The Information Technology (IT) Adoption Process and E- Readiness to Use within Yogyakarta Indonesian Small Medium Enterprises (SME)

Article *in* International Journal of Information and Communication Technology · January 2012

CITATIONS
12

READS
111

5 authors, including:

Muafi Uii
Universitas Islam Indonesia
76 PUBLICATIONS **329** CITATIONS
SEE PROFILE

Hendri Gusaptono
Universitas Pembangunan Nasional "Veteran" Yogyakarta
5 PUBLICATIONS **22** CITATIONS
SEE PROFILE

Mohamad Irhas Effendi
Universitas Pembangunan Nasional "Veteran" Yogyakarta
14 PUBLICATIONS **31** CITATIONS
SEE PROFILE

Novrido Charibaldi
Universitas Gadjah Mada
2 PUBLICATIONS **12** CITATIONS
SEE PROFILE

Volume 2 No. 1, January 2012
International Journal of Information and Communication Technology Research

http://www.esjournals.org

The Information Technology (IT) Adoption Process and E- Readiness to Use within Yogyakarta Indonesian Small Medium Enterprises (SME)

[1]Muafi, [2]R. Hendri Gusaptono, [3]M. Irhas Effendi, [4]Novrido Charibaldi

[1,2,3] Lecturer of Management Department of Economic Faculty of UPN "Veteran" Yogyakarta Indonesia, SWK 104 Ring road Utara Condong Catur Yogyakarta Indonesia.

[4] Lectures of Informatics Engineering Department of Industrial Technique Faculty of UPN "Veteran" Yogyakarta Indonesia, SWK 104 Ring road Utara, Condong Catur Yogyakarta Indonesia

ABSTRACT

To understand adoption process and its relevant factors influencing this research model will integrate model that uses T-O-E approach (technology, organization, and environment) by Tornatzky and Fleisher (1990) and orientation process approach by Soh and Markus (1995). Survey method is applied in this research. The population is the entire SME (small medium enterprises) in Yogyakarta City, Daerah Istimewa Yogyakarta, Indonesia. The sample quantity is 108 SME. The technique of sample drawing used is method of proportional area sampling. This research applies statistical technique of Partial Least Square (PLS). The conclusion of all the hypothesis proposed are; (1) there is positive influence of technology competence on IT usage, (2) there is positive influence of government policies on IT usage, (3) there is positive influence of government policies on technology competence, (4) there is positive influence of IT usage on IT value, and (5) there is positive influence of IT usage on E-readines to use.

Keywords: *technology competence, government policies, IT usage, IT value, E-readiness to use.*

1. INTRODUCTION

Some studies, either empirical or theoretical have explained that SME (small medium enterprises) has an important role in improving the economic power of a country [6, 29, 41, 47]. If the contribution of SME to economy is bigger, economic aspect of certain country is stronger. In Indonesia, SME is well-known as one of economic prop at monetary crisis in 1997 [41]. In its effort and contribution to force monetary crisis, however, SME actually has a complicated problem. Based on the research of Yayasan Dana Bhakti Astra, it shows that SME has weaknesses, such as, technology, organization, management, and blue print platform of information technology [47] that is not provided yet.

[41] states that along with SME development in Indonesia, SME faces new problem in managing their business in IT usage. They often face a new problem in introducing new technology to their company. They have limited capital for IT investment, limited internal knowledge to manage the process of IT adoption, IT operation, and caring of IT source [29]. The limitation of source is the main problem for SME in consideration of IT investment [32, 41], especially in technology competence [25]. Other limitations are discrepancy of resource (like human resource, financial, and technology), IT knowledge, and competence in organizing knowledge gathering. The failure in solving IT problem can influence long term organizational performance [41]. If IT usage and IT value develop, it can influence E-readiness to use [10, 16] Moreover, [1] states that in developing country, the success of IT is influenced by organization readiness and readiness of external environment in IT usage.

