EMPLOYEES' READINESS TO ADOPT ERP SYSTEMS IN SMALL AND MEDIUM SCALE INDUSTRIES

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ABSTRACT:

The paper examines the impact of perceptions of the employees and computer efficiency on readiness of the employees to adopt ERP systems in small and medium-sized enterprises (SMEs). In carrying out the study, random sampling technique was used to select 200 employees who have worked at least 3 years in an SME. Relevant data were collected using structured questionnaire. The correlation analysis was used to test the hypothesis. The findings showed that Perceived Ease of Use, Perceived Usefulness, Perceived Personal Competence and Computer Efficiency have a positive influence on the employee's readiness to adopt ERP systems. This paper suggests strategies which top management of SMEs can implement to encourage its employees in adopting ERP systems.

Key words: ERP systems, Perceptions, Readiness to adopt.

Introduction:

SMEs have to bring about continuous improvement of business processes and business process reengineering. This requires an integration of all the departments in the corporations. ERP system helps SMEs to achieve this integration and also helps them to integrate with their clients.ERP system integrates all the business functions together into one single integrated system with a single central database. This system serves the information needs of all the departments while allowing them to communicate with each other. Though the cost of an ERP system is very high, it becomes insignificant in the face of the benefits a proper ERP implementation provides in the long run (Sadagopan, 1999). For SMEs to survive and grow in the future, it becomes a matter of strategic importance to adopt information technology (Sandberg and Vinberg, 2000). When developing a tool to "ease" the workload of the employees, it is also

critical to involve these employees to ensure that the strategies as well as the tools are relevant to their occupation, to improve productivity. An effective business strategy for an SME centers on efficient use of information technology and for this reason the ERP systems has emerged as enterprise backbone of the organization (Nash, 2000). An ERP system streamlines processes within a company and improves its efficiency and provides a means to enhance competitive performance, increase responsiveness to customers, and support strategic initiatives (Chaterji, N.1999). The technology acceptance model (TAM), developed by Davis, F., et al., (1989), is one of the most widely used and influential models in the field of information systems, technology and services. TAM has been widely utilized by several researchers to understand the factors that determine technology acceptance and usage (Adams,et al., 1992; Anakwe, et al., 2000; Chau P., et al., 2002). Technology Acceptance Model (TAM) forms the foundation of the conceptual model for this study. Technology Acceptance Model postulated that the intention to use technology is determined by individual perception of its usefulness, perception of its ease of use, personal competence and computer efficiency. The government and policy makers must provide more support to the SMEs by helping its employees to adopt the ERP systems (Michael Sanja Mutongwa, et. al., 2013). A deeper understanding of the ERP implementation at SMEs is needed to ensure a strong impact.

Literature Review:

With the near saturation in the large enterprise market, ERP vendors are looking to tap the potential in the SME segment (Davenport, 1999).ERP implementation in SMEs is picking up fast. But most of this implementation has not yet witnessed the expected results (Gargeya et al., 2005). Premkumar (2003) holds that incremental project costs prevent or inhibit the final adoption of IT in small firms. While Indian SMEs usually overlook the benefits of ERP citing ERP software being beyond their budgets as the reason, it is beyond doubt that ERP implementation can improve a company's performance manifold (Parijat Upadhyay and Pranab K. Dan, 2009). Despite the fact that usage of IT in SMEs is much below its potential, they are now slowly waking up to the importance of adoption of ERP in their operations and are realising the necessity of setting up intra- and inter-office networks (Federici, T. 2009). Indian SMEs are willing to invest in IT to improve their output and efficiency (Sharma K.M. and Bhagat R., 2006). These small and medium enterprises have realised that to maximise the potential of available information technology, ERP solution must be implemented in tandem (Gupta A., 2000). Considering the current market realities, SMEs today need to understand that with ERP software they can not only systematically

arrange and assimilate all systems of entering data and processes, but also understand and adapt to retailers' business requirements and thus respond faster and frequently to product orders from retailers (Rao, S. ,2000).

