Technology Adoption Model (TAM) and Enterprise Resource Planning System (ERP) implementation Review paper

Ms.Sunita N.Nikam
Associate Professor, ASM's IIBR, Pune
Research Scholar (CS), TMV Pune
Dr.Vikas Prasad
Assistant Professor, NICMAR, Pune

Abstract

The importance of ERP systems has been increasingly recognized by almost all organizations. The purpose of this paper is to review the literature on ERP adoption in an organization to understand the need of extended, modified and integrated models for technology adoption. It further makes an attempt to identify factors influencing implementation of ERP with technology acceptance model (TAM).

The research papers are accessed from the popular databases of ten years from 2007 to 2017. The selected papers have addressed technology adoption in context ERP only. The paper attempts to review the studies based on TAM model framework to identify relevant set of variables for the adoption of ERP in organizations.TAM and its extended versions have capability to explain the technology adoption . This review presents a detail picture of a set of different variables used by different authors which can be used in the adoption of ERP in future. The researchers and managers can use the set of variables identified for adoption of ERP in organizations. The review presents a set of variables which can be used to study adoption of similar other technologies in future. This study briefly discusses the adoption of the ERP among organizations, by adoption model like TAM. This paper presents systematic reviews on the relevant literature. The result increases the understanding connection of adoption model and ERP which finally given a better understanding about success of ERP implementation in any organizations. This study will help the researchers who are working in the same area to directly start their work with adoption technology, ERP and variable used.

Keywords: Review, Enterprise Resource Planning, adoption, TAM, technology, PU, PEOU, IU.

1. Introduction

In a competitive environment, firms continually need to establish new business objectives to fulfill their corporate visions. A whole organization should be structured to achieve these objectives. In order to support the objectives, information technology (IT) needs to be aligned to the organization's mission. IT

professionals have provided systems for the organization and, in most cases, these systems consist of individual function, which should be used in an integrated manner. Enterprise Resource Planning (ERP) software has emerged to offer an integrated IT solution. It is suggested that ERP could facilitate achieving compatibility between task characteristics and technology characteristics, a long overdue IT solution. ERP has become one of the major IT investments for many organizations. Unfortunately, little research has been done to provide managers guidance on ERP potential for their organizations. Some useful information about ERP can be found by examining the technological evolution of ERP from MRP.

Business owners and management teams often must make tough decisions about how to manage operations in their organization, and one of the decisions which may be debating right now is whether to do an ERP implementation. Enterprise resource planning (ERP) is a system that can be used with great benefits to organization, but it also can take time, effort and financial resources to adopt and to use on a regular basis. To make it beneficial TAM is the technology adoption model which can be used to implement ERP in better ways.

Studies on technology adoption have main aim to find, predict and determine variables influencing adoption behavior at different level like individual ,organizational levels etc….to accept and use technological innovations. Hence, this study makes an attempt to review such studies, and acknowledges greater significance of technology acceptance model (TAM) to explain technology adoption .Further, it shows their integration using the set of identified variables by different authors so that power of ERP implementation can be improved to an extent. Hence, the study tries to identify the different set of variables explaining the adoption of technologies like ERP with TAM.

The objective of this paper is to present a consolidated review of literature on adoption of ERP and TAM in an organization in order to illustrate the status of research in this area, and to assist researchers in pinning down the current research gaps. A total of 36 articles were reviewed. Section 1 is representing Introduction and the remaining part of the paper is organized as follows. Section 2 presents the literature Review. Section 3 provides an Objective of the study. Section 4 presents Research methodology. Section 5 represents Findings and the Conclusion. Finally section 6, discusses the references.

