

# Effect of Technology on Employees Productivity in ADNOC Oil and Gas Industrial Sector: A Review

Izaidin Bin Abdul Majid,

*Professor, Department of Entrepreneurship, Faculty of Technology Management & Technopreneurship, Universiti Teknikal Malaysia Melaka., Malaysia*

Mohammed Ali Nasser Aleissae

*Business Management Phd, Postgraduate Program, Faculty of Technology Management & Technopreneurship, Universiti Teknikal Malaysia Melaka., Malaysia*

## Abstract

*Economic demands of Emirates, technology, competitiveness and the labour intensive existence of the petroleum and gas sector continue to threaten technology and productivity. The rapid emergence and utilization of technology in the workplace by employees provides a broad view of what technology is meant to do and the way management has integrated the technology in businesses. Through this article, a study of ADNOC oil and gas in the UAE aims to establish a conceptual model to examine the effect of technology on productivity of employees. The policy implication of this study is that its implementation is expected significantly to improve the productivity of employee due to the technology adopted. In several years to come, technology will continue to dominate and impact the global economy, diplomacy and other social practices.*

**Keywords:** *Technology, Employees Productivity, Employee Engagement, ADNOC.*

## 1. Introduction

Many economists see information technology (IT) at the crux of several major economic issues including productivity growth, decreasing labor's share of output, and the potentially negative impact of technology on employment. New information technologies, such as Big Data and machine learning, are altering many production activities, enabling computers to interpret X-rays to diagnose disease, select job applicants, handle routine customer support phone calls, and drive cars. Some economists worry about the effects of new IT on wages, employment, and inequality (Brynjolfsson and McAfee 2014), some fearing mass unemployment (Frey and Osborne 2017).

Dubai launched its technology quest in 1999, with the introduction of Dubai Internet City (Dubai e-Government), Dubai Smart Government, and Smart Dubai Initiative in 2014 unveiling the first strategic ICT plan. In all respects of existence, ICT has been taken over the past 20 years in public by the various digital development projects in the region. Currently, Dubai is one of the most top forms of urban and political utilization, having 2.5 million residents as one of the seven Emirates in the UAE. Dubai has created excellent living standard and an unrivaled commercial landscape (Alamodi, 2017).

The technology has been defined by his highness Sheik Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and President of Dubai as the opportunist rather than the key reason, The project Smart Dubai fulfills His Highness 'dream of "making of Dubai the happiest country on the planet." It will have an enormous influence on the goal of driving happiness. Several initiatives have been introduced and proven as part of Smart Dubai's program spanning from large lot networks, data analysis, block chains, Hyperloop ventures, modern 3D printers, self-contained cars and robots, robotics and artificial intelligence technologies. (Addas, S., & Pinsonneault, A. (2015). Nevertheless, technology distracts personnel from operating in other respects. The usage of social networks at work has created disruption and had an effect on workplace productivity. Instead of their infinite interruption, several businesses wanted to ban exposure to popular websites, such as Facebook, Twitter and YouTube. Smartphones, laptops and virtual conference apps like Skype often provide company tools that become intrusive at work (Pierce et al., 2015). However, because much of the duties are technologically programmed, many employees are inefficient and their creative capabilities are destroyed by technology.

In general, computers are used for basic activities, such as calculating sales and managing stocks; employees cannot fully overcome high-end challenges of business because computers or programs do so without difficulty (Cherian et al., 2013).

Telephones, instant messaging, email or online interactive video conference devices are used to connect among employees (Alomari et al, 2017). This form of technology of contact prohibits face-to-face interactions. Interpersonal interactions are crucial in creating working relations as workers have a chance to get to know with one another, and even sharing random details, and networking devices eliminate this sort of connection. Personnel seem to be more reserved and self-centered; their occupations may be profoundly affected by the efficiency of an organization and staff (Naoum, 2016). This research would examine the effect of technology on the productivity of employees in the UAE oil and gas field and establish a theoretical framework for the influence of technology instruments on the productivity of employees.