The result of research institution, AMI Partners, it is only 20% out of all SME in Indonesia that have computer. How about SME in Yogyakarta? Until now, it is only 5% SME in Yogyakarta that use IT as media in transaction, especially activity that is export oriented [33]. Based on survey by [13], the reason why SME in Yogyakarta do not use IT is because they do not need it and they do not have skill to use it. Besides, the financial limitation is also the reason why SME in Yogyakarta do not use IT. From all SME that have IT, there are a lot of SME that do not use it for strategic and external oriented activities. Those problems show that IT adoption in SME in Yogyakarta is still low and there is no E-readiness to use for SME.

[26] study the process of IT adoption by considering to technology, organization, and environment effecting to the IT diffusion in organization. On the other hand, [7] state that IT process of IT usage can be used for value creation of IT. T-O-E approach is studied by considering the technology competence and government policy whereas orientation process approach is studied by considering IT usage and IT value. Then, it will be related to E-readiness to use for SME in Yogyakarta in managing their business activities. This research aims to complete research that is not studied yet in Indonesia. IT adoption process of SME in Yogyakarta must be revealed since it will influence E-readiness to use and it is expected will give significant influence long time organizational performance.

2. THEORETICAL REVIEW AND HYPOTHESIS

2.1 Technology Competence and IT Usage

Technology competence is believed including a basic activity that is management task like improving, protecting, using IT, and in controlling technology [42]. As a whole, there are three main problems that can influence IT usage in creating IT value, such as IT infrastructure, IT management, and government policies [35, 46]. This statement is supported by research of [25] who state that those three factors influence IT usage and then it will influence IT value. There is significant relation among environment factor, company IT, organization factor, and government policies will influence IT infrastructure and decision in IT management.

Literary review explains technology resources is important factor in the success of IT adoption. Technology competence is regarded by [20] can be used as variable influencing technology adoption. Technology competence in this research includes IT infrastructure and skill or knowledge in using IT (IT know how). IT infrastructure is amount of physic technology resources, including various technology and technology services in organization [35], so it can facilitate network and company activities. Technology, hardware, and *software* like computer, network, database, platforms of communication and *software* are forms of IT infrastructure [11]. IT know how is skill in to use IT [11, 12]. Company can develop unique capacity and business value by using IT infrastructure. IT know how is useful to develop IT effectively. Result of the research done by [25] shows that IT know how and its infrastructure gives significant role in IT usage. In the same sense, [11, 12, 14] state that IT knowledge, IT investment and strategic IT suitability can effect IT adoption.

In developing countries, IT infrastructure is not developed well, including in Indonesia. Unprepared IT services market and limited knowledge about technology will impact to the lowness of IT usage and IT value. Some researches show investment in IT infrastructure should be more than 58% out of all company's budget and the percentage of its improvement is 11% per year. Even China, the average IT infrastructure in that country is 28% [27].

H1. There is positive influence of technology ccompetence on IT Usage.

2.2 Government Policies, IT Usage and IT Competence

Government policies influence business activities including IT decision, IT management, and IT usage. Companies in China always try to adapt to government policies. It is because government policies have the impact to IT configuration and management of the companies [25]. External environment including government, customers, and business competitors will influence the process of IT adoption [9, 14, 37, 39, 40]. Moreover, [41] states that government policies support SME in Indonesia to do IT adoption. In Indonesia, however, some researches done by Senada/ USAID and Bappenas in Jakarta, East Java, West Java, Central Java, and Daerah Istimewa Yogyakarta (DIY) show that there are 62% out of 1000 government have negative impact to business. There are also many government policies that are not consistent each other [24]. This condition causes the high cost in production and decrease product competitiveness. Some previous researches also show that environmental factors impact the adaption of innovation [26]. In a research about IT environment, in e-commerce application like security, credibility of IT system and law are the main problems that should be observed by the government as the key to support IT and e-commerce IT usage. Government policies should be the factor influencing IT adoption [46, 43].

Government has some efforts to manage and promote companies that use IT by providing donation for companies that adopt IT, support online tax payment, maintain rules or law influencing the use and security for companies using IT, establish standard for IT software, and promote IT evaluation design.