2. Literature Review

(Shahin 2011) The company's top management must provide full support and commitment to the project if the system is to be successful. In addition, management must also ensure the plans are communicated and understood by the entire company. Adequate training and education pertaining to the systems must be given to all users to ensure that they are able to use the system effectively and efficiently thus contributing to their satisfactions which will subsequently influence the implementation success. There is a positive relationship

between top management support, enterprise-wide communication, and ERP training and education with ERP implementation success. There is a relationship between user satisfaction and organizational impact, which is how ERP success is measured in this study. (Manouchehr 2014) In the developing world today, application of techniques which increase the speed of processing activities in businesses and simultaneously lead to an increase in profit and yield and reduce costs, has constantly been the center of attention of organizations. In this connection, the Enterprise Resource Planning is among instruments that are highly effective in this respect. But, implementation of the system involves a complex process that is often met with failure. Change management was identified as a vital factor in success of the implementation of ERP system. Then, change management strategies from the viewpoint of Kuzic and Thi van Hau including effective communication, top management support, effective training, project teams, presence of project champion, clear and systematic planning, broad participation of employees, incentives and feedback were used. Thus, effects of change management strategies in success of EPR system implementation were examined through using a questionnaire, which was distributed among experts of the Ministry of Cooperatives, Labor and Social Welfare, who were experienced in the field of implementation of an enterprise resource planning system. (Christy 2015)Complex information systems like the ERP integrate the data of all business areas within the organization. The implementation of ERP is a difficult process as it involves different types of end users. Computer self-efficacy, organizational support, training, and compatibility have a positive influence on ERP usage which in turn has significant influence on panoptic empowerment and individual performance.

(Kwasi 2004) The impact of one belief construct (shared beliefs in the benefits of a technology) and two widely are the technology implementation success factors (training and communication) on the perceived usefulness and perceived ease of use during technology implementation. Shared beliefs refer to the beliefs that organizational participants share with their peers and superiors on the benefits of the ERP system. (Pedro 2013)Enterprise Resource Planning (ERP) plays an important role in handling the organizations' information flow due to shorter cycle and faster information transactions. Hence, it is crucial to understand the implementation of ERP as it ensures that management could make better strategic decisions. Factors such as project champion, training, shared beliefs, perceived ease of use, perceived usefulness, and attitude towards use were found to be significant in determining intention to use ERP system.

(NikenL2017)Technological readiness and User Acceptance is increasingly being used as a guide in the process of new technologies implementation. This approach can be measured using the collaboration of Technology Readiness Index (TRI) and Technology Acceptance Model (TAM) by analyzing the implementation of new technologies adaptation construct in a particular industry group.

(Rajesri) User reluctance or unwillingness to adopt or use the newly implemented ERP system is often cited as one of the main reasons for ERP failures. Nine constructs comprises of ERP Ease of Use, ERP Usefulness, ERP Compatibility, ERP Business Fit, Shared Belief in The Benefit of ERP System, Facilitating Condition, ERP Self-Efficacy, Argument for Change and Personal Innovativeness of IT. ERP Compatibility and Attitude toward ERP System Use have direct effects on ERP Symbolic Adoption, while ERP Business Fit and ERP Usefulness influence ERP Symbolic Adoption by being fully mediated through Attitude.

(Simona 2013) Enterprise resource planning (ERP) solutions have been implemented in most companies recently, but it seems that the companies who use ERP solutions are unable to point out the most important contributions of their ERP systems. One of the reasons for this might be that users do not accept and use the ERP solution properly. The technological acceptance model (TAM) proposed by Davis (1989) has been the most widely used model for researching user acceptance and usage of IT/IS.

