

PAPER • OPEN ACCESS

Increasing Regional Original Income (PAD) Using Cloud Computing Information Communication Technology

To cite this article: Ishak Ramli *et al* 2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **508** 012118

View the [article online](#) for updates and enhancements.



IOP | ebooks™

Bringing you innovative digital publishing with leading voices to create your essential collection of books in STEM research.

Start exploring the [collection](#) - download the first chapter of every title for free.

Increasing Regional Original Income (PAD) Using Cloud Computing Information Communication Technology

Ishak Ramli*, Agus Zainul Arifin, Yanuar
Accounting Department, Faculty of Economics
University of Tarumanagara, Jl. Tanjung Duren Utara no.1, Jakarta, Indonesia

* ishakr@fe.untar.ac.id

Abstract: The demographic bonus momentum in Indonesia has become a tremendous potential for economic growth, provides the widest possible prosperity of the Indonesian people. It could be realized by using technology. Technology both in the central and local government of Indonesia depends on Government and each region local budget (APBN and APBD). Technology budgeting in the APBN and APBD is very dependent on state and regional income. This study aims to examine empirical evidence on whether technology can be financed by Regional/local district Income and analyze whether cloud computing technology could increase Regional Original Income (PAD). The sample uses the district government Yogyakarta, the first phase we examine whether Regional Original Income (PAD), General Allocation Fund (DAU), and Special Allocation Fund (DAK) can finance Capital Expenditures (technology) and the second phase we analyze how to increase PAD through Cloud computing technology. Descriptive analysis of PAD, DAU and DAK data in financing technology and analysis of using cloud computing technology in order to improve PAD. The Research using four districts and one capital city in Yogyakarta. Using secondary data from 2006-2015 realized APBD, we analyzed whether the four districts and one capital city could finance the capital expenditures (technology). Using PLS We examined whether PAD, DAU, and DAK be able to finance the technology, and We analyzed whether cloud computing can improve PAD. The results conclude that technology spending in district budget cannot fully be financed by PAD, DAU, and DAK. Furthermore, DAU does not significantly affect capital expenditure (technology), but PAD and DAK positively influence the capital expenditure (technology). It is a different phenomenon findings that DAU does not significantly affect capital expenditure (technology). In order to make Indonesia is one of a developing country in the world, We conclude the demographic bonus momentum requires technology as well as computing cloud technology. Moreover Indonesia needs to increase and utilize PAD, DAK, and DAU to finance capital expenditure (technology).

Introduction

The demographic bonus momentum in Indonesia is giving a tremendous potential economic growth and gives the widest possible prosperity of the Indonesian people. It could be realized by using technology. Technology both in the central and local government of Indonesia depends on Government and each region local budget (APBN and APBD). The implementation of regional autonomy in Indonesia, especially on technology, is an obligation in creating independency in order to develop regions optimally. Information technology is expected to prosper the local/ regional governments, increase their community, public services



improvement, and economic growth. E-government adoption could also increase regional original income (PAD) so that it could increase government spending on technology.

The most common problem faced by Indonesian local governments in public sector organizations is budget allocation. High regional original income (PAD) should support high Capital Expenditures. But what happened really, the allocation of Capital Expenditures still has not been implemented well. In the 2013 fiscal year the comparison of PAD, DAU, DAK and Capital Expenditures have not supported the concept.

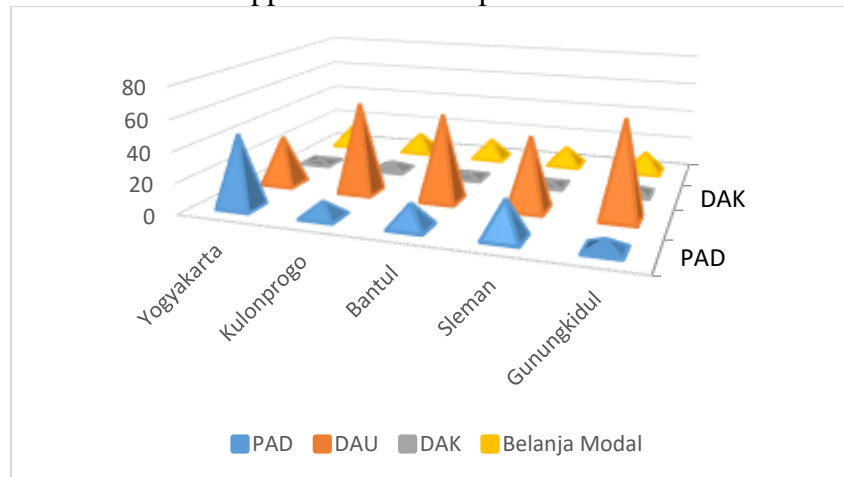


Figure 1.

