

# **September 2026: Top 10 Read Articles Advanced Information Technology**

**International Journal of Advanced Information  
Technology (IJAIT)**

**ISSN : 2231 - 5853 [Online] ; 2231 - 6663 [Print]**

**<https://airccse.org/journal/IJAIT/ijait.html>**

# Artificial Intelligence in Law Enforcement, A Review

Suhaib Alzou'bi, Haitham Alshibl and Mohammad Al-Ma'aitah,

Al-Balqa' Applied University, Jordan

## ABSTRACT

This research is presenting a critical review of existing methodologies and researches that deal with using AI as a tool of mining data in order to smooth and lead evidence in enforcing law. It will review as well the current situation in Jordan as possible as we can access the current available resources, where the method of mining information and using AI or soft evidence are to be addressed. The research concluded the importance of AI as supportive technology in policing, fighting crimes, cybercrimes, as models for enforcing law, but there were no cutoff evidence in using AI advanced methods in mining data in Jordan police and intelligence, simply because it was impossible mission to access the security information of such bodies.

## KEYWORDS

Artificial Intelligence, Knowledge, Law Enforcement, Fraud

**For More Details :** <https://airccse.org/journal/IJAIT/papers/4414ijait01.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2014.html>

## REFERENCES

- [1] Ahmad, I., Kamruzzaman, J., and Habib, H., and Habibi, D. (2012). Application of artificial intelligence to improve quality of service in computer networks. *Neural Comput & Applic*, 21, 81– 90.
- [2] Alimadad, A., Ghaseminejad, A. H., Borwein, P., Christopher, C., Brant ingham, P., Li, J., Brantingham, P., Pollard, N., Dabbaghian-Abdoly, V., Rutherford, A., Ferguson, R., van der Waall, Alexa and Fowler, E. (2008). Using Varieties of Simulation Modeling for Criminal Justice System Analysis. Ch 19 In Liu, L. & Eck, J. *Artificial Crime Analysis Systems: Using Computer Simulations and Geographic Information Systems*. Premier Reference Source. USA.
- [3] Al-Ma'aitah, M. A. (2013). Security Concerns in E-payment and the Law in Jordan. *IJACSA International Journal of Advanced Computer Science and Applications*, 4, 179-183.
- [4] Azuela, J. H. S., Ritter, G., Serra J., and Cortés, U. (2006). Special Issue: Advances in Artificial Intelligence. Instituto Politécnico Nacional Centro de Investigación en Computación.
- [5] Bell, P., Dean, J. and Gottschalk, P. (2010). Information Management In Law Enforcement: The Case Of Police Intelligence Strategy Implementation. *International Journal of Information Management*, 30, 343–349.

- [6] Buscema, M., and Tastle W. J. (ED). (2013). Intelligent Data Mining in Law Enforcement Analytics; New Neural Networks Applied to Real Problems. Springer Dordrecht Heidelberg New York London.
- [7] Collins, I. M., Breathnach, O., and Felle, P. (2012). Electronic Clinical Decision Support Systems Attitudes and Barriers to Use in the Oncology Setting. *Ir J Med Sci*, 181, 521–525.
- [8] Galway, L., Charles, D., and Black, M. (2008). Machine learning in digital games: a survey. *Artif Intell Rev*, 29, 123–161.
- [9] Gertosio, C. and Dussauchoy, A. (2004). Knowledge delivery from Industrial Databases. *Journal of Intelligent Manufacturing*, 15, 29-37.
- [10] Grover, V., Adderley, R. and Bramer, M. (2007). Review of Current Crime Prediction Techniques. Applications and Innovations in Intelligent Systems, 14, 233-237
- [11] Gonzales , A. R., Schofield , R. B., Herraiz , D. S. (2005). Intelligence-Led / Policing: The New Intelligence Architecture. Bureau of Justice Assistance. NCJ 210681.
- [12] Gottschalk, P. (2008). Knowledge Management in Policing: Enforcing Law on Criminal Business Enterprises. Hindawi Publishing Corporation.
- [13] Gottschalk, P. (2007). Knowledge Management Systems in Law Enforcement: Technologies and Techniques. Indea Group Inc. USA.
- [14] Hegselmann, R. and Krause, U. (2002). Opinion Dynamics And Bounded Confidence Models, Analysis, And Simulation. *Journal of Artificial Societies and Social Simulation (JASSS)*, 5, 1-33. Jordan National Information and Communications Technology Strategy (2013-2017).
- [15] McCaney, K. (2010). Law enforcement using analytical tools to predict crime. <http://gcn.com/articles/2010/12/22/police-predictive-analysis-software.aspx>.
- [16] McCarthy, J., Abrahams, B. W., Edwards, D. J., Hart, T. P. and Levin, M. I. (1985). LISP 1.5 Programmer's Manual The Computation Center and Research Laboratory of Electronics Massachusetts Institute of Technology. 2nd Ed.. The M. I.T. Press Massachusetts Institute of Technology Cambridge, Massachusetts. ISBN 0 262 130 1 1 4.
- [17] McCarthy, J., Minsky, M. L., Rochester, N., and Shanno, C. E. (2006). A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence August 31, 1955. *AI Magazine* , 27, 12-14.
- [18] Moran, L. (2011). <http://www.dailymail.co.uk/news/article-2053617/Professor-John-McCarthyFather-artificial-intelligence-dies-aged-84.html>.
- [19] Pierson, R. M. (2012). Can Artificial Intelligence Detect Crime Before It Happens?. <http://www.lockergnome.com/news/2012/08/25/can-artificial-intelligence-detect-crime-before-it-happens/>.
- [20] PMSEIC Prime Minister's Science, Engineering And Innovation Council. (2000). Science, Crime

Prevention & Law Enforcement. Fifth Meeting - 2 June 2000 Agenda Item 5.

# A Website Evaluation of Travel Agencies in Iran: An Adoption Level and Value Creation Approach

Raika Sadeghein, Farid Khoshalhan and Sajad Homayoun, K.N.Toosi

University of Technology, Iran

## ABSTRACT

Nowadays e-commerce is playing a big role in the tourism industry. It is safe to say that tourism industry is one of the only industries that accepted e-commerce with open arms. Travel agencies are one of the first organizations to move toward joining the online environment. Information technology has changed this industry in a way that travellers can now plan, reserve and purchase their ideal trips in a fraction of time and money used by traditional methods. This research focuses on investigating travel agencies websites in Iran to see where they are standing today according to the stages of internet adoption. In addition this paper aimed to evaluate the performance of the travel agencies in the online environment. The main weaknesses were extracted to help managers enhance their e-commerce activities in Iran's tourism. The value creation and capturing concepts were introduced, and it was concluded that perhaps the most serious disadvantage of the travel agencies websites in Iran, is that they did create value but they did not facilitate value capturing.

## KEYWORDS

e-commerce; e-tourism; website evaluation; internet adoption.

**For More Details :** <https://airccse.org/journal/IJAIT/papers/2612ijait01.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2012.html>

## REFERENCES

- [1] Dimitrios Buhalis, Soo Hyun Jun, (2011), E-Tourism, Contemporary Tourism Reviews, Goodfellow Publishers Limited, pp. 1-38.
- [2] [Http://media.unwto.org/en/press-release/2011-10-11/international-tourists-hit-18-billion-2030](http://media.unwto.org/en/press-release/2011-10-11/international-tourists-hit-18-billion-2030), retrieve on 04/01/2012 at 10:56 pm.
- [3] Forrester, 1999, Report January, (1999), available at [www.forester.com](http://www.forester.com).
- [4] [Http://internetworldstats.com/stats5.htm](http://internetworldstats.com/stats5.htm), retrieved on 04/01/2012 at 10:50 pm.
- [5] Wen-Chih Chiou, Chin-Chao Lin, Chyuan Perng, (2010), A strategic framework for website evaluation based on a review of the literature from 1995–2006, Journal of Information & Management, Vol. 47, pp. 282-290.
- [6] Wen-Chih Chiou, Chin-Chao Lin, Chyuan Perng, (2011), Case study: A strategic website evaluation of online travel agencies, Journal of Tourism Management, pp. 1-11.
- [7] Xiaobing Yu, Shunsheng Guo, Jun Guo, Xiaorong uang, (2011), Rank B2C e-commerce websites in e-alliance based on AHP and fuzzy TOPSIS, Journal of Expert System with Application, 38 , pp. 3550–3557.
- [8] Xiuli Cao, Yanhua Liu, Bing Shen, Min Wang, (2009), Research on Evaluation of B to C Ecommerce Website Based on AHP and Grey Evaluation, Second International Symposium on Electronic Commerce and Security, IEEE, pp. 405-408.
- [9] Soyoung Kim, Lesli Stoel, (2004), Apparel retailers: website quality dimensions and satisfaction.
- [10] Alastair G. Smith, (2001), Applying evaluation criteria to New Zealand government websites, International Journal of Information Management , Vol. 21, pp.137-149.
- [11] Nocolae-george dragulanescu, (2002), Website quality evaluation criteria and tools, international Journal of Information & Library, Vol. 34, pp. 247-254.
- [12] Layla Hasan, Emad Abuelrub, (2011), Assessing the quality of web sites, Applied Computing and Informatics , Vol. 9, pp.11-29.
- [13] R. Ufuk Bilsel, Gulcin Buyukozkan, Da Ruan, (2006), A Fuzzy Preference-Ranking for a Quality Evaluation of Hospital Websites, International journal of Intelligent Systems, Vol. 21, pp. 1181- 1197.
- [14] Wei-Hsi Hung, Robert J McQueen, (2006), Developing an Evaluation Instrument for e-Commerce Websites from the First-Time Buyer's Viewpoint, 2006, Electronic Journal of Information Systems Evaluation , Vol. 7, No. 1, pp. 31-42.
- [15] Bindu Madhuri .Ch, Padmaja.M, Srinivasa Rao.T, Anand Chandulal.J, (2010), Evaluating Web Site based on Grey Clustering Theory combined with AHP , International Journal of Engineering and Technology, Vol. 2 Vol. 2, pp.71-76.

