

**ORGANIZATIONAL LEARNING AS INTERVENING VARIABLE ON
ASSOCIATION OF IT COMPETENCE TO PERFORMANCE OF PUBLIC SECTOR
ENTITIES: AN EMPIRICAL STUDY AT SIMDA OF BOGOR LOCAL
GOVERNMENT**

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Abstract

The purpose of this study is to analyze the effect of Organizational Learnings as intervening variable of IT Competency effect to Bogor Local Government performance. This study uses survey method by distributing questionnaires to staff which in doing her/his job related to SIMDA as unit analysis in preparing LKPD (Local Government Financial Report). Processing of data collected will use Structural Equation Modelling (SEM). This Research finds variable Organizational Learning will play significant role in mediating the effect of IT competence on Bogor Local Government Performance.

Keywords: Organizational Learnings, IT Competency, Local Governance, Governmental

JEL Classification: D23, R50, H83

INTRODUCTION

This study based on journal by Tippin and Sohi (2003) as a major journal reference. This study has aimed to analyze the effect of Organizational Learnings as intervening variable of IT Competency effect to Bogor Local Government performance. This study uses survey method by distributing questionnaires to staff which in doing her/his job related to SIMDA as unit analysis in preparing LKPD (Local Government Financial Report). Processing of data collected will use Structural Equation Modelling (SEM). Sample of the research consists of 271 managers from various manufacturing companies, and have concluded variable *organizational learning* was crucial role as mediating variable on effect of IT competence to organization performance. So far, there are very limited research focused



on this topic which applied to public sector entity, especially in the governmental institutions. In the era of local government autonomy, the function of local government in manage their people have increasing drastically. On the other side, local government should report using and spend of budgeting periodically as tools of accountability. Through regulation of Permendagri No. 8 tahun 2009, the central government will evaluate local government performance yearly and the output of such evaluation is score of EKPPD for each local government. Preparation of EKPPD referred to LKPPD (Laporan Penyelenggaraan Pemerintahan Daerah (LPPD)).

This research try to developed study by Pippin and Sohi (2003) and have objective to explore effect of variable organizational learning as variable intervening on association of IT competence to public sector entity performance, at local government of Bogor, West Java. This research try to investigate whether intervening variable have important role to mediate association of IT Competence at Bogor Local Government to Local Governmental of Bogor City by using new tool of measurement EKPPD.

Contribution of research consists of two things, they are first, this research expected will give the alternative proxy to measure performance of government institutions (UU No. 8 year 2009). There are some differences between research of and Sohi (2003) and this study, as unit analysis of the research are direct staff level involved with compiling financial statements by using IT software at the Local Government of Bogor City. IT Software of Local Government of Bogor City is SIMDA which prepared by BPKP.

The second difference is that this study focused on Organizational Learning variable at local governmental with customer is people of Bogor City, DPRD and central governmental. Research of Pippin and Sohi (2003) used managers as research unit analysis in the manufacturing company and the costumers are buyer of manufacturing products. On the next paragraph we will discussed theoretical framework, research method and questionnaires as attachments.



LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Information Technology and Organizational Strategy

Before 1990, majority literatures focused on importance of information technology and the opportunity of information technology as an alternative for the whole of range for strategy variable and industrial structure, including cost positions, economic scale, and bargaining position (Cash and Kosyuski, 1985; Porter, 1985; Clemons, 1986). In contrast to period after 1990, literature more focused on association between IT and specific component of organizational strategy, such as scanning on environmental component (Maier et al, 1997), competitive advantage component (Mata et al, 1995), organizational performance component (Dollinger, 1984, Powell and Dent-Micallef, 1997; Bharadwaj, 2000) and also accumulated knowledge component (Bettis and Hitt, 1995; Grant, 1996).

Next, Resource-based view concept (RBV) have been developed in IT field, that have meaning that changes in the companies those have will compete on the human resources basis that distributed heterogeneously inter company (Barney, 1991), heterogeneously resources are responsibility of the variance which come from observation of financial performance inter company (Peteraf, 1993). It is difference with perspective on external focused based, which find out a bounding a company strategy on competitive position, RBV perspective focused on internal organization resources competitiveness.

IT Competence

According to RBV perspectives, competence cannot imitized, consequently, this condition have an effect on competitive advantages of company (Lei et al., 1996). So, the company has a possibility to reached high level IT competence and logically, will be in the superior position in managing “invisible assets” which used to create company in the position of prominent in the market (Itami, 1987). Conceptualization of IT competence as extension of organization knowledge about and utilization effectively of IT in managing all of the information in the organizations.

