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# Accounting Students Attitude towards Computer, The Acceptance of the Accounting Information System's Course and Teaching Method

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## Abstract

The aim of this study is to analyse the influence of student's attitude towards the acceptance of the AIS course and which teaching methods are used in the AIS course. The study results have indicated that computer attitude is significantly influences the acceptance of students towards the AIS course. However, the usefulness of the AIS course has not given an influence towards the AIS. The study results have also indicated that the many teaching methods that have been used in the AIS course are the lectures accompanied by video shows, field studies, applying e-learning, and applying the internet.

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*Keywords:* Perceived Accounting Information System course; AIS course acceptance; computer attitude; computer anxiety; computer liking; perceived computer usefulness in workplace; perceived computer importance in workplace.

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## 1. Introduction

The demand towards the skill in using information technology (IT) as an accounting profession in the business is becoming more intensive today (Daigle & Morris, 2011). The accountant is expected to master the IT in their task. Expertise in using the IT becomes important for the accounting graduates, especially if the business environment

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becomes more global and more dynamic (Darayseh et al., 2011; Hoffman, 2004). An auditor that does not have sufficient IT knowledge will face great difficulties in integrating the computer into their auditing system task with their professional audit (Kearns, 2010).

This phenomenon has is a great challenge for the accounting education institution in providing accounting graduates who have proficiency in IT in managing information. Because of the environment that has already oriented towards IT, the educational institution must adapt their teaching methods in order to be able to explore different stages of ability of the students that can use the IT. To answer that challenge, the educational institution, especially in Indonesia, has to supply the accountant candidate by copying this limited IT educational resources. The IT skill requirements by accounting students can be met through the AIS course, because in this course a half of the topics are IT topics and the rest is accounting topics.

According to Chayeb & Best (2005), there is no single standard regulation regarding the important content that must exist in AIS. The consequence is that the topic delivered is different one from another. The different topic is more caused by the development of the IT, which is the non-separated part of the AIS course. Therefore, the development of the AIS course becomes difficult (Badua et al. 2012). The same result also mention in Jackson & Cherrington (2001), in which the student has also found difficulties to follow the AIS's course material. The difficulties experienced are related to the computer projects, such as the use of the spreadsheet and the accounting software, which are integrated in the AIS course. Another difficulty is at the transaction cycle material.

Previous studies regarding the AIS curriculum have not yet been conducted in Indonesia. Most of them have been conducted in the United States, Australia, and the United Arab Emirates. The previous studies were carried out to analyze the content based on the books that are used and the AIS syllabus (Badua et al. 2012). Besides, studies regarding the teaching methods of AIS were conducted by Shahwan (2011), and the results have indicated that there is a variation in the AIS teaching methods.

This aim of this study is to analyze the student's acceptance of the AIS course at the universities in Jakarta, especially for the accounting program. Although studies to answer this program have already been conducted by Theuri and Gunn (1998), this study is a little different in the use of data. The study of Theuri and Gunn (1998) evaluated the readiness of the graduates as seen from the standpoint of the lecturer and the employing company using questioners. In this study, the data processed is based on the student's perception towards the AIS topic and it analysis the influence of the student's attitudes towards the computer with the acceptance of the AIS course, besides to analyze the teaching method applied at the AIS course.

## **2. Literature Study And The Hypothetical Development**

### *2.1. The AIS course content*

In general, the aim of the AIS course is to prepare the student from the conceptual side as well as from the logic to analyze the accounting system and to practically understand the implementation of the system and at the physical level. At the conceptual level, it is hoped that the student can explain the abstract of the AIS, including the use of the technical diagrams and programming concept. At the physical level, the conceptual model is realized in the physical form through some kind of instruments such as the application of spreadsheet, database, general ledger module, some programming language or some computer based program (Callaghan et al. 2011).