Comparison of PAD, DAU, DAK , & capital expenditures realized in district Yogyakarta for the year 2013,

Sources : 2013 fiscal year realized APBD Yogyakarta District.

High in PAD and DAU do not support high capital expenditure, so that un-optimal economic growth is not increasing the people of Yogyakarta's welfare drastically. The Technology spending is very small. Regional governments should shift the more composition spending on capital investment (technology). The higher the level of capital investment (technology) the higher the quality of public services and the better ability to increase the level of public participation in development through increased PAD [1]. Construction of facilities and infrastructure will be supported by good technology and it will attract investor to invest.

This study aims to examine: first whether the PAD, DAK, and DAU could finance the technology spending. Second whether cloud computing could increase the PAD. Sources of funding in carrying out regional government affairs are expected to be obtained in Yogyakarta district from extracting PAD sources. But in practice, balancing funds are the main source of funds for local governments for the implementation of regional autonomy. Regional governments must be able to allocate regional budgets to technology. The higher the level of capital investment (technology) the higher the quality of public services, the more improvement be expected to be able to improve ,then they creates regional independence and optimizing the potential income of the region and being able to increase capital expenditure for the development of productive sectors in such areas.

In order to increase PAD, literature widely proposes government to use Cloud computing technology [3] [4], [5], [6], [7]. Poor in collecting PAD using traditional e-government because of difficulties in migration, integration and management for software and hardware, poor capabilities with disaster recovery, auditing and logging, fragmentation of resources and low asset utilization, software licensing and support, traditional infrastructure cannot scale, security

and privacy, and poor performance with rapidly changing in the system requirements[3],[9],[10][11]. There are five uses of cloud computing according to research: business continuity, simplicity of tools and ability to adapt, versatile data retrieval, modeling capabilities, and service function compatibility [2]. They are all suitable for district to increase PAD.

We organize the paper: first, explain the research method. Second, examine whether Regional Original Income (PAD), General Allocation Fund (DAU) and Special Allocation Fund (DAK) can finance the capital expenditure (technology) that further can increase the ability to finance capital expenditures (technology) even higher. Third, we analyzed the information system in order to increase PAD.

