

# DRIVING FACTORS OF INFORMATION TECHNOLOGY GOVERNANCE IN INDONESIAN BANKING SECTOR

## ABSTRAK

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*IT governance becomes the primary and integral part of successful implementation of corporate governance overall. IT governance must ensure the efficient and effective measure to increase the company's business process. This study used the primary data with questionnaires. From 122 commercial banks in Indonesia and using purposive sampling that meets the criteria and completeness of the data are 33 banks as sample. Using multiple regression, the result of this study are: corporate performance appraisal and involvement of top management in IT were significant influenced the effectiveness of IT governance but corporate control was not significant. Banking sector as influenced by developing of IT should have commitment to have effectiveness of IT Governance because it can increase your security of data and transaction, trust from your customer and performance of daily activities also.*

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## INTRODUCTION

Every organization has to do communication's audit regularly in order to know how effective the communication's programs, activities, performance or policies that they have done. Communication audit uses integrated, planned and systematic method of researches, objective data and standardized bench marking.

Various definitions of IT governance can be found in many literatures. Some of them said that IT governance is another designation of ICT governance. IT governance can be defined as the organizational capacity exercised by the board, executive management, and IT management to control the formulation and implementation of IT strategies and ensure the successful fusion of business and information technology (Grembergen *et al.*, 2004; Trites, 2004). According to the IT Governance Institute (2011), IT governance is defined as a structure of relationships and processes to control the enterprise in order to achieve the enterprise's goals by adding value while balancing risk versus return over IT and its processes.

Within the framework of corporate governance, IT governance becomes the primary and integral part of successful implementation of corporate governance overall. IT governance ensures the efficient and effective measure to increase the company's business process. Effective IT governance is crucial for an organization to achieve its corporate performance goals (Ali and Green, 2012).

IT governance is the responsibility of executives and the board of directors, and consists of the leadership, organizational structures and processes that ensure that the enterprise's IT sustains and extends the organization's strategies and objectives (Moeller, 2008). To implement IT governance effectively, a set of IT governance mechanisms is required (e.g., IT steering committee, IT organizational structure) that encourages behaviors congruent with the organization's mission, strategy, values, norms and culture (Vaswani, 2003; Weill, 2004).

Application of IT in a company can do well if it is supported by an IT governance of starting the scope of the Control Objectives for Information and Related Technology (COBIT) IT governance with a combination of broad principles that have been implanted and is known as the reference model (such as

COSO), and aligned IT balanced scorecard is the complete package of products consists of COBIT including: executive summary, framework, control objectives, audit guidelines, the implementation tool set, and management guidelines, which are useful or needed by the auditors, IT users, and the managers. Internal controls include policies, organizational structure, practices and procedures are the responsibility of corporate management (Wulandari, 2010). In other words, COBIT is an IT governance control framework as well as a maturity model and its purpose is to ensure that IT resources are aligned with the organizational vision and strategies.

Organizational or the company that influenced by developments in information technology are the company which includes in banking sector. The progress of the banking system is strongly influenced by developments in information technology (Lee and Zahra, 2011). Along with the competition that occurred in the banking world, banks are increasingly improving service quality to customers. Real time operational inter-bank also has a claim to the world of banking, as this became one of the materials for a competing service in marketing banking products.

IT governance is a subset discipline of Corporate Governance focused on information and IT assets (Weill and Ross, 2004). The board, internal customers, and departments such as finance, must have the necessary input into the decision making process. Management need to understand the overall architecture of its company's IT applications portfolio. The board must ensure that management knows what information resources are out there, what condition they are in, and what role they play in generating revenue (Nolan and McFarlan, 2005).

IT governance specifies the decision rights and accountability framework to encourage desirable behavior in the use of IT (Weill and Ross, 2004). IT governance also includes the foundational mechanisms in the form of the leadership, and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategies and objectives (IT Governance Institute, 2011). IT governance provides a structure that connects the IT process, IT resources, and information for strategy and organizational goals. IT governance is also a

process and structure of mutual related as well as directing and controlling the organization in achieving organizational goals through value-added and the balance between risk and benefit from information technology and processes, then ensures the efficient and effective appraisal towards improving the organization's business process through connecting IT processes, IT resources, and information to the direction and strategy of the organization. From the integration is expected to ensure that organizations information organization and other related technologies really become support for the attainment of organizational goals through planning and IT organization, development, and implementation, deliver and support, and to monitor and also evaluate IT performance. By implementing IT governance, business process will be more transparent, where responsibility and accountability of each function and individuals are also increasingly clear.