Recommendation that is related towards the IT content in accounting was forwarded by the Committee of the American Accounting Association (AAA) in 1987. In this recommendation an approach for teaching the AIS was formulated covering 9 category levels. This category was further updated, following the recommendation from The International Education Guidelines for Professional Accountants (IFAC), regarding the IT competency in the accounting curriculum. Further, the IFAC had provided practical instructions regarding the IT content in the curriculum consisting of the ability to use the word processing spreadsheet, the database, and the accounting program.

Bain et al. (2002) had found that although the goal of the AIS education is variable, however, many AIS classes had included the general basic IT topic. In his study of twenty AIS syllabuses in the United States, Bain et al. (2002) had found that the basic topic was the introduction to the information system, transaction management, and internal control. Whereas, the topic related to the IT consisted of: sort of IT based AIS, computer Assisted Tools &

Techniques/CAATs), relational database, framework of IT governance, threat and control at the IT environment, and safety at the IT environment.

Badua et al. (2012) had conducted a content analysis towards the AIS syllabus and indicated that the use of the textbook was a principal tool however they did not followed the whole topics in the textbook chronologically. Tam (2011) had conducted a research about the knowledge and skill in IT which were needed for the accounting graduates in New Zealand and had found that 9 (nine) topics that were essential to be given and 9 important topics for the graduates.

## *2.2. Studies related to the AIS course*

The study about the needed content in an AIS course has been conducted many times by researchers before. Richtermeyer & Kovar (2001) had conducted a study about the AIS teachers regarding the IT content in the AIS course. The result of the study indicated that the majority had used many approached however most of them had included the transaction cycle topic and the business process using the accounting software, spreadsheet, and database, besides the present development topic. Study by Doost et al. (2011) had found that there existed a gap between the professional demands with competences as demanded by the AICPA. Further, they had also found ten basic topics provided by the AIS teacher and new topics. A similar study was also conducted by Riner and Stinson (2011) regarding the AIS teacher's point of view towards the AIS curriculum. Most of them had priorities the internal control topic and the transaction cycle. They also did not include the computer based project simulation at the AIS course as proposed by some extra material in the AIS textbook.

Darayseh et al. (2011) have conducted a study regarding the accounting graduates in connection with their ability and command of IT in the accounting curriculum. The result indicated that most of the accounting graduates acknowledge that computer knowledge is very important for their future success. Therefore, they proposed to revise the accounting curriculum according with the technological developments used in working place. Because according to them, most of the accounting curriculum has not yet accommodated the development of the information technology at the workplace.

## *2.3. AIS study format*

The AIS course is a unique course, because part of it consists of an IT topic and another part an accounting topic. Besides that, the AIS course is often considered difficult, because it cannot be quantified and it is not structured compared with the financial accounting course as well as the accounting management. This problem has induced some researchers to study innovation in the AIS teaching techniques. Togo & Yuthas (2011) have developed material with a role-play system about organization, especially business operation regarding the transaction cycle. Besides the role-play method the teaching method applied is the cooperative learning. Another method was applied by Macur (2011) with the laboratory teaching format, e.g. the practice of applying the general ledger, or a kind of accounting software. Besides, a system case analysis is also taught using a Visio application or a kind of it.

Before that, Stanley & Edwards (2005) had developed an AIS teaching material using multimedia in the form of a CD ROM. The material consisted of the transaction cycle packed in accordance with the real business environment. Another the teaching method was given by Walters (2011), using the case study approach adjusted to the real world condition. Another model was provided by O'Connell et al. (2011) who had conducted an experiment to understand the influence of the use of accounting software towards the accounting students' knowledge.

## *2.4. Computer attitude, AIS usefulness in the workplace and the acceptance of the AIS course*

Following the Theory of Reasoned Action (Ajzen 1991), attitude is something which determines a person's behavior. Attitude is a combination of trust and a person's feeling towards an object and the tendency to act, in relation to the object. The attitude towards the computer can be defined as believe or trust and feeling of someone towards the use of a computer. The attitude towards the computer, in general, is valued by using the anxiety, confidence, liking and usefulness attitude (Lloyd & Lloyd, 1985).

