



The implications of linguistic diversity for the ERP implementation practices in multilingual contexts



Abdulfattah Omar*, Majed Ali Alqahtani

Department of English, College of Science and Humanities, Prince Sattam bin Abdulaziz University, Alkharj, Saudi Arabia

ARTICLE INFO

Article history:

Received 11 February 2018

Received in revised form

20 April 2018

Accepted 26 April 2018

Keywords:

Linguistic diversity

Language barriers

Multilingual

Linguistic identity

ERP implementation

ABSTRACT

This research study addressed the issue of the implications of language differences for the Enterprise Resource Planning (ERP) implementation processes in Saudi public universities as a specimen of organizations where employees come from different linguistic backgrounds. In these universities, Arabic is the dominant language for different reasons including linguistic identity and accessibility. ERP units in these universities are required to use Arabic for all the ERP applications, screens, and practices for linguistic identity purposes. There are several employees in these universities who cannot understand Arabic and therefore cannot comprehend the ERP system resulting in problems and difficulties in their work delivery. This study designed a survey in order to investigate the impact of linguistic diversity on ERP implementation and data was collected from 788 participants in 7 Saudi public universities. The rationale of this study is that these Saudi universities have employees from different countries that speak different languages and at the same time require ERP applications, screens, and practices to be done in Arabic. Results clearly indicate that linguistic barriers pose a big challenge to ERP implementation processes and have a negative impact on various ERP implementation practices. It is suggested that universities should select ERP systems that include multi-language capabilities, encourage employees to adopt English as a foreign functional language, and provide opportunities for employees to improve their language skills for the successful implementation of ERP systems.

© 2018 The Authors. Published by IASE. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Innovation is considered one of the key and critical factors for organisations to survive and cope up with the rapidly increasing changes and challenges of the world today (Shavinina, 2013, Zhou, 2015). The pace of globalisation and the increasing rate of social and technological changes are posing different internal and external pressures which require organisations to foster a culture of innovation in order to maintain a sustainable competitive advantage (Choi and Chang, 2009; Cummings and Worley, 2014). That is why organizations today adopt policies and practices that encourage change and innovations in their processes. Enterprise Resource Planning (ERP) implementation represents one of the recent aspects of technological innovations in organizations and

institutions. It is considered one of the effective solutions for organizations to survive increased pressures of competition. In spite of its importance, ERP implementation is a complex social interaction between IT departments on one side and employees and staff on the other side (Griffith et al., 1999; Wang et al., 2008). It is also a very complicated process that needs high coordination between all staff of the organization. However, in multilingual organizations, linguistic diversity can be a barrier for effective and successful communication which is found to have its negative implications on the success of ERP implementation processes.

In the light of this argument, this research study addressed the implications of linguistic diversity in success of ERP implementation processes. This study evaluated the role of linguistic differences and the need for effective communication between IT and ERP teams and employees in the sampled seven universities of Saudi Arabia. Recently, these universities have introduced technological changes and innovations in almost all their processes including the introduction of ERP systems in order to integrate the services provided for citizens, students,

* Corresponding Author.

Email Address: a.omar@psau.edu.sa (A. Omar)

<https://doi.org/10.21833/ijaas.2018.07.006>

2313-626X/© 2018 The Authors. Published by IASE.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

faculty members, employees, stakeholders and contractors. The selected universities provide a rich source of data since they still recruit employees from different linguistic backgrounds in spite of the Saudization plans that have been initiated over the last decade. Saudization is a government scheme that requires all Saudi institutions and enterprises to fill up their workforce with Saudi nationals up to certain levels (Fakeeh, 2009; Mahdi, 2000). Therefore, in order to meet the requirements of to the Saudization laws, these universities recruit only Saudi nationals in a few jobs ear-marked for them. This study investigated the relationship between language differences on one side and employees' familiarity with the ERP systems and interpersonal effective communication on the other side.

