การพัฒนาซอฟต์แวร์บัญชีอย่างมีจริยธรรม ความน่าเชื่อถือของซอฟต์แวร์บัญชี และประสิทธิภาพการดำเนินงานขององค์กร: การศึกษาเชิงประจักษ์ ของธุรกิจซอฟต์แวร์บัญชีในประเทศไทย

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บทคัดย่อ

วัตถุประสงค์ของการศึกษาวิจัยนี้เพื่อทดสอบผลกระทบของการพัฒนาซอฟต์แวร์บัญชีที่คำนึงถึงหลักจริยธรรมที่มีต่อการรับรู้ถึงความน่าเชื่อถือของซอฟต์แวร์บัญชี และผลการดำเนินงานของธุรกิจพัฒนาซอฟต์แวร์บัญชีในประเทศไทย การศึกษาครั้งนี้ยังได้ศึกษาถึงอิทธิพลของตัวแปรแทรก ได้แก่ สภาพแวดล้อมด้านบรรษัทภิบาล และความเข้มข้นทางด้านเทคโนโลยีสารสนเทศ ที่ส่งผลกระทบต่อความสัมพันธ์ระหว่างการพัฒนาซอฟต์แวร์บัญชีที่คำนึงถึงหลักจริยธรรมและการรับรู้ถึงความน่าเชื่อถือของซอฟต์แวร์บัญชี ในการศึกษาครั้งนี้ใช้แบบสอบถามเป็นเครื่องมือในการเก็บรวบรวมข้อมูลจาก ธุรกิจผลิตซอฟต์แวร์บัญชี 522 แห่ง โดยมี 119 แห่งที่ตอบกลับแบบสอบถามและแบบสอบถามมีความสมบูรณ์สำหรับการวิเคราะห์ทางสถิติ ผลการศึกษาชี้ให้เห็นว่าการพัฒนาซอฟต์แวร์บัญชีที่คำนึงถึงหลักจริยธรรม มีผลกระทบเชิงบวกกับการรับรู้ถึงความน่าเชื่อถือของซอฟต์แวร์บัญชี และผลการดำเนินงานทั้งด้านที่เป็นตัวเงิน และด้านที่ไม่เป็นตัวเงิน สำหรับผลกระทบของตัวแปรแทรกจากการศึกษาครั้งนี้แสดงให้เห็นว่า สภาพแวดล้อมด้านบรรษัทภิบาลมีผลกระทบเชิงลบต่อความสัมพันธ์ระหว่างการพัฒนาซอฟต์แวร์บัญชีที่คำนึงถึงหลักจริยธรรมและการรับรู้ถึงความน่าเชื่อถือของซอฟต์แวร์บัญชี นอกจากนี้ยังพบว่าความเข้มข้นทางด้านเทคโนโลยีสารสนเทศมีผลกระทบเชิงบวกต่อความสัมพันธ์ระหว่างการพัฒนาซอฟต์แวร์บัญชีที่คำนึงถึงหลักจริยธรรมและการรับรู้ถึงความน่าเชื่อถือของซอฟต์แวร์บัญชี

คำสำคัญ: ซอฟต์แวร์บัญชี; ความน่าเชื่อถือ; จริยธรรม

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ETHICAL ACCOUNTING SOFTWARE DEVELOPMENT, ACCOUNTING SOFTWARE CREDIBILITY, AND EFFICIENCY OF FIRM PERFORMANCE: AN EMPIRICAL STUDY OF ACCOUNTING SOFTWARE BUSINESS IN THAILAND

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ABSTRACT

The purpose of this study is to investigate the effects of ethical accounting software development toward the perception on accounting software credibility and firm performance of accounting software developers in Thailand. Also, this study investigates the moderating effects of corporate governance environment and information technology intensity in the relationship between ethical accounting software development and perceived accounting software credibility. Mailed questionnaire is determined as a data collection instrument and was distributed to 522 accounting software businesses. Completed 119 returned for the statistical analysis. The results of this study indicate that ethical accounting software development positively affects software credibility and firm performance in both financial and nonfinancial performance. For the moderating effects, the results show that corporate governance environment negatively moderates the relationship between ethical accounting software development and perceived accounting software credibility. This study also finds that information technology intensity positively moderates the relationship between ethical accounting software development and perceived accounting software credibility.