## 2. Literature Review

### 2.1 Cloud Computing

Cloud computing is the preferred choice for many applications: software providers gradually sell their apps as internet utilities instead of individual goods when they seek to move to a subscription model. Nevertheless, cloud computing is inherently detrimental, because additional challenges and threats will be added by businesses utilizing the cloud infrastructure (Al-Lamy *et al.*, 2018). According to studies carried out by IDC, developing an infrastructure to sustain cloud services already represents a third of the world's IT spending. Both public cloud solutions delivered by providers or private clouds developed by companies themselves, the computing workloads are constantly moving into the cloud in-house IT. In addition, GDP rates are defined as two-way communications in developed countries with the implementation of information and communication technologies (Abbasi, 2011). On the other side, the higher the GDP level in a region, the higher the degree of ICT acceptance and usage, the more citizens are willing to take advantage of the modern technologies. In comparison, the expanded usage of ICT means that GDP and economic development will improve (Doheir *et al.*, 2015, 2019) (Virta et al., 2011; GSMA, 2013)(Alawi *et al.*, 2018).

In a study conducted by Supyuenyong & Islam, (2016), in order to predict best efficiency and drilling techniques and oil well placement, to minimize operating costs, to maximize oil field productivity, and to strengthen reservoir control and production practices, for instance, Saudi Aramco utilized cloud computational technologies for real time tracking and retrofitting.

According to the study that was carried out by Wang et al, (2010), Saudi Aramco has utilized real time information integration in business operations through the application to petroleum extraction and production practices with a range with emerging technologies, offering Saudi Aramco the benefits of the modern petroleum sector growth in terms of applying real-time approaches and expertise in integrating information. A broad variety of facilities are offered by cloud computing. This includes personal utilities, such as Gmail and the cloud storage of images on your mobile, but also includes tools which enable bigger corporations to store all their data and operate all their web applications.

Netflix depends on cloud storage tools to handle the video streaming program and its other business processes as well. The importance of petroleum and gas resources in human life and their major effects on all export and producing countries' economies should never be under-emphasized. The economies in these countries and the world at large was profoundly affected by oil and gas.

Today, several of the world's top ten petroleum companies have introduced cloud infrastructure in oil and gas production and management activities, allowing information transfer and collaboration to shorten the time consumed creating profitability. For example, Bonanno (2016) studied the impact of IT on profitability while Beckett and Taylor (2019) studies explored growth and development Proving the commercial importance of IT on organizational competitive output was a major problem in study on information technology (IS).

ADNOC was recently reengineered and incorporated under one big single organization all its branches (Al-Ameri, & Al-Shibami, 2019). Different global measures have produced a consistent image that helps

explain the country's status by implementing a range of globally recognised steps (Al-Ali, & Alrajawi, 2018). This step has been praised as it enables ADNOC to compete internationally as well as bring valuable opportunities to the local staff to manage and lead international company as ADNOC where the emphasizing on boost local experts to lead Al-Ali, & Alrajawi, (2018).

## 2.2 Social Media

According to Yates and Paquette (2011), social networking consists of means that allow free and collaborative online sharing of information. They also claimed that social media is one new technology with the opportunity to offer accessibility, adaptability and limit-scope features needed for their data systems by respondent organizations. Boyd and Ellison (2007) described social media as a web interface that enables users to create public or semi-public accounts within a small network. This Web service allows individuals to post links and allows them to access and monitor their list of links and those created by others, then this web-service helps users to link to each other, enabling them to access and check the list of contacts created inside the network and those produced by others. Yet, from a specific point of view on social networking, Constantinides and Fountain (2008) advocate the establishment of unofficial users' networks to promote the exchange of ideas and expertise by effectively generalizing, disseminating, exchanging, editing and information material. Lewis (2010), on the other hand, described social networking applications as computer communication technologies, usually used for linking people and for creating and distributing user-generated content. Osatuyi (2013) also mentioned that social media was slowly substituted by mainstream media, such as Telev, newspaper and radio for the exchange of knowledge. Social media platforms such as social networking sites, blogs and forums are on their way to be a credible knowledge exchange medium for timely viewers such as wiki and micro blogging platforms which have been accepted (Osatuyi, 2003; Al-Hammadi *et al.*, 2019; Al-Shami *et al.*, 2019) In fact, Osatuyi (2013) claimed that understanding about how to exchange content efficiently on social networking platforms was increasingly essential for the aim about successfully influencing the target audience. Finally, Sjoberg (2010) has acknowledged the well-known term of the social media, which executives in different fields use to regularly interact with their consumers and keep them successful. In summary, several studies have confirmed that social media serve an significant role in distributing information. Ma and Chan (2014) said that the relationships between social network users in the real world are extension. They also recommended that people create and develop associations across social media such that they can properly and more effectively establish interaction formally and informally through their contacts. The usage of social media will also affect the behaviour of people today, particularly the exchange of information.