2. Problem statement

In order to address the needs, requirements, and future expectations of the higher education system, the Saudi universities have initiated over the last 5 years ERP implementation processes in order to serve and support their multiple business operations. One main challenge for the success of these systems is language differences. Although linguistic diversity is considered as one of the key assets for the growth of any organization, it faces various challenges for the successful implementation of ERP systems. One main challenge is the dominance of a single language which a few employees may not be familiar with in the organization. In the context of the Saudi universities, Arabic is that dominant language, adopted in all types of ERP systems in these universities for different reasons including linguistic identity and accessibility. In Saudi Arabia, Arabic enjoys a high privilege, not because it is the language of Quran and thought by Muslims to be the words of God, but also because there are many Saudis and other Arab nationals who work for these universities. Therefore, it is more likely for them to use their native language for communication. But at the same time, it is likely that such few people who speak languages other than Arabic may find it difficult to communicate effectively and perform their job properly.

With regard to ERP implementation processes, all ERP systems have been released in both Arabic and English. However, a few employees who can do not speak Arabic or English may find difficulties in their responses and interactions with the system. This study addresses the implications of these language differences for ERP implementation processes and practices with the purpose of proposing a few solutions for the successful implementation of ERP systems.

3. Previous works

Numerous studies indicate clearly that the adoption of technological innovations results in numerous advantages and benefits for organizations such as reducing costs, improving customer service,

and shortening cycle time that helps in maintaining competitiveness or even having a competitive advantage over their rivals. The current trends in the modern world are dominated by technology. Organization growth and survival are now greatly determined by the organization's ability to keep up with technological advancements (Cummings and Worley, 2014, Schein, 2016).

For effective management practices, organizations have adopted different technological innovations in running their operations and processes. Ghosh and Skibniewski (2010) indicated that "Enterprise Resource Planning (ERP) systems are among the most important business information technologies that emerged during the last decade." ERP emerged in the late 1980s and early 1990s out of the necessity for creating new systems that integrate all the functions of an organization together in order to be able to deal with the highly competitive business environment and the increasingly rapid advancements in IT systems. Monk and Wagner (2013) defined ERP systems as "core software programs used by companies to integrate and coordinate information in every area of the business". ERP implementation is useful for businesses and organizations in many ways as it helps organizations and businesses manage more effectively company-wide business processes. They add that "ERP software supports the efficient operation of business processes by integrating tasks related to sales, marketing, manufacturing, logistics, accounting, and staffing- through a business". It is therefore argued that ERP implementation has numerous advantages for businesses and organizations. Ferran and Salim (2008) indicated that ERP implementation is closely associated with improving and increasing productivity levels, decreasing costs, and increasing efficiency. In short, it has been emphasized that ERP systems are particularly critical for complex organizations due to the complexity and interacting nature of their products, marketing, systems, networks, constructs and operations.

Complex organizations refer to a variety of organizational forms that involve the creation of temporary systems for the performance of project tasks (Davies and Hobday, 2005; Hobday, 2000; Morris, 2013). In complex organizations, most or all of the functions of the organization are carried out within projects which are considered primary units for production organisation, innovation and competition (Hobday, 2000). In this way, complex organizations are completely different from organizations based on traditional structures. Complex organizations also differ from mass production in terms of product, production, market characteristics, industrial coordination and evaluation, and competitive strategies. The implication here is that complex organizations due to increasing technological and market needs and challenges must have a culture of change and innovation, for which ERP systems are needed to run their projects smoothly and more effectively.

Universities therefore fall under the category of complex organization when they are also seen undergoing a transition from traditional processes to adoption of more modern, technologically advanced systems to run their processes.

Complex organizations are also composed of different disparate units comprising of components, subassemblies and subsystems that work together as a whole. Furthermore, the ever-increasing competition in today's global economy has made it necessary for businesses to have systems that should work synchronously in collaboration and coordination with its various stakeholders in the supply-chain. There is also a need to synthesize knowledge across their different professional expertise, roles and responsibilities to integrate elements. In other words, there is a need to link the disparate pieces of the project into a seamless whole. This can be done by means of implementing ERP systems that can integrate information and data from within the organization synthesizing its different and numerous units in a smooth and functioning way.

