

Research Article

Integrative Conceptual framework of factors affecting diffusion of ERP in the GCC (Gulf Cooperation Council): A theoretical perspective in SMEs

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Abstract

Enterprise resource planning (ERP) system are found as the most popular system for business management with benefits of greater managerial control and real time capabilities in organizations. With current growth in SMEs, Gulf Cooperation Council observed that implementation of ERP system is necessary and common platform to influence their competitive advantage. Whereas, all implementation of ERP have not been successful since, it brings considerable changes in companies norms, people, processes and culture, still there are many challenges that organizations face in implementing ERP system. “Small and Medium enterprises (SMEs)” in Gulf region are the main drivers of employment, growth, and economy development. Government of Gulf countries has developed many programs and policies to support SMEs in different states but these are usually not updated like ERP system and hence efforts become useless. Focus of this study is to explore “critical success factors (CSFs)” of proposed framework for implementation of ERP systems in SMEs of GCC (Gulf Cooperation Council). These findings may help SMEs of gulf countries in improving success rate of ERP implementation.

Keywords: Integrated conceptual Framework, Enterprise Resource Planning, Gulf Corporation Council, ERP Implementation, Theoretical Perspective

1. Introduction

ERP system is a business information system that automates and integrates the main process of business and functional division procedures within & across the enterprise. It helps organizations in various activities like alliance with customers and vendors, managing demand of customers, reduction of inventory and improvement in productivity, timely & correct information flow within enterprise. It is not simple as any other information systems as it involves its own process from business and need many minor or major changes to be done in organization related to management, technology, operations, and strategies. Hence successful ERP system implementation is very expensive, complex, and time-consuming chore that need huge amount of resources along with effective planning and management (Aldossari, & Mukhtar, 2018).

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Organization size plays an important role in implementation of ERP. SMEs environment is found different as compared to large organizations (Aarabi, et al, 2012). As compare to large enterprises, SMEs suffer more shortage of financial resources (Zach, Munkvold, & Olsen, 2014). SMEs usually face failures in ERP utilization. ERP adoption risks in SMEs depend on the fact it has limited resources and precise features that make them different from large enterprises. Employee behavior, project activities, project sponsors, coordination, organization culture, and individual features of ERP project management team have great impact on success or failure of implementation of ERP in SMEs. Improvement in user communication, training, & achieving short-term successes can positive influence motivation and acceptance rates of users' system within SMEs. Small and Medium enterprises that are able to implement ERP successfully can investigate more ways to expand them to support their external operations (Kirana and Reddy, 2019).

Support from top management, ERP software and vendor selection, business process reengineering (BPR) and involvement of user at the time of implementation are some of the issues called as "critical success factors (CSF)" and if these are handled carefully can result in positive influence and successful adoption and implementation of ERP system (Nkasu, 2020). Many studies are done on developed countries for ERP technology but few are done on Gulf and Arab countries due to late IT adoption in these countries. This study investigates some ERP system critical factors adoption in GCC (Gulf Cooperation Council).

2. Literature Review

There are 4 major factors that affect the diffusion of ERP in GCC i.e. "Top management support, Organizational culture, User's involvement and "reengineering of business process".

2.1 Top management support

The execution of Cloud "Enterprise Resource Planning" (ERP) system and explore the challenges & factors that affect the users. This study also compares traditional system and Cloud ERP systems. This research study is divided into 3-group factors i.e. environmental, management and technological that is expected to be most important Cloud ERP implementations determinants. Finding of the study shows that Cloud ERP system use is a substitute to old type ERP system and is positive to the organization success & enhances the quality of process of decision-making. It was also observed that implementation of Cloud ERP effectiveness is dependable on professionalism providers and results in decreasing independence of organization (Alsharari, Al-Shboul, and Alteneiji, 2020).

Tamimi, and Mohammad, (2018) investigated important "critical success factors (CSF)" for successful implementation of ERP. Finding of the study shows that various "National and Organizational factors" from the framework adopted have positive pressure on implementation of ERP software at authorities of UAE federal government. National factors such as IT infrastructure, economy & economic strengths, region allocation of the UAE and regulations of government have positive whereas manufacturing strengths does not have noteworthy influence. Organizational factors like "management commitment", "computer culture", "IT maturity" and "business process reengineering experience" are found positive and business size revealed no

foremost impact. Positive relationship was observed among National & Organizational factors and successful ERP implementation in federal departments of UAE govt.