Assumptions of conceptualization are each organization owned IT object (such as: *software, hardware, IT personnel*). Cumulatively, there are 3 (three) dimensions of IT



Competence describes co-specializations resources that provides indications those organizations have ability to understand and utilize IT tools and processing everything needed to manage market and customer information. Components of each IT competence, i.e. IT knowledge, IT operations and will be explained in details.

IT Knowledge

IT knowledge is a combination of information and experience, context and interpretations and reflection (Davenport, De Long, and Beers, 1998; 43). According to Capon and Glazer (1987) *IT knowledge* cannot differentiate as subset of more general concept than knowledge. Technical knowledge is a groups of principles and techniques which used to explained any change agreed to expected final outcome (Taylor, 1971).

IT Operations

Technical Operations, or techniques, consists of activities that carried out in order to achieved ultimate goal (Mitcham and Mackey, 1983). IT operations is methods, skills, and process needed to complete tasks (Granstrand, 1982). Technical operations meanings as manifestations of technical knowledge such as implementations of technical knowledge output of technical operations or skills. Conceptualizations of IT operations as extension of organizations IT utilizations to manage market and customer information.

IT Object

According to Glazer (1991) *IT Objects* have roles and responsibility to elevate production information and information dissemination. For this research IT objects conceptualizations describes computer based hardware, *software* and human resources supports.

Organizational Learning

According to Slater and Narver (1995) at the basic level of organizational learning is processing about new knowledge or mindsets developed by company, organizational learning



consists of 4 (four) components, are information gathered/obtained, information dissemination, and information sharing.

Information Obtained/Gathered

Information gathered components are an actively process of company to obtained and collected benefit information (Slater and Narver, 1995). Component process to obtained information consists of : organizations obtained information through direct experience, from other party experience, or from company's experience which have memorized mechanism, that mechanism in this context as if warehouse of information at the company.

Information Disseminations

According to Maltz and Kohli (1996); Slater and Narver (1995), information dissemination components is an extension of information obtained from organization that shares among functional units, through formal path and informal path. Information disseminations provides competitiveness as a different perspectives and in the form of thought sharing.

Interpretation Sharing

Slater and Narver (1995) have an understandings that interpretations sharing components as actualizations of consensus among organization members related to understandings of information. If disseminations of Information through company, so consensus of company should be done, and should be thought how information understandings have an impact on organization strategy in the future. Next, interpretations sharing components are playing a role in obtaining information and future interpretations (Slater and Narver, 1995).

Organization Memorized

Memorized refer to quantity of information or company experienced about specific phenomena (Moorman and Miner, 1997). Memorized play 2 (two) primary role of *organizational learning*, those are: first, memorized provides basic for changing through



generation learning process (generative learning process), and second memorized have significant influence through learning process through impact on the types of information and a way how to analyzed those information (Slater and Narver, 1995).

Local Government and Software SIMDA

To measure Local Government Bogor city performance, we used score of EKPPD (skor Evaluasi Kinerja Penyelenggaraan Pemerintah Daerah) published by Ministry of Internal affair by year. Measurement of EKPPD is using data provided in the LKPD (Laporan Kinerja Pemerintahan Daerah).

Information system used by Local Government Bogor city in order to prepared LKPD, provided by *software* SIMDA products of BPKP. Starting from 2015 financial statement preparation based on accrual basis, and this research will caught up this moment. Research prediction is through *intervening organizational learning* variable expected will increase Local Government Bogor city performance.



Hypotheses Building/ Development

Based on introduction on the earlier of this paper, and literature review, we proposed research model as followings : (picture 1)