## 2.3 Mobile Technology

Mobile advancements influence any part of today's lifestyle. According to his article (Halaweh, 2017), because of to the sophisticated apps and functionality such as e-mail, text messages, web browsing, multi-media and business and service software (i.e. those sold by the Apple store) cell phones have moved from the private to the school and industry worlds, to list only a few. The scope for m-commerce projects in the Emirates is important, according to Shuhaiber. (2016). And Khidhir (2014) indicates that the country reported almost 193% of the world's highest cell phone prevalence, whereas the smartphone penetration rate fell to 78 It is because of the rising movement towards multi-SIM 24 services in which customers are seeking to secure exclusive discounts and different deals (Yaacob *et al.*, 2019) (Juniper, 2012). In the United Arab Emirates (UAE), the usage of cellphones has tremendous potential. The advantages acquired in the telecoms business surpassed the customers' advantages alone. Mobile development leads to economic growth. The GSMA (2013), which states that the telecommunications industry, after the petroleum industry in the Gulf countries, is the second wealth center (GSMA, 2015). The biggest smartphone industries in Arabic Saudi Arabia, Qatar, the UAE and Kuwait. In its Connect Arab Summit (2012) study, "In 2011, a further 78 USD billion was produced by the mobile industry in order to boost the economy of the Arab

countries" (Further Connect Arab Summit, 2012). In addition, the per capita effects of 3 G penetration on GDP was substantial (Williams et al., 2013).

ADNOC's latest existing system has significantly improved preparations for local employees to assume command in the giant corporation (Al-Ameri, & Al-Shibami, 2019). All business and study remain in the constraints of global creativity, competitiveness and development, such as demand in the Emirates, and the labor intensive complexity of the oil and gas industry (Cheung & Wong 201 2). Organizational hierarchy tends to evolve through global development and diffusion of strategic strategies and technologies. Most of the creativity and innovative technology created internationally for the construction and property industries focussed on sustainability. The evolving trends in the building industries include new materies, 3D print, pre-manufacture, and modular solutions that fuel development for those ready to embrace, particularly in the UAE, where take-up has been slow to date. Agile, medium-sized businesses are very well positioned to take this next phase in local innovation and to take advantage of the development prospects provided to them (Grant Thornton, 2016).

## 2.4 Employee Productivity

Productivity is, however, one of the main factors of economic growth, its improvement and progress is also considered as one of the competitive advantages for different industries (Alomari et al, 2017). Productivity refers to the optimal use of various resources in producing goods and services to attract consumers' satisfaction, maximize employee's job satisfaction), and increase the quality of employee's life in all aspects (Bazzhina, 2015. According (Ma 7 Chan, 2014; Alseiri, Sidek and Al-Shami, 2019), that most of development plans in many countries are based on enhanced productivity. Over the past fifteen years, productivity has been increased by as much as 45 times worldwide (Ali et al, 2019). On the other hand, no long time has passed since the adoption of methods for improving the quality and productivity of different industries and sectors. The achievements of these strategies in economic growth and development made the authorities assess them in the most fundamental institutions and centers. According to them, the use of productivity enhancement methods has also been successful in these systems.