Research Method

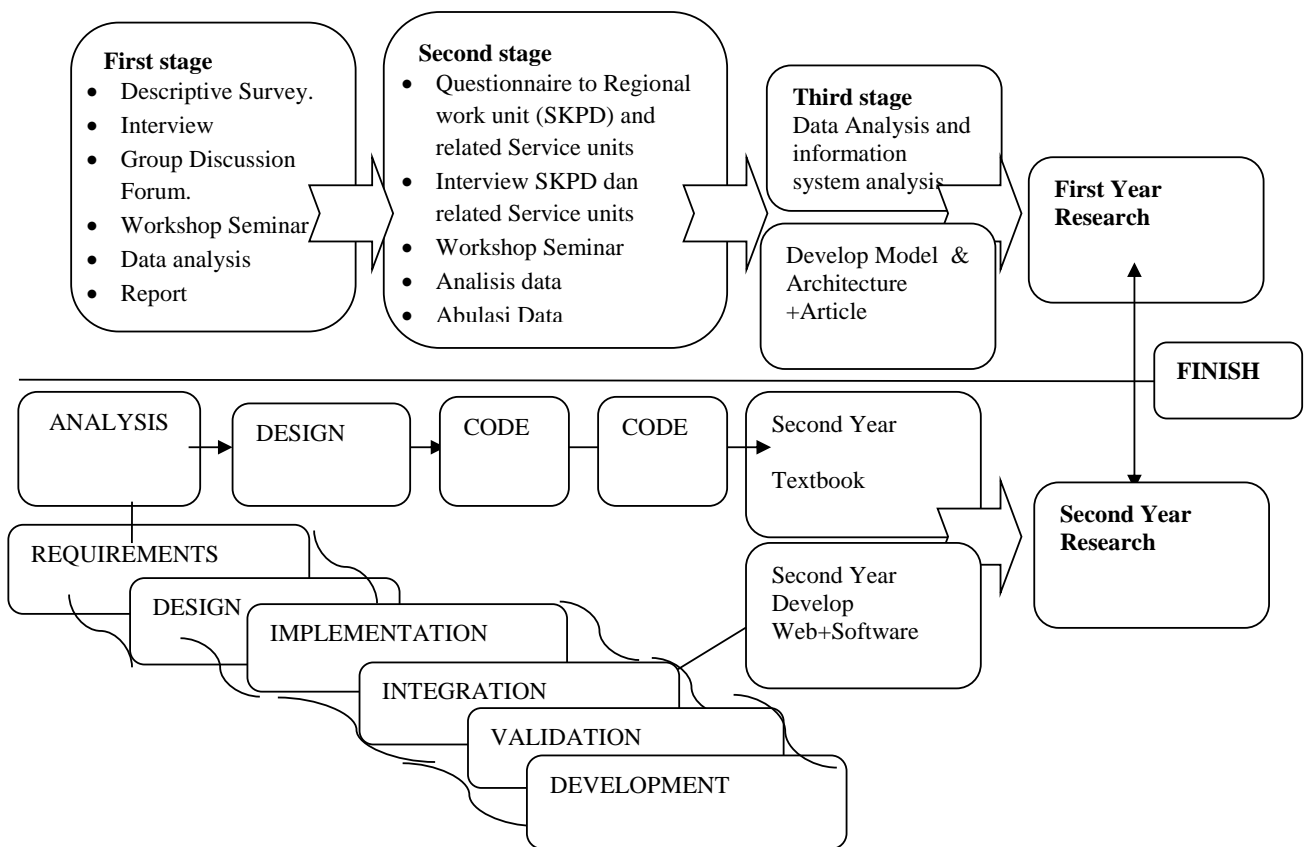


Figure 2.
Research Method

Results and discussion

Tabel: 1: Anova

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4,899	3	1,633	8,806	,000 ^(a)
	Residual	8,530	46	,185		
	Total	13,429	49			

^a Predictors: (Constant), LnDAK, LnDAU, LnPAD

^b Dependent Variable: LnBM

Source : SPSS Output

PAD, DAU. and DAK, have $0.000 < 0.05$ significance. PAD, DAU, and DAK, could finance Capital expenditures (technology) but they could only finance 32.3% the technology.