In spite of its need and importance in managing organizations today, adoption of ERP is avoided due to its very high costs and highly sophisticated implementation strategies which most organizations fail to develop. For a successful implementation of ERP systems, thus, some critical success factors (CSFs) are required. One main factor is the selection of the ERP system/software appropriate to integrate with different processes and operations of the organization. There are numerous ERP packages for organizations which include Microsoft, Oracle, Netsuite, Adonix, and SAGE. Whatever the package an organization chooses, this must be frequently updated in order "to improve the fit between business and system" (Wang et al., 2008). Second, the ERP team should have technological and administrative competence for dealing with different problems and making other employees motivated to use and be familiar with the new system. They should also have clear understanding that failure to implement the ERP system results in disasters and can lead businesses to bankruptcy. Last, but not the least, ERP teams need to ensure effective communication between its ERP implementation teams and rest of the members of the organization. In the absence of an effective communication and understanding of the ERP systems, a few of the committed employees may not be able to perform to their fullest potential nor can interact successfully with the implemented ERP system.

In the context of the current study, it is essential to focus on the issue of language barriers that can inhibit the progress of the organization in many ways. While a few employees might be unable to deliver to their utmost potential due to the language barrier, other employees might use this drawback to justify their non-conformance to organizational norms and practices. Prior studies have adequately dealt with language and cultural barriers in work environment and given importance to these barriers

for maintaining a productive and healthy work environment (Avison and Malaurent, 2007; Huang and Palvia, 2001; Sheu et al., 2004; 2003; He, 2004); however, very little has been done in the recent times to study the relationship between language barriers and ERP implementation in general and its relationship with Arabic in particular.

This study tends to bridge this gap in literature by investigating the implications of language differences on the employees' familiarity with ERP systems and the effective communication between ERP teams and employees in other departments in the Saudi universities which can be described as complex organizations based on the nature of forms, structures, roles, functions, administration, management processes, and products of higher education institutions (Bolman and Deal, 2017; Harper and Leicht, 2015; Seeber et al., 2015).

4. Methodology

4.1. The context

The study is based on seven public universities in the Kingdom of Saudi Arabia. The selected universities initiated ERP implementation processes over the last five years with the purpose of integrating different and numerous functions of the organization. The initiative comes in agreement with the Ministry of Higher Education's (now the Ministry of Education) strategic plan to introduce digitalization in the processes and services of the Saudi public schools by 2020. This plan later intends to implement ERP systems in all universities in order to develop and update the current management systems through standardization, to integrate all university processes, and enhance communication, teamwork, and accountability. The initiative comes in line also with the Saudi National Commission for Academic Accreditation and Assessment's requirements that universities need to adopt a culture of innovation in their quest for high quality and efficiency.

The universities share many characteristics in common with a complex organization /industry where ERP is a common phenomenon. First, they are all multilingual institutions where people from different linguistic backgrounds are hired. In all of these institutions, workers, employees, faculty members, and consultants are hired from different non-Arab countries including the United States, Canada, Australia, India, Pakistan, Bangladesh, Philippines, Turkey, and Sri Lanka (Bowen, 2009; Rasooldeen, 2017). Second, these universities can be described as complex organizations as they are involved in providing and undertaking different complex projects and processes, and services for different sectors. Not only do these universities undertake the established three roles: of education, research, and community service, they are also concerned with carrying out infrastructure projects in different sectors including health and housing. Furthermore, public universities are characterized

by research, evolution, and self-organization which prove them good examples of complex organizations (Lohmann, 2006). Third, the ERP systems in these organizations are provided in both English and Arabic. Fourth, the ERP teams come from different linguistic backgrounds which can be an advantage in its implementation among non-Arabic staff members.

4.2. Procedures

The study is based on a case study design using the qualitative method of primary data collection. For data collection purposes, a questionnaire was designed being a common tool in ERP studies and a useful instrument to gather information and data for various purposes like the use and effectiveness of ERP systems, the implementation experience, benefits obtained from the implementation, CSFs of implementation, and reasons of failures of implementation. In this study particularly, the questionnaire proved an appropriate tool for gathering information directly from the employees and staff who have a first-hand experience with the ERP system. The items of the questionnaire were so designed that they helped in exploring the relationship between linguistic on one side and the success and effectiveness of ERP implementation processes on the other side.

4.3. Data collection

The data was collected from 788 participants who belong to 7 Saudi universities. These are Dammam University (112 participants), Imam Muhammad Bin Saud University (124 participants), King Abdullah University of Science and Technology (85 participants), King Fahd University of Petroleum and Minerals (64 participants), King Abdulaziz University (137 participants), King Saud University (144 participants), and Prince Sattam bin Abdulaziz University (122 participants).

