

AUDITORS' PERCEPTION TOWARDS INFORMATION TECHNOLOGY

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ABSTRACT

The technological and economic development in the latest centuries result in the significant development of Information Technology and the changes made in the manner of executing transactions have important repercussions on the manner of executing audit. Utilizing the traditional approach for internal controls for Information Technology might be insufficient due to the fact that in Information Technology environment almost all evidence transactions are digital. To provide audit service, the auditor needs to understand the controls from the point the electronic transactions taking place to how the information rolls up to the companies financial statements. The purpose of this paper is to investigate perception and knowledge of auditors towards Information Technology audit service. The respondent of the study consists of 64 auditors working at Accounting Firms in Bandung. The results of the study presenting auditors' perception towards Information Technology audit were positive but they were lack of Information Technology audit understanding and knowledge.

Keywords: information technology, audit, auditor.

1. Introductions

It has become impossible for today's enterprises of any size and in any market sector to exist without computers to assist with their fundamental business operations (Cascarino, 2007). Most entities, including small, family-owned businesses, rely IT on recording and processing business transactions. As a result of explosive advancements in IT, even relatively small businesses use personal computers with commercial accounting software for their accounting (Arens. 2008).

The development of IT changes various living fields instantly. With those fields, we can get profit which cannot be gained by using traditional methods. The changes occur with many processes. Plans and wishes to gain more benefit urge people to follow and apply IT in their fields that they learn. This is a challenge for audit service apart from audit of financial report.

As the number of companies using on-line facility in their commerce in Indonesia has improved, the needs of the companies of audit service of public accountant institutions spring out. The given audit service is called IT audit service. However, there are many Accounting Firms auditors, especially those living in municipality of Bandung, having not yet made use of this kind of audit assignment.

In accounting profession in Indonesia, the advance of IT has caused the consideration of accounting profession shift, replaced by computers. This leads pessimism to the professionals and professional candidates unready to deal with challenges and understanding of professional world that they take care of. However, harmonic relationship happens between the advance of IT and accountant profession although the accountant must deal with stronger challenges. Apart from the readiness of human resources, the advance of IT demands the auditors to follow the advances whether they want it or not. As known transaction process nowadays can be carried out by computers. Auditors are concerned with accounting report which will be audited. They absolutely cannot carry out the assignment with the same methods when accounting

transaction is processed manually. In addition to giving very great benefit, the advance of IT also conceives spaces enabling frauds of accounting data via IT.

Abroad Accounting Firms offering IT audit service is a common phenomenon (AICPA Website, 2005. <http://www.aicpa.org>). In Indonesia, IT audit service has been not yet known widely. Most of small scales of Accounting Firms like in Bandung have difficulties in understanding IT appropriately. It's the fact that business competition becomes stricter in economic globalization, Accounting Firms having many kinds of competitive superiority will be able to win the competition. Hence, further research is needed so as to find out some causal factors to the unfamiliarity of this IT audit service. To find out the main cause of it, it is important to comprehend the perception and the comprehension of the auditors towards IT audit service especially Accounting Firms classified as the small one in the region of Bandung city.

The aim of this research is to obtain empirical proofs of auditors' perception towards IT audit service.

2. Prior Research and Hypothesis

2.1 Information Technology (IT)

Information technology refers to all forms of technology applied to processing, storing, and transmitting information in electronic forms (Lucas, Jr. 2000). Technology is considered as an instrument used by an individual to solve his assignment. In research context of accounting system, technology is defined as system computer (hardware, software and data) and service supporting the users (training, help lines, etc) ,provided to help users complete their tasks (Goodhue & Thompson, 1995). Information system with computer basis can operate its function properly and quickly and the data processing will be cheaper compared to manual system (Wilkinson & Cerullo, 1997).

It bases on electronic process and data transmission including texts. This encompasses various activities including goods and services trade electronically, digital data sending on-line, financial transfer electronically, stock trade electronically, bills of lading, commercial auction, design and build cooperation, on-line procurement, public procurement, direct consumer marketing and post sale service. Products (consumption products and medical utilities) and services (information service, financial services, and law services), traditional activities (health, education), and new activities (mall virtual) are also parts of IT (Thomas, 2000).

Isnaeni Achdiat (2000) proposes that IT is that: The use of electronic transmission mediums (telecommunications) to engage in the exchange, including buying and selling, of products and services requiring transportation, either physically or digitally, from location to location.