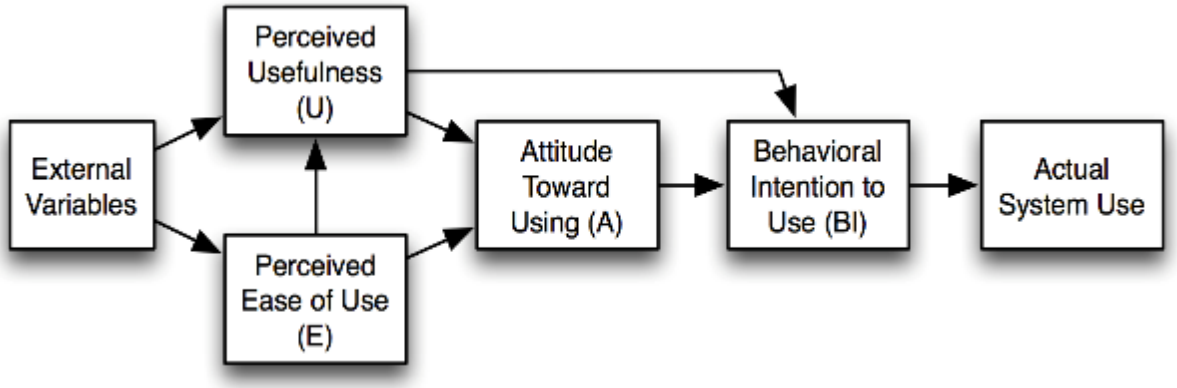

Figure-1 Technology Adoption Model (TAM) Source: Davis (1989)

(Oluwole 2016) The Technology Acceptance Model (TAM) is gaining popularity for understanding the relationship between humans and technology through Perceived Usefulness (PU) and Perceived Ease of Use (PEU). The foremost rationale for adopting the TAM in this study was to present a foundation for ascertaining the impact of external variables on internal beliefs, personal abilities, attitude, mind-set and intention in attaining Information Literacy (IL) skills. The TAM is an information system theory that propagates stages to be followed by information seekers or learners in the acceptance, inculcating and utilisation of new technology to achieve information literacy skills.

(Hassan 2016) ERP systems have become an optimal solution for companies to perform their works with maximum advantages of Enterprise Resources Planning (ERP). Moreover, even though the cloud computing has many obstacles which need to be solved, but the enterprises always embrace the cloud. Many enterprises tend to adopt the cloud computing paradigm in order to get its leverage in successful and benefits. With the development of cloud computing technology, there is a growing orientation to move the ERP from inside boundaries of organizations into the cloud computing technologies. (Brenda 2016) Though the field of

management information systems, as a sector and a discipline, is the inventor of many guidelines and models, it appears to be a slow runner on practical implications of interface usability. This usability can influence end users' attitude and behaviour to use IT. Interface usability has a significant impact on users' perceptions of usefulness and ease of use which ultimately affects attitudes and intention to use the ERP software.

(Dinesh 2017) The success of any technology innovations lead by the acceptance of end user, many IT implementations failed as it's not accepted by the user group. ERP being the strategic application require more insights in this regard as failure rate of ERP application are very high i.e. 7 out of 10 due to lack of consideration of CSFs in ERP implementation process. Managerial practices and socio environmental factor are significantly related to the original TAM variables in the context of ERP system. Positive effect on the perceived ease of use, suggesting a useful reference for future research. (VENKATESH 2012) In recent times, a substantial number of chief construction establishments boarded on the implementation of unified information technology results such as enterprise resource planning (ERP) systems to better assimilate various business functions. But, these integrated systems in the construction segment present a set of exclusive challenges, different from those in the manufacturing or other service sectors. There have been many cases of catastrophe in implementing ERP systems in the past, so it is acute to identify and recognize the factors that mainly regulate the accomplishment or failure of ERP implementation in the construction industry.

(Ravi 2014) Enterprise Resource Planning (ERP) systems are now offered on the cloud under the Software as a Service (SaaS) model. For small and medium sized enterprises

(SMEs), this is considered the best opportunity to take advantage of the capabilities of an ERP system without the investment and management costs associated with the on-premise model.

The determining factors in deciding to adopt SaaS ERP are software vendor's reputation in the market, software fit to the business, the potential willingness of the vendor to support the customer throughout the product life cycle, the vendor's participation in co-creation of value for customers and the generic benefits of implementing an integrated ERP system. With switching considered a costly option, accounting shift of capital costs to operating expenses is considered advantageous by firms. Competitive pressures faced by the enterprise, external factors, concerns about data security and system performance have no influence on adoption decision, according to this study. Change management and increasing the effectiveness of use are challenges, but the willingness of the software vendor to work with organizations' requests for changes and improvements and the continuous co-creation of value through improved product offerings is reassuring to the firms in the post-implementation phase.