H2. There is positive influence of government policies on *IT Usage*

H3. There is positive influence of government policies on *technology competence.*

2.3 IT Usage, IT Value, and E-readiness to Use

IT is a whole technology used by organization to collect, process, disseminate information in all forms. Therefore, IT support for company activities efficiently and effectively [14, 22]. IT can decrease cost in business activities, especially for SME because IT can allocate fund saved in IT usage for other businesses. Some theories explain that IT is useful for supporting business [31, 41]. Moreover, according to [41], IT usage in SME can be categorized as follow; (1) internal development in which UKM can use and develop IT to solve problem related internal resource of the company, (2) external development in which SME can use and develop IT software of the company to external business, (3) *commercial off the self-*implementation (COTs) in which SME can get COTs product (IT application software) by using IT adaptation or not, and (4) management application managed by vendor.

In the context, IT value is important issue in the comprehensive model [4, 7] because one main concept of

Soh and Markus's process approach is IT value. IT value is expected can maximize IT investment. For a whole, IT value can be used to make reference to IT impact to organization activities, including remedial of operation efficiency, competitiveness, and measurement of other works [45]. Investment that is significant in IT resources gives understanding in relationship between IT investment and IT value continuously in which all of them are important for both government and company [43]. IT resources rarely give direct contribution to activity development, but it influences indirectly to IT value after using IT [7, 15]. Traditional approach refers to economics that is focused on economization including productivity and business value. In Soh and Markus's understanding, IT can make business more efficient, effective, flexible, and innovative. These four indicators can be used to create IT value. IT value in this research is measured by using indicators of IT efficiency and affectivity to support work, IT flexibility in comprehend changes, IT users' satisfaction in supporting work and IT interest rate in the competitive market.

External environment demand and various dynamic changes of organization will influence readiness to change. [2] explain that E-readiness model has relation with organization resistance and adoption behavior. [3] state that organization readiness research is recommended to be done before organization change, those systems and structures are implemented. Moreover, [1] states that success of one organization in using IT in developing country is influenced by organization's readiness and external environment in using IT. Organization readiness is measured by organization commitment, human resources, technology resources, business resources, and organization management whereas readiness of external environment is measured by government readiness, market readiness, and industry support readiness.

Actually, there is relation between capability reinforcement with readiness aspect to change structure, and system in organization. Organization readiness including motivation and organization competence strengthens knowledge, skill and behavior to change structure, organization or system as an important need for successful organization changes implementation [16]; [23]. Overall, organization changes system and structure so often when employer and employee physiologically do not have readiness yet. Therefore, organization should manage changes effectively, so both employer and employee have readiness to change. Related on E-readiness to use, it will be related to business performer's effort to maintain positive benefits and changes in organization [8]. However, on the other hand, the risks that will be happened should be considered as the result of changes [3, 23]. Outcome of IT will influence not only to organization changes, but also will change structure, task, and the employer. IT users will resistant it when IT implementation done [34, 38]. It means that organization behavior aspect or each employer has to be prepared for IT adoption process in a business. The satisfaction of IT users and IT usage are essential criteria in seeing IT implementation; it succeed or not [16, 17]. IT usage that improves and positive IT value become an important aspect that can influence E-readiness to use [16].

H4. There is positive influence of IT usage on IT value.

H5. There is positive influence of IT usage on E-readiness to use.

H6. There is positive influence of IT value on E-readiness to use.

The literature has been used to develop the conceptual framework for this study as shown in research model (See figure 1)

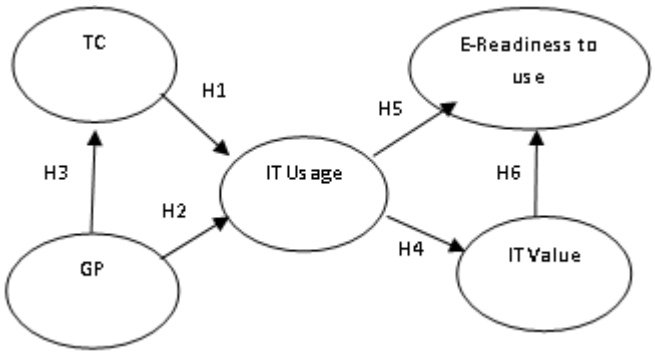

Figure 1. IT Adoption Process and E-Readiness to Use within Yogyakarta Indonesia Small Medium Entreprise