Studies about the relationship between attitude towards the computer and the AIS course were previously conducted by Morris & Daigle (2011). They studied the attitude towards the student's computer before and after having taken the AIS course. The foundation of their study was that the AIS was an integrating accounting course and the computer needed by the professional accountants. The result of their study indicated that the positive attitude towards computer had an influence towards the AIS course, in which, the student did better understand the AIS concept. Hence, Morris & Daigle (2011) proposed that the AIS teaching should be integrated with the student's experience in using the computer, besides the AIS material must be connected with the computer's technology concept.

Another study had been conducted by Darayseh et al. (2011) regarding the IT material at the AIS course. Their study result indicated that there was a relationship between knowledge about IT and success in their work. Besides, the accounting graduates felt that the knowledge about IT was important as part of the accounting curriculum. However, they also found that the information technology curriculum at the university, especially at the Gulf Cooperation Council (GCC) was not yet in accordance with the progress in technology at the workplace.

Based on Morris & Daigle (2011), and Darayseh, et al. (2011) study, regarding IT and the IT curriculum program for the accounting study, this study will look into the attitude towards computers based from the viewpoint of Computer Anxiety, Computer Liking, Computer Usefulness, seen from the benefit of the computer for the work, and for the computer application needs in the work place. Besides, study by Darayseh, et al. (2011) had also analyzed the respondent's perception regarding the usefulness of the AIS curriculum in the work place. However, the result of their study indicated that the AIS curriculum could still not fulfilled the work place's needs, especially, in the use of IT that had experienced a fast development such as the database.

Using the tools that were proposed by Darayseh, et al., (2011) about the perception of the usefulness of the AIS in the work place, therefore, this study also wanted to see whether the student's perception regarding the usefulness of the AIS course in the work place is related with the acceptance of the AIS course content. Therefore the hypothesis is proposed as follow:

H1: Computer Anxiety, Computer Liking, Perceived Computer Usefulness in Workplace, and Perceived Computer Importance in Workplace influences student's attitude towards the computer.

H2: The student's attitude towards the computer is positively related with the acceptance of the AIS

H3: Perceived AIS Usefulness in Workplace is positively related towards the AIS course acceptance by the students.

### 3. Research method

#### 3.1. Research model

This research model is a modification of the Theory of Reasoned Action (Ajzen 1991), Technology Acceptance Model (Venkatesh, 2000), the study of Morris and Daigle (2011), and Darayseh, et al., (2011). The modification was done using the Computer Anxiety, Computer Liking (Loyd & Loyd, 1985), Perceived Computer Usefulness in Workplace, and Perceived Computer Importance in Workplace as a Second Order of the Computer Attitude, besides the Perceived AIS Usefulness in Workplace variable which had an influence towards the student's acceptance of the AIS course content.

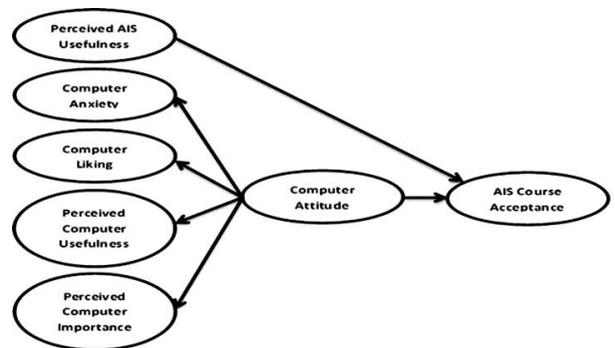


Figure 1: Second Order Research Model

#### 3.2. Variable operational definition

Acceptance of the AIS course is the student's perception regarding the topic of the material provided at the AIS course, consisting of the accounting material and the IT material. The measurement was conducted by asking at each topic the difficulty level, the control, the attractiveness, and the material needs used with the 1 up to 5 scales.