(BooYoung 2009) Recently, a significant number of major construction companies embarked on the implementation of integrated information technology solutions such as enterprise resource planning _ERP_ systems to better integrate various business functions. However, these integrated systems in the construction

sector present a set of unique challenges, different from those in the manufacturing or other service sectors. There have been many cases of failure in implementing ERP systems in the past, so it is critical to identify and understand the factors that largely determine the success or failure of ERP implementation in the construction industry.

(Ibrahim 2015) There are many similarities between the cultural, structural and technological factors considered. It is important to integrated these factors to determine their importance.(Ankit 2012)The demand for Enterprise Resource Planning (ERP) applications in India has increased tremendously from US$1596 million in 2006 to US$2399 million in 2011.Perceived usefulness, perceived ease of use and system flexibility, showed significant relationships with the intention to use of ERP systems in Indian.(Marwa 2017) The main problems had been discussed for a while are complexity and failure of ERP system in an institution. To solve these problems and reduce this complexity some researchers were concentrated on the effect of perceived usefulness (PU) and perceived ease of use (PEOU) on the attitude toward using enterprise resource planning (ERP) system based on the theory of technology acceptance model. The understanding of user's perceived ease of use and user's perceived usefulness should be taken into consideration for an institution in pre-implementation stage of an ERP system.

(Cheng200)The issues of enterprise resource planning (ERP) implementation have been given much attention due to its high failure rate. Leadership's support and training abilities have significant impacts on organizational business processing abilities. Change management abilities, business processing abilities and learning abilities, have significant impacts on user perceived ease of use. (Hemlata 2014)TAM and its extended versions have high capability to explain the technology adoption while the significance of TOE framework is similarly recognized in explaining technology adoption. TAM model and TOE framework to improve their explanatory power in technology adoption. (Lee2010) The organizational support is an important factor for perceived usefulness (PU) and perceived ease of use (PEOU). PU and PEOU seem to lead to a higher level of interest in the ERP system and BI to use the system. Organizational support is positively associated with factors of TAM.

3. Objective of the Study

To increase the productivity, gain maximum profit and overall business performance, Enterprise Resource Planning (ERP) is one of the best solutions for the all type of organizations including large, medium and small organizations in order to face the global challenges. The purpose of this paper is provide a systematic and consolidated list of influencing factor for implementation of ERP. This will give benefits to the organization for proper decision making. Objective of the study are as follows,

- The main aim of our study is to contribute to the research field of the ERP adoption projects in different sectors.

- To presents a detail picture of a set of different variables used by different authors which can be used in the adoption of ERP.
- To presents a systematic reviews on the relevant literature.

The study will give a proper understanding and knowledge in connection with adoption ERP which finally given a better understanding about success of ERP implementation in any organizations. This will even help the researchers who are working in the same area. This will can be used by top management team from the organization.

4. Research Methodology and Data Collection

In this study we have applied a systematic review approach .This approach is characterized by considering different research papers published in this area. The review covers articles published between the years 2007-2017. We have considered the all found articles published in journals or conference proceedings. Moreover, no restrictions have been imposed on field or sector where ERP is adopted. An initial search was done through Google Scholar and then we tried to found few papers from directly from Google. The search option was given for words like: ERP, Enterprise Recourse Planning, TAM, adoption etc….. .We searched for the keywords across all issues published during the delimitated period. The same procedure was applied to the proceedings of conferences. Both authors carefully read the articles abstracts to check their relevance and adequacy for the review. Only articles directly addressing ERP adoption or implementation done with TAM were selected. We finally took 20 research papers for the study related to the subject only.

4.1 The use extension of the Technology Acceptance Model in ERP

However, many researchers make use of TAM as it is for their study .Many of them extension of the Technology Acceptance Model is an ongoing process to assess the modern technologies.TAM has arguably become the most influential theory in the IS. Many researchers added new variables to the Technology Acceptance Model that are shown in below Table.