There are many anticipated frameworks and models for ERP systems implementation. The proposed framework consists of 4 stages in its implementation i.e. “Planning, selection and design, implementation and control, and evaluation and improvement”. With simple methods in the framework and presence of SME’s features can help in ERP implementations in SMEs without any technical & high experienced staffs & technical tools. Needed elements in framework can help in usability & sustainability of framework such as plan in project management, steering committee, “Critical success factors (CSFs)”, environment of organization, external environment, workforce, security, standard & stakeholders (Aarabi, Ghafoorian and Saman, 2014)

AlBar and Hoque (2019) examined the factors that manipulate the acceptance in Kingdom of Saudi Arabia of cloud ERP by merging the “Diffusion of Innovation theory (DOI)” and “Technology Organization-Environment (TOE)” framework. ERP (Enterprise Resource Planning) systems have shown a standard changes in the domain of information systems. It can provide “cost efficiency, flexibility, adaptability, scalability, configurable data and availability to any type of company”. This system grows rapidly all over the world. But cloud ERP adoption is still at state of infancy in developing countries of Middle East like “Saudi Arabia”. Finding shows that complexity, competitive environment, relative advantage, ICT skill, ICT infrastructure, observability, support from top management and regulatory environment had a noteworthy impact on cloud ERP the adoption, while culture of organization, compatibility, & trial ability had no noteworthy impact.

Haddara and Elragal (2013) explored that in SMEs, unexpected costs enhancement causes serious danger to their survival and stability in market. ERP projects estimated their schedules and budgets. This study provided list of cost factors and its diversions that can help in better estimated needed in budgets of ERP projects. This explored indirect and direct cost factors that happen during ERP adoptions in SMEs. Rankings, mind mapping, group discussions, interviews techniques help respondents to indentify and recommend futuristic list for cost factors. Researcher explored the factors such as quality management, machinery, services, hosting and VPN under services, business engagement under HR costs and planning; and implementation under BPR.

Kouriati, Bournaris, Manos and Nastis (2020) investigated the “Critical success factors” that influence the ERP system implementations in some companies of United Arab Emirates. Some elements have noteworthy influence on success of ERP system is called as “Critical Success Factors (CSFs)”. Relevant literature review was conducted to find out CSFs that apply a great influence on either success or failure of implementation of ERP in general. Further the study investigated influence of these CSFs on process of ERP implementation in various organizations of United Arab Emirates. Finding shows that technological and organizational ERP factors are more influencing as compare to other factors.

H1: Top Management Support has a positive and significant influence on the Diffusion of ERP in GCC

2.2 Reengineering of business process

An ERP system is most important for business change and development and its implementation is huge challenge. Study reveals that most of the organizations face issues in managing scope of implementation of ERP project. Study provided practical as well as theoretical implications both of successful implementation of ERP in Saudi organizations. This study reveals 29 main factors are identified that influence the successful ERP implementation. It was found that generally ERP knowledge and learning has noteworthy influence on implementation of ERP in relation to organizations adoption, understanding, and usage of ERP functions level in Saudi Arabia (Alhajaj, 2018).

Bekhet and Sofian (2018) explored that high rate of failure of implementation of ERP is due to differences in interests among customer associations that have objective to give most favorable solutions for problems of business and ERP vendors who rather like to have general solution that can be relevant to a broader market. Business environment is getting complicated and global economy is also becoming uncertain with fast changes in technology, continuously change in demands of customers, more deregulations, and trade barriers. These uncertain factors have noteworthy impact on companies' probability of success and survival. Hence, this study reveals the new "Critical Success Factors" that affect implementation of ERP in "Saudi Arabia".

Chen (2012) described and dissimilar critical factors and experience of 2 organizations of UAE implementation of ERP. One of them is global and other one is local company. Top management support is the only one common factor among both companies that are at most priority. Balanced team implementation & clear knowledge of strategic objectives were also ranked differently. Local company is concerned to learn from outside resources and measure performance of project while global company is concerned for organizational and managerial factors that were expected traditionally. It is possible that due to prior experience of ERP implementation of these companies this result obtained. Most critical factors that influenced local company ERP implementation were support from top management, learning from outside resources, involvement of user, strategic objectives, performance measures & implementation team.