Computer Attitude is the student's attitude towards computers. The measurement was conducted using Computer Attitude Scale (Computer Anxiety, Computer Liking) by Morris & Daigle (2011), (Perceived Computer Usefulness in Workplace, Perceived Computer Importance in Workplace, Perceived AIS Usefulness in Workplace) by Darayseh, et al., (2011), using 5-point scale, where scale 1 is strongly disagree and scale 5 is strongly agree.

Teaching Method (MP) is a way in learning AIS which refers to the general principles, pedagogy and management strategies used in achieving learning outcomes. The measurement was conducted by asking the level of use at each method using 5-point scale, where scale 1 is the method never used in AIS class and scale 5 is always used in AIS class. The higher the score of the answer, the more often the method applied in AIS class.

#### 4. Results and discussions

Research was conducted on accounting students in seven private universities in Jakarta. Collecting data using a questionnaire had been done between April 2013 and July 2013. Total respondents who fill in as many as 700 people consisting of 323 men and 377 women, they generally in semester 3 to 4, with a GPA of respondents were in the range of 2.00 to 4.00 and the age of range of 19-22 years.

##### 4.1. Analysis of Structural Equation Modeling(SEM)

The first phase of testing the overall model is evaluating a goodness of fit (GOF) between the data with the model. Testing the overall model fit was based on goodness of fit indicators statistics index of the Lisrel 8.8 output (Hair et al., 1995). GOF test results for the model studies are summarized in Table 1. After testing the model fit and the overall data produces a good fit, then at this stage, there will be an evaluation of the measurement model. Evaluations are conducted on each construct or measurement models separately through evaluation of the validity and reliability of the measurement model.

Table 1.GOF Result

Fit Measures	Score	Result
$\chi^2$ (Chi-Square)	318.089	$2df < \chi^2 < 2df$ à Acceptable fit*
p value	0	$p < 0.05$ à not fit*
$\chi^2/df$	318.089/127	$2 < \chi^2/df < 3$ à Acceptable fit*
RMSEA	0.0464	$0 \leq RMSEA \leq 0.05$ à Good fit*
p value for test of close fit (RMSEA<0.05)	0.818	$0.1 < p \leq 1.00$ à Good fit*
Confidence Interval (CI)	0.0401 ; 0.0528	Close to RMSEA à Good fit*
SRMR	0.0411	$0 \leq SRMR \leq 0.05$ à Good fit*
NFI	0.972	$0.95 \leq NFI \leq 1.00$ à Good fit*
NNFI	0.979	$0.97 \leq NNFI \leq 1.00$ à Good fit*
CFI	0.983	$0.97 \leq CFI \leq 1.00$ à Good fit*
GFI	0.952	$0.95 \leq GFI \leq 1.00$ à Good fit*
AGFI	0.935	$0.90 \leq AGFI \leq 1.00$ à Good fit*
Model AIC	406.089	smaller than AIC Independence and close to Saturated model à Good fit*
Saturated AIC	342	
Independence AIC	11648.434	
Model CAIC	650.336	smaller than CAIC Independence and close to Saturated model à Good fit*
Saturated CAIC	1291.235	
Independence CAIC	11748.353	
Model ECVI	0.581	smaller than ECVI Independence and close to Saturated model à Good fit*

Confirmatory Factor Analysis (CFA) was conducted on 31 items of questions used to measure six latent variables. From Lisrel 8.8 output shows only 18 valid indicator, where all the indicators have a standardized loading factor greater than 0.5 and significant at  $P < 0.05$ . Therefore, all the results of the CFA can be used for further analysis.