3. RESEARCH METHOD

Method in this research is survey by using *cross sectional*. Data used in this research is primary data. Technique in collecting primary data is questioner. Population in this research is all SME in Yogyakarta city, Indonesia. Sampling design of this research is proportional are random sampling in 14 sub districts. Sample in this research is expected to be 140 respondents with 10 respondents for each sub district, 108 respondents answered the items completely, so this meets the requirement for Partial Least Square (PLS) [18]. There are five variables which are used in this research; technology competence (TC), IT usage (ITu), government policies (GP), IT value (ITv), and E-readiness to use (E-ru). Validity and reliability test indicate that all item and variables are valid and reliable. The scale arrangement technique applied to asserting technology competence (TC), IT usage (ITu), and government policies (GP), IT

value (ITv), and E-readiness to use (E-ru) is Likert scale by scale 1 (strongly disagree) to 7 (strongly agree).

4. RESULTS AND DISCUSSION

4.1 Description of Respondents Characteristics

4.1.1 Sample Profile

As illustrated in Table 1, the majority of respondents were owner (73,1%), respondents who have business on food production is about (34.3%), 52 SME (48.1%) that its age less than 5 year, and 100% SME that has less than 50 employers.

Table 1. Profile of Respondents (N=108)

Respondents Characteristics	Quantity	Percentage
Position		
Owner	79	73,1
Employer	21	19,4
Children	2	1,9
Employee	3	2,8
Relative	2	1,9
Owner's parents	1	0,9
Business Type		
Food	37	34,3
Convection	17	15,7
Machine Shop	11	10,2
Handicraft	13	12,0
Others (stationery, household utensils, batik, metal)	30	27,8
Company's age		
< 5 year	52	48,1
5 – 10 year	32	29,6
11 – 15 year	4	3,7
15 – 20 year	5	4,6
> 20 year	15	13,9
Number of employers		
< 50 employers	108	100
51 – 100 employers	0	0
100 – 500 employers	0	0
Number of Respondent	108	100

To test the hyphoteses, the result of path coefficient could indicate the causal relationship between those variables being examined. See Table 2 for that relationship. Based on data analysis, all hypothesis proposed are **accepted**.

Technology competence believed by [21] can be used as variable influencing IT adoption.
Technology competence in this research includes IT infrastructure and skill/ knowledge in using IT (IT know how). Technology, hardware, and software, such as computer, network, database, communication platform, and software are form of IT infrastructure and this is commonly found in SME in Yogyakarta city. On the other hand, IT know how is someone's skill/knowledge in IT usage [11, 12]. Companies can develop unique capability and business value by using IT infrastructure. IT know how is useful to spread out IT effectively. Research done by [25] shows that IT know how and infrastructure support important roles that are significant in IT usage. In the same finding, [11, 12, 14] state that knowledge about IT, IT investment, and IT suitability can influence IT adoption. On the other hand, SME in Yogyakarta city still have obstacle in funding and employers' competence. Besides, SME in Yogyakarta city doesn't have any motivation to learn more about IT.
Not only in Yogyakarta, in developing country like Indonesia, is IT infrastructure not developed well. IT services market is not ready enough and limited knowledge about technology sometimes can impact to the lowness of IT usage and IT value. Some researches show that investment in IT infrastructure better more than 58% out of company's budget and the average percentage of IT development is 11% per year, even in China, IT infrastructure develop 28% [27]. Therefore, based on this explanation, efforts that should be taken is SME in Yogyakarta city have to develop technology competence by using IT infrastructure development and skill in using IT (IT know how), so it will influence IT usage.

Table 2. Path Coefficient (Standardized and Unstandardized Regression)

Path coefficient	t-statistic	Sign.	Note
H1 : TC (technology competence)→ IT usage (ITu)	4.434	0.000	Significant (H1 supported)
H_2 : GP (government policies)→ IT usage (ITu)	2.323	0.023	Significant (H2 supported)
H_3 : GP (government policies)→ TC (technology competence)	3.620	0.001	Significant (H3 supported)
H_4 : IT usage (ITu) → IT value (ITv)	8.711	0.000	Significant (H4 supported)
H_5 : IT usage (ITu) → E Readiness to use (E-ru)	2.433	0.017	Significant (H5 supported)
H_6 : IT value (ITv) → E Readiness to use (E-ru)	2.326	0.023	Significant (H6 supported)

4.2 Influence of Technology Competence on IT Usage

As stated before that IT includes basic activities that are management's task in developing, protecting, using technology, and controlling technology. It shows that SME in Yogyakarta city having technology competence is expected to develop, protect, use, and control IT to reach expected works. Result of this research strengthen the study of [25] showing that there are IT infrastructure, IT management, and government policies can impact IT usage. There is significant relationship among environmental factor, IT of companies factor, organization factor, and government policies that influence IT infrastructure and decision for IT management. Theory explains that technology resources consistently are an important factor to measure the success of IT adoption.