Performance appraisal is concerned with determining whether IT systems have achieved the goals set for them by the Board and senior management. There has also been considerable research on this issue focusing primarily on the development and testing of the IT balanced scorecard and ITG appraisal frameworks.

Appraisal plays a crucial role in translating business strategy into results. A number of studies such as Grembergen and Haes (2005), ITGI (2011) and Chan and Ho (2000) have developed a cascade of scorecards that can be used to measure IT system processes. Balanced scorecards translate strategy into action to achieve goals with a performance measurement system that goes beyond conventional accounting, measuring those relationships and knowledge-based assets necessary to compete in the information age: *customer focus, process efficiency and the ability to learn and grow.*

IT not only contributes information to the business scorecards and tools to the different dimensions being measured, but also—because of the criticality of IT itself—needs its own scorecard. Defining clear goals and good measures that unequivocally reflect the business impact of the IT goals is a challenge and needs to be resolved in co-operation among the different governance layers within the enterprise. Use of an IT balanced scorecard (IT BSC) is one of the most effective means to aid the board and management to achieve

IT and business alignment. The objectives are to establish a vehicle for management reporting to the board, to foster consensus among key stakeholders about IT's strategic aims, to demonstrate the effectiveness and added value of IT and to communicate about IT's performance, risks and capabilities (ITGI, 2011).

### **H1: Does corporate performance appraisal influence the effectiveness in using IT governance?**

IT-related capability of top management commitment suggests that successful use of IT requires top executives to act as business visionaries. Top management must support and articulate the need for IT and communicate its functionality within the context of the organization's strategy, structure and systems. Top management commitment for IT-related initiatives enhances IT success by making IT resources available, supporting and guiding the IS functions. This commitment also helps integrate IT with business strategies and processes, and ensuring continuity in IT investments over time. The lack of such support may see IS resources having little effect on performance, even when substantial investments are made to acquire or develop the IS resources.

The effectiveness of the IT steering committee and the extent of its laterality will provide top management with the assurance and an embrative consensus that IT initiatives are beneficial to the organization as whole. The IT steering committee has the potential to galvanize management commitment, from which IT management would benefit. The key top management role of supporting IS planning also benefits from a proactive IT steering committee. Effective IT management requires a coordinated effort in planning, organizing, controlling, and directing the deployment of IT use within firms. The role of the top management in promoting this coordination is crucial. The presence of IT steering committee driven IT governance initiatives acts as an important catalyst in sophisticating this IT management role. The IT steering committee driven IT governance initiatives will secure top management support for various IT-related initiatives.

### **H2: Does involvement of top management in IT influence the effectiveness in using IT governance?**

This trend towards an ethic of responsibility or culture of compliance, in organizations is part of what some have described as New Governance in which strict standards are replaced by boundaries that allow local experimentation to occur. Implicit in most governance legislation and regulation is the need for prudent governance of organizations IT functions. Much has been written about the importance of ethics in establishing good corporate governance (Coffin, 2003; Farrar, 2002; and Verschoor, 2004).

Effective ethical compliance management has several advantages. First, as employees ethical and legal awareness increase, the employees tend to ask questions correctly and, in the end, do "the right thing" when facing dilemmas. Second, it influences employees to be willing to report violations to management, thus contributing to process transparency in the organization. Finally, it

increases employees' commitment, because a culture of ethical compliance creates value congruence that generates a sense of community and organizational commitment among employees.

A recent study by Córdoba (2007) suggested that stakeholder-centric perspectives still dominate research into ethics and information systems, and that ethical behavior is largely a matter of reflective practice on the part of individual decision-makers. This perspective is similar to that advocated by Filatotchev (2007), which criticizes the disciplines focus on agency perspectives. We could find no study, however, that directly addressed the notion of an ethic of compliance driving IT governance mechanisms, largely, we feel, because the complexity information systems does not lend itself well to close scrutiny.