Through proper ERP integration, SMEs can expect far-reaching results like reduced working capital requirements and improved customer service (Leon A., 1999). They can also reduce purchase costs considerably and bring in more clarity and accountability throughout the organization (Garg Venkitakrishnan, 2006). Implementation of ERP in SMEs will not only act as a complete business software solution, but will also help them to expand their reach of business quickly. The benefits that an SME derives in the long run are comparatively more than the costs incurred while implementing an ERP system (Nicolaou, A. 2004).

One of the main reasons why ERP applications fail is non-cooperation of employees or users who either do not understand the products capabilities or consider it to be a threat to their jobs (Kale P. T., Banwait S. S., Laroiya S. C., 2007). The best of the application would be a failure if the employees are not embedded into the entire process and properly communicated with the aims and goals of the venture. Motivated and involved employees will share their knowledge freely with the implementers and ensure that the end result is splendid (Soja, 2006). Maintaining a level of motivation among the employees through the entire process of ERP implementation and keeping the team together united and concentrated till results are on the table is a challenging task. “Ease of use” is anchored to individual differences’ variables and general belief, as well as previous hands-on experience with computer/software in general (Venkatesh, 2000). Ease of use is a very important predictor of both the adoption and continued use of a technology that will permit organizations to reap the promised benefits (Ramayah, 2006). Aladwani (2001) has provided a first process-oriented approach for facing the complex social problems of workers’ resistance to ERP. Employees’ perception of the perceived usefulness, ease of use of the technology, and the users’ level of intrinsic involvement all affect their intention to use the technology (Kwasi Amoako-Gyampah, 2007)

Objective of the study:

1. To study the impact of Perceived personal competence on readiness to adopt ERP System
2. To study the impact of Perceived usefulness readiness to adopt ERP System

3. To study the impact of Perceived ease of use readiness to adopt ERP System
4. To study the impact of Computer efficiency readiness to adopt ERP System

Sample Design:

The present study was carried out in Hyderabad city by selecting employees from 10 Small and Medium Scale industries. A sample of 200 employees was selected for gathering primary data. To carry out the study in a more accurate and easier way, convenience sampling method was adopted.

Data Collection:

Both primary and secondary data have been used to draw appropriate conclusions. The primary data was collected by using interview and questionnaire method. The secondary data was mainly drawn from available literature pertaining to the field of knowledge.

Statistical tool used:

The researcher used the statistical package for social sciences. Factor analysis was used to test the construct validity within each factor. Karl Pearson's Coefficient of correlation was computed to find out the degree of relationship among Perceived Ease of Use, Perceived Usefulness, Perceived Personal Competence, Computer Efficiency and readiness to adopt ERP system.

Analysis and interpretation:

H1: Perceived Ease of Use has a positive effect on readiness to adopt ERP System

H2: Perceived Usefulness has a positive effect on readiness to adopt ERP System

H3: Perceived Personal Competence has a positive effect on readiness to adopt ERP System

H4: Computer Efficiency has a positive effect on readiness to adopt ERP System

Table 1: Factor Analysis of Perceived Ease of Use

Perceived Ease of Use Variables	Factor Loadings	Composite Reliability

Learning ERP is easy	0.82	0.95
ERP is clear and understandable	0.85	
Easy to be skillful at using ERP	0.89	
There is flexibility in operating ERP	0.84	
It is easy to remember ERP operating system	0.82	

The above table shows that there are positive loadings on all the Perceived Ease of Use variables. Easy learning, clear and understandable, flexibility in operating ERP, easy in being skillful at using ERP, easy in remembering ERP operating system, are the factors that influence the Perception on Ease of Use of ERP system. Perceived Ease of Use has emerged as a separate factor with an eigen value of 2.62. The above table shows that the variable "Easy to be skillful at using ERP" has got the highest loading of 0.89.