4.3 Influence of Government Policies on IT Usage and Technology Competence

As we know that government policies have influence to behavior of SME including IT decision, IT management, and IT usage. In China, companies always assimilate with government policies. It is because government policies influence company's IT management and configuration [25]. The result of this research is SME in Yogyakarta city also think that they do not get government support yet optimally. Something that is expected is practices in IT usage intensively and continuously to support operational and company development.

The result of this research support opinion of [9, 14, 37, 39, 40] stating that external environment including government policies, customer, and competitors can influence the process of IT adoption. [41] states that government policies will support SME in Indonesia to adopt IT. This condition will cause the high cost and decrease product competitiveness. These conditions will strengthen SME to be reluctant to use IT in the business development and operational. Therefore, government has to pay attention to that aspect by using local policies that can support the fluency and development of IT adoption process.

Then, this result shows that there is an effect of IT usage on IT competence. This result strengthens the previous research stating that environmental factors impact the adaption of innovation [26]. In a study of IT environment in e-commerce application, such as security, credibility of IT system, and problem of law are the main problems that should be the main attention of the government as the key to support IT and e-commerce usage. Government policies should be the factor that can influence IT adoption [43, 46]. Government policies have to support b businessman Indonesia in the process of IT adoption, especially SME. It will support SME to develop IT competence.

4.4 Influence of IT Usage on IT Value

As we know that IT provides support for company's operational efficiently and effectively [14, 22]. The result of this research strengthen the research of [31, 41] showing that IT can decrease the cost in business activity, especially SME since it can allocate the fund saved in IT usage for other businesses. This research also strengthens some theories explaining that IT can be useful to support business. [41]states that researcher who studies about SME, they are faced an alternative decision to choose IT usage into: (1) internal development, in which SME can use and develop IT to solve the problem of internal resources of the company, (2) external development, in which SME can use and develop IT software for external business, (3) commercial off the self (COTs) implementation in which SME can get COTs product (IT application software) with or without IT adaption, and (4) management application managed by vendor.

Based on context, IT value is an important issue in the comprehensive process designs [7] ; [4] because one of the main concepts in [7] approach is IT value. IT value is expected can maximize IT investment. As a whole, IT value is used to refer to IT impact to organizational activities, including operation efficiency renovation, superiority in competition, and the measurement of other works [1, 4, 19, 30, 45]. The significant investment in IT resources gives understanding of relation between IT investment and IT value continuously in which all these things are important for government's and company's businesses [20]. IT resources rarely give contribution continuously to works remedial, but influence indirectly to IT value use IT [7, 15]. Traditional approach refers to IT economics focusing in economization both production and business value. [7] state that IT can make business run more efficient, flexible, and innovative. Those four indicators can be used to create IT value for SME in Yogyakarta city. This is because IT value in this research is measured by using efficiency and effectiveness indicators to support works, IT flexibility to know changes, IT users' satisfaction in supporting activities and rate of IT importance in the competitive market.

4.5 Influence of IT Usage on E-readiness to Use

External environment requirements and difference of changes experienced by organization will influence readiness to change. [2] state that readiness model is always related to organization resistance and adoption activity. In the same line, [5] explain that research about organization readiness should be done before changes

happened in the organization, system and this structure implemented. Moreover, [1] states that organization's success in using IT in developing country is influenced more by organization's readiness and external environment's readiness to use IT. In IT usage, SME in Yogyakarta city faces some obstacles, such as fund and skill to use IT. It influences readiness of SME itself. As we know that organization's readiness is measured by organization's commitment, human resources, technology resources, and organization's management whereas readiness of external environment is measured by government readiness, market readiness, and readiness of industry to support it. All of them relate each other.