Author	Year	Type of Industry and Country	Sample Size	Is Extended TAM?	Factor identified	Factors Have Significant Influence on
Simona Sternad Zabukovsek	2013	Slovenia	Industries-44 Questionnier-293	Yes	A Group of Organizational, Technological, Personal ,Work Compatibility	perceived usefulness towards ERP, perceived ease of use towards cloud ERP, Attitude toward using ERP system,

						conceptual factor personal characteristics and information literacy, Technology & Organizational
Hassan Alhanatleh	2016	Jordanian Education Ministry	206	Yes	Cloud ERP Technology, Employee	perceived usefulness towards cloud ERP, perceived ease of use towards cloud ERP

Author	Year	Type of Industry and Country	Sample Size	Is Extended TAM?	Factor identified	Factors Have Significant Influence on
Rajesri Govindaraju	-	SAP Users	176	No Modified TAM	Organizational, Individual	All Factors -influence end-users acceptance, perceived ease of use, perceived usefulness, perceived fit, perceived compatibility, attitude toward system use and symbolic adoption, individual an organizational contexts: personal innovativeness of IT, computer self-efficacy, argument for change, shared belief in the benefit of ERP system, and facilitating condition.
Christy Angeline	2015	SAP,Oracle, RAMCO Users	154	Yes	Organizational, Individual, Technological	Computer self-efficacy was significantly and positively related to perceived usefulness, Under organizational characteristics, both organizational support and training had a significant positive effect on perceived usefulness and perceived ease of

						use, Organizational support was more strongly related to perceived usefulness than perceived ease of use, training on the other hand was more strongly related to perceived ease of use, Perceived usefulness and perceived ease of use significantly affect intention to use and in turn the usage of the ERP system, ERP had significant impact on the end users'

Author	Year	Type of Industry and Country	Sample Size	Is Extended TAM?	Factor identified	Factors Have Significant Influence on
Ravi Seethamraju	2006	SaaS 3000	300	No Modified TAM	Vendor, Technology, Organizational	evaluation process, accounting shift of investment costs to operating expense and challenges such as change management and value co-creation
Dong Cheng	2007		340	Yes	Change Manageemnt,Business Process,Leadership Support,Learning Ability	change management, business process and learning ability on perceived use and ease of use
Marwa Abdulrahman Al-hadi	2017	Yemeni higher education institutions	84	Yes	Vision and objectives, top management support, business process, organizational structure, budget size, human resources management, project management, training and education, business process re-engineering, and	perceived ease of use and perceived usefulness (H1) and perceived ease of use have higher and direct influences on attitude toward using ERP, vision and

					communication	objectives‖ have a direct impact on" business process‖, clearness of business process‖, the more perceived usefulness, business process‖, project management‖ and communication and connection‖, absolutely have impact and influence on perceived ease of use‖,
Kwasi Amoako-Gyampah	2003	healthcare products organization SAP Users like Allied Signal, Coca-Cola, Dow Chemical, DuPont, Eastman, General Electric, Hoechst, IBM		Yes	Project Communication, Training on ERP, Shared Belief	beliefs on attitude and the mediation effect of attitude on the behavioral intention to use an ERP system.
BooYoung Chung	2009	construction industry	281	Yes	User related and Project Related	User-Related Variables, Job Relevance, Result Demonstrability, Compatibility, System Reliability, Reporting Capability, Software Selection, Consultant Support, Information Systems Area Participation, Intermediate Variables,

