
**FACTORS OF CHANGE MANAGEMENT AND PERCEIVED EASE OF USE
AFFECTING ERP ACCEPTANCE AND FINANCIAL PERFORMANCE OF SAUDI
ARABIA LISTED COMPANIES**

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ABSTRACT: *This study investigates the effects of ERP change management and ERP perceived ease of use on ERP systems acceptance and its impact on the financial performance of Saudi listed companies. The survey method has used in order to collect the primary data and survey was conducted with the employees who are working in the Saudi companies and using the ERP systems in order to manage their day-to-day activities. The findings of this research shows that change management activities within the organization can be helpful in increasing ERP acceptance within the firm. The research findings reflect that effective change management activities can be helpful in increasing the acceptance of the ERP systems within the firm.*

KEYWORDS: Financial Performance, ERP Acceptance, PLS

INTRODUCTION

The use of the ERP (enterprise resource planning) systems in the modern organizational settings has been the focus of the researchers and scholars from the last many years (Aloini and Mininno, 2007). The acceptance of the ERP systems by the organizations mainly depends upon the various business needs and the ability of the ERP systems to satisfy those needs (Al-Masher and Zairi, 2003). However, the majority of the studies which have been conducted on the ERP systems in the business contexts tend to ignore one of the most important aspects which are the return on the investment on ERP systems (Amoako-Gyampah, 1999). This means that the business managers are interested in identifying that what return they will get if they are making investments on the establishment and implementation of the ERP systems within the firm (Akkermans and Helden, 2002).

Therefore, it is important to investigate the link between the financial performance of the firm and the implementation of the ERP systems (Al-Mudimigh and Al-Mashari, 2001). Although there are very few studies that are focused on identifying the link between organizational financial performance and the ERP systems implementation, however, it is an important subject which also increases the importance of this particular study. One of the main reasons behind this is majority of the studies are focused on discussing that how the business needs and requirements can be

fulfilled with the help of the ERP systems. The link between the financial performance of the firm and the ERP systems implementation is an important aspect that has been ignored. According to Aladwani (2001), the proper implementation of the ERP systems increases the ability of the organization to gain financial returns. Beheshti (2006) believes that ERP systems implementation enable the business firms to introduce innovative and cost efficient business systems in order to handle various important business tasks which result in improve financial results in the long run. It is a fact that a research model which does not identify the link between financial gains and the implementation of the ERP systems cannot provide a proper justification that why is it important for the firms to accept the ERP systems and how the acceptance of ERP systems can be increased (Besson and Rowe, 2001). This research papers discusses the issues which the organizations are facing while accepting the ERP systems and their role in improving the overall financial performance. An important aim of this research is to suggest the future agenda of ERP acceptance within the organizations and to discuss the tangible and intangible benefits which can be generated by the ERP systems. Ignoring the strategic benefits of ERP systems implementation can be a crucial mistake for the managers because it decreases their ability to convince the key stakeholders to support the implementation of the ERP systems. The technology acceptance model has been used in this particular research which is helpful in understanding that why it is important to accept the new technologies such as ERP systems in the modern organizations. Research shows that implementation of ERP systems can be beneficial for the organization only when it is balanced with the financial needs of the company (Yen and Chang, 2002). This helps to understand that it is important for the business managers to identify the business needs and the user requirements before introducing the ERP systems but it is equally important to identify that whether the implementation of ERP systems can be helpful in improving the overall financial performance of the company or not (Ehie and Madsen, 2005). Boykin (2001) believes that ERP systems can be easily accepted within the organization when they are focused on meeting the financial needs of the company.

This article aims to develop a strong understanding of the various studies that have conducted on the ERP acceptance within the organization and its link with the financial performance of the company. An important aim of this research is to propose a research model which can be helpful in providing adequate explanations of the ERP change management and ease of use on ERP acceptance and its impact on the overall financial performance of the firm. This is a major gap which is identified in the research area and this study help to bridge this gap. The structure of this research is that the following section of this article provides the theoretical background and a detailed literature review. The third of the article discusses the research methodology and in the section four, the analysis of the research results has been presented. The last section of the article discusses the research results and it also provides the final conclusion of the research.