Readiness of SME in Yogyakarta city is not only about organization's motivation and skill, but also it should also strengthen the knowledge, skill, and action to change structure, organization or system as an important need for the success of organization changes implementation. This is because organization often changes organization, system, and structure when employer and employee have no readiness yet psychologically. Therefore, organization should manage those changes effectively in order to make all employer and employee have readiness to change. Related to E- readiness to use , it has relation with efforts of business performers to maintain the positive benefits and changes in organization. Even though, on the other hand, it is needed to consider the risks of that change. Outcome of IT impact not only in organization changes, but it can also change structure, task, and each employer. IT users will be resistant so often when IT implementation done [34, 38]. It means that behavior aspect of organization or employer should be prepared for the IT adoption process in a business. Satisfaction of IT users and IT usage are important criteria to measure success when IT will be implemented as important aspect that can influence E-readiness to use [16].

4.6 Influence of IT Value on E-readiness to Use

It is stated that IT value is used to refer to IT effect to organizational activities, including operation efficiency remedial, competitiveness, and other work measurements [45]. Result of this research proves that IT value believed by SME in Yogyakarta city has significant positive influence to E-readiness to use.

It means that SME in Yogyakarta city considers that IT value is useful for E-readiness to use even though they also have so many obstacles in buying sets of equipment, operational cost, and in caring IT. It shows that SME still has limitation in fund to develop IT usage because they allocate fund to other equipment or production cost of their business. It means that the priority of SME more to those aspects, so they think they are not ready enough to use IT. It strengthens an opinion saying that IT value is an important positive value that can influence e-readiness to use [16].

5. CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

- Technology competence and government policies have positive and significant influences on IT usage.
- Government policies have positive and significant influence on technology competence.
- IT usage has positive and significant influence on IT value and E-readiness to use.
- IT value has positively and significant influence on technology competence.

5.2 Suggestions

- SME should develop technology competence. Technology competence can be developed by developing IT infrastructure and skill/knowledge in using IT (IT Know How), so it can influence IT usage.
- Government policies have negative impact to business and they are inconsistent each other. The effect is SME are unwilling to use IT to run and develop their business. Therefore, government should pay attention to this aspect by making policies that support the fluency and development of process of IT adoption.

- To support technology competence, government should has efforts to manage and promote company using IT by providing fund for company that adopt IT, support online tax payment and information system, maintain rules or law that can influence IT usage and security of the company that uses IT, a34nd establish standard of IT software for SME.
- Develop the efforts of business performer to maintain positive benefits and changes in organization, especially benefit related to e-readiness to use. This is because Outcome of IT influences not only to organization changes, but also changes in structure, duties, and employers. IT users are resistant when IT is implemented.

5.3 Research Limitations

- Sample or respondents in this research are SME in Yogyakarta city that are picked up purposively,

so it to be worried that sample does not present all SME in Yogyakarta city yet.

- This research does not use in-depth interview comprehensively, so it does not reveal in-dept. problem and information, especially problem related to variable.
- This research uses perceptual measure that needs stimuli process of respondents to be selected, organized, and interpreted, whereas respondents' perception in the same stimuli can be interpreted differently. This implication can cause perception of each respondent is subjective since perception of someone can be different to others'.

REFERENCES

[1] A. Molla, T*he Impact of e Readiness on e Commerce Success in developing Countries: Firm Level Evidence*, working paper series, Institute for Development Policy and Management, p. 1-15, 2004.

[2] A.A. Armenakis and S.G. Harris, Readiness for Organizational Change: The Systematic Development of a Scale, *The Journal of Apllied Behavioral Science*, 43, 232, 2007.

[3] A.A. Armenakis, S.G. Harris and H.S. Feild, Making change permanent: a model for institutionalizing change interventions, *Research in Organizational Development and Change*, Stamford, 97-128, 1999.

[4] A.J.G. Silvius, Does ROI Matter? Insight into the True Business Valut of IT, *The electronic Journal Information System Evaluation*, Vol. 9 (2), p. 93-104, 2006.

[5] Armenakis, A.A., S.G. Harris, S.G and K.W. Mossholder, Creating readiness for change, *Human Relation*, 46, 681-703, 1993.