## 2.5 The Technology and Employee Productivity

The effect on business results may be improved if performance metrics are established, such as consumer loyalty, firm development, profitability and rentability, as well as other benefits (Al-Ansari, 2013). Increasing techniques may be utilized by businesses to increase the participation of employees, while often implying productivity. Employee participation literature has been around for approximately two décades and is primarily a consultancy-related phenomenon. The engagement of employees is focused on core principles such as OCB and dedication (Robinson et al, 2014; Ellis & Sonrenson, 2017)(Yaacob *et al.*, 2017). The two main factors related to employee engagement are their two-way features and issues in which workers 'organizational understanding could not be affected by certain business approaches. A topic of employee involvement explicitly illustrates the existence of a shared two-way relationship between the organization and employee (Al-Ansari, 2013). The degree to which an organization encourages the workers to share their views; the degree to which it takes care of its workers 'safety and well-being; and incentives available for employees to improve their jobs are core factors of workplace loyalty; Encouraging and valuing the participation of the workforce; (Al-Ali, & Alrajawi, 2018).

The companies present employees the independence to perform their job thrilling and an atmosphere having an involved work life (Dajani, 2015). Employees are the assets of the business, be improved if Communication, Development, and Co-Employee hold are given sufficient significance. (Jogi & Srivastava, 2015). Therefore, more employee engagement is needed in the private segment for the development of the economy. Public part employees are extra casual with esteem to their jobs and occupation, but the private sector is additional careful since of be short of job safety (Ali et al., 2019). Employee Engagement is considered important in term of business success (Dutta & Sharma, 2016). The administration must be able to know how essential employee engagement is, that unlike other business

systems, several studies display a significant correlation between employee engagement and business results (Mishra et al., 2013). Administrators can also recommend different rewards and promotions to improve workplace productivity and that the pressures that circumvent employee obligations (Danish, Saeed, Mehreen, & Shahid, 2014).

## 2.6 Employee Engagement as A Mediating Variable

Three criteria must be fulfilled for researchers to check the influence of a mediating variable in the association between the independent and dependent variables: direct relationships between the independent variables and the dependent variable, the direct relationship between the independent and the mediating variable and the direct relationship between the independent variable \*Alias, Noor & Hassan, 2014). Suharti and Suliyanto (2012) noticed that employees' motivation mediates the impact of organizational culture and leadership style on employee satisfaction, in a research in Indonesia in the hotel industry.

The relationships between possible histories of engagement and work-related outcomes (for example job satisfaction and involvement) were explored according to Ram and Prabhakar(2011), "This is a proof that the engagement of employees may be mediated.

### 3. overview of the Proposed Conceptual Framework

Figure 1 depicts the conceptual model that was built on the review on the literature review and shows all the independents variables, mediating variable as well as dependents variable. The framework explains clearly how the postulated hypothesis relates to each other and provides the key input of this research. The hypotheses developed in this research are as follows:

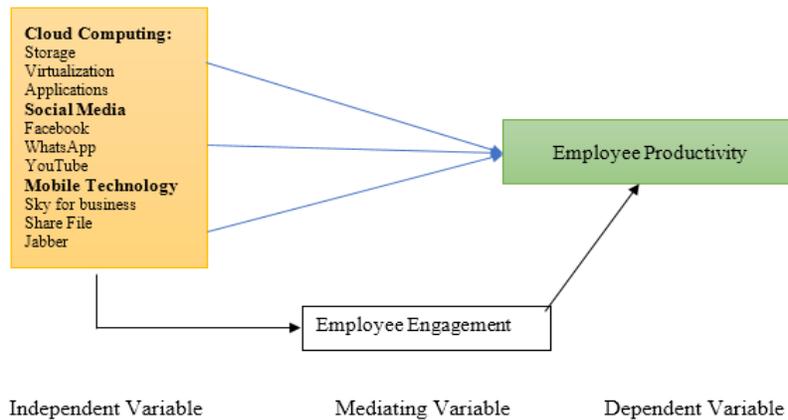


Figure 1: Operational Framework

**H1:** There is a relationship between technology tools and employee productivity in ADNOC Oil and Gas in UAE.

**H2:** There is a relationship between technology tools and employee productivity with employee engagement as the mediating variable in ADNOC Oil and Gas in UAE.

**H3:** There is a relationship between cloud computing and employee productivity in ADNOC Oil and Gas in UAE.

**H4:** There is a relationship between social media and employee productivity in ADNOC Oil and Gas in UAE.

**H5:** There is a relationship between mobile technology and employee engagement and employee productivity in ADNOC Oil and Gas in UAE.