Aldossari and Mokhtar (2020) examined some major issues that are connected to "Enterprise Resource Planning and Business Intelligence (ERPBI)" in private sector of "Saudi Arabia". 30 experts from private sector of Saudi was considered in this study. Finding of the study reveals that adoption of ERPBI models are lacking and in those they are present are not able to prohibit various noteworthy factors for successful adoption. Finding shows that factors such as service quality, system quality, & information quality, effective communication, change management, training factors, competitive pressure, clear vision and government role. By highlighting these factors and their connection with ERPBI use success will help top management in decreasing losses by system usage to enhance flow of cash, employee performance improves, and hence lead to organization overall performance.

Nofal, & Yusof, (2016) identified the critical challenges related to ERP utilization in SMEs in Middle East Companies. More than 50 literature works were reviewed critically to find out the main "Critical Success factors (CSFs)" to use ERP in diverse type of industries with the

objective to offer a taxonomic framework that can portray and recognize the main CSFs that have influence in ERP successful use. This framework will help in improving outcome of business and help in designing new strategies in SMEs for ERP projects. The successful use of ERP system does not mean to demolish the old model of ERP system but instead replatforming and hosting them. ERP is usually considered as strategic investments that provide noteworthy competitive advantage with optimistic outcomes hence contribute in company's growth and revenue.

Saleh, Abbad and Al-Shehri (2013) found that challenges and factors of implementation of ERP in Western countries are differing from developing countries like "Saudi Arabia". This research study examined the critical factors that have influence on successful implementation of ERP. Sample was collected from 150 organizations of different sizes, ownership, and activities and from different areas of Saudi Arabia Finding shows that success of ERP implementation in "Saudi Arabia" is inclined by support of vendor, business process re-engineering, consultant competence, support from top management & support from users. Based on finding, it was observed that ERP implementation projects are not successful in "Saudi Arabia." Company's expectations that executed ERP are not paying them accordingly.

H2: Organizational Support has a positive and significant influence on the Diffusion of ERP in GCC

2.3 User's involvement

Many organizations perceived "Enterprise Resource Planning" as crucial, probable and very important solution to their businesses to be competitive and increase efficiencies. ERP can provide huge benefits if implemented properly in the organization otherwise it can be disastrous. Adoption of ERP process is quite complex and need rigorous efforts, a good planning, careful thinking and analysis of critical factors important for implementation. Approximately 40 studies were reviewed for CSF and 12 were selected among them. Support from management is the top most important factor followed by project management, training, & education, Teamwork, communication, Business visions and plans, ERP choice, technical implementation, Legacy systems etc. This finding will help in successful implementation of ERP and identification of possible issues (Mahraz, 2019).

Saade and Nijher (2016) consolidated the "Critical Success Factors (CSFs)" that were published in "Enterprise Resource Planning (ERP)" implementation case studies. 37 case studies were used in this paper from different context and countries. This study follows 2 methodologies i.e. process of literature review and analysis & synthesis. Total 64 CSFs were found from literature and after analysis & synthesis 22 factors are found distinct. These factors that include change management are projected with 5 stages of ERP implementation. Finding of the study may help in reducing costs, maintain timeline, and reduce anxieties among employees and by implementation successfully better service to customers. Results can be used to assess ERP implementation, comparative analysis with other experience of implementation, CSFs can be used as a model for performance indicators and use this model to make strategy for project management process for implementation of ERP.

Hustad, Olsen, Jorgensen and Sorheller (2019) investigated the influence of cloud "Enterprise Resource Planning (ERP)" systems on "Small and Medium size enterprises (SMEs)" and how

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they will be benefitted and create information technology value. 19 respondents are interviewed and found that SMEs are experiencing both challenges and benefits by cloud ERP system implementation. Benefits to SMEs such as fast updates on functionalities of system, automization, data storage secured and are able to access crucial business data from various digital units. Challenges are mostly related to organization compliance that have standard solutions and found there is need changes in organization for employees to get maximum output. SMEs usually prefer an informal process to realize benefits, reduce challenges and create digital value from system.

Bramantoro (2018) explored that due to failure and high cost of ERP implementation, ERP is hardly implemented in Saudi Arabia's small and medium enterprises (SMEs). Two application types were made to access the service i.e. smartphone and desktop based application. On the basis of simple qualitative assessment, it is recognized that service of ERP is advantageous as compare to old type ERP systems on the basis of its global accessibility, lack of upfront costs, agile implementation, rapid upgrading, low operational costs, scalability, best practices, mobility and interoperability among other services.