2.2 Information Technology (IT) Audit

Accounting Firms in general are committed two kinds of services for their clients: attestation service and consultation. Attestation service springs up because: (1) There are parties requiring information, (2) Information providers have different interest in the users, (3) The information can be audited, and (4) Analysis of finance/benefit result in attestation conclusion reasonable to be carried out. The demand of attestation service in information era is inclining so that business opportunity for auditors is also greater.

Accounting firms developed procedures to conduct an audit of information system because so many of their typical clients' transactions are processed by computer. The auditors are most concerned about systems effecting financial statements, the balance sheet, and income statement (Lucas, Jr. 2000). IT is the ability to handle a large number of complex business transactions cost-effectively, causing the organization to use IT during the process of their finance report. As computers process information consistently, IT systems can potentially reduce misstatements by replacing manual procedures with programmed controls applying checks and balances to each processed transaction (Arens. 2008).

The making use of IT in audit may be clearer with the more of *generalized audit software* which can be used by Accounting Firms, the productivity in the implementation of audit work improves because

eledronic working papers are used. In addition, information system applied by the client with computer basis allowing audit to work is carried out on-line so that advantages gained by the clients and other parties of audit works can be obtained immediately.

AICPA and CICA have developed assurance service for information technology and IT with service group named *WebTrust* and *SysTrust*, carried out according to atestasi standard (Arens, 2008). Public Accountant Professional Standard (PAPS) SA Section 335, Auditing in Management Environment of Electronic Data about expertise and competence, explains: If an auditor carries out audit in management environment of electronic data, he must have good comprehension about hardware, software, and computer management system to design assignment and comprehend of the impact of computer management to design assignment. Also, he must realize the impact of the management of electronic data towards used procedures by an auditor in gaining comprehension and committing audit procedures including the use of *computer-assisted audit techniques*.

IT audit can be carried out by using audit technique and another additional one. This is possible because the scope of IT audit is larger than financial report audit. However, an auditor also must have knowledge of electronic data management to apply audit procedure depending on used audit approach (*audit around computer and through computer*).

2.3. Perception

Perception means: (1) Direct response (acceptance) of something; (2) A view of an overall object (Kamus Besar Bahasa Indonesia). Perception is an experience about objects, events, or relations achieved by summarizing information and interpreting messages (Jalaludin Rakhmat, 2004). Robbins (1993) states that: "Perception can be defined as a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment," while Assael (1984) states about perception as follows: "Perception is the process by which people select organize, and interpret sensory stimulate into a meaningful and coherent picture."

According to Gibson, Ivancevich, Donnelly translated by Djakarsih (1990) states as follows: Perception is a cognitive process used by an individual to interpret and understand his environment.

One's perception is affected by several factors causing an individual gives different interpretation to others when viewing something. Factors influencing perception are: (1) Functional factor : needs, experience in the past, motivation, hope and wishes, attention, emotion, mood, and other things included in personal factor. (2) Structural factor: the nature of physical stimulus and neurotic effects piled up in one's neurotic system. (3) Cultural factor or culture where an individual develops and grows will also determine one's perception process (Jalaludin Rakhmat (2004). One's disliking to computers can be caused by the anxiety of computer technology use, also called as *computer anxiety* (Igarria and Pauraman, 1989).

According to Toha (1992), perception is a cognitive process experienced by everyone in grasping their information through sight, sense of hearing, total comprehension, feeling, and sense of smell. Adam I. Similarly, Indrawijaya (2000) affirms that "Perception is the basic of cognitive process or psychological process." Cognitive is the highest mental process in treating an object or a target. The process includes the awareness of a problem, the extension of meaning, value and function of an object. Heider (2000) asserts that this cognitive component is a unit forming a correlation between subject and object of a situation in order to intend consciously to prepare themselves to form a concept. Hence, it is clear that there is subject knowledge component about objects, situations or certain targets, for instance: Comprehension of IT audit. In audit activity, the perception can be in the form of perspective to improve knowledge, objective to try/carry out new things, and preparation to earn assignments of audit IT.

2.4. Framework of Research

The development of IT either directly or indirectly affects to the auditor as an IT company needs a new audit service: IT audit service. Various research results reveal empirical evidence about the improvement phases of the roles of computer technology for various importance of business. For instance, Lavota (1990) studies the capability of computer technology as medium in various audit technique.

To commit an audit of financial report in “*dot com*” company, an auditor must gain knowledge about cooperation enabling him to comprehend the transaction and practices according to possibility consideration. Such has impacts on financial report (Professional standard of public accountant section 3.11 paragraph 06), Beside auditing financial report. An auditor must also be able to understand IT system used by the company. Thus, the auditors must also master IT audit if they get audit assignment in an IT company.