### **H3: Does culture of compliance influence the effectiveness in using IT governance?**

IT-related capability of top management commitment suggests that successful use of IT requires top executives to act as business visionaries. Top management must support and articulate the need for IT and communicate its functionality within the context of the organization's strategy, structure and systems. Top management commitment for IT-related initiatives enhances IT success by making IT resources available, supporting and guiding the IS functions. This commitment also helps integrate IT with business strategies and processes, and ensuring continuity in IT investments over time. The lack of such support may see IS resources having little effect on performance, even when substantial investments are made to acquire or develop the IS resources (Wulandari, 2010).

The effectiveness of the IT steering committee and the extent of its laterality will provide top management with the assurance and an embrative consensus that IT initiatives are beneficial to the organization as whole. The IT steering committee has the potential to galvanize management commitment, from which IT management would benefit (Karimi et al., 2000). The key top management role of supporting IS planning also benefits from a proactive IT steering committee.

Effective IT management requires a coordinated effort in planning, organizing, controlling, and directing the deployment of IT use within firms (Karimi et al., 2000). The role of the top management in promoting this coordination is crucial. The presence of IT steering committee driven IT governance initiatives acts as an important catalyst in sophisticating this IT management role. The IT steering committee driven IT governance initiatives will secure top management support for various IT-related initiatives. The IT steering committee plays an important role in establishing an IT infrastructure, whose flexibility is a product of the committees' cooperative initiatives.

### **H4: Does IT steering committee influence the effectiveness in using IT governance?**

Ali and Green (2005) in their research in ISACA Australia with 176 members of ISACA Australia as respondents shows there are any significant and positive relationship between the overall level of effective IT governance and the following four IT governance

mechanisms: an IT strategy committee, the involvement of senior management in IT, the existence of ethics/ culture of compliance in IT, and corporate performance appraisal.

Wulandari (2010) declare there are any significant positive relationship between effectiveness of IT governance and the following two IT governance mechanisms: the involvement of top management in IT and IT risk management, and found two negative relationships which are performance appraisal and culture of compliance.

Several earlier IS studies provide further empirical evidence of the importance of an IT steering committee. For example, a study by Karimi et al. (2000) found that an IT steering committee had a positive impact on the sophistication of IT management, and it was shown to have made improvements to IS project portfolios. A more recent study by Vaswani (2003), using 80 auditors in Australia, revealed that an IT steering committee has a positive correlation with the level of effectiveness of overall IT governance.

According to Prasad, et al. (2010) declare their result firms' effectiveness of IT steering committee driven IT governance initiative positively relates to the level of their IT-related capabilities. Prasad, et al. also found positive relationships between IT-related capabilities and internal process-level performance. Furthermore, effectiveness of IT steering committee can improving in internal process-level performance positively relates to improvement in customer service and firm-level performance.

## **RESEARCH METHOD**

Primary data were used in this research to maximize the results. Measuring instrument used was a questionnaire. The variables in this research consists of 1 (one) dependent variable (Y) and 4 (four) independent variables (X). The following variables were adopted from prior studies or newly developed for the purpose of this study. Effectiveness of IT governance (EITG) as a dependent variable was measured using four items that were validated by Vaswani (2003), Ali and Green (2005) and wulandari (2010).

The factors examined in relation to the effectiveness of IT governance based on IT Governance Institute (ITGI) and also as a independent variables are corporate performance appraisal system, involvement of top management in IT, culture of compliance and IT steering committee. Corporate Performance appraisal system (CPA) was measured using three items that were validated by Vaswani (2003). All three items or indicator were originally develop and validated based on a study conducted by Chan and Ho (2000). Involvement of Top Management in IT (ITM), to measure this variable, this study used three items that were validated by Vaswani (2003). The first two items or indicators were originally develop and validated based on a study conducted by Jarvenpaa and Ives (1991). Culture of Compliance (CULTC), to measure this variable, three items or indicator from Trevino et al. (1999) were adapted to the context of IT governance and the last, IT Steering Committee (ITSTEER) was measured using three items that were validated by Vaswani (2003). All three items or indicator were originally developed and validated based on a study conducted by Karimi et al. (2000).



Moreover, researchers used the primary data in order to maximize the results. Measuring instrument used was a questionnaires which are spread the questionnaire to all level of management. The questionnaire is built from a model made by Vaswani (2003) who later developed again by Syaiful Ali and Peter Green (2005) and Pandam Wulandari (2010).