Stepanyan, Abajyan, Ndoeye, Alnasaa (2019) examined that Small and Medium Enterprises (SMEs) are foundation and important for economies of Arab and it includes more than 90 % of overall business and are major source of creating new jobs. Arab countries government has recognize the importance of SMEs and the role they play in higher and inclusive growth. Concerned authorities have made policy and schemes to involve and support development of SME. But development and progress of SMEs are still patchy and need to be taken more comprehensive actions. Government of Arab countries need an approach that figure out the gaps in accessing finance, creating an enable environment for business and up gradation of infrastructure and human capital.

H3: Users' Involvement has a positive and significant influence on the Diffusion of ERP in GCC

2.4 Organizational Culture

Alhirz & Sajeev (2015) examined the impact of individual's cultural values on client adoption of "Enterprise resource planning (ERP)" system. This influence is may be due to resistance by users, satisfaction, and involvement with ERP. Size of organization, level of education and ERP user are also influencing factors. Survey was conducted and 230 ERP users from different organizations are studied. Study finding shows that structure equation model does not reveal any proof for power distance and individual influencing supposed resistance of users and ERP involvement while avoidance of uncertainty has noteworthy influence on perceived involvement of users and resistance with ERP. Perceived involvement of users affect positively to user perceived satisfaction to ERP and level of education impact is moderate.

Almahamid and Awsi (2015) examined the influence of environment of organization ("business process reengineering, top management support, effective project management, company-wide support and organizational culture") and "Enterprise resource planning (ERP)" vendor environment (ERP vendor support) on perceived benefits of ERP. Finding shows that "company-wide support, business process reengineering, organizational culture, and effective

project management” have positive relationship with perceived ERP benefits while “top management support” was not there. there is a noteworthy positive relation among ERP perceived benefits and vendor support. Study included 59 companies that have executed ERP systems. It was observed that culture of organization strongly influence by culture of country and it is one of the key determinant of success and ERP system benefits.

AlMuhayfith and Shaiti (2020) examined the influence of use of ERP on financial & non financial performance of SMEs of “Saudi”. This study identified the factors that contribute in successful and effective ERP system usage. A survey was made and delivered to 200 SMEs of Saudi that accepted and implemented ERP system and approximately 120 valid responses received. Finding shows that satisfaction of users, support from management and training has noteworthy influence on use of ERPs. It was also observed that performance of SME’s also enhances due to ERP system implementation. Other factors like organization culture, strategy, structure and human resources also influence ERP implementations.

Zafar, Almaleh, Alshahri, Alqahtani and Alqahtani (2015) explored Small and Medium enterprises of KSA are very much important for the KSA’s economy growth mainly when implement and apply information system approaches in companies. SMEs in Saudi have automated main processes and functions of business with the help of Enterprise Resource Planning (ERP) system that accomplish full process integration and automation. This system is very beneficial for the enterprises and is flexible although it need extra effort but still the benefits achieve by this system can outweigh the price.

Aloqaily (2021) examined the issues and hurdles face by Small and Medium organizations by ERP system implementation and their relationship & effectiveness between them in Amman (Jordan). This study also evaluated the work performance of the enterprises that has implemented ERP system. Sample was collected through random sampling and population includes employees and management of SMEs of Amman. It was found that organizational performance enhances due to ERP implementation as most of the respondent companies are using ERP system from last 5 years for financial requirements and marketing however they found this process quite challenging.

Shanab, Shehab and Khairallah (2015) explored that ERP system are complex in nature and possibility of failure is more. To implement such type of systems, organizations need to be very careful towards planning and protector against failure factors. This study explored “Key Success Factors (KSFs)” that can be helpful in successful implementation of this process. Responses from 60 executives and managers from local companies of Jordan was collected to find out the highest KSFs.

Shaiti (2014) explored that to have healthy internal control system, an organization need an incorporated system such as “Enterprise Resource Planning (ERP)”. This system has the capacity to have control on access of users and provide facility of duties separation that is most general mechanism for internal control used to prevent fraud in financial system. This study examined the ERP success, ERP & organizational factors that influence the efficiency of procedures of internal control in Business environment of Saudi Arabia. Finding of the study shows that different companies pursues different types of requirement that usually based on the ownership.