The auditors should have had positive perception towards IT audit. It means that they should have had perception, cognition and tendency to take positive action towards the IT audit. They should have had positive perception towards IT audit as those having IT audit assignment in their works will be intensely and directly related to information technology. The auditors ought to have positive perception towards IT accordingly.

One’s perception towards an object is a supporting feeling (favorable) or an undermining feeling (unfavorable) to an object. *Thurstone* itself specifically formulates perception as positive affect degree or negative affect toward a psychological object.

The perception, afterwards, can be considered as indicator or reference as the first illustration of how deep the auditors’ comprehension is and how their behavior is to IT audit service so that their perception later can be compared to an ideal perception of the auditors as expected, how the behavior of the auditors working in large Accounting Firms in Bandung is in case of viewing, understanding and dealing with IT audit itself.

Hypothesis

The hypothesis of this research is that: “Auditors have positive perception to IT audit service”.

3. Research Method

The objects of this research are the perception of the auditors of Accounting Firms towards IT audit service. The perceptions of the auditors were chosen as objects in this research as the auditors are the main resources in audit. IT audit is an audit intensely and directly related to information technology.

The used research method is descriptive analytic. This research was implemented by using survey approach and by giving questionnaire to respondents related to the observed objects so they could be considered as the basic valuation to auditors’ perception toward IT audit service.

Respondents in this research were 64 respondents from 24 Accounting Firms in Bandung (*Members of Directory IAI, 2001-2002*), either those having ever carried out IT audit or having never carried out it.

Variables in this research are as follows: An Independent variable (eksogen) is “Auditors’ perception”, and a dependent variable (endogen) is “IT Audit Service”.

Auditors’ perception Variable is measured by Cognitive indicator with sub indicator: Comprehension of IT audit: *Direct respond (acceptance); experience about IT; messages about IT; observing process through senses to IT; interpretation to IT; needs, experience in IT; motivation, hope and wishes, attention, emotion, mood; computers knowledge; disliking to computers; And anxiety to computers.*

IT Audit Service Variable is measured by the indicator of the Activity of IT Audit with sub indicator: *Technology applied to processing, storing, and transmitting information in electronic forms; to help users complete their tasks; process electronically and data transmission; must have good comprehension about hardware, software, and computer management system; impact of computer management; must realize the impact of the management of electronic data towards used procedures by*

an auditor in gaining comprehension and committing audit procedures including the use of computer-assisted audit techniques; security level guarantee; electronic data processing audit system; And information technology audit of transaction system.

3.1. Instrument

Auditors' perception and IT Audit Service were measured by questionnaire consisting of: 17 items about Auditors' perception and 8 items about IT Audit Service towards the same 64 respondents. The respondents were asked to give valuation by choosing one of five answers with Likert scale comprising various questions by choosing and giving a check mark (\surd) to one alternative answer of five answers in available column. The measuring style is by offering a respondent to a question. Then, the respondent was asked to give answers such as "absolutely agree", "agree", "hesitate", "disagree", and "really disagree". The score of the answers were from 5 ("really agree") to 1 ("really disagree"). Low scale (point 1) shows Auditors' perception really disagree to IT Audit Service and high scale (point 5) shows Auditors' perception positive (really agree) to IT Audit Service.

3.2. Data Collection

The data were collected from 24 Accounting Firms by the hope that that they could impart illustration to solve actual problem. They usually were involved actively in taking decision and responsible for the implementation of audit assignment. The number of obtained respondents was 64 respondents working in Accounting Firms in Bandung. They had filled the questionnaires circulated at the end of Januari 2009 and were reaccepted at the beginning of Maret 2009.

3.3. The Validity and Reliability Examination of Instrumen

Items analysis was used to examine validity for each item. The purpose was to correlate scores for each item with total scores showing the number of item score. Furthermore, in giving interpretation to correlation coefficient, Masrun (1997) states that items having positive correlation with criterion (total score) as well as high correlation show that the items have high validity as well. Minimum requirement which can be considered as reasonable one is usually 0.3 for "r". Thus, if the correlation between items and total scores is less than 0.3, items in the instrument are considered invalid. Used correlation was *Pearson Moment* correlation.

Reliability examination was committed by *internal consistency* with *split half* technique analyzed by using *Spearman Brown* procedure. According to Sugiyono (2004) *internal consistency* is reliability examination committed by testing the instrument once. Later, acquired data were analyzed with certain technique. The result of this analysis can be used to predict instrument reliability. For the requirements above the items of the instruments were divided into two groups. They were irregular group and regular group. Next the correlation of total score between irregular group and regular one would be sought. This correlation coefficient afterwards was included into *Spearman Brown* procedure.