The participants represented different linguistic, gender, and age groups. Around 30 % of the participants spoke Arabic as the first language, while only 6 % spoke English as their first language. The remainder 64% came from different linguistic backgrounds which indicate clearly the linguistic diversity in Saudi universities. In terms of sex, 58 % of participants were males while 42% were females. As for age, 22% of the participants were between 20-30 years, 57% between 40-45 years, and the remaining 21% above 45 years.

5. Results and discussion

This section reports results generated from the responses of the participants to the questions that were designed to investigate the relationship between linguistic diversity and ERP implementation processes and practices in Saudi universities. The participants were first asked about

the language they spoke most often in the work environment, it was revealed that Arabic, English, Hindi, Filipino, Malayalam, Punjabi, Kashmiri and Urdu were the most used languages hinting at the linguistic diversity. English came first as 53% respondents of the current sample used this language most often in the workplace, while Arabic came second with around 19% respondents. Hindi, Urdu, Filipino and other languages came later respectively. This finding emphasizes and justifies the use of English as a lingua franca where the majority of employees find this language an effective medium to communicate with one another to overcome linguistic differences. For Arabic, it was noted that mostly the Saudi natives preferred it while members from other Arabic speaking countries like Egypt, Jordan and Sudan still preferred to use English as the formal language. The other employees who used languages such as Hindi, Punjabi and Urdu from countries like India and Pakistan also preferred to use English as the formal language. The implication here is that a linguistic diversity is a significant feature in the sampled universities.

The study focused on the relationship between linguistic diversity and ERP implementation practices of these universities such as admission, evaluation, assessment, salaries, leaves and recruitment, to name only a few. Findings suggest clearly that several users face difficulty in understanding the ERP system platforms, screens and instructions because of language barriers as these are in Arabic and machine translation option is never reliable and creates semantic misunderstandings. A majority (51%) of the respondents felt that ERP manuals and instructions lacked clarity while only 35% found them legible to understand with some effort and only a small number (14%) understood them without difficulty. This is an evidence of a critical challenge for implementation of ERP processes in the universities under study because if employees do understand the system, they will not be able to use it thus affecting their productivity and performance.

This claim is supported by another finding in which a majority of participants (72%) indicated that not all the system data, applications, and screens were available in both English and Arabic though the interfaces and the introductory screens of a few ERP systems in all selected universities could be found in Arabic and English. Still, a big number of respondents (64%) found a lot of information missing in the English version of such interfaces. This is a more deteriorating factor to establish communication with non-Arabic users and a real challenge to the successful implementation of ERP systems. Furthermore, many respondents emphasized upon the fact that there several applications and data were available only in Arabic and that they cannot deal with them effectively in spite of taking the help of Google and other translation tools. About translations tools, almost half of the respondents (49%) reported that they

used such tools very regularly and additional 14% said they used a lot for almost every communication; 8% used it moderately and 7% a little, while 22% of them reported that they did not use such tools at all. When asked about the usefulness and effectiveness, of translation tools for understanding the ERP system applications and screens, only 27% of the respondents found them useful but the worst scenario were when 65% of respondents thought that translations were unreliable and inaccurate since they often led to confusion and error-prone job directives and activities. These findings are in consistent with previous studies such as [Wankel \(2009\)](#) who found that inaccurate translations led to problems of personal communication in the workplace.

In terms of the communication with ERP and IT staff, the majority of the respondents (59%) reported that they faced difficulties in communicating with the IT Help Desk and that the information and feedback which they received from

them were not clear (Not at all clear, 37%; and not so clear, 22%). In their evaluation of their experiences with IT and ERP departments, 69% rated them as negative (Very negative, 37%; and somehow negative, 32%). Furthermore, many respondents indicated that in their universities, they faced many difficulties when calling the IT Help Desk over the phone as they were usually answered by Saudi females whose English was not good enough. This leads to infer that that the problem of ineffective communication between ERP teams and rest of the units in the universities can partly be ascribed to the government regulations where a few jobs are restricted to only Saudi nationals and in some cases to only females to follow sex segregation policies of the Saudi government. It was therefore not surprising to find a majority of respondents (69%) who believed that the impact of linguistic diversity on work environment was negative (35% Very negative and 34% somewhat negative) as shown in [Fig. 1](#).