- [16] John Paynter, Suwannee Satitkit, (2001), An evaluation of travel agent web sites, University of Auckland press.
- [17] Chung, T. and Law, R., (2003). Developing a performance indicator for hotel websites, *International Journal of Hospitality Management*, Vol. 22, No. 1, pp. 119-125.
- [18] Park C (2003), A content analysis of travel agency websites in Korea, *Asia Pacific Journal of Tourism Research*, Vol. 7, No. 1, pp. 11-18.
- [19] Law, R., & Leung, R., (2000). A study of airlines' online reservation services on the Internet, *Journal of Travel Research*, Vol. 39, No. 2, pp. 202–211.
- [20] Maswera, T., Dawson, R., Edwards, J., (2007), E-commerce adoption of travel and tourism organization in South Africa, Kenya, Zimbabwe and Uganda, *Telematics and Informatics*, pp. 1-14.
- [21] Hen, J.H., Mills, J. E., (2006), Zero Acquaintance Benchmarking at Travel Destination Websites: What is the First Impression that National Tourism Organization Try to Make?, *International Journal of Tourism Research*, Vol. 8, pp. 405-430.
- [22] Jelassi. Tawfik, Enders. Albrecht, (2004), *Strategies for e-business: creating value through electronic and mobile commerce*, First edition.
- [23] Saddam, Gh., (2009), A Study of E-commerce Applications Adoption in Iranian Tourist Organizations , Tarbiat Modares University, Faculty of Engineering, Department of Industrial Engineering, Lulea University of Technology, Division of Industrial Marketing and E-commerce.
- [24] Teo, T. and Pian, Y., (2003), A contingency perspective on internet adoption and competitive advantage, *European Journal of Information System*, Vol. 12, No. 2, pp. 78-91.

# Information and Communication Technology Skills' Sufficiency of Egyptian Accounting Graduates

Mohamed Elsaadani, Arab Academy for Science & Technology & Maritime Transport, Egypt

## ABSTRACT

This study aims at evaluating the sufficiency of ICT skills of fresh accounting graduates by soliciting the opinion of senior accounting professionals. A questionnaire used as the data collection method, and descriptive statistics used for analysis. The result of this research was surprisingly, as the level of the accounting graduates rated to be above average and they are very competent for current accounting profession in Egypt. The research revealed that any fresh graduate should be literate with Internet, word processing software, spreadsheet software, e-mail, commercial accounting software, and database management software. The research has several practical implications as well as a genuine value, as it provides current set of ICT skills tools needed by accounting profession in Egypt. Also, it calls accounting higher education institutions worldwide to keep investigating the requirements of the profession in order to produce graduates who are competent and up to market challenges.

## KEYWORDS

Sufficiency, skills, ICT, Egypt, Accounting Graduates, HEI

**For More Details :** <https://airccse.org/journal/IJAIT/papers/5215ijait01.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2015.html>

## REFERENCES

- [1] Ismail, N.; Tayib, M.; Salim, B. (2005). IT Integration in Accounting Education: Are We Ready? *Accountants Today*, 18(7), pp. 36-39.
- [2] Greenstein, M.; McKee, T. (2004). Assurance practitioners' and educators' self-perceived IT knowledge level: an empirical assessment. *International Journal of Accounting Information Systems*, 5(2), pp. 213-43.
- [3] Lin, Z. (2008). A Factor Analysis on Knowledge and Skill Components of Accounting Education: Chinese Case. *Advances in Accounting, incorporating Advances in International Accounting*, 24, pp. 110-118.
- [4] Celik, O; Ecer, A. (2009). Efficiency in Accounting Education: Evidence from Turkish Universities. *Critical Perspectives on Accounting*, 20(5), pp. 614-634.
- [5] Aristovnik, A. (2012). The impact of ICT on educational performance and its efficiency in selected EU and OECD countries: a non-parametric analysis. *ICICTE 2012 Proceedings*, pp. 551-524.
- [6] Elsaadani, M. 2014. Influence of ICTs on workforce productivity in Egyptian industrial organizations. *International Journal of Advanced Information Technology (IJAIT)*, 4(3), pp. 1-8.
- [7] Yusuf, M.; Afolabi, A. (2010). Effects of computer assisted instruction (CAI) on secondary school students' performance in biology. *The Turkish Online Journal of Educational Technology*, 9(1), pp. 62-69.
- [8] Shaikh, Z. (2009). Usage, acceptance, adoption, and diffusion of information and communication technologies in higher education: a measurement of critical factors. *Journal of Information Technology Impact (JITI)*, 9(2), pp. 63-80.
- [9] Nneka, E; Festus, A. (2014). Integrating Information and Communication Technology (ICT) in Accounting Education Instruction in Ekiti State Universities. *International Journal of Business and Social Science*, 5(6).
- [10] Nwosu, B.; Ogbomo, N. (2011). ICT in Education: A Catalyst for Effective use of Information. *PNLA Quarterly. The Official Publication of the Pacific Northwest Library Association*, pp. 1-6.
- [11] Buba, M. (2011). Integrated information and communication technology in the curriculum of Business Education. *Journal of Business Educational Research and Development (JOBED)*, 2(10), pp. 126-132.
- [12] Department for Education and Skills (DfES). (2003). Towards a unified e-learning strategy. Nottingham: DfES Publications.
- [13] Reynolds, D.; Treharne, D.; Tripp, H. (2003). ICT - The hopes and the reality. *British Journal of Educational Technology*, 34, pp. 151-167.

# Change Management: Implementation and Benefits of The Change Control in the Information Technology Environment

Paulo Roberto Martins de Andrade<sup>1</sup>, Adriano B.Albuquerque<sup>2</sup>, WeskleiDourado Teófilo<sup>3</sup> and Fátima Aguiar da Silva<sup>3</sup>,

<sup>1</sup>University of Regina, Regina, Canada, <sup>2</sup>Universidade de Fortaleza, Brazil and <sup>3</sup>FaculdadeEstácio FIC, Brazil

## ABSTRACT

In the competitive environment, companies have given increasing importance to the IT sector and the resources it delivers as strategic. As a result, IT becomes a living being within the company. This sector is being subject to continuous changes in this scenario. These changes can occur within the own IT sector or whether IT to other sectors of the company. For both scenarios, it is important to have a good change control to avoid unnecessary trouble and expense. This paper aims to show through a case study, the benefits and results obtained with the implementation of a process of managing and controlling changes in the information technology environment of a large government company in Brazil.

## KEYWORD

Change control; Information technology, PMBOK, Software engineering.

**For More Details :** <https://aircconline.com/ijait/V6N1/6116ijait02.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2016.html>

## REFERENCES

- [1] ANDRADE, PAULO R. M.; ALBUQUERQUE, A. B.; FROTA, O. F. ; SILVA FILHO, J. F. . PM5: One approach to the management of IT projects applied in the Brazilian public sector, 2015, Las Vegas, Nevada, USA. Proceedings of 13th International Conference on Software Engineering Research and Practice - SERP. San Diego, California, USA: Waset.org, 2015. v. 1.
- [2] ANDRADE, P. R. M., ALBUQUERQUE, A. B.. “Escritório de projetos: Características, vantagens e o planejamento de sua implantação no setor público” RBGP. Revista Brasileira de Gerenciamento de Projetos, 2014, p. 21-26.
- [3] ANDRADE, PAULO R. M.; ALBUQUERQUE, A. B.; ARAUJO, R. G.; CRONEMBERGER FILHO, J.; PEREIRA, T. R.; MENDONÇA, N. C.. Improving business by migrating applications to the cloud using cloudstep, 2015, Gwangju, Korea. Proceedings for the 29th International Conference on Advanced Information Networking and Applications Workshops, 2015. p. 77-82.
- [4] ATKINSON, R. “Project management: cost, time and quality, two best guesses and a phenomenon, it’s time to accept other success criteria.” International Journal of Project Management, 1999: 337- 342.
- [5] BARBARA, Michele. Gestão de mudança: superando dificuldades na implantação dos sistemas de informação nas organizações, 2013.
- [6] CAVAREC, Y. “Revisiting de Definition of Project Success.” PMI Global Congress Proceedings. Vancouver, Canada: PMI, 2012.
- [7] CHIAVENATO, I. Gestão de Pessoas: o novo papel dos recursos humanos nas organizações. Rio de Janeiro: Elsevier, 1999.
- [8] HALL, M., R. HOLT, e D. PURCHASE. “Project sponsor under new public management: lessons from the frontline.” International Journal of Project Management, 2003: 495-502.
- [9] Harris Kern, <http://www.harriskern.com/> (visited on January 20, 2016).
- [10] ISACA, <http://www.isaca.org/cobit> (visited on January 20, 2016).
- [11] PCI Compliance Guide, <https://www.pcicomplianceguide.org/> (visited on January 20, 2016).
- [12] PMI; “A Guide to the Project Management Body of Knowledge: PMBOK(R) Guide.” 5ª. San Francisco, CA: Syba - PMI Publishing Division, 2013.
- [13] REGO, M. L, e H. A. R. IRIGARAY. “Gerenciamento de Projetos: Existe Produção Científica Brasileira?” Proceedings of XXXV Encontro ANPAD. Rio de Janeiro, RJ: ANPAD, 2011.
- [14] SANTOS RODRIGUEZ, A. Evolução do Modelo de Gestão. Proceedings of II CONGRESSO NACIONAL DE EXCELÊNCIA EM GESTÃO, 4, 2008, Rio de Janeiro
- [15] SÖDERLUND, J. “Building theories of project management: past research, questions for the future.” International Journal of Project Management, 2004: 183-191.
- [16] SOX LAW, <http://www.soqlaw.com/compliance.htm> (visited on January 20, 2016).
- [17] SRIVANNABOON, S., e D. Z. MILOSEVIC. “A two-way influence between business strategy and project management.” International Journal of Project Management, 2006: 493-505.
- [18] WISE, L. R. “Public management reform: competing drivers of change.” Public Administration Review 62, nº 5 (2002)

# TRADITIONAL VERSUS BLENDED LEARNING METHOD: A COMPARATIVE STUDY ON ITS EFFECTIVENESS IN BUSINESS COMMUNICATION COURSE

Fahad AlShahrani<sup>1</sup> and Gilbert M. Talaue<sup>2</sup>

<sup>1</sup>Assistant Professor of English Language and Director of e- Learning Center, Royal Commission of Jubail, Jubail Industrial City, Kingdom of Saudi Arabia

<sup>2</sup>Assistant Professor of Business Administration, Jubail University College, Jubail Industrial City, Kingdom of Saudi Arabia

## ABSTRACT

This article presents a descriptive comparative study on two methods of teaching, the traditional and blended learning pedagogical approach in a Business Communication course. Forty-four (44) students from the two controlled groups were enrolled in the course for the first semester of school year 2017-2018 participated in the study. The findings indicated that respondents' performance in ENGL118 (English Composition) had an effect on their performance in BUS261(Business Communication) and there was a significant positive relationship between year level and final grade in BUS261. Therefore, it was concluded that the year level and grade in ENGL118 have correlations on student's performance in BUS261. The results of the assessments of the two groups were compared and indicated a significant difference in the results which was influenced by respondents' year level and mode of conducting assessments. It is further concluded, that if the characteristics of both groups were the same, blended would have been more effective than the traditional method. This study recommends adopting the blended pedagogical approach not only in BUS261 course but also to other courses as applicable.