3.4. Analysis Method

Applied analysis method is *Rank Spearman* Correlation Analysis. Questionnaires results, having been collected, were refined and were analyzed by using *Rank Spearman* Correlation. Each answer of the Questionnaires was given a mutual mark, later counted up so that the number of variable X and Y was gained. Afterwards, *Rank Spearman* Correlation Analysis was carried out by numbering each variable so *Rank X* and *Rank Y* were found and in $(R_x - R_y)$. Next, the variables would become quadratic variables.

The aim of the using of *Rank Spearman* was to find out how great positive perception of the auditors towards IT Audit Service.

4. Result

4.1. The Result of Validity and Reliability Test of The Data

Validity examination is committed by using *Pearson Product Moment*. Furthermore, this examination is also used to give interpretation to correlation coefficient. If the result of the validity examination shows that items have positive correlation with criteria (total score) and with high correlation as well, so it shows that the items have high validity as well.

Minimum qualification can be fulfilled if $r_{arithmetic} > r_{table}$. Thus if correlation $> r_{table}$ then items in the instrument are stated as valid items while instrument reliability examination was accomplished by *internal consistency* with split half technique which was analyzed by *Spearman Brown* procedure.

Validation result shows that $R_{arithmetic}$ 0.9480 and $R_{arithmetic}$ 0.9998 of 25 item $R_{critical} = 0.312$. It is known that all used questionnaire instruments in this research are valid because the result of validity data calculation shows that $r_{arithmetic} \geq r_{table}$.

Instrument reliability examination in this research uses *Split Half* technique with *Spearman Brown* procedure. Instrument is considered to be reliable if its high and positive reliable coefficient value is about 0,9994. Finally it can be said that this instrument research is reliable because its reliable coefficient value is high and positive.

Auditor perception analysis towards IT audit service is a result describing auditors' perception towards IT audit service based on cognitive perception components relatively good. Most of respondents' answers to this component show answers close to ideal. It means that most of the respondents understand and comprehend of IT audit. The answers are supported by respondents' statements showing that most of them comprehend and understand about IT audit in which there is subject knowledge element related to objects, situations, and certain targets.

The research results showed that IT Audit Service carried out by Accounting Firms of security level activity and transaction system as follows:

a) Security Level

Auditors always verify security level from an IT company where auditors examine and implement legal authority analysis. However, there is still deficiency in which auditors do not always examine all sorts of used instruments to protect their data.

b) Transaction System

Auditors understand transaction system of an IT company pretty well in which auditors comprehend of *electronic data processing* (EDP) *on-line* bargain and implement risk analysis towards transaction system.

4.2. Test of Hypotheses

Hypotheses which I express are:

H_o : Auditors have non-positive perception towards IT audit

H_i : Auditors have positive perception towards IT audit

Rank Spearman correlation coefficient between variable X and variable Y is 0.9783.

To decide whether H_o is accepted or not, correlation coefficient must be compared to p value for a table of $n = 64$ at error level 5%. Interpolation for searching p table value.

Based on error level 5% for $n = 64$, p value = 0.042 and for $n = 64$, p value = 0.021.

The equation can be made to search X which is t value n table = 64. Thus the equation is:

$$\begin{aligned} a : b &= c : d \\ (62 - 28) : (64 - 62) &= (X - 2.021) : (2.042 - 2.021) \\ X &= 2.3780 \end{aligned}$$

Correction factor from the same ranking number is $rs = 0.8570$.

To make sure that those variables have correlation or not, t examination is implemented and the results were compared to $t_{\text{table value}}$. If $t_{\text{arithmetic}} \geq t_{\text{table}}$, then H_0 is rejected and H_1 is accepted.

Calculation of t examination is as follows:

$$\begin{aligned} t &= \frac{rs\sqrt{n-2}}{\sqrt{1-rs^2}} \\ t &= \frac{0.8570\sqrt{64-2}}{\sqrt{1-(0.8570)^2}} \\ t &= 13.0959 \end{aligned}$$

From t distribution list with accuracy level is about 0.05 and freedom level 62 (64 - 2), it is found that t_{table} is about 2.3780.