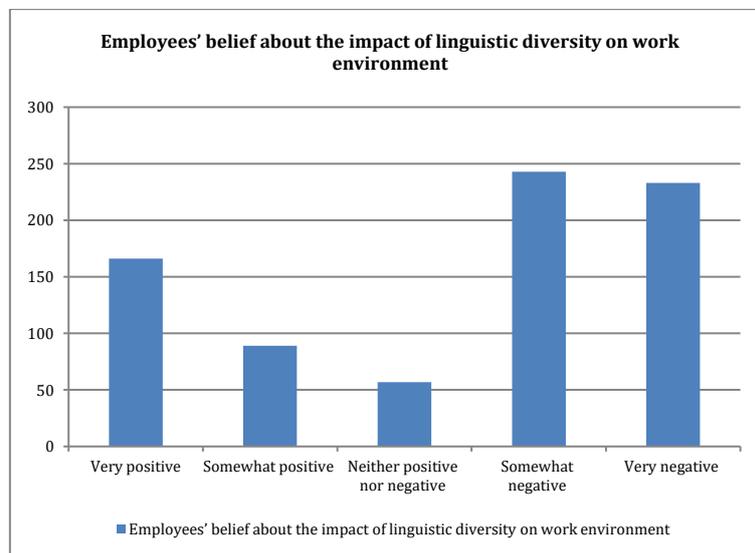


Fig. 1: Employees' belief about the impact of linguistic diversity on work environment

Similarly [Fig. 2](#) reveals that the satisfaction level of a majority (69%) of employees was negative (41% Very negative; 28% somewhat negative) with regard to the culture of the workplace.

Likewise, more than 75% of the respondents reported their disagreements stating that they were not confident in using the ERP systems implemented by their organizations due to their inability to understand the linguistically diverse screens with several version of meaning as shown in [Fig. 3](#).

These results clearly reflect that linguistic diversity in the selected Saudi universities, owing to the distinctive feature of their employees from diverse cultures and languages, face different challenges in the successful implementation of ERP systems. It was also revealed that language barriers had negative implications on employees' familiarity with ERP systems and effective communication with IT and ERP teams. Different reasons can be suggested including the dominance of Arabic, lack of

language training workshops, and the architecture of the few of the ERP components used.

Accordingly, organization leadership should adopt strategies that can help in overcoming these barriers for a successful implementation of ERP systems. The failure to address to language barriers in work environment has negative implications on employees' performance and commitment to the success of ERP systems.

This is consistent with the findings of [Gurung and Prater \(2017\)](#) who indicated that language barriers made it difficult to give direction, explain expectations, or provide performance feedback to those with whom one cannot communicate effectively. The author added that the productive output of employees cannot be raised if managers cannot communicate with them nor employees can be trained properly if there are semantic and lexical barriers owing to linguistic diversity. As a result, employees' performance cannot be improved if they

fail to comprehend what they are expected to perform.