## KEYWORDS

Flipped Class, Blended Learning, BlackBoard, Business Communication, Teaching Pedagogy

For More Details : <https://airconline.com/ijait/V8N6/8618ijait01.pdf>

Volume Link : <https://airccse.org/journal/IJAIT/current2018.html>

## REFERENCES

- [1] Alammery, A., Sheard, J., & Carbone, A. (2014). Blended learning in higher education: Three different design approaches. *Australasian Journal of Educational Technology*, 30(4). <https://ajet.org.au/index.php/AJET/article/view/693/1061>
- [2] Allen E., & Seaman J. (2011). *Going the Distance: Online educator in the United States*. (Survey). Babson Survey Research Group.
- [3] Aslam, S. (n.d.). A Comparative Study of Blended Learning versus Traditional Teaching in Middle School Science. International Conference: The Future of Education. <https://conference.pixelonline.net/FOE/files/foe/ed0005/FP/1718-SOE1072-FP-FOE5.pdf>
- [4] Al-Azawei, A., Parslow P., & Lundqvist K. (2017). Investigating the effect of learning styles in a blended e-learning system: An extension of the technology acceptance model (TAM). *Australasian Journal of Educational Technology*, 33(2). <https://ajet.org.au/index.php/AJET/article/view/2741/1406>
- [5] BlackBoardLearn (n.d.) Retrieved on 20/2/2018 from <http://www.blackboard.com/index.html>
- [6] Bliuc, A. G. (2007). Research focus and methodological choices in studies into. In *Internet and Higher Education*, 10, 31-244
- [7] Crawford, R., Jenkins, L. (2017). Blended learning and team teaching: Adapting pedagogy in response to the changing digital tertiary environment. *Australasian Journal of Educational Technology*, 33(2). <https://ajet.org.au/index.php/AJET/article/view/2924/1414>
- [8] Statistics How to (n.d). Retrieved from <https://www.statisticshowto.datasciencecentral.com/probability-and-statistics/find-sample-size/>
- [9] Fadde, P. J., & Phu Vu. (2014). Blended Online Learning: Benefits, Challenges, and Misconceptions. In P. Lowenthal, C. S. York, and J. C. Richardson (Eds.), *Online Learning: Common Misconceptions, Benefits, and Challenges* (pp. 33– 48). New York: Nova.
- [10] Fung, JL., Quek, CL. (2016). Modeling relationships between students' academic achievement and community of inquiry in an online learning environment for a blended course. *Australasian Journal of Educational Technology*, 32(4). <https://ajet.org.au/index.php/AJET/article/view/2500/1375>
- [11] Graham, C. R. (2005). Blended learning systems: definition, current trends, and future definitions. In C. J. Bonk & C. R. Graham (Eds.), *Handbook of blended learning: Global perspectives, local design*. (pp. 3 – 21). San Francisco, CA: Pfeiffer Publishing.
- [12] Heinrich, E. & Milne, J. (2012). Pathways for improving support for the electronics management and marking of assignments. *Australasian Journal of Educational Technology*, 28(2), 279-294. <https://ajet.org.au/index.php/AJET/article/view/874/152>

- [13] Heinrich, E., Milne, J. D. & Moore, M. (2009). An investigation into e-tool use for formative assignment assessment - status and recommendations. *Educational Technology & Society*, 12(4), 176- 192. [http://www.ifets.info/journals/12\\_4/16.pdf](http://www.ifets.info/journals/12_4/16.pdf)
- [14] Heinze, A., Procter, C. (2004). "Reflections on the Use of Blended Learning". *Education in a Changing Environment*. University of Salford, Salford, Education Development
- [15] Jubail University College (2018). About Jubail University College. Retrieved on 20/2/2018 from <http://www.ucj.edu.sa/en/about/Pages/About-Jubail-University-College.aspx>
- [16] Khan, A., et. al (2012). Study of Blended Learning Process in Education. *I.J.Modern Education and Computer Science*, 9, 23-29, DOI: 10.5815/ijmecs.2012.09.03
- [17] Medina, L.C. (2018). Blended learning: Deficits and prospects in higher education. *Australasian Journal of Educational Technology*, 34(1). <https://ajet.org.au/index.php/AJET/article/view/3100/1460>
- [18] Montgomery, A., Hayward, D., et. al (2015). Blending for student engagement: Lessons learned for MOOCs and beyond. *Australasian Journal of Educational Technology*, 31(6). <https://ajet.org.au/index.php/AJET/article/view/1869/1321>
- [19] Murphy, R., et. al (2014). Blended Learning Report. Michael & Susan Dell Foundation in Partnership with SRI International.
- [20] Nazarenko, A. (2015). Blended Learning vs Traditional Learning: What Works? (A Case Study Research). The XXVI Annual International Academic Conference, Language, and Culture, 27-30, October 2015. *Propecia – Social and Behavioral Science* 200 (2015) 77-82. <https://www.sciencedirect.com/science/article/pii/S1877042815046662>
- [21] O'Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The Internet and Higher Education*, 25, 85-95.
- [22] Omiola, M., et. al (2012). Effects of Blended Learning and Individualized Instructional Strategies on the Cognitive Learning Outcomes in Basic Technology. *British Journal of Science* Vol. 6 (1) 38-44.
- [23] Ryback, D., & Sanders, J. (1980). Humanistic versus traditional teaching styles and student satisfaction. *Journal of Humanistic Psychology*, 20(87), 87-90
- [24] Sarka, A., Semradova, I. (2016). Evaluation of Blended Learning. *Future Academy's Multidisciplinary Conference*. *Propecia – Social and Behavioral Science* 217 (2016) 551-557. <https://www.sciencedirect.com/science/article/pii/S1877042815046662>
- [25] Saunders, M., Lewis, P., Thornhill, A. (2012). *Research Methods for Business Students*. Pearson, UK. [26] Shih, W., Tsai, C. (2017). Students' perception of the flipped classroom approach to facilitating online project-based learning in marketing

research course. *Australasian Journal of Educational Technology*, 33(5).  
<https://ajet.org.au/index.php/AJET/article/view/2884/1436>

[27] Simon, D., Jackson, K., & Maxwell, K. (2013). Traditional Versus Online Instruction: Faculty Resources Impact Strategies for Course Delivery. *Business Education & Accreditation*. Vol. 5, November 1.  
<ftp://ftp.repec.org/opt/ReDIF/RePEc/ibf/beaccr/bea-v5n1-2013/BEA-V5N1-2013-9.pdf>.

[28] Staker, H. & Horn, M. (2012). *Classifying K-12 blended learning*. Clayton Christensen Institute for Disruptive Innovation: San Mateo, CA

[29] Strauss, Valerie (3 June 2012). "The flip: Turning a classroom upside down". *Washington Post*.

[30] Talaue, G. (2017). *Research Writing Handbook: A Guide for Basic Research*. Scholar's Press. Germany.

[31] Tayfour, A., Siraj, M (2017), "Analysis of Factors Affecting Student Evaluation of Teaching Effectiveness in Saudi Higher Education: The Case of Jubail University College." *American Journal of Educational Research*, vol. 5, no. 5 (2017): 464-475. doi: 10.12691/education-5-5-2.

# EVALUATION OF HOSPITAL INFORMATION SYSTEMS IN SELECTED HOSPITALS OF IRAN

Esmaeil Mehraeen<sup>1</sup> , Maryam Ahmadi<sup>2</sup> \*, Yousef Mehdipour<sup>3</sup> ,  
Tayyebbeh Noori<sup>4</sup>

<sup>1</sup>Health Information Technology MSc (Lecturer), Department of Health Information Management, School of Health, Zabol University of Medical Sciences, Zabol, Iran.

<sup>2</sup>Associate Professor in Health Information Management, School of Management and Medical Information Sciences, Iran University of Medical Sciences, Tehran, Iran.

<sup>3</sup>Assistant Professor, Department of Health Information Management, Zahedan University of Medical Sciences, Zahedan, Iran.

<sup>4</sup>Health Information Technology MSc (Lecturer), Department of Health Information Management, Zahedan University of Medical Sciences, Zahedan, Iran.

## ABSTRACT

Due to the information systems objectives, and to avoid duplication and to help improve care quality and reduce cost, it is necessary to conduct continuous evaluation to determine how to achieve these goals. This study was performed using evaluation indices of hospital Information systems (HIS) in selected hospitals of Iran. In this article organizational and server components of hospital information systems in selected hospitals are being assessed. This research is a descriptive cross – sectional study. The study population consisted of the information system of Shohaday Tajrish, Khatamolanbiya, Imam Khomeini and Milad Hospital. Data collecting tools were checklist of hospital information system Evaluation Index, which completed with direct observation and interviews with users. Data analyzed by statistics software SPSS, and presented as statistical tables and graphs. In the studied hospitals, although the most of the organizational components subgroups and hospital information system server components has been set up and used but pharmacy information system, decision support systems, communication services and telemedicine services hadn't been set up fully in the hospitals. Currently most subtypes of organizational components and hospital information system server components were fully in the designed software and considering all fields in 5 hospitals.