THEORETICAL FRAME WORK AND LITERATURE REVIEW

Technology Acceptance Model

There are various literatures which suggest that acceptance of information and communication technology within the firm is based on the theory of technology acceptance model (TAM). The

TAM model discusses that the usefulness of the IT based systems and it explains that the needs of the users is the main determinant of the usage of new systems within the firm (Bingi and Godla, 1999). However, there is very limited attention that has been given by the researchers and scholars in order to identify the factors or elements that can influence the usefulness of the IT systems and ease of use of these systems. An important factor that can help to ensure the successful implementation of the IT based systems within the organization is the intended use of the information technology and the benefits that can be achieved with the help of those systems (Yen and Chang, 2002). It has been identified that there is a close link between the theory of reasoned actions and technology acceptance model (Zhang and Banerjee, 2002). The technology acceptance model states that the successful implementation of the new systems within the organization is based on how the innovations are viewed by the users and how effectively these innovations can address the changing needs of the business. It also depends upon how the changes are appreciated within the organization. However, the acceptance process also has various stages which help to ensure that IT systems can become the full part of the organizational environment. These stages reflect the cognitive behavior of the users towards the acceptance of the new systems within the organization.

Literature review

Enterprise resource planning (ERP) refers to business management software that can be used by the companies in order to collect, store and interpret the data or information for various business activities. These activities could include product planning, marketing and sales, manufacturing and inventory management. Research shows that the most effective benefit of ERP systems is that they are helpful in effectively managing the organizational resources and enable the management to achieve the desired business results (Grabski and Sangster, 2009). According to Calegero (2000), ERP provides a closed view of important business processes by using the common data bases. It also helps to track the business resources including production capacity, cash in hand, raw materials and provides an update to the organizational management regarding the business commitments including sales orders and purchasing orders (Carton and Sammon, 2008). The management of the firm can make important business related decisions by using this information (Chou and Chang, 2008).

There are various literatures which show that the organizations which are successful in implementing the ERP systems can easily achieve strategic competitive advantage which is also helpful for them to achieve a leadership position within the industry in which they are operating (Dent and Goldberg, 1999). The enterprise system software is considered as a multi-billion dollar industry and it helps to produce the components that can support the variety of business functions (Fiona and Janet, 2001). According to Davenport (1998) the financial and economic benefits that are directly associated with the implementation of the ERP systems is one of the most important aspects that motivate the organizations to make investments in the ERP systems. The investments in the IT based systems have become the largest category of capital expenditures which are made by the businesses in the United States of America (Francoise and Pellerin, 2009). However, despite of number of benefits of the ERP systems, the acceptance of these systems still depends upon the fact that whether the ERP systems can be successful in meeting the business needs and enhancing its efficiency or not (Gargeya and Brady, 2005). If the implementation of the ERP systems result

in improved business performance then the acceptance of these systems is more likely to high (Gargeya and Brady, 2005).