[6] B.M. Sadowski, C. Maitland, C and J.v. Dongen, Strategic Use of the Internet By Small and Medium sized company; An Exploratory Study, *Information Economic and Policy*, 14 (1), p. 75-93. 2002.

[7] C. Soh and M.L. Markus, How IT creates business value: A process theory synthesis. In J. I. DeGross, G. A., C. Beath, R. Hoyer, & C. Kemerer (Eds.), *Proceedings of the 16th International Conference on Information Systems, p.29-41*, 1995.

[8] C.E. Cunningham, C.A. Woodward, H.S. Shannon, J. Machintos, B. Lendrum, and D. Risenblon, Readiness for organizational change: A longitudinal study of workplace, psychology and behavioral correlates, *Journal of Occupational and Organizational Psychology*, 75, 377-392, 2002.

[9] D. Fink, Guidelines for The Successful Adoption of Information Technology in Small and Medium Enterprises," *International Journal of Information Management* (18:4), pp 243-253, 1998.

[10] D.Truong, T.T.S. Rao and S. Senecal, The Correlation between e readiness and electronic marketplace usage: An empirical study from the buyer perspective, *Collaborative Electronic Commerce Technology and Research Conference*, Santiago, Chile, 2004.

[11] F. Bergeron and L. Raymon, The Contribution of IT to the Bottom Line: A Contingency Perspective of Strategic Dimension; *Proceding of the 16th International Conference on* Information System, Amsterdam, 167-181, 1995.

[12] F. Bergeron, L. Raymond and Rivard, S, Conceptualizing and analyzing fit in information system research: an empirical comparison of perspectives, *Cahier du Gresi no. 99-03, September, ISSN 0832-7203*, 1999.

[13] F. Wahid and N. Indarti, Rendah, adopsi TI UKM di Indonesia. Benarkah?, Majalah Pusat Informasi Perkoperasian. Dewan Koperasi Indonesia. Edisi 281/Januari/Th. XXIV/2007. Available on: http://www.majalahpip.com/majalah/treeBuilder.php, 2007.

[14] H. Utomo and M. Dodgson, "Contributing Factors to The Diffusion of IT Within Small and Medium-sized Firms in Indonesia.," *Journal of Global Information Technology Management* (4:2), pp 22-37, 2001.

[15] H.C. Lucas, The Business Value of Information Technology: A Historical Perspective and Thoughts for Future Research." In R. D. Banker, R. J. Kauffman and M. A. Mahmood (Editors), *Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage*, Harrisburg, Pennsylvania: Idea Group Publishing, pp. 359- 374, 1993.

[16] J. Jones and Griffith, The impact of Organizational Culture and Reshaping Capabilities on Change Implementation Success: The Mediating Role of Readiness for Change, *Journal of Management Studies*, 42:2, March, p. 361-386, 2005.

[17] J.Pinto, *Succesful Information System Implementation: The Human Side*, Upper Darby, Project Management Institute, 1994.

[18] J.F. Hair, R.E. Anderson, R.L. Tathan and W.C Black, *Multivariate Data Analysis*, Fourth Edition, Prentice Hall, New Jersey, 1995.

[19] K. Zhu and S. Xu, The value of information technology in e-business environments: The missing links in the renewed IT value debate. In *Proceedings of the Twenty-Fifth International Conference on Information Systems*, 2004.

[20] K. Zhu, K.L. Kraemer and S. Xu, A cross country study of electronic business adoption using the technology-organization-environment framework. In *Proceedings of the Twenty-Third International Conference on Information Systems, p. 337-348*, 2002.

[21] K. Zhu, The complementarity of information technology infrastructure and e-commerce capability: A resource-based assessment of their business value. *Journal of Management Information Systems, 21*, 167-202, 2004.

[22] K.C. Laudon and J.P. Laudon, *Management Information System. Organization and Technology In The Networked Entreprise*, 6th edition, Prentice Hall, Upper Sadle River, 2000.

[23] K.Y. Kwahk, ERP Acceptance: Organizational Change Perspective, *Hawai International Conference on System Science*, p. 1-10, 2006.