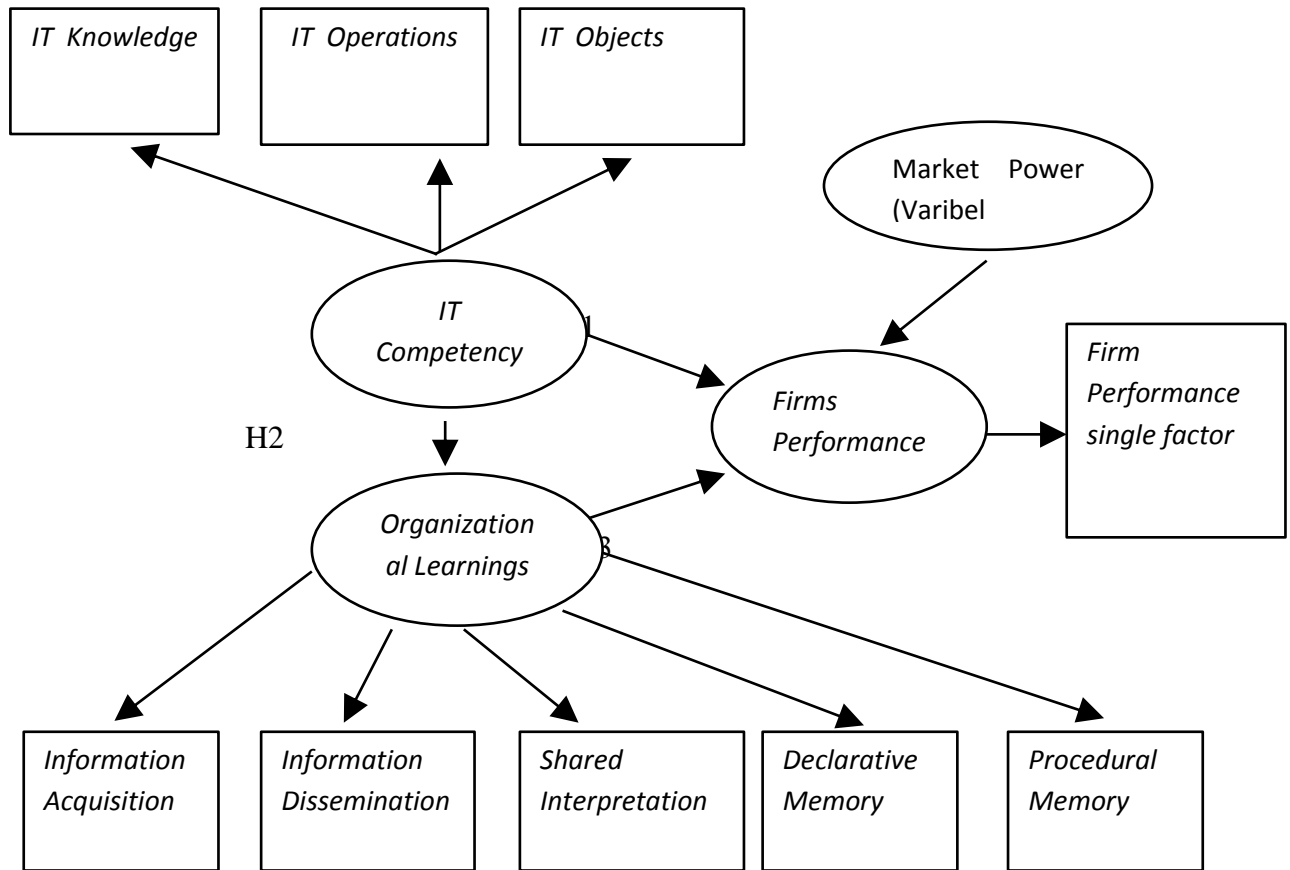


Figure 1. Conceptual Framework

(Source: Tippins and Sohi, 2003)

Before explaining picture 1, there are some conditions we should noted: Competence and organizational learning as 2nd order, and to decrease clutter, only two indicants showed by 1st order factor. Meanwhile, control variable is market power which consists of reactive organization size components rekatif and market share.

Picture 1, describes research model and on that model, conceptualization of IT Competence as higher order construct which consists of 3 domains which presented through ist order: *IT knowledge, IT Operations and IT Objects*. The same with conceptualizations of

which presented through 1st factor order: *information acquisition, Information dissemination, shared interpretations, declarative memory and procedural memory.*

In the research model we know the research focus: IT Competence influence organizations performance and mediating variable of organizational learning. So, we developed 3 (three) Hypotheses as follows

1. Association between IT Competence and Organization performance
2. Association between IT Competence and *organizational learning*
3. Association of *organizational learning* to organizational performance

IT Competence and Organization Performance: A partial mediating case

Bharadwaj (2000) have so many debates on IT Capability that have an ability to shifted obstacle cross company, strong case will make the capability inefficient in providing sustainability of competitive advantages positions due to, easiest to imitized new technology. Consistent with Clemon and Row (1991), benefit resulted from innovative applications of IT more persistent if its system used the uniqueness of resources of innovative organizations, so competitor could not raise any benefits due to duplications or imitations of new IT. For this conditions IT impact to influenced of IT on organization performance could not know directly, but we will know by quantified checking indirect impact on some intervening variable of organization capability, such as organizational learning.