						Perceived Usefulness, Perceived Ease of Use, Intention to Use/Use, User Satisfaction, Individual Impact, Organizational Impact orgimpa1al Impact, Project Success
Brenda Scholtz	2016	manufacturing industry in Bangladesh	140	Yes	Interface Usability-Navigation, Presentation and Learnabilty	PU,PEOU
DR. VENKATESH	2012	construction industry	-	Yes	User related variable, Project related variable	ERP evaluation-function and consultant support, project success-progress and quality.
Pedro Soto-Acosta	2013	manufacturing companies	69	Yes	Project Communication, Project Champion, Training	Sheared Belief, PU, PEOU, Intension to Use
Ankit Mahindroo	2012	manufacturing companies	152	No	PU, PEOU, System Flexibility	perceived usefulness, perceived ease of use and system flexibility on the intention to use
Samad M E Sepasgozar1	-	Construction Industry-Australia.	448	Yes	Composite Factors-Vendor, Individual, Organizational ,Project, Technological Factors	Vendor-Technology-Influence Intension to USE
Ibrahim Egdair	2015	Libya	-	Yes	Organizational, Technology	ERP Use
Niken Larasati	2017	Craft Micro, Small and Medium Enterprise in Yogyakarta Regency, Indonesia	222	Yes	Technology Readiness, Technology Acceptance	PU,PEOU,IU, Optimism, innovativeness, discomfort, security
Shahin Dezdar	2011	SME's Malaysia	26	Yes	Top Management, User Training, Communication	Organizational Impact, User Satisfaction

DonHee Lee	2009	SME's in South Korea	209	Yes	Composite Factor-Organizational Support	Formal support -,Training and education , Work environment Informal support - Communication-PU,PEOU,IU
Dinesh Banswal	2017	Education Sector India	-	Yes	User Participation	PU,PEOU, Attitude, Intension

5. Findings, Conclusion

The review concludes that the idea of extending or modifying model of TAM is advocated over the current innovation theories and models which are more significant in explaining the technology adoption for recent technologies such as ERP.

The set of variables presented in this paper facilitates the development of extending model and develops the ground to study ERP adoption literature. The paper has certain limitations too. It has covered the adoption of technologies like ERP only and it has not considered the other technology options. It looks into the literature to develop adoption model for study similar information technologies... Nevertheless, the review has been able to identify the different influencing variables for ERP implementation thus, presenting a platform for future research for increasing use of modified model of TAM in the ERP implementation. This will leads to success of ERP implementation and adoption. Most of the researchers tried to extend or modify the original TAM or versions of TAM for better implementation of ERP in different sectors which gives them better results. Mostly they identified composite influencing factors like Organizational Factor, Technology Factors, Individual Factor, Vendor Factor and Project Factor. These factors have positive influence on Perceived Usefulness of ERP and perceived ease of use of ERP, which furthers influence its intension to use and finally leads to ERP success.

Research limitations/implications – This study provides a platform for studying adoption of technologies using modification or extension of TAM. Even the study can be conducted by using more research papers or thesis reports.

6. References

- Ankit Mahindroo , Hergovind Singh , Harsh Vardhan Samalia ,(2012) "Factors Impacting Intention to use of Erp Systems In Indian Context: an Empirical Analysis", 3rd World Conference on Information Technology -WCIT, Vol 03 (2013) 1626-1635 .