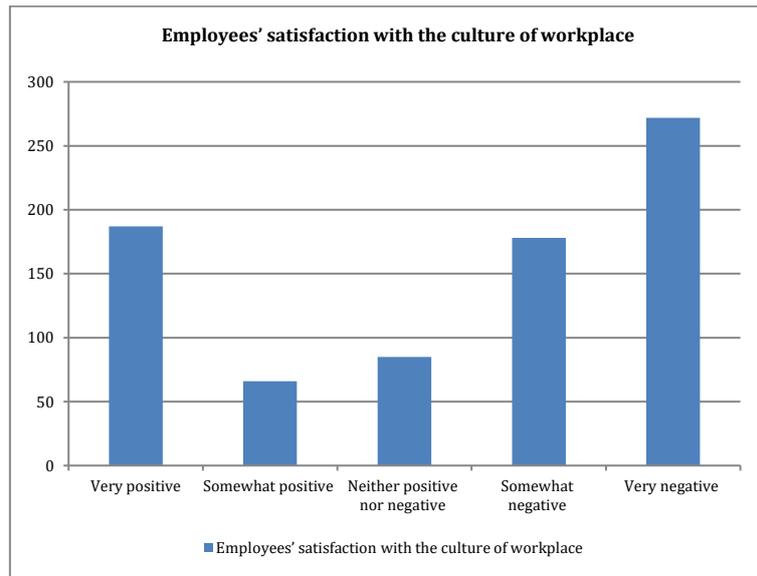


Fig. 2: Employees' satisfaction with the culture of workplace

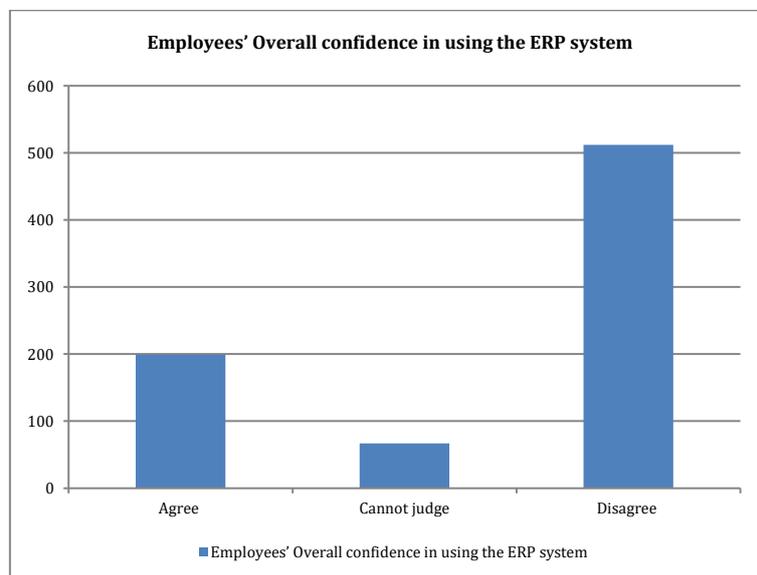


Fig. 3: Overall, I feel confident in using the ERP system as I can fully understand the system screens

Moreover, leaders and executives need to address the issue of language barriers for the successful implementation of ERP systems. All ERP instructions, data, applications, and screens should be made available in a clear and accessible language. Universities should use such ERP systems that are embedded with multi-language capabilities to address the linguistic needs of all employees and stakeholders (Sharma, 2004; Wessel, 2010). It is also recommended that university management should encourage all staff and employees (including the Arabic speakers) to adopt a foreign functional language in the workplace thus emphasizing the need to respect of the linguistic identity and different linguistic backgrounds of university employees. It is suggested to make English that foreign functional language for it already enjoys a global status (Crystal, 2012) and it is also the most widely spoken language in the workplace of the sampled universities as revealed in the results of the study.

Employees and faculty members who are not native speakers of English are thus expected to improve their language capabilities for the successful communication between all employees in all different departments. Universities are also recommended to conduct language training workshops in order to improve the linguistic proficiency of their employees.

6. Conclusion

In Saudi Arabia, universities employ people from different languages and cultures and provide them unique opportunities for personal growth, leadership and improvement of technological skills. Employees should always see challenges and difficulties posed by linguistic diversity as opportunities of learning and acquiring better communication in international spheres. A successful interface with ERP practices in their work

environment and developing awareness with the ERP implementation processes would therefore pave a way of their growth and smooth understanding of their work expectations. Universities should also understand that if language barriers are underestimated, it can dramatically lead to a breakdown of the system. The management of universities should make sure that all employees understand ERP instructions and application descriptions thoroughly. Having discussed the issue of linguistic diversity in detail, this study finds a dire need for an integrated linguistic framework for a successful implementation of ERP systems. Universities need to select multi-language ERP systems and encourage the use of English as a functional language or a lingua franca in the workplace. Finally, in order to ensure that all employees are familiar with the ERP systems and communicate effectively with one another, it is equally important for employees to improve their linguistic competence.