Researchers using non-probability sampling is purposive sampling. Purposive sampling is a technique to determine the sample with a certain consideration. From 122 commercial banks in Indonesia, the population that meets the criteria and completeness of the data is 33 banks.

## RESULT AND DISCUSSION

This research used SPSS 18.0 software to obtain accurate results. Hypothesis test performed by using multiple linear regressions to test the influence of corporate performance appraisal (CPA), involvement of top management in IT (ITM), corporate control (CTRL) to the effective use of IT in corporate governance. Table 1 presents the mean and standard deviation for variables included in the multiple regression analysis.

**Table 1.**  
Descriptive Statistics

Variable	Average	Standard Deviation
EITG	3.256	0.827
CPA	3.040	0.478
ITM	3.502	0.784
CULTC	2.813	0.794
ITSTEER	2.959	0.611

Source: Primary data processed

Table 2 presents the result of multiple regression. Table 2 shows the adjusted R square value of 0.918 means that 91.8% of the dependent variable effective use of IT governance can be explained by the independent variable measurement of IT risk management and internal control. Durbin Watson value also declares that there is no autocorrelation between the variables. The formula of Durbin Watson for this study is  $dU < DW < (4-dU)$  or  $1.802 < 1.946 < 2.198$ . The F test show that two variables as together can support the effectiveness of IT governance (sig. value  $0.000 < 0.05$ ).

**Table 2.**  
Coefficient Determinants

Model	R	R Square	Adjusted R Square	F-Statistics	Sig. F	Durbin-Watson
1	0.979	0.959	0.918	2.611	0.016	1.946

Source: Primary data processed

**Table 3.**  
IT Governance Mechanism on the Effectiveness of IT Governance in Partially

Variable	Coef. Regression	Std. Error	Beta	t	Sig. t
Constant	1.352	0.669		2.022	0.047
CPA	0.281	0.126	0.265	2.224	0.030
ITM	0.256	0.125	0.264	2.044	0.045
CULTC	0.227	0.138	0.215	1.643	0.105
ITSTEER	0.438	0.191	0.411	2.288	0.025

Source: Primary data processed

The test for result of multiple regression according to the hypothesis of this study used t-test. The result for partial hypothesis testing shows in table 3 as follows.

The result for partial hypothesis testing show that corporate performance appraisal has significance influence to effectiveness of IT governance with the significance t value 0.030 smaller than  $\alpha$  value 0.050. This result consistent with research conducted by Vaswani (2003) which states that the performance appraisal affects the effectiveness of the use of IT governance. It is indicate that IT systems in banking sector can deliver the strategy, vision and mission of the company so the company can achieve the goals. Therefore, it is not consistent with research conducted by Ali and Green (2005), Ali and Green (2006), Ali and Green (2009), and Ali, Green and Parent (2009).

Involvement of top management in IT has significance influence effectiveness of IT governance in banking sector. Involvement of top management in IT has significance t value 0.045. Significance t value is smaller than  $\alpha$  value 0.050. A lack of top management involvement has been shown to lead to unfavorable outcomes in IS planning, and even failure to plan for IS (Cerpa and Verner, 1998; Nath, 1989; Sabherwal, 1999; and Salmela et al., 2000 quoted by Ali and Green, 2005). According to Trautman and Price (2011) to be successful, IT governance requires enterprise commitment at the very top on an effective IT governance framework. This result consistent with research conducted by Vaswani (2003), Ali and Green (2005), Hoffman, et al. (2007), Ali and Green (2009), Wulandari (2010), Ali, Green and Parent (2009), Ali, Green and Robb (2011), and Ali, Green and Robb (2012).

Variable culture of compliance has the significance t value 0.105 bigger than  $\alpha$  value 0.050. In effectiveness of IT governance, culture of compliance has not significance influence. This result consistent with Wulandari (2010) which state there is no significant effect on the effective use of IT governance. Therefore this result not consistent with research conducted Vaswani (2003), Ali and Green (2005), Ali and Green (2009), and Ali, Green and Parent (2009). Illustrate that could be given because of the slow evolution in the management if there are new rules of regulation (Wulandari, 2010).