- Booyoung Chung1; Mirosław J. Skibniewski2; and Young Hoon Kwak3,(2009):,"Developing ERP Systems Success Model for the Construction Industry", JOURNAL OF CONSTRUCTION ENGINEERING AND MANAGEMENT © ASCE / 207.
- Brenda Scholtz,imranmahmud ,T. Ramayah,(2016):,"Does Usability Matter? An Analysis of the Impact of Usability on Technology Acceptance in ERP Settings",Interdisciplinary Journal of Information, Knowledge, and Management Volume 11.
- Christy Angeline Rajan*, rupashreebaral ,(2015),"Adoption of ERP system: An empirical studyof factors influencing the usage of ERP andits impact on end user", IIMB Management Review 27, 105e117.
- Dinesh Banswal, 2 Dr. Ramchandra Pawar ,(2017)," User acceptance, a key to effective implementation of enterprise resource planning systems in higher education", International Journal of Academic Research and Development ,Volume 2; Issue 6,.Page No. 160-164.
- Dong Cheng, Dehong Yang, Jidong Han and Yuanfang Song,(2007) "An Empirical Research of Successful ERP Implementation Based on TAM", in IFIP Intemational Federation for Information Processing. Volumc 2:'4. Research and Practical Issues of Enterprise Infonnation Systems 11 Volume 1. Eds. L. Xu, Tjoa A . Chaudhry S. (Boston: Springerl. Pp. 283·292.
- Donhee Lee, Sang M. Lee and David L. Olson,(2010):, "The effect of organizational support on ERP implementation", Industrial Management & Data Systems Vol. 110 No. 2, pp. 269-283 q Emerald Group Publishing Limited 0263-5577
- DR. VENKATESH. J*; MS. AARTHY.C** ,(2012):,"EMERGING ERP SYSTEMS - EXEMPLARY FOR THE CONSTRUCTION INDUSTRY", EXCEL International Journal of Multidisciplinary Management Studies Vol.2 Issue 6, ISSN 2249 8834.
- Hassan Alhanatleh, Murat Akkaya,(2016):,"The Investigation of Jordanian Education Ministry Employees' Attitude toward the Using of Cloud ERP",Int. J. Communications, Network and System Sciences, 2016, 9, 440-450.
- Hemlata Gangwar, Hema Date and A.D. Raoot ,(2014):,"Review on IT adoption: insights from recent technologies", Journal of Enterprise Information Management Vol. 27 No. 4, pp. 488-502 Emerald Group Publishing Limited 1741-0398 DOI 10.1108/JEIM-08-2012-0047.
- Ibrahim Egdair, M Farizal Rajemi , Santhirasegaran Nadarajan,(2015) "Technology Factors, ERP System and Organization Performance in Developing Countries", International Journal of Supply Chain Management IJSCM, ISSN: 2050-7399 (Online), 2051-3771 (Print), Vol. 4, No. 4.
- Kwasiamoako-Gyampah*, A.F. Salam1 ,(2004):,"An extension of the technology acceptance model in an ERP implementation environment",Information & Management 41 731–745.

- Marwa Abdulrahman Al-hadi1, Nagi Ali Al-Shaibany2 ,(2017) "An Extended ERP model for Yemeni universities using TAM model", International Journal Of Engineering And Computer Science ISSN:2319-7242 Volume 6,, Page No. 22084-22096.
- Manouchehrhayati, elhamvahedi, Saeed najafitavani, Abbas Shirian and Mohammad Reza Ebrahimi ,(November 2014):"Study of Factors Affecting Success of ERP System Implementation in Iranian Organizations with Change Management Approach", Research Journal of Recent Sciences ISSN 2277-2502 Vol. 3(11), 70-78.
- Nikenlarasati, Widyawan, and Paulus I. Santosa,(2017):, "Technology Readiness and Technology Acceptance Model in New Technology Implementation Process in Low Technology smes", International Journal of Innovation, Management and Technology, Vol. 8, No. 2.
- Oluwoledurodolu,(2016):,"Technology Acceptance Model as a predictor of using information system' to acquire information literacy skills", Library Philosophy and Practice (e-journal). 1450.
- Pedro Soto-Acosta, thurasamyramayah, simonapopa,(2013):, "EXPLAINING INTENTION TO USE AN ENTERPRISE RESOURCE PLANNING SYSTEM: A REPLICATION AND EXTENSION",Tehničkivjesnik 20, 3, 397-405 .
- Rajesrigovindaraju and nennyindriany,"A STUDY ON ERP SYSTEM ACCEPTANCE BASED ON TECHNOLOGY ACCEPTANCE MODEL".
- Ravi Seethamraju ,(2014),"Adoption of Software as a Service (saas) Enterprise Resource Planning (ERP) Systems in Small and Medium Sized Enterprises (smes)", Discipline of Accounting, The University of Sydney Business School, Sydney, Springer Science+Business Media New York .
- Shahindezdar and sulaimanainin, (2011):" The influence of organizational factors on successful ERP implementation ", Management Decision Vol. 49 No. 6, 2011 pp. 911-926.
- Simonasternad, samobobek,(2013),"Impacts of TAM-based external factors on ERP acceptance",Procedia Technology 9 , 33 – 42.