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Haq, Chatti and Asfoura (2018) examined that “Enterprise resource planning (ERP)” is a significant innovation that affects the enterprises and business world by improving both intangible and tangible in “Small and medium enterprises (SME)” & large companies. Focus of this study was on the determinant of success and benefits of implementation of this technology in the Kingdom of Saudi Arabia (KSA) context. Finding shows two main determinants of success of ERP project. Firstly, prevalence of information control & improvement in the competence use. The other factors are team project quality, team mission definition, training, reengineering of business process, acceptance by users, support from top management and selection of solution of ERP.

Alenezi and Alsayat (2018) investigated the factors that cause failure of “Enterprise Resource Planning (ERP)” implementation in “Saudi Arabia”. Finding of the study shows that factors like lack of commitment from senior management, ineffective communication with users, fail to get support from users and less effective change management leads to failure of ERP implementation. In organizations of Saudi Arabia, business process engineering was not placed properly, customization size was not understood and measured and implementation of ERP was not properly analyzed and management fail to depend on external and internal participants involved in project.

H4: Reengineering of Business Process has a positive and significant influence on the Diffusion of ERP in GCC

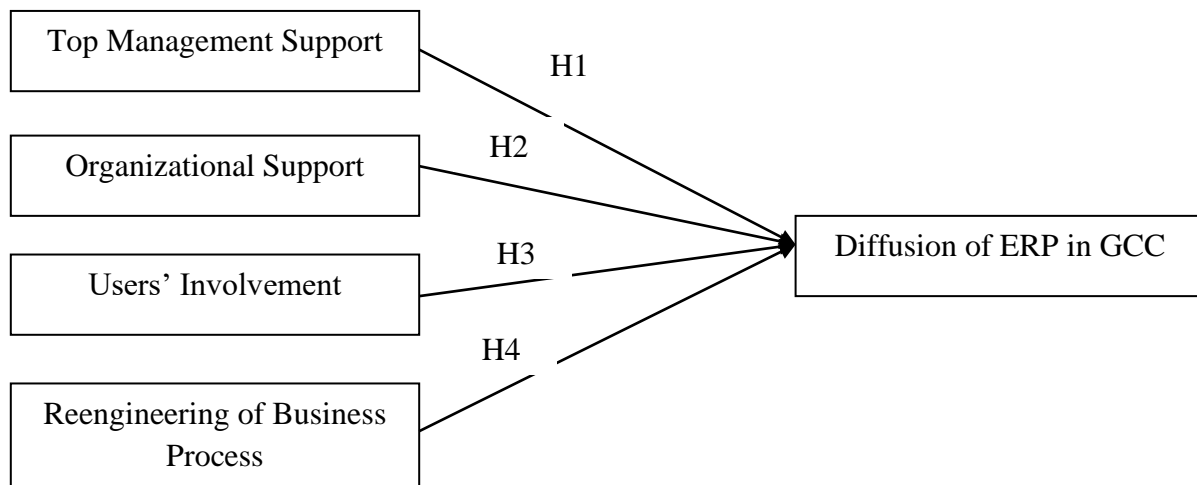


Figure 1 Conceptual Framework: Factors Affecting ERP in the GCC

3. Conclusion

Enterprises that have implemented ERP system successfully are enjoying the benefits of standardized processes, integrative workenvironment, reduced cycle time & improved

productivity of organization. Gulf countries are developing countries and there lots of scope exist for further development. SMEs are always the important element for the growth and development of any economy and SMEs in these countries are also expanding and adopting new technologies like ERP. Many SMEs and authorities are aggressively adopting and implementing ERP business solutions. This study found that some important elements are needed in the framework that can help in usability and sustainability of framework such as plan in project management, steering committee, “Critical success factors (CSFs)”, environment of organization, external environment, workforce, security, standard& stakeholders. Many small organizations are still struggling and fail to handle process of implementation that leads to failure of the project as well as time and resources wastage. ERP software’s are also improving according to the suit and need of SMEs in Middle East as there are huge opportunities available there. SAP has initiated Arabised version of their ERP solutions for these countries.