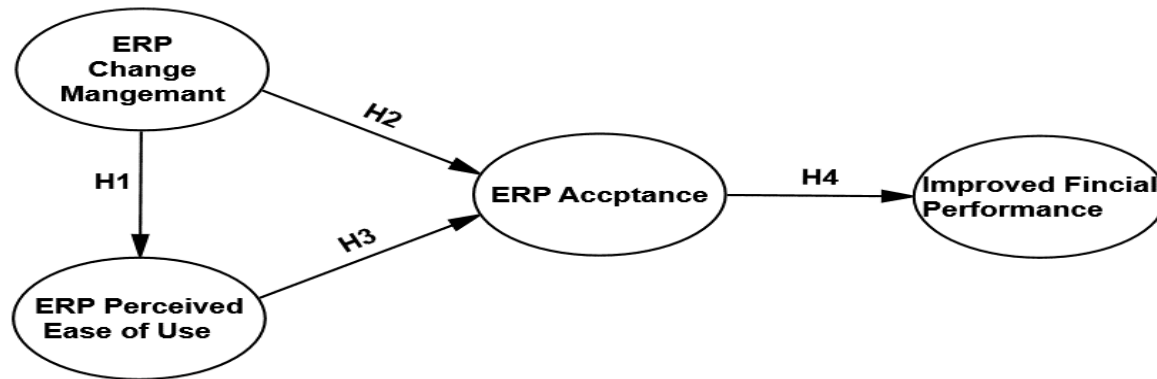


Figure 1 ERP Acceptance Model

ERP Change Management

The importance of change management in the modern era has been significantly increased and the critical factor which is discussed in the literature is the way change is initiated and managed by the senior management of the firm within the organization also determines the success or failure of the business (Grabski and Sangster, 2009). The change management process within the organization helps to ensure that users are not showing resistance against the implementation of the new systems within the firm (Hung and Lin, 2004). This is very crucial because when the users are resisting against the change then it affect the ability of the management of the firm to introduce innovative and technology based business systems such as ERP systems which have become an important business requirement in the modern era (Hong and Kim, 2002). Research shows that users or employees working within the firm are more likely to resist against the change because they have a perception that they might not be able to effectively utilize the new systems and it could result in loss of their job or other workplace related issues (Haines and Goodhue, 2003). Therefore, the management of the firm is not able to implement the new systems because of high level of resistance from the employees. According to Gupta (2000), the business managers can implement new and innovative business systems and processes when the employees are providing necessary support to the management.

Iskanius (2004), when the change management process is implemented or the new systems are introduced within the firm then there is always a fear in the minds of the employees regarding the use of the new systems and in order to overcome, the management of the organization can arrange training programs for the employees. The training activities enable the employees to effectively utilize those systems and achieve desired results from them (Jaideep and Gunasekaran, 2002). Therefore, the employees working in the organization can be updated regarding the use of the ERP systems (Ke and Wei, 2006). The managers require a positive behavioral approach from the employees so that they can utilize the ERP systems in the best possible manner for the purpose of achieving the corporate goals and objectives of the organization (Klaus and Rosemann, 2000). It is a fact that if change is effectively managed then it is more likely to create a positive impact on

ERP acceptance within the firm and it will also help to develop positive perceptions in the minds of the employees regarding the use of ERP systems.

Hypotheses 1: ERP change Management is positively affects ERP perceived Ease of use

Hypotheses 2: ERP change Management is positively affects ERP Acceptance

ERP Perceived Ease of Use

The perceived benefits of the ERP systems have been discussed by many researchers and scholars. The satisfaction of the users who are required to use the ERP systems is generally considered as one of the most important factor which is more likely to increase the acceptance of the ERP systems within the firm. However, the users are more likely to be satisfied with the ERP systems when they have the necessary skills and capabilities to use those systems in an effective manner. This means that the ERP systems must be easy to use, reliable and accessible for the users (Stratman and Roth, 1999). Therefore, the organizations required delivering those ERP systems that are according to specific needs of the users and training must be provided to them so that they can use the ERP systems in an effective manner (Somer and Nelson, 2001). Research shows that when the users are satisfied with the ERP systems then they can easily generate desired level of performance from those systems (Umble and Umble, 2003). On the other hand, if the users are not satisfied with the implementation of the ERP systems then it could result in failure of the systems which is also a serious financial loss for the businesses (Wu and Tai, 2002). The technology acceptance model can be helpful in identifying the needs of the users and analyzing the chances of the acceptance of the new systems (Wang and Jiang, 2006). The use of the technology acceptance model is more likely to create awareness among the users which increases their acceptance towards the model (Wang, 2003). Thus, below is the hypothesis to be tested for this aspect.

Hypotheses 3: ERP Perceived ease of use is positively affects ERP Acceptance

ERP Acceptance and Improved Financial Performance

Analyzing the impact of the ERP systems on the financial performances of the firm is an important concern for the organizations due to the high cost and high risk of ERP investments. The use of ERP systems is continuously increasing in the modern business era and the business managers have started realizing this fact that use of the ERP systems could enable them to enhance the organizational performance (Nah and Lau, 2001). The organizations which are not using the effective use of ERP systems or similar technologies might not be able to enhance their competitiveness by operating in the highly competitive industry (Noudoostbeni and Yasin, 2010). This is one of the reasons that the organizations nowadays are making significant investments in the ERP systems and awareness is also created among the employees so that they can shows positive attitude towards the use the ERP systems (Olson and Sheu, 2005). Kemppainen (2001) believes that the implementation of the ERP systems within the organization can be done in a successful manner only when the employees are accepting these systems. According to Kalbasi (2007), the acceptance of the ERP systems by the employees is more likely to occur when the employees have a positive view about the use of latest technology and they believe that it is helpful in managing the day to day business operations of the firm in an effective manner. Therefore, in order to achieve financial benefits from the ERP systems it is essential to first encourage the employees to accept the ERP systems (Ke and Wei, 2008).