## KEYWORDS

Assessment Index, Evaluation, Hospital, Hospital Information System

**For More Details :** <https://airccse.org/journal/IJAIT/papers/4514ijait01.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2014.html>

## REFERENCES

- [1] Siamian H, Gonbadi K, Nasiri E, Shahrabi A (2005) Health information management role in hospital management. *Elec J IrnScien Inform and Docum Cent* 4(3):19-28.
- [2] Moghaddasi H (2009) Information Focus and medical Hypermedia. *Educ Press Assoc of Irn J Med Reco* 3(7): 7-12.
- [3] Hoseyni A (2002) Logical model design of information system for public-Teaching hospitals affiliated to medical universities in Tehran. Dissertation, Iran University of Medical Sciences, School of Management and Medical Information Sciences.
- [4] Kaplan B, Maxwell J (2005) Qualitative Research Methods for Evaluating Computer Information SystemsEvaluating the Organizational Impact of Healthcare Information Systems.Volume 1. 2nd edition. USA: Springer:30-55.
- [5] Borzekowski R (2009) Measuring the Cost Impact of Hospital Information Systems: 1987-1994. *Journal of Health Economics* 28(5):938-949.
- [6] Mehraeen E, AhmadiM, Shajarat M, Khoshgam M (2012)Assessment of hospital information system in selected hospitals in tehran. *Journal of PayavardSalamat*6(6):458-466.
- [7] Hoffman EK, Finnegan R, yakul MA (2008) Medical record management.Volume 2. 3rd edition. Berwyn: physician's record company:543.
- [8] Design and implementation of health information systems(2011) <http://ict1.tbzmed.ac.ir/healthbank/online%20education/pdf%20book.pdf>. Accessed 2 Apr 2010.
- [9] Reinhold H (2007) Health information systems – past, present, future. *Inte J med inform*75(3-4): 268- 281.
- [10] Salmela H, Turunen P (2011) Evaluation of information systems in health care: a framework and its application. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.199.8598&rep=rep1&type=pdf>. Accessed 10 June2012.
- [11] Ammenwerth E, Gräber S, Herrmann G, Bürkle T, König J (2003) Evaluation of health information systems-problems and challenges. *Int J Med Inform*71(2-3):125-135.



# **THE IMPACT OF SOCIAL MEDIA ON ACADEMIC PERFORMANCE OF SELECTED COLLEGE STUDENTS**

Gilbert M. Talaue<sup>1</sup> , Ali AlSaad<sup>2</sup> , Naif AlRushaidan<sup>3</sup> , Alwaleed AlHugail<sup>4</sup> , Saad AlFahhad<sup>5</sup>

<sup>1</sup>Assistant Professor, <sup>2,3</sup> Business Administration Student-Researcher, <sup>4,5</sup>Management Information System Student-Researcher

Business Administration Department, Jubail University College, Jubail Industrial City, Kingdom of Saudi Arabia

## **ABSTRACT**

The purpose of this article is to assess the impact of social media on academic performance of selected college students. In this article, the authors raise the actual impact of daily communication of youth in social media. Descriptive research design was utilized to gain accurate profile of situation. Sixty (60) Business Administration and Management Information System students who are actively using social media are the respondents of the study. It was conducted during the summer semester of academic year 2017- 2018. Summing-up, social networks becomes an integral part of the students' full life, took up most of their free time. Undoubtedly, in social networks, there are also things useful for the development of the students. In addition, communication with peers through social networks can help a student socialize, find new friends, discuss with them issues related to studies. Thus, it can be concluded that social media have a dual impact on student achievement, and it is necessary to approach adolescents' use of social networks with ultimate responsibility.

## **KEYWORDS**

social network, social media, Saudi Arabia, impact of electronic technology, social media effect

For More Details : <https://aircconline.com/ijait/V8N5/8518ijait03.pdf>

Volume Link : <https://airccse.org/journal/IJAIT/current2018.html>

## REFERENCES

- [1] Abousaber, I., Oueder, M. (2018). A Study on the Impact of Social Media Usage on Student Academic Performance: University of Tabuk an Example. American Scientific Research Journal for Engineering, Technology, and Sciences (ASJETS), 40(1), pp. 77-88
- [2] Alwagait, E., Shahzad, B. (2014). Impact of social media usage on students' academic performance in Saudi Arabia, Computers in Human Behavior, <http://dx.doi.org/10.1016/j.chb.2014.09.028>
- [3] Amin, Z., Mansoor, A., et.al (2016). Impact of Social Media of Student's Academic Performance. International Journal Business and Management Invention, 5(4), pp. 22-29
- [4] Asemah, S., Okpanachi, R. (2013). Influence of social media on the academic performance of the undergraduate students of Kogi State University, Anyigba, Nigeria, Research on Humanities and Social Sciences, 3(12), pp. 90-96
- [5] East, S. (2016). Teens: This is how social media affects your brain. CNN. Retrieved from <https://edition.cnn.com/2016/07/12/health/social-media-brain/index.html>.
- [6] Ellen, S. (2017). Slovin's Formula Sampling Techniques. Sciencing. Retrieved from <https://sciencing.com/slovins-formula-sampling-techniques-5475547.html>
- [7] Jubail University College (2018). About Jubail University College. Retrieved on 20/2/2018 from <http://www.ucj.edu.sa/en/about/Pages/About-Jubail-University-College.aspx>
- [8] Kolan, B., Dzandza, P. (2018). Effect of social media on academic performance of students in Ghanaian Universities: A case study of University of Ghana, Legon, Library Philosophy and Practice (e-journal), <https://digitalcommons.unl.edu/libphilprac/1637>
- [9] Landry, T. (2014). How Social Media Has Changed Us: The Good and The Bad. Retrieved from <https://returnnonnow.com/2014/09/how-social-media-has-changed-us-the-good-and-the-bad/>
- [10] Mensah, S., Nizam I. (2016). The impact of social media on students' academic performance – a case of Malaysia Tertiary Institution. International Journal of Education, Learning and Training, 1(1), pp. 14-21
- [11] Newspoll. (2013). Like, Post, Share Young Australians' Experience of Social Media. Australian Communications And Media Authority. Retrieved from <https://www.acma.gov.au/-/media/mediacomms/Report/pdf/Like-post-share-Young-Australians-experience-of-social-mediaQuantitative-research-report.pdf?la=en>.
- [12] Owusu-Acheaw, M., Larson, A. (2015). Use of social media and its impact on academic performance of tertiary institution students: A study of students of Koforidua Polytechnic, Ghana, Journal of Education and Practice, 6(6), pp. 94-101
- [13] Research into the online behaviour and attitudes of Australians in relation to movie and TV piracy (2013). Intellectual Property Awareness Foundation. Retrieved from <https://www.aph.gov.au/DocumentStore.ashx?id=1bff7481-b92a-4bc7-a2e7>
- [14] Reuters. (2009). Study: Facebook, Twitter Use At Work Costs Big Bucks. Retrieved from <https://www.reuters.com/article/urnidgns852573c4006938800025765b00619aidUS399557440920091026>.

# **INFLUENCE OF ICTS ON WORKFORCE PRODUCTIVITY IN EGYPTIAN INDUSTRIAL ORGANIZATIONS**

Dr. Mohamed Elsaadani, PhD

Assistant Professor, the Arab Academy for Science & Technology & Maritime Transport

## **ABSTRACT**

Present study aims to investigate the influence of ICTs dimensions (Information Technology (IT), Management Information System (MIS), Office automation (OA), Intranet and Internet) on workforce productivity for a group of industrial organizations in Alexandria - Egypt. The population of the study was managers and staff members working in different areas related to ICTs in the selected industrial organizations at various managerial levels. Descriptive-statistical combined research study was conducted. The selection of the participating industrial organization done using simple random sampling technique. Data collection done using questionnaires. In order to check the validity of the study instrument expert comments were used and the reliability of the questions calculated as 79% using Cronbach's Alpha coefficient. The analysis of instrument data done using single variable t-test, Friedman and variance analysis. The study findings revealed that the specified dimensions of ICTs positively affect workforce productivity of industrial organizations in Alexandria - Egypt.

## **KEYWORDS**

ICTs, Workforce Productivity, Egypt, Industrial Organizations

For More Details : <https://airccse.org/journal/IJAIT/papers/4314ijait01.pdf>

Volume Link : <https://airccse.org/journal/IJAIT/current2014.html>

## REFERENCES

- [1] Ellram, L. et al. (1999). Retail logistics. *International Journal of Physical Distribution & Logistics Management*, 29(7/8), pp. 477-494.
- [2] Brown, J. et al. (2005). Supply chain management and the evolution of the 'Big Middle'. *Journal of Retailing*, 81(2), pp. 97-105.
- [3] Bridges, E. & Freytag, P. (2009). When do firms invest in offensive and/or defensive marketing? *Journal of Business Research*, 62(7), pp. 745-749.
- [4] Melville, N. et al. (2004). Information technology and organizational performance: an integrative model of IT business value. *MIS Quarterly*, 28(2), pp. 283-322.
- [5] Tsai, W. & Tang, L. (2012). A model of the adoption of radio frequency identification technology: the case of logistics service firms. *Journal of Engineering and Technology Management*, 29(1), pp. 131- 151.
- [6] Phuong, T. (2008). Internet use, Customer Relationships and loyalty in the Vietnamese travel industry. *Asia Pacific Journal of Marketing and Logistics*, 20, pp. 190-210.
- [7] UNCTAD, (2004). E-Commerce and Development Report. [Online]. United Nations Conference on Trade and Development. Retrieved December 17, 2013, from [http://unctad.org/en/Docs/ecdr2004overview\\_en.pdf](http://unctad.org/en/Docs/ecdr2004overview_en.pdf).
- [8] Battisti, G. & Iona, A. (2009). The UK productivity gap in the service sector: do management practices matter? *International Journal of Productivity and Performance Management*, 58(8), pp. 727-747.
- [9] Lin, W. (2009). The business value of information technology as measured by technical efficiency: Evidence from country-level data. *Decision Support Systems*, 46(4), pp. 865-874.
- [10] Fuentelsaz, L. et al. (2009). The effects of new technologies on productivity: An intra-firm diffusionbased assessment. *Research Policy*, 38(7), pp. 1172-1180.
- [11] Zain, M. et al. (2005). The relationship between information technology acceptance and organizational agility in Malaysia. *Information & Management*, 42(6), pp. 829-839.
- [12] Davis, B. (2001). An Emerging Issue: Knowledge Worker Productivity and Information Technology. *Information Science Conference*, Krokow - Poland.
- [13] Pilat, D. & Schreyer P. (2004). The OECD Productivity Database: An Overview. *International Productivity Monitor*, OECD, 8, Spring.
- [14] Bosworth, B. & Triplett, J. (2000). Productivity in the Services Sector. *American Economic Association (AEA)*, January 7-9, Boston - Mass.
- [15] Jorgenson, D. & Stiroh, K. (2000). Raising the speed limit: US Economic growth in the Information Age. *Brookings Papers on Economic Activity*, 1, pp. 125-211.
- [16] Oliner, S. & Sichel, D. (2000). The Resurgence of Growth in the Late 1990's: Is Information Technology the Story? *Journal of Economic Perspectives*, 14(4), pp. 3-22.
- [17] Mas, M. & Quesada, J. (2005). ICT and Economic Growth: A Quantification of Productivity Growth in Spain 1985-2002. *OECD Statistics Working Papers*, 4, OECD Publishing. Doi: 10.1787/527376367825.