Table 2: Factor Analysis of Perceived Usefulness

Perceived Usefulness Variables	Factor Loadings	Composite Reliability
ERP increases my productivity	0.88	0.97
ERP helps in providing more accurate information	0.86	
ERP increases my effectiveness	0.90	
ERP improves the quality of my work	0.84	

The above table shows that there are positive loadings on all the Perceived Usefulness variables. Increase in productivity, provision of more accurate information, increase in effectiveness, increase in the quality of work, are the factors that influence the Perception on Usefulness of ERP system. Perceived Usefulness has emerged as a separate factor with an eigen value of 2.65. The above table shows that the variable "ERP increases my productivity" has got the highest loading of 0.88.

Table 3: Factor Analysis of Perceived Personal Competence

Perceived Personal Competence Variables	Factor Loadings	Composite Reliability
My work is challenging and exciting	0.80	0.90
My job is very demanding	0.75	
My job makes important contributions to the larger aims of the organizations	0.82	
I participate in decisions regarding my job	0.78	

The above table shows that there are positive loadings on all the Perceived Personal Competence variables. Challenging and exciting work, demanding job, importance of the job, participation in decision making and competency, are the factors that influence the Perception on Personal Competence in using ERP system. Perceived Personal Competence has emerged as a separate factor with an eigen value of 2.55. The above table shows that the variable "My job makes important contributions to the larger aims of the organization" has got the highest loading of 0.82.

Table 4: Factor Analysis of Computer Efficiency

Computer Efficiency Variables	Factor Loadings	Composite Reliability
I am comfortable working on a computer	0.90	0.96
I understand terms related to computer hardware and software	0.83	
I get help for problems in the computer system	0.81	
I feel confident learning to use a	0.88	

variety of programs		
I have a clear understanding of the three stages of Data processing i.e. input, processing and output	0.87	

The above table shows that there are positive loadings on all the Computer Efficiency variables. Comfortability in working on a computer, understanding computer hardware terms and software terms, getting help for problems in the computer system, confidence in learning computer programs, clear understanding of data processing, are the factors that influence Computer Efficiency in using ERP system. Computer Efficiency has emerged as a separate factor with an eigen value of 2.64. The above table shows that the variable "I am comfortable working on a computer" has got the highest loading of 0.90.

Table 5: Means, standard deviations, and correlations among study variables

Constructs	Mean (SD)	1	2	3	4	5
Readiness to adopt ERP	4.90(0.97)	0.86	1			
Perceived Ease of Use	4.35(0.99)	0.70	0.88	1		
Perceived Usefulness	4.98(0.90)	0.81	0.68	0.89	1	
Perceived Personal Competence	4.67(0.83)	0.67	0.60	0.58	0.75	1
Computer Efficiency	4.76(0.89)	0.59	0.57	0.53	0.64	0.82

The correlation matrix given in the above table reveals that the readiness to adopt ERP system is positively associated with Perceived Ease of Use, Perceived Usefulness, Perceived Personal Competence and Computer Efficiency. All the four constructs were significantly related to Readiness to adopt ERP ($r = 0.88$, $p < 0.01$; $r = 0.68$, $p < 0.01$; $r = 0.60$, $p < 0.01$; $r=0.57$, $p<0.01$) for Perceived Ease of Use, Perceived Usefulness, Perceived Personal Competence and Computer Efficiency respectively.

Conclusion:

From this paper, it can be concluded that to effectively implement ERP system it is essential for the top management to understand the perceived ease of use, perceived usefulness, perceived personal competence and computer efficiency of its employees. The key to successful implementation of ERP system is to first recognize the readiness of the employees to adopt ERP system. Perceived Ease of Use, Perceived Usefulness, Perceived Personal Competence and Computer Efficiency have been found to be positively associated with the readiness of the employees to adopt ERP systems. Top management can encourage adoption of ERP systems by employees by ensuring that everyone gets involved in the ERP implementation and is made accountable. Adequate time must be provided to the employees so that they can devote time towards ERP implementation while performing their regular jobs. It is also important to make process changes while implementing ERP so that process can be streamlined with ERP systems. Adoption improves when employees are allowed to tweak the system to better fit their jobs. Continuous improvement is required to take advantage of all the functions in the ERP system. Effective feedback mechanisms also need to be in place to channel any concerns the employees may have and to take any relevant actions to address issues that surface which can be achieved using techniques such as regular interviews and surveys.

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