## 4. Conclusion

This paper reviewed research on UAE oil and gas sector technology and employee productivity. This paper comprises of a comprehensive review of literature relating to the technology and its effects on employee

productivity, evolution and definition of ICT, technology and employee productivity in UAE, the effect of technology on the productivity of employees as well as a model/theories of technology adoption for employee productivity. Although United Arab Emirates is among the highest public spending on employees training among the Gulf Cooperation Council (GCC) States Global Innovation Index, (2017a), and World Development Indicators (2016), United Arab Emirates move along slowly in term of quality of local employees Global Competitiveness Report (2017), which makes the initiatives and studies Employees Productivity and Employee Engagement of work in United Arab Emirates as an urgent national issue. Technology could play a major role to increase the quality of work and productivity and to overcome social or economic difficulties which may stall some employees from being motivated. Employees Productivity and Employee Engagement also could enhance the quality of their work. Findings of this study could offer policymakers with suggestions that are important on how to make a more successful approach to design and implementation employee self-sufficient programs within Oil and Gas organizations, and how to encourage senior management to Employees Productivity. In future research, the authors intend to do empirical study to test the confirmatory of the model.

## References

1. Alawi, M. et al. (2018) ‘The determinants of E-commerce quality on small business performance in Iraq case study from ceramic industry’, *Journal of Advanced Research in Dynamical and Control Systems*, 10(2), pp. 1348–1359.
2. Abbasi, J. (2011) *Information and Communication Technology in the Middle East: Situation as of 2010 and Prospective Scenarios for 2030. CASE Network Studies and Analyses.*
3. Addas, S., & Pinsonneault, A. (2015). The many faces of information technology interruptions: a taxonomy and preliminary investigation of their performance effects. *Information Systems Journal*, Vol.25. No.3, pp 231-273
4. Al-Ameri, J., Isaac, O., Bhaumik, A., & Al-Shibami, A. H. (2019). Impact of Power Delegation and Peer Learning on Self-Sufficient within Oil and Gas Industrial Sector in UAE.
5. Alamodi, A. (2017). Identity of ADNOC.
6. Al-Ansari H. A. A. (2013). “Organizational Strategy and Employee Productivity in Oil and Gas Industry: The Case of the United Arab Emirates”. the British university Dubai.UAE.
7. Ali, A., Mamari, A. L., Khalid, A., Busaidi, A. L., Abdulwahab, A., & Balushi, A. L. (2019). “A Comparative Study of Employee Engagement in Private and Public Companies in Oman oil and Gas Sector “. Vol.2. No.4, pp.41-48.
8. Al-Hammadi, Abdulhadi et al. (2019) ‘Social network sites and innovation capabilities in the UAE hotel industry. Reliability and normality test’, *International Journal of Innovative Technology and Exploring Engineering*, 8(6S4), pp. 775–779. doi: 10.35940/ijitee.F1156.0486S419.
9. Alomari, B. M. A., Awawdeh, A. M. H., & Alolayyan, M. N. (2017). “The Important of Training and its Impact on the Performance of Employees in Banking Sectors (Abu Dhabi–UAE) to Rise Efficiency “. *Modern Applied Science*, Vol.No.11, pp129-138.
10. Alomari, B. M. A., Awawdeh, A. M. H., & Alolayyan, M. N. (2017). The Important of Training and its Impact on the Performance of Employees in Banking Sectors (Abu Dhabi–UAE) to Rise Efficiency. *Modern Applied Science*, Vol.11. No.9, pp 130-138.
11. Al-Lamy, H. A. et al. (2018) ‘Information technology infrastructure and small medium enterprises’ in Iraq’, *Opcion*, 34(86), pp. 1711–1724.
12. Al-Shami, S. et al. (2019) ‘Online social networking websites in innovation capability and hotels’ performance in Malaysia’, *Journal of Hospitality and Tourism Technology*. doi: 10.1108/JHTT-10-2018-0107.
13. Alseiri, A. M. S., Sidek, S. and Al-Shami, S. A. (2019) ‘The moderation role of transformational leadership between human capital and organizational innovation in Abu Dhabi government’, *International Journal of Recent Technology and Engineering*, 8(3), pp. 7216–7222. doi: 10.35940/ijrte.C6222.098319.