- [18] Laudon, K. & Laudon, J. (2005). *Management Information System: Managing the Digital Firm*. 9th ed. Prentice Hall, USA.
- [19] Pavic, S. et al. (2007). Could e-business create a competitive advantage in UK SMEs? *Benchmarking: An International Journal*, 14(3), pp. 320-351.
- [20] Gichoya, D. (2005). Factors Affecting the Successful Implementation of ICT Projects in Government. *The Electronic Journal of e-Government*, 3(4), pp 175-184.
- [21] Brady, M. et al. (2008). Researching the role of information communication technology (ICT) in contemporary marketing practices. *Journal of Business & Industrial Marketing*, 23(2), pp. 108-114.
- [22] Deeter-Schmelz, D. & Kennedy, K. (2004). Buyer-seller relationships and information sources in an e-commerce world. *Journal of Business & Industrial Marketing*, 19(3), pp. 188-196.
- [23] Geiger, S. & Turley, D. (2005). Personal selling as knowledge-based activity: communities of practice in the sales force. *Irish Journal of Management*, 26(1), pp. 61-71.
- [24] Li, E. (1995). Marketing information systems in US companies: a longitudinal analysis. *Information and Management*, 28(1), pp. 13-31.
- [25] Martin, L. & Matlay, H. (2001). Blanket approaches to promoting ICT in small firms: some lessons from the DTI ladder adoption model in the UK. *Internet Research: Electronic Networking Applications and Policy*, 11(5), pp. 399-410.
- [26] Grandon, E. & Pearson, J. (2004). Electronic commerce adoption: an empirical study of small and medium US business. *Information and Management*, 42(1), pp. 197-216.
- [27] Srensena, C. et al., (2010). Conceptual model of a future farm management information system. *Computers and Electronics in Agriculture*, 72, pp. 37–47.
- [28] Zafiropoulos, C. et al. (2006). Research in Brief: the internet practices analysis from Greece. *International Journal of Contemporary Hospitality Management*, 18(2), pp. 156-163.
- [29] Abereijo, I. et al. (2009). Technological innovation sources and institutional supports for manufacturing small and medium enterprises in Nigeria. *Journal of Technology Management and Innovation*, 4(2), pp. 82-89.
- [30] Flor, M. & Oltra, M. (2005). The influence of firms' technological capabilities on export performance in supplier-dominated industries: the case of ceramic tiles firms. *R&D Management*, 35(3), pp. 333- 347.
- [31] Jones, M. & Crack, D. (2001). High-technology firms' perceptions of their international competitiveness. *Strategic Change*, 10(3), pp. 129-138.
- [32] Lo'pez, J. & Garc'ia, R. (2005). Technology and export behavior: a resource-based view approach. *International Business Review*, 14(5), pp. 539-557.
- [33] Powell, T. & Dent-Micallef, A. (1997). Information technology as competitive advantage: the role of human, business, and technology resources. *Strategic Management Journal*, 18(5), pp. 375-405.
- [34] Zeng, S. et al. (2008). Competitive priorities of manufacturing firms for internationalization: an empirical research. *Measuring Business Excellence*, 12(3), pp. 44-55.
- [35] Jes'us C. et al. (2012). Effect of ITC on the international competitiveness of firms. *Management*

Decision, 50(6), pp. 1045–1061.

[36] Black, S. & Lynch, L. (2004). What's driving the new economy? The benefits of workplace innovation. *The Economic Journal*, 114(493), pp. 97-116.

[37] Lee, Y. et al. (2011). The impact of service R&D on the performance of Korean information communication technology small and medium enterprises. *Journal of Engineering and Technology Management*, 28(1-2), pp. 77-92.

[38] Boothby, D. & Dufour, A. (2010). Technology adoption, training and productivity performance. *Jianmin Tang Research Policy*, 39, pp. 650–661.

[39] Yang, K. et al. (2007). Adoption of information and communication technology. *Industrial Management & Data Systems*, 107(9), pp. 1257-1275.

[40] Law, R. & Jogaratnam, G. (2005). A study of hotel information technology applications. *International Journal of Contemporary Hospitality Management*, 17(2/3), pp. 170-180.

[41] Karadag, E. & Dumanoglu, S. (2009). The productivity and competency of information technology in upscale hotels - the perception of hotel managers in Turkey. *International Journal of Contemporary Hospitality Management*, 21(4), pp. 479-490.

[42] Drucker, P. (1999). Knowledge Worker Productivity: the Biggest Challenge. *California Management Review*, 41(2), pp. 79-85.

[43] Jayaram, J. et al. (2000). The effects of information system infrastructure and process improvements on supply-chain time performance. *International Journal of Physical Distribution and Logistics Management*, 30(3/4), pp. 314-30.

[44] Olson, J. & Boyer, K. (2003). Factors influencing the utilization of internet purchasing in small organizations. *Journal of Operations Management*, 21(2), pp. 225-245.

# **CRITICAL SUCCESS FACTORS FOR INFORMATION TECHNOLOGY INFRASTRUCTURE LIBRARY IMPLEMENTATION IN PUBLIC SERVICE ORGANIZATIONS: AN EXPLORATORY STUDY**

Tayfour Abdalla Mohammed

Department of Business Administration, Jubail University College, Jubail Industrial City,  
Kingdom of Saudi Arabia

## **Abstract**

In recent years, market competitions and internal efficiency requirements derived many Information Technology (IT) functions to shift their paradigms from IT asset management to IT service management (ITSM). Consequently, a growing number of public and private organizations are implementing the ITIL (IT Infrastructure Library) “best practice” as a framework for improving IT service management processes. This paper presents an exploratory in-depth case study of two public service organizations in the kingdom of Saudi Arabia deemed successfully implemented ITIL V3 processes. The case studies identify several critical success factors (CSF) associated with ITIL implementation success. These CSF are then compared with factors identified in the literature to shed light on success factors and challenges to offer a learning experience for organizations currently undergoing or planning ITIL implementation.

## **Keywords**

ITIL, IT Service Management, critical success factors, Saudi Arabia, project, process.

For More Details : <https://aircconline.com/ijait/V8N2/8218ijait01.pdf>

Volume Link : <https://airccse.org/journal/IJAIT/current2018.html>

## REFERENCES

- [1] Saudi Vision 2030 available at: [www.vision2030.gov.sa](http://www.vision2030.gov.sa)
- [2] Tayfour A. Mohammed. (2008), "The Art of Existence and the Regimes of IS-enabled Customer Service Rationalization: A Study of IT Service Management in the UK Higher Education", in proceedings of ICIS 2008, 2008, Paris, France.
- [3] J. Beachboard, S. Conger, S. D. Galup, A. Hernandez, J. Probst, and R. Venkataraman. "AMCIS 2007 Panel on IT Service Management: IT Service Management in the IT Curriculum", Communications of the Association for Information Systems, 2007, Vol. (20), pp. 555-566.
- [4] Mauricio Marrone, Francis Gacenga, Aileen Cater-Steel and Lutz Kolbe. "IT Service Management: A Cross-national Study of ITIL Adoption," Communications of the Association for Information Systems: 2014, Vol. 34, Article 49. Available at: <http://aisel.aisnet.org/cais/vol34/iss1/49>
- [5] Z. Binders and A. Romanovs. "ITIL Self-assessment Approach for Small and Medium Digital Agencies" Information Technology and Management Science, 2014, Vol. (17), PP. 138-143.
- [6] L. Lema, J. Calvo-Manzano, R. Colomo-Palacios and M. Arcilla. "ITIL in small to medium-sized enterprises software companies: towards an implementation sequence", Journal of Software Evolution and Process, 2015, Vol. (27), PP. 528-538.
- [7] S. Karkoskova and G. Feuerlicht. (2015), "Extending MBI Model using ITIL and COBIT Processes", Journal of Systems Integration, 2015, Vol. (4), PP. 29-44.
- [8] J. Iden and T. R. Eikebrokk. "The impact of senior management involvement, organizational commitment and group efficacy on ITIL implementation benefits", Information Systems and EBusiness Management, 2015, Vol. (13), PP. 527-552.
- [9] M. S. Benqatla, D. Chikhaoui and B. Bounabat. "IT Governance in Actor-Network Mode of Collaboration: Cost Management Process Based on Game Theory", International Journal of Computer Science Issues, 2016, Vol.13 (1), PP. 42-46.
- [10] S. Sebaaoui and M. Lamrini. "Implementation of ITIL in a Moroccan company: the case of incident management process", International Journal of Computer Science Issues, 2012, Vol. 9 (4), PP. 30-36.
- [11] N. Ahmad, T.N.Amer, F. Qutaifan and A. Alhilali. "Technology adoption model and a road map to successful implementation of ITIL", Journal of Enterprise Information Management, 2013, Vol. 26 (5), PP. 553 – 576.
- [12] N. Ahmad and Z. Shamsudin. "Systematic Approach to Successful Implementation of ITIL", in Proceeding of Computer Science, (2013), Vol. 19, PP. 237-244.
- [13] M. Nicho and B. Al Mourad. "Success Factors for Integrated ITIL Deployment: An IT Governance Classification", Journal of Information Technology Case and Application Research, 2012, Vol.14 (1), PP. 25-54.
- [14] M. M. AlShamy, E. Elfakharany and M. Abd ElAzim. "Information Technology Service Management (ITSM) Implementation Methodology Based on Information Technology Infrastructure Library Ver.3 (ITIL V3)" International Journal of Business Research and Management, 2012, Vol. 3 (3), PP. 113-132.
- [15] CAI (2008), "ITIL V3 Application Support", available at: [www.compaid.com](http://www.compaid.com).