Lucas (1999), concluded that some companies could get some positive benefits, contrast, other company could get productivity paradox, it means the company received negative return from IT investments, so we concluded that organizations could not get increasing in performance, and finally we should make an integration in the organizations in order to produced positive impacts. Based on that arguments, we proposed the following hypotheses:

H₁: Organizational Learning variable as Mediating effect on Associations of IT Competence and organization performance



IT Competence and Organizational Learning

According to Hope and Hope (1987), IT provided the member or staff in the organization a fast access and effective in the amount of information and IT could ensure that each of organization staff got recent and relevant market information, through acceleration in obtaining information and information disseminations of those organizations. So, we expected the company developed IT Competence that have opportunity to increase ability in obtaining information and disseminating an information to staff or other department within an organization.

IT provided needed mechanism to save information, in order saved information would give benefits, so staff of an organization could access information and interpreted those information in the same way, then as part of company's basic knowledge as a whole. In the future, those staffs expected could synthesized those informatios to be new information on the basis of combined information plus an information access in the saved information. Based on previous paragraphs, we proposed 2nd hypotheses as follows

H₂: IT Competence have positive association with organizational learning

Organizational learning and Organizational Performance

Learning organization better translate as organizational strategy in facing the customer and the competitor, and expected in the future will elevate the company profit (Slater and Narver, 1995). Besides profit, as tool to measure organizational performance, we can use sales growth got from learning process.

We can related customer retention organizational learning, due to the meaning of customer retention is customer persistence to return to the company or organizations in order to received service and or product of those organizations. Consistent with Slater and Narver (1995), since organization have an ability in the proper way to learn and to know customer demands and needs will provide higher level of customer satisfaction, and connected to customer retention.

One of the form of local governmental accountability is legally published or issued regulation of PP No. 3/2007 about LPPD. LPPD issued every year based on RKPD (Rencana kegiatan Pemerintahan Daerah) to central, LPPD can be used as a main sources to evaluate



governmental performance as to meet transparency and accountability obligations to public. PP No. 6/2008 is about guidance to evaluate local governmental performance, as part of effort to reached Good Government Governance as mentioned in the EKPPD.

By using measurement EKKPD and LKPD as specific measurement applied to local governmental organization, we proposed the 3rd hypotheses as follows:

H₃: positive association between *organizational learning* and organizational performance

RESEARCH METHODS

Data and Sample

This research used survey method, populations of this research is all of staff of local government of Bogor City. Sample as unit analysis is staff of local government of Bogor City which works by using software SIMDA produced by BPKP. This questionnaires distributed directly to 118 candidates respondents from 37 SKPD (Satuan Kerja Perangkat Daerah) and 7 staffs from BPKAD (Badan pengelolaan Aset dan Keuangan Daerah). This research give one week for respondents to fill in questionnaires and directly collected by researcher.

The following is detail respondents:

1.	37 SKPD 3 staff each	total 111 respondents
2.	7 persons at BPKAD	<u>total 7 respondents</u>
Total		118 respondents

Research Model (Operationalization Research Concept)

Measurement by using previous literatures and there are some adjustments due to conditions of local government of Bogor City. The adjustments are regarding about marketing concept, customer and customer satisfactions, which focused on services provided to society of local government of Bogor City. Next, we will explained about some concepts of variable as unit analysis, consists of IT Competence, Organizational learning, Kinerja Organisasi and control variable.



Concept definitions

IT Competency (ITCOMP)

By using 7 points *likert scale* to operationalization 3 dimensions of IT Competency IT knowledge, IT Knowledge (ITKNOW), IT Operations (ITOPS) and IT Object (ITOBJECTS). This scale is scale by theoretical owned by domains in the marketing and researcher will use this scale, even though location of research is in the ocal government, the argue are society of local government of Bogor city, analogy as customer that should be serviced by staff or human resources of local government of Bogor City. Next, we referred to that 7 points of likert scales referred to expert on marketing (Glazer, 1991), Information Technology (Mata, Fuerst, and Barney, 1995), and information knowledge (Contrator and Eisenberg,1990).