14. Bazzhina.V. (2015). “Labour activity as a factor of social, economic and emotional well-being of the population “, *Procedia - Social and Behavioural Sciences*.Vol.166. No.24.pp74 – 81.
15. Boyd, D., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer Mediated Communication*, Vol.13.No1, pp. 570 -588.
16. Cherian, J., & Jacob, J. (2013). Impact of self-efficacy on motivation and performance of employees. *International Journal of Business and Management*, Vol.8. No.14, pp 80.
17. Cheung, C., Baum, T., & Wong, A. (2012). Relocating empowerment as a management concept for Asia. *Journal of Business Research* Vol.65. No.1, pp 36-41.
18. Connect Arab Summit follow up (2012) Connect Arab Summit follow up 2012 [Online] <http://www.itu.int/en/ITU->
19. Constantinides, E., & Fountain, S. (2008). Web 2.0: Conceptual foundations and marketing issues. *Journal of Direct, Data, and Digital Marketing Practice*, Vol.9, pp.231–244.
20. Ellis C. M., and Sorensen A. (2017). “Assessing Employee Engagement: The Key to Improving Productivity”. *Perspectives*, Vol .15, No. 1 The Segal Group, Inc.
21. Grant Thornton, 13 Oct 2016 on the impact of technology on construction materials & techniques
22. GSMA (2013) Arab States Mobile Observatory 2013 [online] [http://www.gsma.com/publicpolicy/wpcontent/uploads/2012/03/GSMA\\_MobileObservatory\\_ArabStates2013](http://www.gsma.com/publicpolicy/wpcontent/uploads/2012/03/GSMA_MobileObservatory_ArabStates2013).
23. GSMA (2015) ‘The Mobile Economy: Arab States 2015’ [online]
24. Halaweh.M.(2017). Using Mobile Technology in the Classroom: A Reflection Based on Teaching Experience in UAE, *TechTrends*, Vol.61, pp. 218–222.
25. <https://gsmaintelligence.com/research/file=7910cff3a3e6f96219cd50e31d6d3e1c&download>
26. Juniper-Research. (2012). Press Release: Mobile payments to reach \$1.3tn annually by 2017, as NFC and physical goods sales accelerate. *Mobile Content and Applications*, from <http://www.juniperresearch.com/viewpressrelease.php?pr=332>
27. Khidhir, A. (2014). Will Mobile Wallets make UAE cashless? *Finextra*. Retrieved from <http://www.finextra.com/blogs/fullblog.aspx?blogid=101262>.
28. Ma, W. K., & Chan, A. (2014). Knowledge sharing and social media: Altruism, perceived online attachment motivation, and perceived online relationship commitment. *Computers in Human Behaviour*, Vol.39, pp.51-58
29. Ma, W. W. K., & Chan, A. (2014). Knowledge sharing and social media: Altruism, perceived online attachment motivation, and perceived online relationship commitment. *Computers in Human Behaviour*, Vol.39, pp.51-58.
30. *Mobile Payments in the United Arab Emirates*. Victoria University of Wellington, UAE, pp.1-238.
31. Naoum, S. G. (2016). Factors influencing labor productivity on construction sites: A state-of-the-art literature review and a survey. *International Journal of Productivity and Performance Management*, Vol.65. No.3, pp 401-421.
32. Osatuyi, B. (2013). Information sharing on social media sites. *Computers in Human Behaviour*, Vol.29. No.6, pp.2622–2631.
33. Pierce, L., Snow, D. C., & McAfee, A. (2015). Cleaning house: The impact of information technology monitoring on employee theft and productivity. *Management Science*, Vol.61. No.10, pp 2299-2319.
34. Robinson D., Perryman S., and Hayday S. (2014). *The Drivers of Employee Engagement Report 408*, Institute for Employment Studies, UK.
35. Shuhaiber.A.(2016), *Factors Influencing Consumer Trust in*
36. Sjöberg, L. (2010). *Social Media in Organisations*. *PscCRITIQUES*, pp.55(34).
37. Supyuenyong. A and N. Islam, (2016). *Knowledge Management Architecture: Building Blocks and Their Relationships*, *Proceedings of the Technology Management for the Global Future*, vol.3, pp.1210-1219.
38. Virta, H., Puumalainen, K, and Tuppuraa, A. (2011) *Mobile Telephony and Economic growth in developing economies*. In: Abdel-Wahab, A. and El-Masry, A. (2011) *Mobile Information*