The next step is to do a reliability test in order to determine the consistency of the measurement indicators of latent variables. To test the reliability will be calculated composite reliability value (CR) and Average Variance Extracted (AVE). Cut-off value for composite reliability (CR) was 0.6 and AVE is 0.5 (Bagozzi & Yi, 1988). The results of calculations for CR and AVE gave values greater than the cut-off limit. The results of these calculations show that the size of the whole has a reliable indicator on its latent variable, thus all variables are acceptable to be used in subsequent analysis. Evaluation of structural models includes an examination of the significance of the estimated coefficients and the overall value of the coefficient of determination ( $R^2$ ). Here are the results of structural models Lisrel output 8.8:

$ca = -0.499 * cas, Errorvar. = 0.751, R^2 = 0.249$ (0.0462) (0.0669) -10.803 11.221	$cuw = 0.770 * cas, Errorvar. = 0.407, R^2 = 0.593$ (0.0453) (0.0512) 16.996 7.958
$cl = 0.517 * cas, Errorvar. = 0.733, R^2 = 0.267$ (0.0487) (0.0794) 10.624 9.224	$ciw = 0.859 * cas, Errorvar. = 0.262, R^2 = 0.738$ (0.0468) (0.0564) 18.370 4.651

Four structural equations above indicate that the variables ca, cl, cuw, and ciw is a factor of the variable CAS, it can be seen from the significant t values for every variables. This means that the largest contribution to CAS is obtained from the ciw and cuw, the attitude towards computers were first determined by the perception of the importance of computers in the workplace, the usefulness of computer in the workplace, computer liking and anxiety of computers. Thus, hypothesis 1 is acceptable, based on the above results it can be concluded that the attitude of the students toward computers (cas) can be explained by computer anxiety, computer liking, and perceived computer usefulness in workplace and perceived computer importance in workplace.

$pnm = -0.168 * cas - 0.00386 * auw, Errorvar. = 0.971, R^2 = 0.0289$ (0.0508) (0.0480) (0.0687) -3.314 -0.0804 14.136
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Furthermore, based on the structural equation, it can be seen that the only significant variable is CAS and has a negative influence. Negative effect can be explained because of the scale of measurement is not included in the reverse. But variable AUW is not significant, therefore it is concluded that attitudes towards computers exert significant influence on the acceptance of the course content, while the perception of the usefulness of AIS in the world of work does not affect the acceptance of AIS course content. By looking at a very small value of  $R^2$  means that the explanatory power of the variable CAS and AUW is very small and this means there are also other variables that influence the acceptance of AIS course content. The results of the path diagram in Figure 2 shows the structural model generated from the output Lisrel 8.8.

#### 4.2. Analysis of testing results

Test results of a structural equation model confirmed that attitudes towards computers as measured by factors which are, computer anxiety (ca), computer liking (cl), perceived computer usefulness in workplace (cuw) and perceived computer importance in workplace (ciw) positive effect on student acceptance on AIS. The higher a person's fear of computers, the lower a person's attitude towards computer because it is influenced by a sense of discomfort, anxiety and is not easy for someone to put their comforts to computers, as well as the distaste to use computers can affect someone to avoid using computers at work, whereas the computers can help people to make their work easily done.