There are number of studies which are focused on analyzing the impact of ERP systems implementation on the overall financial performance of the firms (Kemp and Low, 2008). Research shows that ERP systems are helpful in ensuring effective financial management of the companies which impact the overall financial performance of the company in a positive manner (Lee and Lee, 2000). According to Motwani and Gunasekaran (2002), the firms which are adopting ERP systems can achieve better return on their assets and overall profitability of the company can also be increased due to improved financial management. The organizations can track their purchase and sales orders with the help of the ERP systems which is helpful for them to take timely and effective business decisions which impact the financial performance in a positive manner (Sangster and Grabski, 2009). However, it is very important that the ERP users within the firm must be able to track the performance of ERP systems on regular basis in order to identify and evaluate that whether the ERP systems are generating the desired level of performance or not (Norris and Balls, 2000). Thus, we hypothesize,

Hypotheses 4: ERP Acceptance is positively affects improved financial performance.

METHODOLOGY

Sample and procedure

In order to undertake this research, the researcher has collected the primary data which is helpful in generating the first hand information and reliable research outcomes. The survey method was used in order to collect the primary data and survey was conducted with the employees who are working in the Saudi companies and using the ERP systems in order to manage their day to day activities. The survey with the users of the ERP systems is helpful in identifying their perceptions regarding the ERP systems and analyzing the role of the ERP systems in improving the financial performance of the company.

The sample size of total 1500 employees were selected by the researcher which means that the questionnaires were distributed among 1500 users of the ERP systems for the purpose of collecting the research data. Since there are significant percentage of the employees who are working in the Saudi companies are not able to effectively understand the English language. Therefore, both English and Arabic versions of the questionnaires were prepared by the researcher. This helps to overcome the language barrier and to ensure that all the participants of the research can understand the questions of the survey effectively and provide appropriate answers against them. The language barrier is an important issue which should be addressed during the process of collecting the research data because if the research participants are not able to effectively understand the questions of the survey then they are more likely to provide wrong answers against the survey questions which lead towards generation of inaccurate study outcomes.

Data collection

The data collection process is considered to be most important step in the entire research process as it helps to ensure the availability of the research data which is ultimately analyzed in order to generate research results. Therefore, it is very important to collect the research data in a way that it will leads towards generation of accurate research outcomes (Yin, 1989). The questionnaires

were sent to the users by using the email because it is difficult to meet the 1500 research participants face to face and hand over the questionnaires to them. This could also increase the research cost and this method is also little time consuming. However, the permission was taken from the top management of the companies before conducting the survey with the employees who are working in those companies. This is important because this research is focused on identifying the impact of ERP systems on the financial performance of the company. There are many companies which prefer not to disclose information regarding their financial performance. Therefore, it was important to get permission from the management before conducting the survey.

Table 1demographic characteristics of the survey

ERP Participants	Category	Percentage (%)
Gender	Male	82.9
	Female	17.1
Education	High-School	6.5
	Bachelor	67.7
	Master's	22.4
	PhD	3.4
Experience	<5	15.8
	5 – 10	73.4
	>10	10.8
Job Level	Top	13.3
	Mid	36.7
	Supervisory	50

The above table shows that approximately 83% of the male employees have participated in the survey and the female employees who have ensured their effective participation in the survey were approximately 17%. An important reason behind this is survey is conducted with the employees who are working in the Saudi organizations and using the ERP systems. The Saudi culture does not allow the woman to go out and work in the professional business environment; therefore, there were very few female employees who have participated in the survey. The analysis of the sample also shows that education level of the participants of the survey. The majority of the survey participants were having the Bachelor degree and then there also few survey participants who are having the Masters Degree and then there were approximately 4% of the research participants who are having the PHD degree. Approximately 73.4% of the survey participants were having the professional working experience in between “5 – 10” years and 10% of the survey participants were having the work experience of more than 10 years.

Data Analysis and Hypothesis testing

Structural Equation Modeling

The Smart PLS version 3 has been used for data analysis, which is also helpful in analyzing both the measurement quality and the path model for hypothesis testing. The measurement model has been assessed firstly to ensure the internal consistency reliability, and discriminant validity of the measurements (Sumner, 1999). After that the structure model was tested in order to test the research hypotheses.