- [16] W. G. Tan, A. Cater-Steel and M. Toleman. "Implementing IT Service Management: a Case Study Focusing on Critical Success Factors", *The Journal of Computer Information Systems*, 2009, Vol. 50(2), PP. 1-12.
- [17] Pink Elephant (2011) "Definitive ITIL 2011 & 2007 Edition Process & Function Lists" available at <https://www.pinkelephant.com/>.
- [18] H. Gil-Gómez, R. Oltra-Badenes, and W. Adarme-Jaimes Wilson. (2014), "Service quality management based on the application of the ITIL standard", *Dyna*, 2014, Vol. 81(186), pp. 51-56.
- [19] Tayfour A. Mohammed. "The Dynamics of Implementing Business Process Innovation with IT: Insights from an IT Service Management Field Study", *Journal of Management and Business Research*, 2011, Vol. 1(1), pp. 47-65.
- [20] A.J.Keel,M. A. Orr, R. R. Hernandez, E. A. Patrocinio and J. Bouchard. "From a Technology Oriented to a Service-Oriented Approach to IT Management", *IBM Systems Journal*, 2007, Vol. 46(3), pp. 549- 564.
- [21] P. C. Chan, S. R. Durant, V. M. Gall, and M.S. Raisinghani. "Aligning Six Sigma and ITIL to Improve IT Service Management", *International Journal of E-Services and Mobile Applications*, 2009, Vol.1 (2), pp. 62-82.

# ACTIVE CONTROLLER DESIGN FOR THE GENERALIZED PROJECTIVE SYNCHRONIZATION OF THREE-SCROLL CHAOTIC SYSTEMS

Sarasu Pakiriswamy<sup>1</sup> and Sundarapandian Vaidyanathan<sup>2</sup>

<sup>1</sup>Department of Computer Science & Engineering Vel Tech Dr. RR & Dr. SR Technical University Avadi, Chennai-600 062, Tamil Nadu, INDIA

[sarasujivat@gmail.com](mailto:sarasujivat@gmail.com)

<sup>2</sup>Research and Development Centre Vel Tech Dr. RR & Dr. SR Technical University Avadi, Chennai-600 062, Tamil Nadu, INDIA

[sundarvtu@gmail.com](mailto:sundarvtu@gmail.com)

## ABSTRACT

This paper discusses the design of active controllers for generalized projective synchronization (GPS) of identical Wang 3-scroll chaotic systems (Wang, 2009), identical Dadras 3-scroll chaotic systems (Dadras and Momeni, 2009) and non-identical Wang 3-scroll system and Dadras 3-scroll system. The synchronization results (GPS) derived in this paper for the 3-scroll chaotic systems have been derived using active control method and established using Lyapunov stability theory. Since the Lyapunov exponents are not required for these calculations, the active control method is very effective and convenient for achieving the generalized projective synchronization (GPS) of the 3-scroll chaotic systems addressed in this paper. Numerical simulations are provided to illustrate the effectiveness of the GPS synchronization results derived in this paper.

## KEYWORDS

Active Control, Chaos, Chaotic Systems, Generalized Projective Synchronization, 3-Scroll Systems.

**For More Details :** <https://airccse.org/journal/IJAIT/papers/2112ijait04.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2012.html>

## REFERENCES

- [1] Alligood, K.T., Sauer, T. & Yorke, J.A. (1997) *Chaos: An Introduction to Dynamical Systems*, Springer, New York.
- [2] Lorenz, E.N. (1963) "Deterministic nonperiodic flow," *J. Atmos. Phys.* Vol. 20, pp 131-141.
- [3] Rössler, O.E. (1976) "An equation for continuous chaos," *Physics Letters A*, Vol. 57, pp 397-398.
- [4] Pecora, L.M. & Carroll, T.L. (1990) "Synchronization in chaotic systems", *Phys. Rev. Lett.*, Vol. 64, pp 821-824.
- [5] Lakshmanan, M. & Murali, K. (1996) *Nonlinear Oscillators: Controlling and Synchronization*, World Scientific, Singapore.
- [6] Han, S.K., Kerrer, C. & Kuramoto, Y. (1995) "Dephasing and bursting in coupled neural oscillators", *Phys. Rev. Lett.*, Vol. 75, pp 3190-3193.
- [7] Blasius, B., Huppert, A. & Stone, L. (1999) "Complex dynamics and phase synchronization in spatially extended ecological system", *Nature*, Vol. 399, pp 354-359.
- [8] Feki, M. (2003) "An adaptive chaos synchronization scheme applied to secure communication", *Chaos, Solitons and Fractals*, Vol. 18, pp 141-148.
- [9] Murali, K. & Lakshmanan, M. (1998) "Secure communication using a compound signal from generalized synchronizable chaotic systems", *Phys. Rev. Lett. A*, Vol. 241, pp 303-310.
- [10] Yang, T. (2004) "A survey of chaotic secure communication systems," *Internat. J. Computational Cognition*, Vol. 2, No. 2, pp 81-130.
- [11] Ott, E., Grebogi, C. & Yorke, J.A. (1990) "Controlling chaos", *Phys. Rev. Lett.*, Vol. 64, pp 1196- 1199.
- [12] Ho, M.C. & Hung, Y.C. (2002) "Synchronization of two different chaotic systems by using generalized active control", *Physics Letters A*, Vol. 301, pp 424-428.
- [13] Chen, H.K. (2005) "Global chaos synchronization of new chaotic systems via nonlinear control", *Chaos, Solitons & Fractals*, Vol. 23, pp 1245-1251.
- [14] Sundarapandian, V. (2011) "Global chaos synchronization of four-scroll and four-wing chaotic attractors by active nonlinear control," *International Journal on Computer Science and Engineering*, Vol. 3, No. 5, pp. 2145-2155.
- [15] Sundarapandian, V. (2011) "Global chaos synchronization of Li and Liu-Chen-Liu chaotic systems by active nonlinear control," *International Journal of Advances in Science and Technology*,

Vol. 3, No. 1, pp. 1-12.

[16] Liao, T.L. & Tsai, S.H. (2000) "Adaptive synchronization of chaotic systems and its applications to secure communications", *Chaos, Solitons and Fractals*, Vol. 11, pp 1387-1396.

[17] Sundarapandian, V. (2011) "Adaptive control and synchronization of hyperchaotic Cai system", *International Journal of Control Theory and Computer Modelling*, Vol. 1, No. 1, pp 1-13.

[18] Sundarapandian, V. (2011) "Adaptive synchronization of hyperchaotic Lorenz and hyperchaotic Liu systems", *International Journal of Instrumentation and Control Systems*, Vol. 1, No. 1, pp 1-18

[19] Sundarapandian, V. (2011) "Adaptive control and synchronization of Liu's four-wing chaotic system with cubic nonlinearity," *International Journal of Computer Science, Engineering and Applications*, Vol. 1, No. 4, pp 127-138.

[20] Sundarapandian, V. & Karthikeyan, R. (2011) "Global chaos synchronization of Pan and Lü chaotic systems via adaptive control," *International Journal of Information Technology, Convergence and Services*, Vol. 1, No. 5, pp. 49-66.

[21] Yu, Y.G. & Zhang, S.C. (2006) "Adaptive backstepping synchronization of uncertain chaotic systems", *Chaos, Solitons and Fractals*, Vol. 27, pp 1369-1375.

[22] Wu, X. & Lü, J. (2003), "Parameter identification and backstepping control of uncertain Lü system," *Chaos, Solitons and Fractals*, Vol. 18, pp 721-729.

[23] Park, J.H. (2006) "Synchronization of Genesio chaotic system via backstepping approach," *Chaos, Solitons and Fractals*, Vol. 27, pp 1369-1375.

[24] Yang, T. & Chua, L.O. (1999) "Control of chaos using sampled-data feedback control", *Internat. J. Bifurcat. Chaos*, Vol. 9, pp 215-219.

[25] Sundarapandian, V. (2011) "Global chaos synchronization of four-wing chaotic systems by sliding mode control", *International Journal of Control Theory and Computer Modelling*, Vol. 1, No. 1, pp 15-31.

[26] Sundarapandian, V. (2011) "Global chaos synchronization of Pehlivan systems by sliding mode control", *International Journal on Computer Science and Engineering*, Vol. 3, No. 5, pp 2163-2169.

[27] Sundarapandian, V. (2011) "Sliding mode controller design for the synchronization of ShimizuMorioka chaotic systems", *International Journal of Information Sciences and Techniques*, Vol. 1, No. 1, pp 20-29.

[28] Sundarapandian, V. & Sivaperumal, S. (2011) "Sliding mode controller design for global chaos synchronization of hyperchaotic Lorenz systems," *Computer Science and Engineering: An International Journal*, Vol. 1, No. 4, pp. 61-71.

[29] Zhou, P., Kuang, F. & Cheng, Y.M. (2010) "Generalized projective synchronization for fractional order chaotic systems," *Chinese Journal of Physics*, Vol. 48, no. 1, pp 49-56.

- [30] Sarasu, P. & Sundarapandian, V. (2011) "Active controller design for generalized projective synchronization of four-scroll chaotic systems," International Journal of System Signal Control and Engineering Applications, Vol. 4, No. 2, pp 26-33.
- [31] Emadzadeh, A.A. & Haeri, M. (2005) "Anti-synchronization of two different chaotic systems via active control," World Academy of Science, Engineering and Technology, Vol. 6, pp 62-65.
- [32] Sundarapandian, V. & Karthikeyan, R. (2011) "Anti-synchronization of the hyperchaotic Liu and hyperchaotic Qi systems by active control," International Journal on Computer Science and Engineering, Vol. 3, No. 6, pp 2438-2449.
- [33] Sundarapandian, V. & Karthikeyan, R. (2011) "Anti-synchronization of Pan and Liu chaotic systems by active nonlinear control," International Journal of Engineering Science and Technology, Vol. 3, No. 5, pp. 3596-3604.
- [34] Sundarapandian, V. (2011) "Anti-synchronization of Lorenz and T chaotic systems by active nonlinear control," International J. Computer Information Systems, Vol. 2, No. 4, pp 6-10.
- [35] Sundarapandian, V. (2011) "Hybrid synchronization of hyperchaotic Rössler and hyperchaotic Lorenz systems by active control," International J. Advances in Science and Technology, Vol. 2, No. 4, pp 1- 10.
- [36] Mainieri, R. & Rehacek, J. (1999) "Projective synchronization in three-dimensional chaotic systems," Physical Review Letters, Vol. 82, pp 3042-3045.
- [37] Wang, Y.W. & Z.H. Guan, Z.H. (2006) "Generalized synchronization of continuous chaotic systems," Chaos, Solitons and Fractals, Vol. 27, pp 97-101.
- [38] Wang, L. (2009) "3-scroll and 4-scroll chaotic attractors generated from a new 3-D quadratic autonomous system," Nonlinear Dynamics, Vol. 56, pp 453-462.
- [39] Dadras, S. & Momeni, H.R. (2009) "A novel three-dimensional chaotic system generating two, three and four-scroll attractors," Physics Letters A, Vol. 373, pp 3637-3642.
- [40] Hahn, W. (1967) The Stability of Motion, Springer, New York.