[24] Kompas, Banyak Aturan Tidak Mendukung Dunia Usaha, Sabtu, 18 April, halaman B, 2009.

[25] L. Cui, C. Zhang, C. Zhang, and L. Huang, Exploring IT Adoption Process in Shanghai Firms: An Empirical Study, *Journal of Global Information Management*, Vol. 16 (1), April, p. 1-17, 2008.

[26] L.G. Tornatzky and M. Fleischer, *The processes of technological innovation.* Lexington, MA: Lexington Books, 1990.

[27] M. Broadbent and P. Weill, Management by Maxim: How business and IT managers can create IT infrastructures. *Sloan Management Review, 38*, 77-92, 1997.

[28] M. Hammer and J. Champy. *Reengineering the corporation.* New York: Harper Collins Publishers, 1993.

[29] M. Levy and P. Powell, *Strategies for Growth in SMEs; The Role of Information and Information System*, Elesevier Butterworth and Heinemann, Amsterdam, 2005.

[30] M.A. Mahmood and G.J. Mann "Measuring the Impact of Information Technology on Organizational Strategic Performance: A Key Ratios Approach." *Proceedings of the International Conference on Systems Science*, pp. 254-258, 1991.

[31] M.R. Andrew and R. Papp, The Application of IT for Competitive Advantage at Keane Inc, *Organizational Achievement and Failure i Information Technology Management*, IDEA Group Publishing, Hershey, p. 214-232, 2000.

[32] M.S. Gutter and T. Saleem, Financial Vulnerability of Small Business Owner, *Financial Services Review*, 14 (2), p. 133-147, 2005.

[33] Maryanto, Web" Dukung Pemasaran UKM, Pengusaha Diharapkan Miliki "E-mail" Pribadi, http://umkm.jogja.go.id/2008.

[34] N. Bjorn-Anderson, Are human factors human?, *The computer Journal*, 31, p. 386-90, 1988.

[35] N. Melville, K. Kraemer and V. Gurbaxani, Review: Information technology and organizational performance: An integrative model of IT business, value. *MIS Quarterly, 28*, 283-322, 2004.

[36] N.B. Duncan, Capturing flexibility of information technology infrastructure: A study of resource characteristics and their measure. *Journal of Management Information Systems, 12*, 37-57, 1995.

[37] P.B. Cragg and M. King, M, "Small-firm Computing: Motivators and Inhibitors," *MIS Quarterly* (17:1), March, pp 47-59, 1993.

[38] R. Hirscheim and M. Newman, Validating the competing values model as a representation of organizational cultures, *The International Journal of Organizational Analysis*, 6, 231-50, 1988.

[39] R.B. Drew, Strategic uses of E Commerce by SMEs in The East of England, *European Management Journal*, 21 (1), p. 79-88, 2003

[40] S. Dutta and P. Evrard, Information Technology and Organisation within European Small Enterprises," *European Management Journal* (17:3),, pp 239-251, 1999.

[41] S. Sarosa, The Information Technology Adoption Process within Indonesian Small and Medium Enterprises, University of Technology Sydney, Faculty of Information Technology, Thesis, p.1-236, 2007.

[42] S. Wals, and J.D. Linton, The measurement of Technical Competencies, *The Journal of High technology Management Research*, 13 (1), 63-86, 2002.

[43] S. Xu, K. Zhu and J. Gibbs, Global technology, local adoption: A cross-country investigation of Internet adoption by companies in the United States and China. *Electronic Markets, 14*, 13-24, 2004.

[44] W.H. DeLone and E.R. McLean, Information system success: The quest for the dependant variable. *Information Systems Research, 3*, 60-95, 1992.

[45] W.H. DeLone and E.R. McLean, The DeLone and McLean model of information system success: A ten-year update. *Journal of Management Information Systems, 19*, 9-30, 2003.

[46] Z. Tan, Z and W. Ouyang, Diffusion and impacts of the Internet and e-commerce in China. *Electronic Markets, 14*, 25-35, 2004.

[47] Zulkieflimansyah and H. Muhammad, Refleksi dinamika Inovasi Teknologi UKM di Indonesia: Studi Kasus Industri Logam dan Permesinan, *Usahawan*, no. 07/XXXIII, Agustus, hal. 11- 18, 2003.