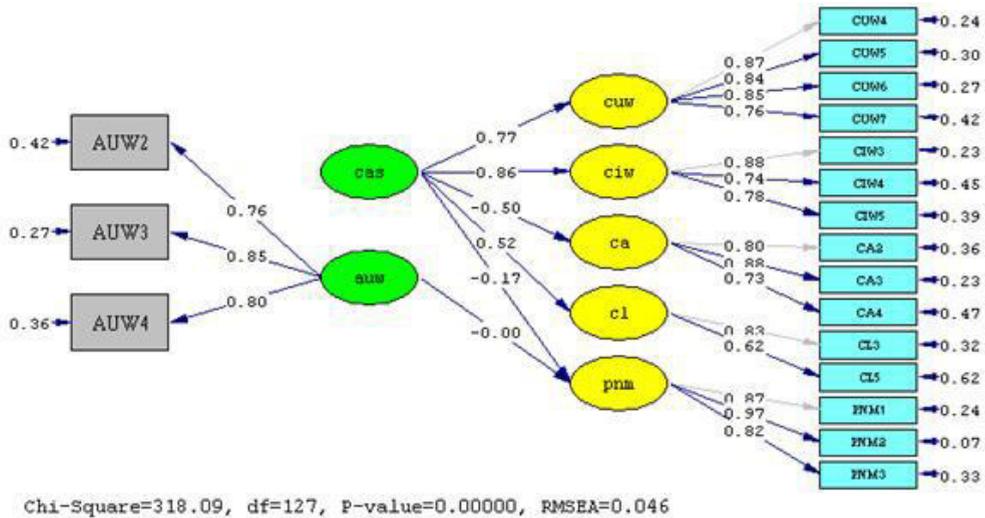


Figure 2: Path Diagram of Structural Model

However, a high perception of the usefulness of computers in the workplace in terms of attitudes towards computers can provide ease in work. Good communication will fix someone’s paradigm towards computers. Thereby, the results of this study answer the first hypothesis, that the fear of computers, resentment of the computer will lower a person’s attitude toward the computer. On the contrary, one’s perception of the usefulness of computers and the importance of computers in the workplace will strengthen the higher the person’s attitude toward computers.

The results of this study also support the second hypothesis, which is a good attitude toward the computer will give a good effect on the attitudes of students in studying IT, such as AIS subject. However, the results of this study cannot answer the third hypothesis in which the perception of the usefulness of the AIS course in the workplace yet to be proven on the attitudes of students in a course studying AIS. Student acceptance of AIS is explained by the level of control subjects; ease of course, an interesting subject. As a whole, results of this study are suited well with the Theory of Reasoned Action (Ajzen, 1991), in which the attitude is one of the things that define a person’s behavior. In addition, the results of this study also supports research Morris and Daigle (2011) where a positive attitude towards computers influence the AIS course, which positively affects the attitude of students to better understand the concept of AIS. Similarly, the results of research Darayseh et al. (2008) which states that knowledge and attitudes towards computers influence in the accounting curriculum so that they can accommodate the prospective accountant in the face of the world of work.

Furthermore, it will be seen that the learning method applied in AIS, which were evaluated using descriptive statistics in SPSS 16.0. The most learning methods are often applied in class is lectures and videos, field studies, followed by using e-learning, using the internet, and the giving examples of the computer program, real world group discussion, text book class discussion, questions and answers, and the lowest order method is lectures and lectures using power point. Looking at the statistics, we can conclude that the seven universities in general, have used the technology in delivering AIS course material, which is the use of video, internet and e-learning. This indicates that information technology becomes an integral part of the learning methods, especially at the AIS course.

**5. Conclusion**

This study aims to analyze the influence of attitudes toward computers with student acceptance to AIS. The measurement of attitudes toward computers following the Theory of Reasoned Action (Ajzen 1991), because of the attitude of a person’s computer is believed to affect one’s attitude in behavior, especially to receive AIS material which

contains both accounting and IT material. The model built in this study modifying the Technology Acceptance Model of Venkatesh (2000) by adding a variable of the research Darayseh et al. (2008).

The practical contribution of this study is the acceptance of AIS course content is influenced by perceived of the usefulness and importance of computers. To increase student acceptance of AIS course, we can educate the student about the usefulness and importance of computer. Therefore it will make it easy for students to study the subject AIS containing IT related topics. Based on the analysis results that do not support the third hypothesis, in which the perception of the usefulness of the course AIS has not been affected on the acceptance of the AIS, giving a conclusion that it needs to be disseminated by the educational institution or lecturer of the course on usability AIS course in the workplace. It is expected to enhance the students' understanding of the importance of AIS in the world of work in particular areas of accounting.

This study uses students' perceptions in answering questions related to the AIS in the workplace. The results can be biased because the students do not understand the importance of AIS course in the world of work. Therefore, analytical results for the third hypothesis cannot be supported. Given these limitations for future research can first provide an overview of the usefulness of the AIS course in the workplace to the students. For that purpose, future research may use methods other than questionnaires, such as FGD (Focus Group Discussion). In addition, future research may be expanded to compare the perception of the workplace and the perception of the lecturer of accounting courses. So that the comparison will be obtained a better model of the AIS course content that needs to be given by the education institution that is aligned with the workplace.

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