From criteria which has been decided, H_0 is rejected if $t_{\text{arithmetic}} \geq t_{\text{table}}$. In contrast, H_0 is accepted if $t_{\text{arithmetic}} \leq t_{\text{table}}$. For in this calculation $t_{\text{arithmetic}} \leq t_{\text{table}}$ (13.0959 \geq 2.3780) H_0 is rejected and H_1 is accepted. To observe how immeasurable X variable (Auditors' perception) correlates to variable Y (IT Audit Service), determination coefficient of $rs = 0.8570$ is:

$$KD = (rs)^2 \times 100\%$$

$$KD = (0.8570)^2 \times 100\%$$

$$KD = 73.44\%$$

The result of this calculation showed that auditors had positive perception. It was about 73.44% of IT audit service. Auditor perception variable had strong relation to IT audit service variable. Determination coefficient was about 73.44%. It showed the degree of auditors' perception to IT audit service. Even though not all editors have ever committed IT audit, the auditors (73.44%) hoped that they could commit IT audit while the remaining auditors (26.56%) was affected by another functional perception. However, I do not explore it.

The result of questionnaire about Auditors' perception towards IT audit service earlier was as follows:

Table 4.2.1.

Perception Category	Respondents	Percentage
Positive perception	47	73.44%
Negative perception	17	26.56%
Total	64	100%

Source: survey

Based on data in table 4.2.1, the number of auditors having positive perception towards IT audit service was about 73.44% respondent. It was greater than the number of auditors having non-positive perception towards IT audit service (26.56% respondent). It meant that the auditors in Accounting Firms in Bandung agreed to carry out IT audit service assignment.

A causal factor that the auditors had positive perception towards IT audit service was their acceptance to the presence of this IT audit service. It made the auditors deal with a challenge. The presence of IT audit service would make a new opportunity in Accounting Firms business and a new opportunity for another commercial agent. IT audit service is a new bright prospect for an auditor. The presence of IT companies demanding IT audit service and that of IT audit service will increase knowledge and comprehension in the development of accountant profession in Accounting Firms in particular.

A causal factor that the auditors had non-positive perception towards IT audit service was the shortcoming of comprehension and knowledge of the auditors in IT audit. Development and advance of business (company) utilizing IT technology, especially in Bandung, are still relatively low compared to large cities and even another country. The shortcoming of the demand of IT audit service from companies in Bandung, the shortcoming of instrument for education development especially IT audit such as seminars, workshops, etc and Ikatan Akuntan Indonesia has not yet standardized everything related to IT audit.

The percentage of Auditors perception correlation to Audit *E-*(rs) Service = 0.8570 was: 73.44%. It meant that the auditors had positive perception towards IT audit service. The auditor perception towards IT audit service indicated attention and strong will to the implementation of *e-commerce* audit service. Although not all auditors had carried out e-commerce audit, they had strong will to carry out e-commerce audit while the others were affected by another factor.

Based on the explanation above it can be concluded that auditors' either positive or non-positive perception has characteristic appropriate with Sax quoted by Azwar (1995) that is: Auditors' perception has directions. They are positive or non-positive towards *IT* audit service. The either positive or non-positive perception of the auditors has different intensity to IT audit service. In spite of having the same direction, its intensity towards IT audit service cannot be equalized. Auditors' perception has autonomy. It means that the auditors' perception whether it is positive or non-positive to IT audit service depends on certain aspects. It can be many minor, specific or even existent aspects. Auditors' perception has consistency. It means that there is a coherency between statements of positive perception expressed by responding towards IT audit service. capably consistent, the perception must last long term period. Inconsistent perception and non-positive perception or neutral must be differed. Auditors' positive perception or neutral is still called a perception as well although its direction is neither positive nor non-positive. One's perception can be neutral consistently and auditors' perception still have spontaneity positive or negative towards IT audit service depending on how far the auditors' preparation in expressing their perception is without being urged first.

5. Conclusion

Auditors have positive perception towards IT audit service. The perception is consonant /ally to IT audit service.

Auditors in Accounting Firms are fond of the presence of IT audit service as they assume IT audit service is a new challenge for auditor profession. This positive response is coherent with the improvement of on-line business opportunity so that the auditors are challenged to accomplish IT audit.

The presence of IT for auditors will also expand their audit field. However business development working on on-line information technology in Bandung is relatively not much compared to other cities. The lack of comprehension and knowledge of the auditors of IT auditors, that of demands of IT audit service from companies in Bandung having already been on-line, that of utilities and knowledge of auditors and other business agents of IT audit cause the inadequacy of IT audit service assignment.

The auditors ought to advance knowledge and experience of IT audit service. Additionally, IAI should arrange profession standard of Indonesian IT audit.

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