# LOSSY COMPRESSION SCHEMES BASED ON TRANSFORMS-A LITERATURE REVIEW ON MEDICAL IMAGES

Sherin Jabbar and Shaiju Panchikkil, MES Engineering College, India

## ABSTRACT

In recent years, advances in information technology and telecommunications have played a crucial role as catalysts for significant developments in the sector of healthcare. These technological advances have played a very strong role in the field of medical imaging. The number of digital medical images has increased rapidly on the Internet. The necessity of fast and secure diagnosis is vital in the medical world. The purpose of medical image compression is express medical images with less data so that it can be efficiently stored and transmitted. Diagnosis is effective only when compression techniques preserve all the relevant and important image information needed. There are basically two types of image compression: lossless and lossy. Lossless coding does not permit high compression ratios where as lossy achieve high compression ratio. Among the existing lossy compression schemes, transform coding is one of the most effective strategies. This paper summarizes the different compression methods based on transforms like Discrete Cosine Transform(DCT), Discrete Wavelet Transform(DWT), Hybrid DCT-DWT and Contourlet transform. And it has been analyzed that Contourlet transform have superior overall performance over other transforms in terms of PSNR.

## KEYWORDS

Medical Image Compression, Wavelet Transform, Discrete Cosine Transform, Contourlet Transform

**For More Details** : <https://airccse.org/journal/IJAIT/papers/2612ijait03.pdf>

**Volume Link** : <https://airccse.org/journal/IJAIT/current2012.html>

## REFERENCES

- [1] M. R. B. Puja Bharti, Dr. Savith Gupta, "Comparative analysis of image compression techniques: a case study on medical images," in International Conference on Advances in Recent Technologies in Communication and Computing, 2009. ARTCom '09. IEEE, 2009, pp. 820-822.
- [2] N. Thota and S. Devireddy, "Image compression using discrete cosine transform," Georgian Electronic Scientific Journal: Computer Science and Telecommunications, vol. 17, no. 3, pp. 35-43, 2008.
- [3] E. Shakhoseini, N. Nejad, H. Behnam, and A. Shakhoseini, "A new approach to compression of medical ultrasound images using wavelet transform," in 2010 Third International Conference on Advances in Circuits, Electronics and Micro-Electronics (CENICS), IEEE, 2010, pp. 40-44.
- [4] A. Mohammed and J. Hussein, "Hybrid transform coding scheme for medical image application," in 2010 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT). IEEE, 2010, pp. 237-240.
- [5] S. Hashemi-Berenjabad, A. Mahloojifar, and A. Akhavan, "Threshold based lossy compression of medical ultrasound images using contourlet transform," in 2011 18th Iranian Conference of Biomedical Engineering

(ICBME). IEEE, Dec 2011, pp. 191-194.

[6] A. Graps, "An introduction to wavelets," Computational Science & Engineering, IEEE, vol. 2, no. 2, pp. 50-61, 1995.

[7] J. Walker and T. Nguyen, "Wavelet-based image compression," The Transform and Data Compression Handbook Ed. KR Rao et al. Boca Raton, CRC Press LLC, 2001.

[8] M. Do and M. Vetterli, "The contourlet transform: an efficient directional multiresolution image representation," Image Processing, IEEE Transactions on, vol. 14, no. 12, pp. 2091-2106, 2005.

[9] N. Riazifar and M. Yazdi, "Effectiveness of contourlet vs wavelet transform on medical image compression: a comparative study," World Academy of Science, Engineering and Technology, vol. 49, pp. 837-842, May 2009.

# Efficient Routing Mechanism Using Cycle Based Network and K-Hop Security in Ad-Hoc Networks

S Deepakraj and R Thamilselvan, Kongu Engineering College, India

## ABSTRACT

In a multi-domain network, Topology Aggregation (TA) may be adopted to provide limited information regarding intra cluster connectivity without revealing detailed topology information. Nodes are grouped into the cluster. Every cluster has border nodes, which is used for data transmission between source and destination. The K-hop security can be used for the purpose of securing the data communication. The topologies are spanning tree and balanced tree that can be used to reduce bandwidth overhead, delivery delay and to increase throughput and packet delivery ratio. The shortest path can be found using Bhandari's algorithm and Cycle-Based Minimum-Cost Domain-Disjoint Paths (CMCDP) Algorithm for establish the second path in the network . These topologies are compared to demonstrate the advantage of finding shortest path using Bhandari's algorithm.

## KEYWORDS

Multi-domain, Ad-Hoc Networks, Routing algorithm, K-Hops algorithm, Network Topologies

**For More Details :** <https://airccse.org/journal/IJAIT/papers/4114ijait02.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2014.html>

## REFERENCES

- [1] Chengyi Gao, Mahammad M.Hasan, 'Domain-Disjoint Routing Based on Topology Aggregation for Survivable Multidomain Optical Networks,' J. Optical Communication. Network, vol 5, no 12 pp.1382-1390,2013
- [2] D.L. Truong and B.Thiongane, 'Dynamic routing for shared path protection in multidoamin optical mesh networks,'J.optical network., vol. 5, no. 1, pp. 58–74,2006.
- [3] Mohamed Younis, Osama Farrag, and Bryan Althouse, 'TAM: A Tiered Authentication of Multicast Protocol for Ad-Hoc Networks,' IEEE Transactions on Network and Service Management, vol. 9, no. 1,2012.
- [4] P.Palacharla, X.Wang and T.Naito, 'K-shortest path algorithmfor overlay protection in optical networks,' in Optical Electronics and Communications Conference (OECC),July 2009.
- [5] Trung K.D, Toulouse M and Jaumard B, 'A distributed p-cycle protection scheme in multi-domain optical networks,' in IEEE Global Communication Conference (GLOBECOM), December 2012.

[6] Royer E M and Perkins C, 'Multicast ad-hoc on-demand distance vector (MAODV) routing,' Internet Draft, University of California, Charles E. Perkins Nokia Research Center,2002.

[7] Y.Li, W.Hou, L.Guo 'Local and global Hamiltonian cycle protection algorithm based on abstracted virtual topology in fault-tolerant multi-domain optical networks',IEEE Transaction.Communication, vol. 58, no.3, pp. 851-859,2010.

# Students E-Readiness in Institutions of the Royal Commission in Jubail

Saleh Alzahrani and Mohamed Elsaadani, Jubail University College, Kingdom of Saudi Arabia

## ABSTRACT

Information and communication technologies (ICTs) provide a rich integrated educational environment, which capable of changing the lives of students. The purpose of this research paper is to investigating e-readiness of the students in the affiliate Institutions of the Royal Commission in Jubail, and whether their experience in using ICTs influences their judgement towards ICTs, and whether their judgement and experience toward ICTs influence their use of ICTs or not. Survey methodology is facilitated through the use of the questionnaires. Survey domain is a random sampling of students in Institutions of the Royal Commission of Jubail. With a 95% confidence level of a possible sample frame of 669, the study sampled 1032 respondents (15%). Results showed that students' judgement towards ICTs is highly positive, which reflect their e-readiness and willingness to use ICTs, but the analysis showed that the experience with ICTs did not significantly predict students' judgement about ICTs use. It was discovered that the following set of ICTs requires the most attention in the future adoption planning by the Royal Commission for its three affiliate Higher education institutions (HEIs): "Blackboard", "smart devices", "e-bulletin boards", and "e-materials". This set of ICTs receives the least scores of use and experience responses from study participants. The result of this study provides valuable insights into students' e-readiness. This information may be used to develop and support factors that enhance strategies for adopting ICTs by students.

## KEYWORDS

e-readiness, ICTs, JUC, JIC, JTI, judgment, Royal Commission of Jubail, HEI

**For More Details :** <https://aircconline.com/ijait/V8N5/8518ijait02.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2018.html>

## REFERENCES

- [1] Manyika J, Chui M, Bughin J, Dobbs R, Bisson P, & Marrs A., (2013) "Disruptive technologies: advances that will transform life business and the global economy". Retrieved August 2, 2017 from: [www.mckinsey.com/insights/business\\_technology/disruptive\\_technologies](http://www.mckinsey.com/insights/business_technology/disruptive_technologies).
- [2] Lou E, & Goulding J., (2010) "The pervasiveness of e-readiness in global built environment arena", Journal of Systems and Information Technology", Vol. 12, No. 3, pp 180-195.
- [3] Rezaei, N.; Noornejad, S. (2016). An assessment on preparedness of students of Hamadan University of Medical Sciences in terms of participation in electronic learning system. International Journal of Humanities and Cultural Studies, January, pp. 1144-1151.
- [4] Shin J, & Harman G., (2009) "New challenges for higher education: global and Asia-Pacific perspectives", Asia Pacific Education Review, Vol. 10, No. 1, pp 1-13.