Quality of Measurement Model

The quality of measurement model is very important in order to complete the research in an effective manner. The quality is assessed in terms of convergent validity, discriminant validity and internal consistency reliability. Average variance extracted (AVE) is usually checked in order to examine the convergent validity. AVE was calculated by averaging the percentage of variance extracted of each construct from its indicators. It is important that AVE should be 0.5 or greater to suggest adequate convergent validity. Discriminant validity is defined as the extent to which measures of the different model constructs are unique. The discriminant validity has been tested by comparing the square root of the average variance extracted (AVE) of each construct and this construct's correlation with other constructs.

Table 2. MEASUREMENT QUALITY INDICATORS

Latent verbal	Items	Loadings	Cronbach's Alpha	Composite Reliability	(AVE)
ERP Change Management (CM)	CM1	0.764	0.867	0.897	0.637
	CM2	0.749			
	CM3	0.728			
	CM4	0.881			
	CM5	0.859			
ERP perceived Ease of Use (PEU)	PEU1	0.918	0.937	0.952	0.798
	PEU2	0.838			
	PEU3	0.910			
	PEU4	0.886			
	PEU5	0.914			
ERP Acceptance (ERPA)	ERPA1	0.850	0.940	0.952	0.768
	ERPA2	0.887			
	ERPA3	0.906			
	ERPA4	0.904			
	ERPA5	0.870			
	ERPA6	0.840			
Intention to improved financial performance (IFP)	IFP1	0.979	0.980	0.985	0.927
	IFP2	0.970			
	IFP3	0.960			
	IFP4	0.948			
	IFP5	0.957			

	ERP Change Management (CM)	ERP Acceptance (ERPA)	Intention to improved financial performance (IFP)	ERP perceived Ease of Use (PEU)
ERP Change Management (CM)	0.798			
ERP Acceptance (ERPA)	0.121	0.876		
Intention to improved financial performance (IFP)	0.106	0.796	0.963	
ERP perceived Ease of Use (PEU)	0.040	0.600	0.550	0.893

Table 3. CROSS LOADINGS OF EACH CONSTRUCT

Items	ERP Change Management (CM)	ERP Acceptance (ERPA)	Intention to improved FinancialPerformance (IFP)	ERP perceived Ease of Use (PEU)
CM1	0.764	0.047	0.016	0.004
CM2	0.749	0.065	0.038	0.000
CM3	0.728	0.058	0.072	-0.030
CM4	0.881	0.134	0.129	0.059
CM5	0.859	0.113	0.096	0.052
ERPA1	0.074	0.850	0.825	0.514
ERPA2	0.097	0.887	0.762	0.537
ERPA3	0.125	0.906	0.701	0.551
ERPA4	0.117	0.904	0.629	0.538
ERPA5	0.113	0.870	0.664	0.535
ERPA6	0.116	0.840	0.559	0.476
IFP1	0.106	0.757	0.979	0.529
IFP2	0.109	0.760	0.970	0.545
IFP3	0.086	0.780	0.960	0.543
IFP4	0.095	0.778	0.948	0.532
IFP5	0.116	0.753	0.957	0.497
PEU1	0.012	0.541	0.517	0.918
PEU2	0.061	0.504	0.469	0.838
PEU3	0.037	0.559	0.530	0.910
PEU4	0.018	0.519	0.453	0.886
PEU5	0.050	0.556	0.486	0.914

Structural model

The data about the path coefficients (P), T-values (T), P-values (P) and squared R (R²) is identified in a detail manner in order to proceed with this study. Path coefficients (β): discusses the relationship between dependent and independent variables. T-Value: the t-tests values are used in order to conduct the hypothesis testing. Commonly, the acceptable value for T-values larger than two (T-value >1.96) means significant level. P-value: P-value is considered as a quantitative measure, which helps to test the hypothesis. As shown in the table, the result of this study confirm H1 and H2 hypotheses are not accepted, while H3 and H4 are accepted at $P < 0.001$.