- Communication Technologies Adoption in Developing countries' IGI Global, Chapter 11, pp. 161-171.
39. Wang, J. Wang, Z. Zong and M. Xie, (2010). Research on the Knowledge Management System of the Vicarious Management Corporation, Proceedings of the International Conference of Information Science and Management Engineering, Vol.2, pp.62-67,
  40. Williams, C., Strusani, D., Vincent, D. Kovo, D. And Llp, D. (2013) The Economic Impact of Next-Generation Mobile Services: How 3G Connections and the Use of Mobile Data Impact GDP Growth [http://www3.weforum.org/docs/WEF\\_GITR\\_Report\\_2013.pdf](http://www3.weforum.org/docs/WEF_GITR_Report_2013.pdf)
  41. Yates, D., & Paquette, S. (2011). Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. *International Journal of Information Management*, Vol.31. No.1, pp.6–13.
  42. Beckett, C., & Taylor, H. (2019). "Human growth and development ". SAGE Publications Limited.
  43. Bonanno, G. (2016). "ICT and R&D as inputs or efficiency determinants? Analysing Italian manufacturing firms (2007–2009) ". *Eurasian Business Review*, Vol.6. No.3, pp 383-404.
  44. Dajani, M. Zaki. A. (2015). The impact of employee engagement on organizational performance: South African Institute for Chartered Accountants Conference, 3(5), 288–295. <https://doi.org/10.12691/jbms-3-5-1>
  45. Jogi, R. A., & Srivastava, A. (2015). Determinants of employee engagement in the banking sector: A multivariate study in Central Chhattisgarh. *Pacific Business Review International*, Vol.8. No.3, pp. 66–70
  46. Danish, R. Q., Saeed, I., Mehreen, S., & Shahid, N. A. A. U. (2014). Spirit at work and employee engagement in banking sector of Pakistan. *Journal of Commerce*, Vol.6. No.4, pp.22–3
  47. Dutta, H., & Sharma, S. (2016). Employee engagement in the Indian banking sector: A review of the literature. *International Conference on Management and Information Systems*, (September), 184–192.
  48. Mishra, P. D., Kapse, S., & Bavad, M. D. (2013). Employee Engagement at Banks in Kutch. *International Journal of Application or Innovation in Engineering & Management*, Vol.2. No.7, pp.349–358.
  49. Brynjolfsson, Erik, and Andrew McAfee. *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company, 2014.
  50. Frey, C. B. and Osborne, M. (2017). The Future of Employment: How Susceptible Are Jobs to Computerisation? *Technological Forecasting and Social Change*, 114:254–280.
  51. Dhabliya, D., & Dhabliya, R. (2019). Key characteristics and components of cloud computing. *International Journal of Control and Automation*, 12(6 Special Issue), 12-18.
  52. Bessen.J. and Righi.C.(2019). *Shocking Technology: What Happens When Firms Make Large It Investments?* Boston University School of Law.
  53. Doheir, M. et al. (2015) 'Structural Design of Secure Transmission Module for Protecting Patient Data in Cloud-Based Healthcare Environment Mohamed', *Middle-East Journal of Scientific Research*, 23(12), pp. 2961–2967. doi: 10.5829/idosi.mejsr.2015.23.12.101171.
  54. Doheir, M. et al. (2019) 'The New Conceptual Cloud Computing Modelling for Improving Healthcare Management in Health Organizations', *International Journal of Advanced Science and Technology*, 28(1), pp. 351–362.
  55. Yaacob, N. M. et al. (2019) 'Electronic Personalized Health Records [ E-Phr ] Issues Towards Acceptance And Adoption', *International Journal of Advanced Science and Technology*, 28(8), pp. 1–9.