Sequencing Decision in the ERP Implementation Process”, *Proceedings of the 39th Hawaii International Conference on Systems Sciences*, Washington, DC.
23. Hallikainen, P., Tuominen, M. and Kivijarvi, H. (2009), “Supporting The Module Sequencing Decision in the ERP Implementation Process – An Application of the ANP Method”, *International Journal of Production Economics*, 119 (2), 259-70.
24. Helo, P. (2008), “Expectation and Reality in ERP Implementation: Consultant and Solution Provider Perspective”, *Industrial Management & Data Systems*, 108 (8). 1045-59.
25. Hong, K. And Kim, Y. (2002), “The Critical Success Factors for ERP Implementation: An Organizational Fit Perspective”, *Information & Management*, 40. 25-40.
26. Huang, M., Wang, J., Yu, S. And Chiu, C. (2004), “Value-Added ERP Information into Information Goods: An Economic Analysis”, *Industrial Management & Data Systems*, 104 (8). 689-97.
27. Joseph Bhekizwedlodlo. (2011). Enterprise Resource Planning in Manufacturing Smes in the Vaal Triangle. 1-124.
28. Kamhawi, E.M. (2008), “Enterprise Resource Planning Systems Adoption in Bahrain: Motives, Benefits, And Barriers”, *Journal of Enterprise Information Management*, 21(3), 310-34
29. Koh, S.C.L., Simpson, M., Padmore, J., Dimitriadis, N. And Misopoulos, F. (2006), “An Exploratory Study of Enterprise Resource Planning Adoption in Greek Companies”, *Industrial Management & Data Systems*, 106 (7). 1033-59.
30. Mahadevansupramaniam, Azween Abdullah and Ramachandran Ponnann. (2014). Cost Analysis on ERP System Implementation amongst Malaysian SMEs. *International Journal of Trade, Economics and Finance*. 5 (1), 1-5.
31. Mahouchehrjofreh, Khadijehjahanian, Afsanehbahrami, Teymour Jabbari, Katayounalimardani, Mostafa Mardi and Behzad Divsalar. (2013). The Role of Enterprise Resource Planning (ERP) for Small and Medium Enterprises (Smes). *Research Journal of Applied Sciences, Engineering and Technology*, 5 (7), 2317-2320.
32. Markus, M.L. and Tanis, C. (2000), “The Enterprise Systems Experience From Adoption To Success”, [Http://Pro.Unibz.It/Staff/Ascime/Documents/ERP%20paper.Pdf](http://Pro.Unibz.It/Staff/Ascime/Documents/ERP%20paper.Pdf) (Accessed 26 April 2009).
33. Michelle Carol Antero. (2015). A Multi-Case Analysis of the Development Of Enterprise Resource Planning Systems (ERP), *Business Practices*, 1-360.
34. Miguelbuleje. (2014). The Impact Of Enterprise Resource Planning Systems on Small and Medium Enterprises. *Nova Southeastern University Nsuworks*, 1-150.
35. Mohammad Bany Baker and ZawiyahYousof. (2017). Factors Influencing Knowledge Sharing in Enterprise Resource Planning System usage in Small and Medium Enterprises. *Journal of Theoretical and Applied Information Technology*. 95 (8), 1-10.
36. Muscatello, J.R., Small, M.H. and Chen, I.J. (2003), “Implementing Enterprise Resource Planning (ERP) Systems in Small and Midsize Manufacturing Firms”, *International Journal of Operations & Production Management*, 23 (8). 850-71.
37. Nah, F.F. and Lau, J.L. (2001), “Critical Factors for Successful Implementation of Enterprise Systems”, *Business Process Management Journal*, 7 (3). 285-96.
38. Päiviiskanuus. (2009). Risk Management in ERP Project in the Context of Smes. *Engineering Letters*, 1-8.
39. Pedro Miguel Fernandes Ruivo. (2013). A Technology Diffusion Perspective of Enterprise Resource Planning Across European Small and Medium Enterprises: From Determinants to Use to Value, 1-159.