Table 4: hypothesis testing

Hypotheses	Causal path	Path Coefficient	T-Value	P-Value	Remark
H1	ERP change Management is positively affects ERP perceived Ease of use	0.040	0.688	0.492	Not Supported
H2	ERP change Management is positively affects ERP Acceptance	0.097	2.333	0.020	Not Supported
H3	ERP Perceived ease of use is positively affects ERP Acceptance	0.596	21.266	0.000*	Supported
H4	ERP Acceptance is positively affects improved financial performance	0.796	54.306	0.000*	Supported
*significant at the 0.001 level **significant at the 0.01 level ***significant at the 0.05 level					

DISCUSSION CONCLUSIONS**Theoretical Implications**

This research study contributes significantly to the growing body of knowledge, which helps to highlight the importance of the ERP systems in the modern era and to identify the link between ERP systems acceptance and improved financial performance of the organization. This research also helps to identify that how the change management activities within the organization can be helpful in increasing ERP acceptance within the firm. This particular research model can be helpful in facilitating the future studies. There is no other opinion on the fact that in order to successfully implement the ERP systems within the firm, the management of the organization can consider the option of implementing the change management process (Pall and Pernille, 2006). The awareness among the employees during the implementation of the change management process can be created regarding the importance of introducing the ERP systems within the firm (Parr and Shanks, 2000). This helps to ensure that the employees are accepting the ERP systems and showing positive attitude towards them (Rajagopal, 2002). This is very crucial because the employees are the actual users of the ERP systems and without their devotion and commitment, the desired results from the ERP systems cannot be achieved by the organization (Srivastava and Gips, 2009). The theories of change management also suggest that effective change management activities within the firm are

more likely to change the attitudes and behaviors of the employees in a positive manner (Rasmy and Ashraf, 2005).

Practical Implications

This particular study provides guidance that how the change management activities can be planned by the organizations and successful implementation of the ERP systems can be ensured. The introduction of change management processes is an important requirement in the modern era especially when the organizations are facing several business related challenges due to the continuous changes in the external environmental factors (Saharia and Tucker, 2008). This study also discusses the acceptance of the ERP systems in the post implementation stages which is very important because once the ERP systems are implemented then it is essential that the employees are using these systems in an appropriate manner for the purpose of achieving desired results from them. The management of the firm can boost the morale of the employees and motivate them so that they accept the ERP systems and use them in an effective manner for the benefit of the organization (Russo and Brandt, 1999).

It is important to understand that some of the employees working within the firm might show resistance against the implementation of the ERP systems because they need to update their skills and capabilities in order to effectively utilize those systems (Ron, 2008). However, this issue can be addressed by improving the existing skills of the employees through the introduction of the training and development programs (Scott and Vessey, 2000). The reason why employees are resisting against the implementation of the ERP systems because they believe that introduction of new and technology based systems within the firm might create threat for their jobs (Stratman and Roth, 2002). Therefore, it is the responsibility of the management of the firm to ensure that the staff members have necessary skills and capabilities to utilize the ERP systems effectively. It is a fact that when the employees are able to use the technology based systems effectively then there are very less likely to shows resistance against the implementation of these systems within the firm (Stein and Hawking, 2002). This is helpful in increasing ERP systems acceptance within the organization (Soh and Tay, 2000).

CONCLUSIONS

In this study we showed how change management activities and the ERP systems can create a positive impact on the financial performance of the Saudi firms. The survey was conducted with the employees who are working in the Saudi firms and survey results show that ERP system acceptance is very positive for the firms which are operating in the modern era when the competition is very intense and the organizations are looking for innovative business methods in order to enhance their business performance. It is concluded that the organizations are required to initiate the change management activities on regular basis because they are very helpful in dealing with various business related challenges. The change management activities also help to increase the acceptance of the ERP systems within the firm and it will motivate the employees to support the implementation of the ERP systems. However, it is essential that change management process must be managed effectively in order to get required level of results.

By concluding this research it can be stated that ERP systems are effective for the companies which are making investments in it and improved financial performance can be achieved with the help of the ERP systems. There are also few limitations of this study which includes the researcher has used only one research method in order to collect the primary data. The researcher could have used other methods of primary data including interview in order to collect the first hand information for research analysis purpose. Another limitation of this research is that the questionnaires were sent to 1500 employees but only 526 employees responded positively and filled the questionnaire. This shows that response rate of the questionnaire was not even 50%. The studies with credible research results usually have more than 50% response rate. The survey is also conducted only in one country which is Saudi Arabia; therefore, the results of this particular research might not be applied in other countries of the world. The future studies can also focused on identifying the link between change management practices and acceptance of the ERP systems within the organization.

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