Organizational Learning (ORGLEARN)

Operationalization of dimensions of ORGLEARN used 7 points skala likert scale, and dimension of information Acquisition (INFOACQ) measured by scale which adapted from Baker and Sinkula (1999). Meanwhile, item used to measure dimensions of *information Dissemination* (INFODISS) adapted from Baker and Sinkula (1999) and Kohli, Jaworski and Kumar (1993).

Next, dimensions of scale adapted by Slater and Narver (1995) and Moorman and Miner (1998), those dimensions are: shared interpretation (SHARINT), Declaration Memory (DECMEM) and procedural Memory (PROC MEM).

Firm Performance (FIRMPERF)

In the context of Local government of Bogor City as respondents of the research and unit analysis are human resources who works by using software SIMDA by BPKP, we used score of EKPPD that sources from LKPD.



Control Variable

Variable to control performance variance of local government Bogor City are: characteristic of size, populations and original local government revenue (PAD) and Brutto domestic regional revenue /PDRB (by BPS)

Concept Operationalization

Table 1. Research Concept Operationalization

Variable	Dimensions	Indicator
1. IT Competency	IT Knowledge	<ol style="list-style-type: none"> 1. Technical support staff with sufficient knowledge 2. IT expert 3. IT innovation
	IT Operations	<ol style="list-style-type: none"> 1. Skill to analyzed information 2. Computerized system to accessed information 3. Online procedures 4. Computer system to analyzed information 5. Utilized supporting system to make a decisions 6. Computer system to save information
	IT Objects	<ol style="list-style-type: none"> 1. Have Department MIS formally 2. PIC to manage IT 3. Budget for upgrading TI hardware 4. Customized application software 5. Networking inter staff
2. Organizational Learning	Information Acquisition	<ol style="list-style-type: none"> 1. meeting by routine to know demanding of society 2. research to know the needs of society 3. society as source of information



		<p>4. Asking society about needs and wants</p> <p>5. collect information about society demands</p> <p>6. Collect information demand per sector and per society</p>
	<i>Information Dissemination</i>	<p>1. Various information are normative</p> <p>2. Accessible information</p> <p>3. Representative of department to discuss about society needs</p> <p>4. Society information undistributed to other department</p> <p>5. Transparency of information</p> <p>6. Accessible of society information</p>
	<i>Shared Interpretation</i>	<p>1. Different opinion about society needs</p> <p>2. Different opinion on service excellent to society</p> <p>3. In case know information about society and have same opinion on impact to governmental staff</p> <p>4. Have same opinion on understanding society needs</p> <p>5. Have same opinion how to service society</p>
	<i>Declarative Memory</i>	<p>1. Hold information about society goal</p> <p>2. Hold information about society competitiveness</p> <p>3. Know the weakness of society</p> <p>4. Know position of society</p> <p>5. Know R &D of society</p> <p>6. Know main goal of society</p> <p>7. Previous strategy to face society is known</p>



	Procedural Memory	<ol style="list-style-type: none"> 1. Have SOP to service society 2. Based on previous experience can service demanding society 3. Have SOP to know needs of society 4. Have SOP to face complaint of society 5. Experience teach what questions suitable for society
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3. Firm Performance	Firm	Customer Retention
		Sales growth = Growth of Original Local Revenue (PAD)
		Profitability = Not applicable (NA) to local government
		Return On Investment =Not Applicable to local government
4. Market Power	Market	Market Share=NA
		Firm Size = ukuran daerah

Data Analysis

This research used survey method, populations are all of staff of local government of Bogor City. Unit analysis of the research is staff or personnel of local government of Bogor City using software SIMDA produced by BPKP. Distribution of questionnaires directly to candidates of respondents 118 people which consists of 37 SKPD (Satuan Kerja Perangkat Daerah) and 7 staffs of BPKAD (Badan pengelolaan Aset dan Keuangan Daerah). Respondents have One week to fill the questionnaires, and will collected directly by researcher.

Method used to test model is using factors analysis (confirmatory factor analysis), meanwhile, for *software* this research used Lisrel (Sudarmanto, 2005; Sugiarto, 2006; Sarwono, 2007).



RESULTS AND DISCUSSIONS

This research is using survey approach, and tools is questionnaires. We sent 118 questionnaires, returned 100 questionnaires (84.75%). Questionnaires distributed directly to respondents and already pilot test questionnaires before distributing to make sure that respondents full understanding about each questions in the survey.