40. R.M. Bhawarkar And DR. L.P. Dhamande. (2012). Exploring Enterprise Resource Planning (ERP) System Outcomes in Indian Small and Medium Enterprises (SME’s). *International Journal of Engineering Research & Technology*. 1 (4), 1-8.
41. Rao, S.S. (2000), “Enterprise Resource Planning: Business Needs and Technologies”, *Industrial Management & Data Systems*, 100 (2). 81-8.
42. Rubina Adam, Paula Kotzé and Alta Van Der Merwe. (2011). Acceptance of Enterprise Resource Planning Systems by Small Manufacturing Enterprises. *International Conference on Enterprise Information Systems*, 1-10.
43. Rubina Adam, Paula Kotzé and Alta Van Der Merwe. (2011). Acceptance of Enterprise Resource Planning Systems by Small Manufacturing Enterprises, 229-238.
44. Sayeed Hashi (2019). Role of Small and Medium Enterprises In Economic Development. Retrieved From: <https://www.linkedin.com/pulse/role-small-medium-enterprises-economic-development-saeed-hash>.
45. Scott, J.E. And Kaindl, L. (2000), “Enhancing Functionality in an Enterprise Software Package”, *Information and Management*, 37. 111-22.
46. Seethamraju, R. (2015). Adoption of Software as a Service (SaaS) Enterprise Resource Planning (ERP) systems in Small and Medium Sized Enterprises (SMEs). *Information Systems Frontiers*, 17(3), 475–492.
47. Selajdinabduli. (2013). Effective Human Resource Management In Small And Medium Size Enterprises In The Republic Of Macedonia. *International Journal of Academic research in Economics and Management Sciences*. 2 (2), 1-15.
48. Siti Shafrahshahawai, Kamarul Faizal Hashim and Rosnahidrus. (2014). Enterprise Resource Planning adoption among Small Medium Enterprises (SME) in Malaysia. *Knowledge Management International Conference*, 1-6.
49. Tarn, J.M., Yen, D.C. and Beaumont, M. (2002), “Exploring the Rationales for ERP and SCM Integration”, *Industrial Management & Data Systems*, 102 (1). 26-34.
50. Tasevska, F., Damij, T., and Damij, N. (2014). Project Planning Practices Based on Enterprise Resource Planning Systems in Small and Medium Enterprises — A Case Study From the Republic of Macedonia. *International Journal of Project Management*, 32(3), 529–539.
51. Themistocleus, M. and Irani, Z. (2001), “Benchmarking the Benefits and Barriers of Application Integration”, *Benchmarking: An International Journal*, 8 (4). 317-31.
52. Tsamantanis, V. and Kojetsidis, H. (2006), “Implementation of Enterprise Resource Planning Systems in the Cypriot Brewing Industry”, *British Food Journal*, 108 (2). 118-26.
53. Vosburg, J. and Kumar, A. (2001), “Managing Dirty Data in Organizations Using ERP: Lessons From A Case Study”, *Industrial Management & Data Systems*, 101 (1). 21-31.

## Evaluating Critical Success Factors of ERP Implementation in SMEs

54. Wbraker Lane Austin. (2013). How Does the ERP Impact Small and Medium Businesses, 1-1.
55. Woo, H.S. (2007), "Critical Success Factors for Implementing ERP: The Case of a Chinese Electronics Manufacturer", *Journal Of Manufacturing Technology*, 18(4). 431-42.
56. Yolande Smit. (2012). A Literature Review of Small and Medium Enterprises (SME) Risk Management Practices in South Africa. *African Journal of Business management*, 6(21). 1-8.
57. Yousef Khaleel, Riza Sulaiman, Nazlena Mohamed Ali and Mohdsyazwanbaharuddin. (2011). Analysis of Enterprise Resource Planning System (ERP) in Small and Medium Enterprises (SME) of Malaysian Manufacturing Sectors: Current Status and Practices. *Jurnalteknologi Maklumat & Multimedia*. 10, 13 - 20.
58. Yusuf, Y., Gunasekaran, A., and Abthorpe, M. S. (2004). Enterprise Information Systems Project Implementation, *International Journal of Production Economics*, 87(3), 251–266.