- [5] Ozdemir Z, &Abrevaya J., (2007) "Adoption of technology-mediated distance education: a longitudinal analysis", *Information and Management*, Vol. 44, No. 5, pp 467-477.
- [6] Advisory Committee for Online Learning (2001) *The E -learning e-revolution in colleges and universities, Executive Summary - A Pan-Canadian Challenge*.
- [7] Dikshit J, Gaba A, Bhushan S, Garg S, & Panda S., (2003) "Learning Attitude, Motivation and Preferences of Online Learners", *Indian journal of Open Learning*, Vol. 12, No. 3, pp 149-167.
- [8] Rohfeld R, &Hiemstra R., (1995) "Moderating discussions in the electronic classroom", *Computer mediated communication and the online classroom*, Cresskill NJ: Hampton Press, Vol. 3, pp 91-104.
- [9] Moolman H, &Blignaut S., (2008) "Get set! e-Ready, e-Learn! The e-readiness of warehouse workers", *Educational Technology and Society*, Vol. 11, No. 1, pp 168-182.
- [10] De Moraes M, Melo F, Oliver E, & Cabral A., (2010) "Analysis of technological innovation strategy for small and medium companies of the aeronautical sector", *Journal of Aerospace Technology Management*, Vol. 2, no. 2, pp 225-236.
- [11] Rohayani A, &Sharipuddin K., (2015) "A literature review: readiness factors to measuring e-learning readiness in higher education", *Procedia Computer Science*, Vol. 59, No. 1, pp 230-234.
- [12] Kumpulainen K., (2007) *Educational Technology: Opportunities and Challenges*, Oulu University Press, Oulu.
- [13] Kakoty S, Lal M, & Sarma S., (2011) "E-learning as a Research Area: An Analytical Approach", (*IJACSA*) *International Journal of Advanced Computer Science and Applications*, Vol. 2, No. 9, pp 13-20.
- [14] Kakoty S, & Sarma S., (2011) "Expert System Applications in E-learning Environment: Analysis on Current Trends and Future Prospects", *International Journal of Internet Computing (IJIC)*, Vol. 1, pp 90-93.
- [15] Elsaadani, M.; Alzahrani, S. 2018. Higher education faculty staff e-readiness in institutions of the Royal Commission in Jubail. *International Journal of Advanced Information Technology (IJAiT)*, 8(3), pp. 1-14.
- [16] Al-Busaidi K., (2013) "An empirical investigation linking learners' adoption of blended learning to their intention of full e-learning", *Behavior & Information Technology*, Vol. 32, No. 11, pp 1168-1176
- [17] Tubaishat A, &Lansari A., (2011) "Are Students Ready to Adopt E -Learning? A Preliminary Ereadiness Study of a University in the Gulf Region", *International Journal of Information and Communication Technology Research*, Vol. 1, No. 5, pp 210-215.
- [18] Marquardt M, &Kearsley G., (1999) *Technology-based learning: Managing human performance and corporate success*, Boca Raton, Florida: St. Lucie Press.
- [19] Goyal E, &Purohit S., (2010) "Study of Using Learning Management System in a Management Course", *SIESJournal of Management*, Vol. 6, No. 2, pp 11-20.
- [20] Islam A., (2012) *Understanding e-learning system users' post-adoption usage behavior and its outcomes: a study of a learning management system*, PhD Dissertation, Turku School of Economics, Turku.
- [21] Ngampornchai, A.; Adams, J. (2016). Students' acceptance and readiness for E-learning in Northeastern Thailand. *International Journal of Educational Technology in Higher Education*, 1, pp.

13:34.

[22] Folorunso, O., Ogunseye, O. S., & Sharma, S. K. (2006). An exploratory study of the critical factors affecting the acceptability of e-learning in Nigerian universities. *Information Management & Computer Security*, 14(5), 496–505.

[23] Iqbal, M. J., & Ahmad, M. (2010). Enhancing quality of education through e-learning: The case study of Allama Iqbal Open University. *Turkish Online Journal of Distance Education*, 11, 84–97.

[24] Addah, J. (2012). Computer literacy and E-learning: Attitudes among first year students in a Ghanaian medical school. *International Journal of Computer Applications*, 51, 22.

[25] Bediang, G., Stoll, B., Geissbuhler, A., Klohn, A., Stuckelberger, A., Nko'o, S., & Chastonay, P. (2013). Computer literacy and E-learning perception in Cameroon: the case of Yaounde Faculty of Medicine and Biomedical Sciences. *BMC Medical Education*, 13, 57.

[26] Akhu-Zaheya, L. M., Khater, W., Nasar, M., & Khraisat, O. (2011). Baccalaureate nursing students' anxiety related computer literacy: a sample from Jordan. *Journal of Research in Nursing*, 18(1), 36–48.

[27] Mueller D., (1986) *Measuring social attitudes: A handbook for researchers and practitioners*. New York: Teachers College Press.

[28] Alharbi Y., (2002) A study of the barriers and attitudes of faculty and administrators toward implementation of online courses, Saudi Arabia (Doctoral dissertation, University of Northern Colorado, 2002), UMI Microform No. 3059974.

[29] Chen L., (2003) A study of how selected faculty and teaching staff members integrate web-based instruction in regular teaching, Unpublished doctoral dissertation, University of South Carolina.

[30] Alsaif A., (2005) The motivating and inhibiting factors affecting the use of webbased instruction at the University of Qassim in Saudi Arabia (Doctoral dissertation, Wayne State University, 2005), UMI Microform No. 3168482.

[31] Minges M., (2005) "Evaluation of e-readiness indices in Latin America and the Caribbean", Retrieved 10 August 2017 from: [www.cepal.org/socinfo/publicaciones/xml/8/24228/w73.pdf](http://www.cepal.org/socinfo/publicaciones/xml/8/24228/w73.pdf)

[32] Olatokun W, & Opesade O., (2008) "An e-readiness assessment of Nigeria's Premier University (p (part 1)", *International Journal of Education and Development Using Information and Communication Technology*, Vol. 4, No. 2, pp 16-46.

[33] Tarvid A., (2008) "Measuring the e-readiness of higher education institutions", *SSE Riga Student Research Papers*, Vol. 6, pp 102, Stockholm School of Economics in Riga, Riga.

[34] Alghonaim H., (2005) Attitudes, barriers and incentives of Saudi college instructors and administrators toward implementation of online instruction (Doctoral dissertation, University of Kansas, 2005), UMI Microform No. 3185123.

[35] Ikpe, I. B. (2011). E-learning platforms and humanities education: An African Case Study. *International Journal of Humanities and Arts Computing*, 5(1), 83

[36] Alzahrani S., (2012) "Assessment of learning at Ju Technology (IT)", 5th International Conference of Education, Research and Innovation, November 19th – 21st, Madrid, Spain.

# Design of Multi-Robot System for Cleaning Up Marine Oil Spill

Emaad Mohamed H. Zahugi<sup>1</sup>, Mohamed M. Shanta<sup>2</sup> and T. V. Prasad<sup>3</sup>

<sup>1</sup>Dept. of CSE, Lingaya's University, Faridabad, India

<sup>2</sup>Dept. of CSE, Lingaya's University, Faridabad, India

<sup>3</sup>Dean (Computing Sciences), Visvodaya Technical Academy, Kavali, India

## ABSTRACT

The researchers and oil companies are trying to take some precaution for the problem of oil spill in sea, river or on ground etc. A lot of work concerned by removing the oil from water, there were many advanced tools for this task. This paper presents a multi-robot system that works on the surface of water to help cleaning up marine oil spills using a skimmer as a collecting tool, the aim of this multi-robot system is to surround the oil spill in certain position for fast and easy cleaning and prevent it from spreading wider.

## KEYWORDS

Multi-Robot, Oil spill, wireless communication, robotics.

**For More Details :** <https://airccse.org/journal/IJAIT/papers/2412ijait04.pdf>

**Volume Link :** <https://airccse.org/journal/IJAIT/current2012.html>

## REFERENCES

- [1] Zhao Qingling and Li Ying, "Monitoring Marine Oil-spill Using Microwave Remote Sensing Technology" Electronic Measurement and Instruments, International Conference, pp 4-69, 4-72, 2007.
- [2] Chase, C.R. Van Bibber, S. Muniz, T.P, "Development of a non contact oil spill detection system", Ocean proceeding of MTS/IEEE, Vol. 2, pp 1352-1357, 2005.
- [3] Brekke, C.; Solberg, A. (2005). Oil spill detection by satellite remote sensing. Remote Sensing of Environment 2005, 95, 1 –13.
- [4] Brown, C.; Fingas, M. Development of airborne oil thickness measurements. Marine Pollution Bulletin 47, 485–492, 2003b.
- [5] Øistein Johansen, Henrik Rye, Cortis Cooper. "Deep spill-field study of a simulated oil and gas blowout in deep water," Spill Science & Technology Bulletin, vol. 8, no. 5–6, pp. 433–443, 2003.
- [6] Song-ping Zhu, Dmitry Strunin. "A numerical model for the confinement of oil spill with floating booms," Spill Science & Technology Bulletin, vol. 7, no. 5–6, pp. 249–255, 2002.
- [7] Ming Xiao, Qingjun Gao, Jianguo Lin, Wei Li, Xiao Liang. "Simulation of submarine pipeline oil spill based on wave motion " 2nd conference on computer modeling and simulation, 2010

- [8] S.D. Wanga, Y.M. Shena, Y.H. Zheng. "Two-dimensional numerical simulation for transport and fate of oil spills in seas," *Ocean Engineering*, vol. 32, pp. 1556–1571, 2005.
- [9] Wikipedia available at [http://en.wikipedia.org/wiki/Oil\\_spill](http://en.wikipedia.org/wiki/Oil_spill)"
- [10] Mazmdouh T. Ghannam and Omar Chaalal, "Oil spill cleanup using vacuum technique ," *Fuel*, vol. 82, pp. 789-797, May 2003.
- [11] N. E. Leonard and J. G. Graver, "Model-based feedback control of autonomous underwater gliders," *IEEE Journal of Oceanic Engineering*, vol. 26, no. 4, pp. 633–645, 2001
- [12] P. R. Bandyopadhyay, "Trends in biorobotic autonomous undersea vehicles," *IEEE Journal of Oceanic Engineering*, vol. 30, no. 1, pp. 109–139, 2005
- [13] T. Fukuda, A. Kawamoto, F. Arai, and H. Matsuura, "Steering mechanism of underwater micro mobile robot," in *Proceedings of the IEEE Conference on Robotics and Automation*, 1995, pp. 363– 368.
- [14] P. E. Hagen, N. Storkersen, K. Vestgard, and P. Kartvedt, "The HUGIN 1000 autonomous underwater vehicle for military applications," *OCEANS 2003. Proceedings*, vol. 2 pp. 1141 - 1145, 2003.
- [15] Xiaobo Tan, Kim, D. Usher, N. Laboy, D. Jackson, J; Kapetanovic, A. Rapai, J. Sabadus, B. Xin Zhou, "An Autonomous Robotic Fish for Mobile Sensing", *Intelligent Robots and Systems*, pp 5424– 5429, 2006.
- [16] Pascoal, A., Silvestre, C., Oliveira, P. (2006) *Advances in unmanned marine vehicles*. IEE Control Series, ch. Vehicle and mission control of single and multiple autonomous marine robots, pp. 353 - 386.
- [17] Joordens, M.A." Design of a low cost underwater robotic research platform", *System of Systems Engineering, SoSE IEEE International Conference*, pp 1-6, 2008.