Tabel 2

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,604 ^a	,365	,323	,43062

a. Predictors: (Constant), LnDAK, LnDAU, LnPAD

b. Dependent Variable: LnBM

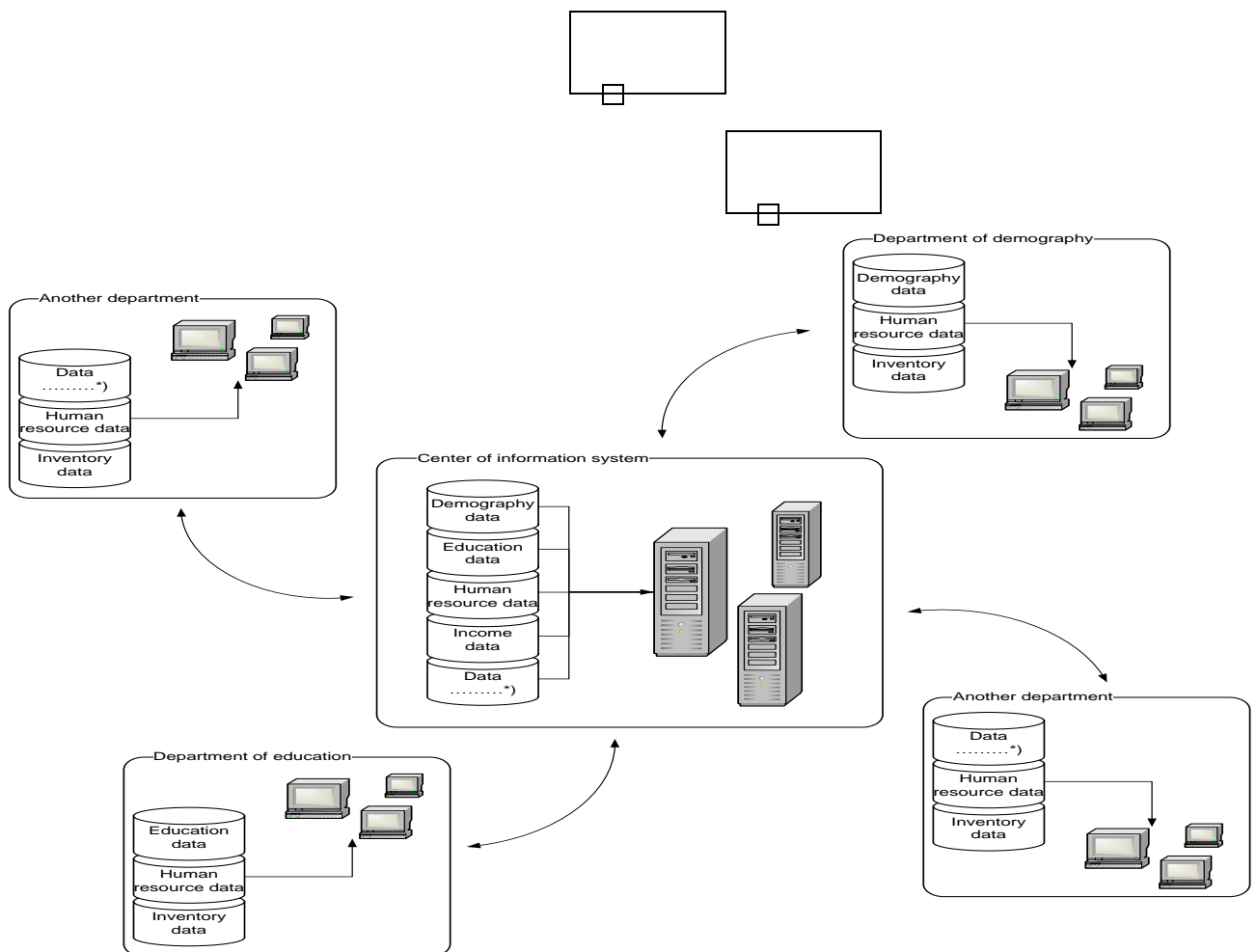
Source:SPSS Output

The local governments need to increase PAD in order to finance technology. PAD is a source of income derived from the district or regional used to finance local administration expense and regional development, especially on technology spending. In addition, PAD is also a source of regional spending. The higher the PAD increases, the higher the level of regional independence, the more local government able to spend on technology. Initiatives to further increase in capital expenditures, in order to add / equip regional development infrastructure, will have an impact on public services, and furthermore can increase technology spending and so on.

The data analysis proves that DAU does not significantly affect capital (technology) spending. The initial objective of the DAU is to distribute funds among regions to reduce inequality in financial capacity among regions. The District with low fiscal potential will be distributed high DAU, on the contrary the district with high fiscal potential will be distributed low DAU.

Second stage We analyzed the information systems (ICT) and find that Figure 2 could be applied in the Yogyakarta's WEB (SIMDA). Analysis of the use of cloud computing concluded that people can access data, can store a lot of data, services to the public become faster, simpler, and accurate, data can be obtained at any time nonstop 24 hours and is a data that is not deferred (can be obtained directly from each service or the process associated with cloud computing), expanding communication channels, increasing productivity for the government, improving regional economy and business, sharing global information and knowledge, automating services, automating business operations, and business communication, supporting Good Corporate Government. The use of cloud computing is expected to prevent corruption without data regulation, increase government transparency and accountability. ICT helps increase the availability of data / information for all stakeholders (Stakeholders)[8],[9]. It was concluded that two analogous networks are needed to be connected to Cloud computing such as Local Area Network (LAN) (Figure 3.), Metropolitan Area Networks (MAN), and analogous Wide Area Networks (WANs) connected to Local, Regional, and Wide Cloud Computing. [10][11].Each model can connect via connectors (connectors), applications that are integrated, communicate, and collaborate using data from different devices. Information and data from the Regional Original Revenue system are obtained from Regional Taxes.