References

1. Alsharari, N.M., Al-Shboul, M. and Alteneiji, S. (2020). Implementation of cloud ERP in the SME: evidence from UAE, *Journal of Small Business and Enterprise Development*, 27 (2), 299-327. <https://doi.org/10.1108/JSBED-01-2019-0007>
2. Tamimi, H. and Mohammad, H. (2018). Factors Influencing ERPs Implementation in UAE. Conference paper, DOI: 10.1109/CTIT.2018.8649536
3. Aarabi, M. , Ghafoorian, H. and Saman, M.Z.M. (2014). Relevance of ERP Implementation and Critical Success Factors in SMEs of Developing Countries. *International Journal of Scientific & Engineering Research*, 5(9). 11-19. <https://www.ijser.org/paper/Relevance-of-ERP-Implementation-and-Critical-Success-Factors.html>
4. AlBar, A.M. and Hoque, M.R. (2019). Factors affecting cloud ERP adoption in Saudi Arabia: An empirical study. *Information Development*, 35(1), 150–164. DOI: 10.1177/0266666917735677
5. Haddara, M. and Elragal, A. (2013). ERP adoption cost factors identification and classification: a study in SMEs. *International Journal of Information Systems and Project Management*, 1 (2), 5-21. <http://www.sciencesphere.org/ijispm/archive/ijispm-010201.pdf>
6. Kouriati, A. ; Bournaris, T.; Manos, B. and Nastis, S.A. (2020). Critical Success Factors on the Implementation of ERP Systems: Building a Theoretical Framework. *International Journal of Advanced Computer Science and Applications*, 11(11), 23-40. https://thesai.org/Downloads/Volume11No11/Paper_4-Critical_Success_Factors_on_the_Implementation_of_ERP.pdf
7. Alhajaj, K.M. (2018). The analysis results showed that the organizational and technological/ERP factors outweigh the rest of the other categories. 1-336. <https://uwe-repository.worktribe.com/OutputFile/858449>
8. Bekhet, M. ,and Sofian, S. (2018). Technological Critical Success Factor in ERP Implementation Projects in Public and Private Sector in Saudi Arabia. *International Journal of Research – GRANTHAALAYAH*, 6(7), 306-316. DOI: 10.29121/granthaalayah.v6.i7.2018.1311
9. Chen, W. (2012). Critical Factors and Multisite Implementation of ERP: A Case Study in the UAE. *Communications of the IBIMA*, 1-10. DOI: 10.5171/2012.768706

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10. Aldossari, S. and Mokhtar, U.A. (2020). A Model to Adopt Enterprise Resource Planning (ERP) And Business Intelligence (BI) Among Saudi SMEs. *International Journal of Innovation*, 8(2), 305-347. <https://doi.org/10.5585/iji.v8i2.17395>
11. Aldossari, S., & Mukhtar, U. A. (2018). Enterprise resource planning and business intelligence to enhance organizational performance in private sector of KSA: a preliminary review. Paper presented at the International Conference of Reliable Information and Communication Technology. DOI:10.1007/978-3-319-99007-1_33
12. Alhirz, H., & Sajeev, A. (2015). Do cultural dimensions differentiate ERP acceptance? A study in the context of Saudi Arabia. *Information Technology & People*, 28(1), 163-194. DOI:10.1108/ITP-07-2013-0127
13. Nofal, I.M., & Yusof, Z. M. (2016). Taxonomy Framework of ERP Success Usage in SMEs in Middle East Region. *Journal of Theoretical & Applied Information Technology*, 86(3). <https://www.semanticscholar.org/paper/Taxonomy-framework-of-erp-success-usage-in-smes-in-Nofal-Yusof/91d34ae51728422b1f7a72cde0fc72e11158e58b>
14. Saleh, M.; Abbad, M. and Al-Shehri, M. (2013). ERP Implementation Success Factors in Saudi Arabia. *International Journal of Computer Science and Security*, 7(15), 30. <https://www.techsciresearch.com/news/2641-uae-erp-market-projectedto-grow-at-cagr-13-till-2022.html>
15. Nkasu, M. (2020). Investigation of the Effects of Critical Success Factors on Enterprise Resource Planning (ERP) Systems Implementation in the United Arab Emirates. *Smart Intelligent Computing and Applications. Smart Innovation, Systems and Technologies*, 159. Singapore: Springer, DOI:10.1007/978-981-13-9282-5_58
16. Zach,O.; Munkvold, B.E. & Olsen, D.H. (2014) ERP system implementation in SMEs: exploring the influences of the SME context, *Enterprise Information Systems*, 8(2), 309-335, DOI: 10.1080/17517575.2012.702358
17. Mahraz, M.I. (2019). Success Factors for ERP Implementation: A Systematic Literature Review. *Proceedings of the international Conference on Industrial Engineering and Operations Management*. https://www.academia.edu/40332465/Success_Factors_for_ERP_Implementation_a_Systematic_Literature_Review
18. Saade,R.G. and Nijher, H. (2016). Critical success factors in enterprise resource planning implementation: A review of case studies. *Journal of Enterprise Information Management*, 29(1), 72-96, <https://doi.org/10.1108/JEIM-03-2014-0028>
19. Hustad, E., Olsen, D.H., Jorgensen, E.H. and Sorheller, V.U. (2019). Creating business value from cloud-based ERP systems in small and medium-sized enterprises, in *Conference on e-Business, e-Services and e-Society*, Springer, Cham, 691-703. <https://hal.inria.fr/hal-02510110/>
20. Bramantoro, A. (2018). ERP Service for Small and Medium Enterprises in Saudi Arabia. *Indonesian Journal of Electrical Engineering and Computer Science*, 12(1), 69-77. DOI: 10.11591/ijeecs.v12.i1.
21. Stepanyan, V; Abajyan, G.; Ndoye, A.; Alnasaa, M. (2019). Enhancing the Role of SMEs in the Arab World—Some Key Considerations. *International Monetary Fund*, <https://www.imf.org/en/Publications/Policy-Papers/Issues/2019/12/13/Enhancing-the-Role-of-SMEs-in-the-Arab-World-Some-Key-Considerations-48873>