For the last variable is IT steering committee also have the same result with the

previous three variables – corporate performance appraisal and involvement of top management in IT. IT steering committee has a significance t value 0.025 and it is smaller than  $\alpha$  value 0.050, can be concluded that IT steering committee influence the effective use of IT governance in banking sector. IT steering committee also has t value 2.288.

This result consistent with research conducted by Steiner (1979), Doll (1985), and Ragunathan and Ragunathan (1989) quoted by Ali and Green (2006) have empirically supported the benefits of the existence of an IT steering committee in information system planning and management. Several earlier studies provide further empirical evidence of the importance of an IT steering committee. Those are, a study by Karimi et al. (2000) found that an IT steering committee had a positive impact on the sophistication of IT management, and it was shown to have made improvements to information system project portfolios (McKeen and Guimaraes, 1985 quoted by Ali and Green, 2006). A more recent study by Vaswani (2003), using 80 auditors in Australia, revealed that an IT steering committee has a positive correlation with the level of effectiveness of overall IT governance. Beside those researchers this result consistent with Ali and Green (2006) and Ali and Green (2009).

Effectiveness of IT governance is the process of collecting and evaluating evidence to determine whether a computer system safeguards assets, maintains data integrity, achieves organizational goals effectively, and consumes resources efficiently (Tunggal, 2000). From the above studies shows that IT governance mechanisms affect the effective use of IT governance at the top and middle level in the organizational structure on banking sector. With the support of top management, middle level in the organization feel more obliged to master a system that has been developed.

Although, effectiveness of IT governance has advantage such as IT governance can reduce from audit risk especially control risk and detection risk. Control risk is the risk that comes from the possibility of error that comes from the inability internal system to find and avoid mistakes early (Tunggal, 2000). When the companies have effective use in IT governance so it can reduces possibility of error in record transaction, in financial reporting and other important information. Beside that if companies effective in IT governance it indicates there are integrated and sophisticated system so all the transaction can be processed automatically. Compared to manual system that use manual records for every transaction it more advantage and can reduce about control risk.

According to explanation in control risk, if there are no error in record transaction, in transaction and other important information because the effective use in IT governance so it also can reduce the possibility of any detection risk – material errors. If companies have good internal systems and control it should possible that auditor not found material errors or minimal reduce it into zero.

Moreover, if there is any advantage, so there is any disadvantages to implemented effectiveness of IT governance. The disadvantages are the cost is high to make effectiveness like cost for the system, space

or room, hardware, and software, and also needing the specialist and professional employee in IT like programmer, operator, and systems analyst. Therefore to delivery strategy, vision and mission of the companies, integrated systems and of course reach the goals of the companies.

In Indonesia, human resources in IT dominated by well-grounded foreign employee, particularly in banking sector, so it affects the quality of IT management in a company (Wulandari 2010). In general, distinguishing between developed and developing countries not only from economic sector therefore also the ability of science and technology. Information technology becomes one of key point for developing countries if the countries want to get ahead in global competition (Wulandari, 2010). In this globalization era, control information is not enough merely to overbearing therefore speed and accuracy required for the development of science and technology of which very fast and unlimited, one way to build appropriate mechanisms in IT governance.

## CONCLUSION AND SUGGESTION

The results of this study only represent the three variables into the mechanisms of IT governance because of constraints in the development of questionnaire indicators. This research can be summarized as follows: 1) The partially test results show that corporate performance appraisal has significance influence to effectiveness of IT governance. It is indicate that companies can achieve the goals trough the strategy, vision and mission which is delivered; 2) The partially test results show that involvement of top management in IT has significance influence to effectiveness of IT governance. As known, IT governance requires commitment at the very top management on an effective in IT governance. If top management not commit it can make terrible in IT system and the record of transaction will errors also; and 3) The partially test result show that corporate control which in this study use internal control as an indicator has not significance influence to effectiveness of IT governance. It can illustrate because security for data and information has freely access for all employees. In this case, security for data becomes one of disadvantages of effective use n IT governance and it is indicates management less concern about the security data and internal control.

For the industry that influenced by developing information technology, banking sector, to have effectiveness of IT governance is crucial part for their daily live and performance. Many part of bank are using IT to driving it such as ATM, m-banking, and e-banking. If they have not the governance in IT, it would be decrease they performance and of course it can decrease of customer also.

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