References

- Avison D and Malaurent J (2007). Impact of cultural differences: A case study of ERP introduction in China. *International Journal of Information Management*, 27(5): 368-374.
- Bolman L and Deal T (2017). *Reframing organizations: Artistry, choice, and leadership*. John Wiley and Sons, Hoboken, New Jersey, USA.
- Bowen G (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2): 27-40.
- Choi J and Chang J (2009). Innovation implementation in the public sector: An integration of institutional and collective dynamics. *Journal of Applied Psychology*, 94(1): 245-253.
- Crystal D (2012). *English as a global language*. Cambridge University Press, Cambridge, UK.
- Cummings T and Worley C (2014). *Organization development and change*. 10th Edition, South-Western College Publishing, Boston, USA.
- Davies A and Hobday M (2005). *The business of projects*. Cambridge University Press, Cambridge, UK.
- Fakeeh M (2009). *Saudization as a solution for unemployment: The case of Jeddah Western region*. Ph.D. Dissertation, University of Glasgow, Glasgow, UK.
- Ferran C and Salim R (2008). *Enterprise resource planning for global economies: managerial issues and challenges: Managerial issues and challenges*. IGI Global, New York, USA.
- Ghosh S and Skibniewski M (2010). Enterprise planning resource systems implementation as a complex project: A conceptual framework. *Journal of Business Economics and Management*, 11(4): 533-549.
- Griffith T, Zammuto R, and Aiman-Smith L (1999). Why new technologies fail?. *Industrial Management*, 41(3): 29-34.
- Gurung A and Prater E (2017). A research framework for the impact of cultural differences on IT outsourcing. In: Palvia J and Prashant P (Eds.), *Global sourcing of services: Strategies, issues and challenges*: 49-82. World Scientific, Singapore.
- Harper CL and Leicht KT (2015). *Exploring social change: America and the world*. Routledge, Abingdon, UK.
- Hobday M (2000). The project-based organisation: An ideal form for managing complex products and systems?. *Research Policy*, 29(7-8): 871-893.
- Huang Z and Palvia P (2001). ERP implementation issues in advanced and developing countries. *Business Process Management Journal*, 7(3): 276-284.
- Lohmann S (2006). *The public research university as a complex adaptive system*. Unpublished paper, University of California, California, USA.
- Mahdi S (2000). *Saudization and structure of the labour market in Saudi Arabia*. Ph.D. Dissertation, University of Hertfordshire, Hertfordshire, UK.
- Monk E and Wagner B (2013). *Concepts in enterprise resource planning*. 4th Edition, Course Technology CENGAGE Learning, Mason, Ohio, USA.
- Morris P (2013). *Reconstructing project management*. Wiley, Hoboken, New Jersey, USA.
- Rasooldeen M (2017). Saudi Arabia has 11 million foreign workers from more than 100 countries. Arab News. Available online at: <http://www.arabnews.com/node/1201861/saudi-arabia>
- Schein E (2016). *Organizational culture and leadership*. 5th Edition, Wiley, Hoboken, New Jersey, USA.
- Seeber M, Lepori B, Montauti M, Enders J, De Boer H, Weyer E, and Frølich N (2015). European universities as complete organizations? Understanding identity, hierarchy and rationality in public organizations. *Public Management Review*, 17(10): 1444-1474.
- Sharma P (2004). *Enterprise resource planning*. APH Publishing, New Delhi, India.
- Shavinina LV (2013). *The Routledge international handbook of innovation education*. Routledge, London, UK.
- Sheu C, Chae B, and Yang C (2004). National differences and ERP implementation: Issues and challenges. *Omega*, 32(5): 361-371.
- Sheu C, Yen H, and Krumwiede D (2003). The effect of national differences on multinational ERP implementation: An exploratory study. *Total Quality Management and Business Excellence*, 14(6): 641-657.
- Wang T, Shih S, Jiang J, and Klein G (2008). The consistency among facilitating factors and ERP implementation success: A holistic view of fit. *Journal of Systems and Software*, 81(9): 1609-1621.
- Wankel C (2009). *Encyclopedia of business in today's world: A-C*, Vol. 1. Sage, Thousand Oaks, California, USA.
- Wessel R (2010). *Toward corporate IT standardization management: Frameworks and solutions: Frameworks and solutions*. IGI Global, Hershey, Pennsylvania, USA.
- He XJ (2004). The ERP challenge in China: A resource-based perspective. *Information Systems Journal*, 14(2), 153-167.
- Zhou J (2015). *The Oxford handbook of creativity, innovation, and entrepreneurship*. Oxford University Press, Oxford, UK.