22. Almahamid, S. and Awsi, O. (2015). Perceived Organizational ERP Benefits for SMEs: Middle Eastern Perspective. *Interdisciplinary Journal of Information, Knowledge, and Management*, 10, 145-172. <http://www.ijikm.org/IJIKMv10p145-172Almahamid1978.pdf>
23. AlMuhayfith, S. and Shaiti, H. (2020). The Impact of Enterprise Resource Planning on Business Performance: With the Discussion on Its Relationship with Open Innovation. *Journal Open Innovation Technology Market Complexity*, 6 (87). doi:10.3390/joitmc6030087
24. Zafar, A.; Almaleh, A.I.; Alshahri, S.; Alqahtani, S.S.; Alqahtani, N.D. (2015). Role of Information Systems in KSA Small and Medium Enterprises (SMEs). *International Journal of Advanced Research in Computer and Communication Engineering*. 4(5), 6–11. DOI 10.17148/IJARCCCE.2015.4502
25. Kirana, T.S. and Reddy, A.V. (2019). Critical success factors of ERP implementation in SMEs. *Journal of Project Management*, 4, 267–280.
26. Aloqaily, R.A.R (2021). The Effect of ERP Systems Implementation on Organizational Performance at Small and Medium Companies in Amman – Jordan. *International Journal of Science and Research*, 10 (2), DOI: 10.21275/SR21213171642.
27. Shanab, E.A.; Shehab, R.A. and Khairallah, M. (2015). Critical Success Factors for ERP Implementation: The Case of Jordan. *International Arab Journal of e-Technology*, 4(1), 1-7. <http://www.iajet.org/documents/vol.4/no.1/1.pdf>
28. Shaiti, H. (2014). The relationship between ERP systems success and internal control procedures: a Saudi Arabian study. Retrieved from <https://uobrep.openrepository.com/bitstream/handle/10547/621847/shaiti.pdf?sequence=>
29. Haq, M.S.A.; Chatti, H. and Asfoura, E. (2018). Investigating the Success and the Advantages of Using ERP System in KSA Context. *Engineering, Technology & Applied Science Research*, 8(6), 3631-3639. <http://etasr.com/index.php/ETASR/article/view/2367>
30. Alenezi, M. and Alsayat, M. (2018). ERP Implementation Failures in Saudi Arabia: Key Findings. *International Business Management*, 12(1), 10-22. <https://malenezi.github.io/malenezi/pdfs/10-22.pdf>
31. Aarabi, M., et al.,(2012). A comparative study on critical success factors (CSFs) of ERP systems implementation among SMEs and large firms in developing countries. *International Journal of Advancements in Computing Technology*, 4(9), 226-239.