Followings are detailed of sample respondents distribution and returned:

37	KPD each <u>total</u>	7 respondents
Total		118 respondents
Returned Questionnaires		100 respondents
%	level of returns	84.75%

Table 2 describes statistic descriptive of respondents of this research, they are human resources of local government of Bogor City in the 2016. If we looked from department, 26% respondents are BPKAD Bogor and the rest 62%, meanwhile respondents majority is Man for about 60%. If we look from position, majority is clerical 51% and 37% is guarding administration. From age, majority respondent in the productive age, it means successor aspects are on the tract, majority for about 51% on the age of 31-40 years. From leveling of position, dominate by level III for about 82%, and for training is very good due to 33% of respondents join trainings 3x and majority 43% on that position for about 4 years, it means that i=one staff should 4 years in the same position before getting promotion, so expected that staff already get enough knowledge and experience before promoting.



Table 2. Variable Statistic Descriptive Demography Respondents

N o.	Variable	Category	Frequency	Percentage
1	Departments	BPKAD Kota Bogor	26	26,0
		Bogor Selatan	5	5,0
		Bappeda	3	3,0
		BPBD	4	4,0
		Others	62	62,0
		Total	100	100,0
2	Sex	Man	60	60,0
		Woman	40	40,0
		Total	100	100,0
3	Level	Clerical	51	51,0
		Pengadministrasi pengawasan	37	37,0
		Kasi pemerintah	1	1,0
		K.SeksiSarkominfo	1	1,0
		Others	10	10,0
		Total	100	100,0

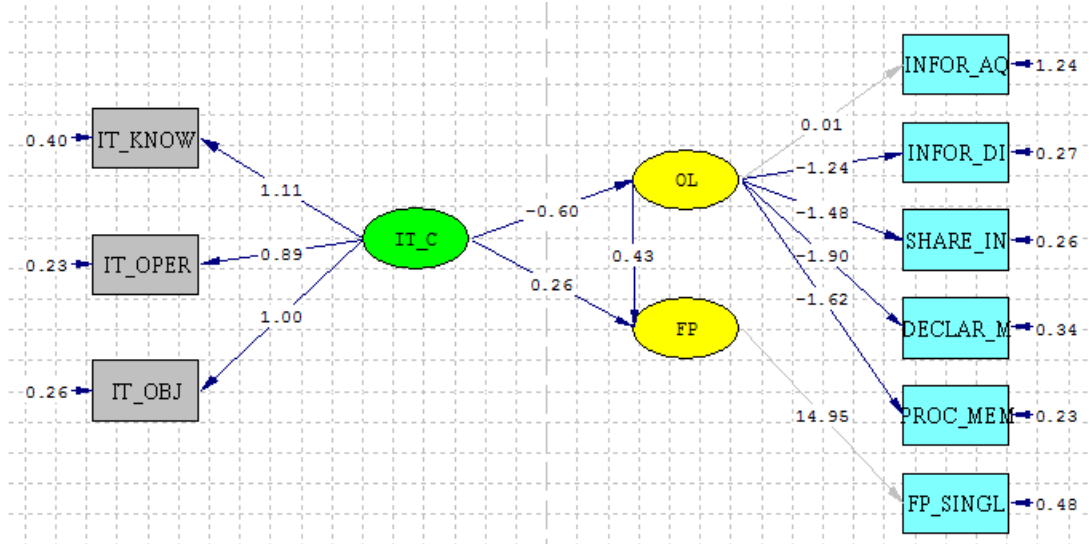


4	Age	< 25 years	8	8,0
		25-30 years	11	11,0
		31-40 years	51	51,0
		41-50 years	28	28,0
		> 50 years	2	2,0
		Total	100	100,0
5	Level	Gol IV	3	3,0
		Gol III	82	82,0
		Gol II	15	15,0
		Total	100	100,0
6	Education	Senior high school	11	11,0
		D3	5	5,0
		S1	64	64,0
		S2	20	20,0
		Total	100	100,0
7	training	None	15	15,0
		1 times	24	24,0



		2 times	15	15,0
		3 times	13	13,0
		> 3 times	33	33,0
		Total	100	100,0
8	Period of positions	2 years	30	30,0
		4 years	43	43,0
		5 years	13	13,0
		6 years	6	6,0
		> 6 years	8	8,0
		Total	100	100,0

**Table 3. SEM Result
Estimated Parameter**



Based on Table 3 parameter estimation provided by analyzed structural Equation Model (SEM) which referred to method introduced by Singh, Goolsby and Rhoads (1994). Analysis result of table 3 findings are direct and indirect association between IT competence and organizational performance. By using proxy human resources performance. There are mediating variable on learning organization variable on the association of IT competence to Organizational performance.