The architecture of registering every vary business company using intermediary in the system could save every transaction in the process.(figure 4).[2]. Implementation of catching information on whole transaction of the company doing business registered in the district of Yogyakarta automatically could be monitored so that the whole PAD due to the district government could be collected, then the PAD will easily increase and improve the district technology spending.



*) Data adjusted to the need of relevant agencies

Figure 3. Applied Systems in District WEB (SIMDA)

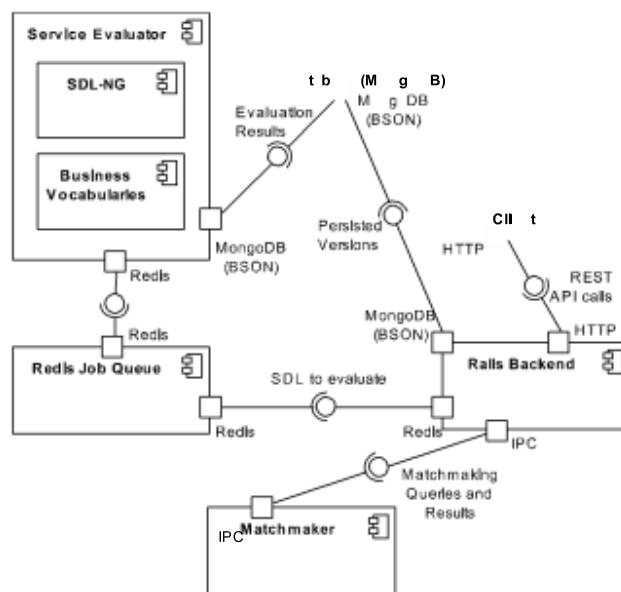


Figure 4. Service Registry Architecture[2]

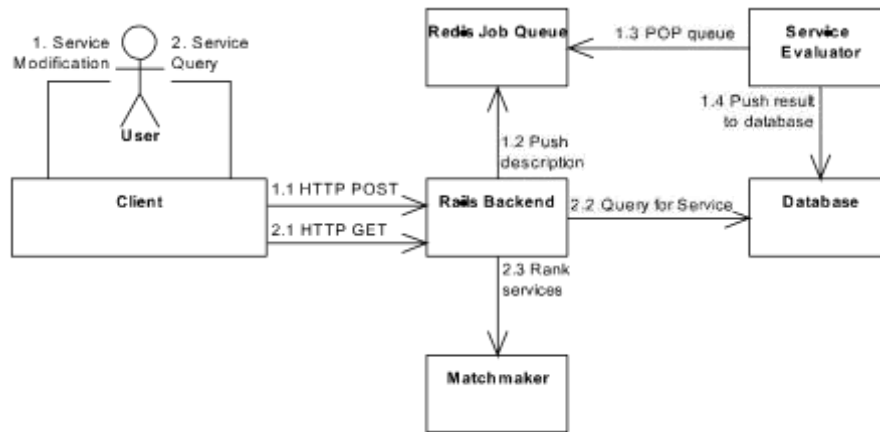


Figure 5. Service registry communication diagram.[2]