In the detail, we observed there are variance value larger than organizational performance when IT competence through mediating partial by organizational learning variable. Then, there are positive association between IT Competence through learning organization. Next, through direct association, there are significant impact between IT Competence and Organizational performance.

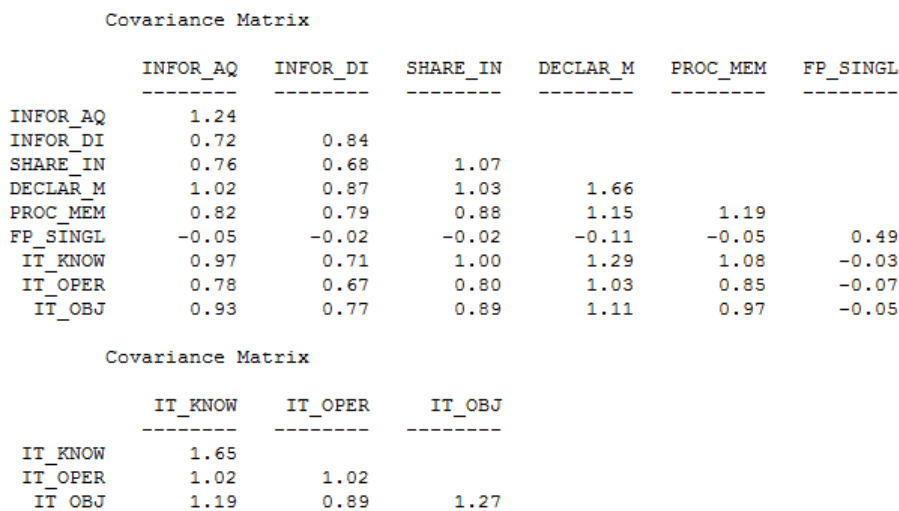


Figure 2

Table 4. Test of Fit the Overall Model

Measurement of GOF	Level of target fit	Estimation result	Level of fit
Chi-square	$p \geq \alpha$	$P=0,000001$ Chi-square = 0,000008	fit
RMSEA	RMSEA \leq 0,08 model fit	RMSEA = 0,001 $P= 0,00001$	fit

Based on table 4 to test good of fit the model of research, by using measurement of Goodness of Fir Chi_Square and RMSEA we finds level of good of fit is fit. So, we hope the result concluded that support all the research hypotheses and ovoid from bias conclusions.

Limitations of the research are the quantity of sample very limited, and also the proxy to measure organizational performance are human resources performance by personnel department. In keeping objectivity performance evaluations, better used performance per agency or per department, as respondent of this research are head of department/ agency. This is an opportunity for future research.

CONCLUSIONS AND SUGGESTIONS

This research proved that IT components influenced organizational performance and IT components effects on the organization performance and mediating organizational learnings. Based on the result, this research suggests if we evaluate IT competence we should focused on technology specific aspect, they are, 3 interactive components: IT Objects, IT Knowledge, and IT Operations. So, 3 (three) IT aspect should exists in the company in order to achieved IT Competence.

Based on this research, we found that IT success is not standing alone, but non only should inherent with organizational strategy, but also to be supported by the organizational strategy. For this research, it could be the opportunity for future research by added variable strategy with many aspects. Next, IT contributed to support success and sustainability of company. The result support all research hypotheses and give contribution of managerial aspects of organizations.

There are so many limitations of the research, such as for generalization aspect of the findings, whether the findings could applied to industries or other entities, since the sample of this research is in the governmental organizations, especially in the local governmental organizations. As we noted, that each local government in Indonesia have specific characteristics those will influenced the application of this research findings. The characteristics of the local government, such as, the populations, the original local revenue or income, the environmental uniqueness of local governmental.

The suggestions of the research findings are in order organization to improve the performance, variable IT components is one factor that have association with the organization performance and variable organizational learning have a mediating effect. It means organizational learning in the organizations is a variable can empowered association of IT Competence variable to organizational performance, which measured by profit, return on investment.



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