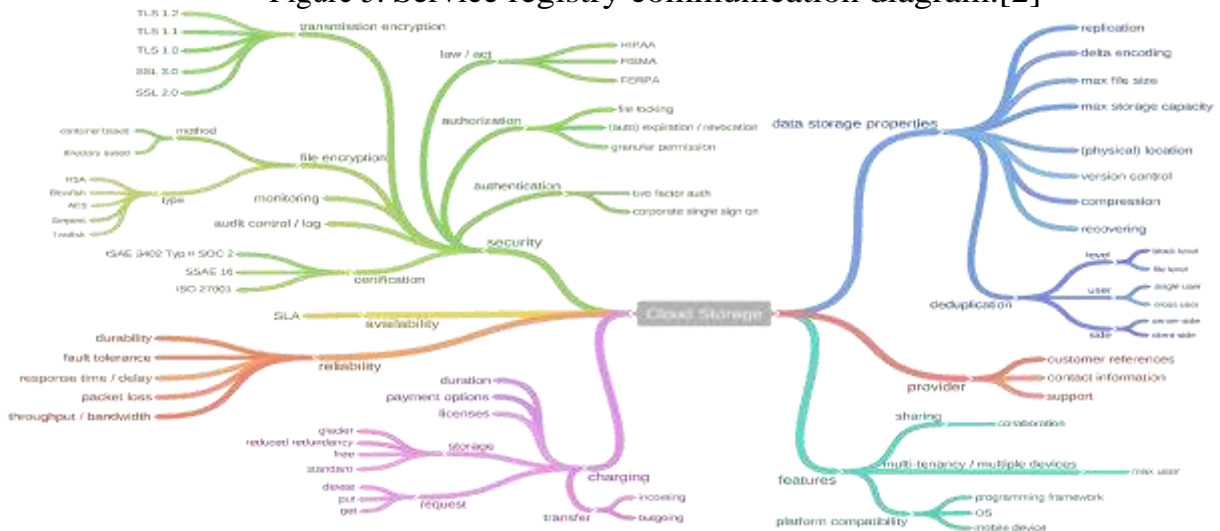


Figure 6. Cloud Storage Vocabulary [2]

Conclusion

In Yogyakarta District / City Government, it was found:

1. PAD, DAU and DAK indeed affect capital expenditure, but their influence is small (32.3%). Technology spending cannot be financed by PAD, DAU, and DAK. Probably the momentum of demographic bonus is not optimally realized due to the lack of technology.
2. Funds that significantly affect technology spending are PAD, and DAK, while DAU does not significantly financing technology spending. Technology improvement potentially financed by increasing PAD.
3. PAD Potentially improved by using Information and Communication Technology (ICT). The LAN, MANs, and WANs could be linked to the cloud computing.

Research Limitations

The study is the first year of the 3 years planned research, so that it does not provide a detailed system of overall ICT technology acceptance of PAD.

The conclusion does not assume the government policy in preparing capital expenditure (technology).

References

- [1] Mardiasmo. 2002. *Otonomi dan Manajemen Keuangan Daerah*. Yogyakarta: Penerbit Andi.
- [2] Slawik, M., Begüm İlkeZilci, ,AxelKüpper, 2018. Establishing User-centric Cloud Service Registries *Future Generation Computers System* **87(2018)p846-867** www.elsevier.com/locate/fgcs.
- [3] Ali KE, Mazen SA, Hassanein EE, A Proposed Hybrid Model For Adopting Cloud Computing In E-Government, *Future Computing and Informatics Journal* (2018), doi: [https:// doi.org/10.1016/j.fcij.2018.09.001](https://doi.org/10.1016/j.fcij.2018.09.001).
- [4] M. Ahmad and Z.A. Hasibuan, “ Government services intergration based on cloud technology,” Proceedings of the 14th International Conference on Information Integration and Web-based applications & Services, pp 303-306, ACM, 2012.
- [5] M.A. Hana, “E-government cloud computing proposed model: Egyptian E-government Cloud Computing,” Advances in Computing, Communications, and Informatics, International Conference, pp 847-852, IEEE,2013.
- [6] H. Singh and A. P. S. N. Campus, “Technology Transfer Model to Migrate E-Governance to Cloud Computing,” IJATER (International Journal of Advanced Technology and Engineering Research), 2, 4, pp. 52-57, 2012.
- [7] F. Shimba, “Cloud Computing:Strategies for Cloud Computing Adoption”. Masters Dissertation. Dublin, Dublin Institute of Technology,” 2010.
- [8] Y. Taher, R. Haque, D.K. Nquyen and W.J. Van den Heuvel, “Designing and delivering public services on the cloud,” International Conference on Cloud Computing and Services Science, 2011.
- [9] F. Mohammed & O. Ibrahim, "Refining E-government Readiness Index by Cloud Computing," *Jurnal Teknologi*, 65(1) , 2013.
- [10] A. tripathi, B. Parihar (2011). E-governance challenges and cloud benefit, *VSRD International Journal of CS & IT* Vol. 1 (1), 29-35.
- [11] Almunawar MN, "Benefits and Issues of Cloud Computing for E-Government", *Review Pub Administration Manag* 3: e105. doi:10.4172/2315-7844.1000e105.