Keywords: Accounting Software; Credibilit; Ethics; PAPA

Introduction

At present, many firms have widely adopted computer-based information system into their business operations and utilize it to provide the beneficial information. The core reason of the utilization of computer-base system is that such system contains the characteristics of accuracy, completeness, timeliness, and also provides information that is relevant for internal and external users to support their decision makings. Likewise, in an accounting transaction processing, firms envision the benefits of computer-based information system and intend to adopt it into their accounting processes in order to comprehend their financial transaction and to provide financial statements for the related stakeholders. Basically, the computer-based accounting information system uses database management system (DBMS) and client/server communication, therefore, it can be provided the consistent and timely accounting information to the related users (Granlund & Mulmi, 2002).

In addition, accounting information system contains

a competency in internal control that supports firms to prepare the accurate and transparent financial reports in accordance with general accepted accounting principles (GAAP) (Dechow & Mouritsen, 2005; Ismail & King, 2005; Kennedy & Widener, 2008; Gonzalez, Sharma, & Galletta, 2012). Also, utilizing accounting software to process financial data supports the efficiency of external auditing (Liang, Lin, & Wu, 2001; Grabski & Leech, 2007). In the elevated corporate governance environment, firms need accounting software to promote the accuracy, transparency, and accountability of the provided financial information. This awareness is significant for software developers. The opportunity perception, response to customer needs, and innovation activity are related to firm's success (Wongsasathain and Kasemphongthongdee, 2015). Therefore, accounting software developers must include these factors in software development processes to conform their consumer needs. Prior research indicated that there are various factors necessary for the software-evaluation process, for instance, the completeness and included functionality of business, competency in customization in general and for specific company, openness to additional developments, security levels, number of simultaneous users that can be connected and served by system, backup and recovery options, license and upgrading cost, and availability of source code (Jadhav & Sonar, 2009).

For accounting software, however, the key factors for evaluating and selecting involved ethical perspectives. For example, accounting software must be precisely transformed occurred financial transactions into financial information and also be accorded with the enacted regulations. Moreover, security options, such as user authentication and authorization, are important for accounting software to segregate the granted duties. In addition, the issues related to the security of accessibility to the core database of accounting software are also concerned. Importantly, accounting software is determined

as the significant tools providing the regulated financial statements and consisted of GAAP. Therefore, the accepted accounting software should contain the characteristics of double-entry accounting, tax evasion prevention, and audit trails storage. Accordingly, accounting software developers should concern the ethical issues and include them into the software development processes to conform customer demands.

Prior research revealed that the perception on ethical performance of information system influenced consumer trust and software adoption. Yang, Chandlrees, Lin, and Chao (2009) found that perceived ethical performance of electronic commerce business impacted on trusting belief and trusting intention. Taherdoost, Jalaliyoon, Namayandeh, Forghani, and Zamani (2010) also found that ethical issues, according to PAPA framework of Mason (1986), impacted customer satisfaction and adoption. Additionally, Bailey and Pearson (1983) discovered that user satisfaction was derived by users weighted reaction to a set of criteria, and ethical issues were the most significant one to evaluate and select the software. Likewise, Wolfinbarger and Gilly (2003) indicated that there was the positive relationship among reliability, security, privacy, and software satisfaction. Moreover, satisfaction of computer system directly affects system adoption (Igbaria & Parasuraman, 1989; Yoon, 2002). Specifically, Choi and Mueller (1992) suggested that security features and completeness and accuracy of audit trails of accounting software became more important to businesses.

Additionally, the moderating effects of corporate governance environment and information technology intensity, as the moderators of the relationship between ethical accounting software development and accounting software credibility, are also investigated. Corporate governance issue is more important in the information age since it could reduce the asymmetry of information and

increase the transparency of provided information. This research also investigates the effects of corporate governance environment as the moderator on the relationship between ethical accounting software development and software credibility. Besides, under the uncertainty of information technology, this research also focuses on the effects of information technology intensity on the relationship between ethical accounting software development and software credibility.

Objectives of the Study

Accordingly, the main purpose of this research is to investigate the relationship between accounting software development concerning the ethical issues, according to Mason's framework; including privacy, accuracy, property, accessibility, and accounting software credibility. This research also studies the impact of accounting software credibility and firm performance. Furthermore, this research

also examines the moderating effects of corporate governance environment and information technology intensity on the relationships between ethical accounting software development and accounting software credibility.

Literature review

Based on the previous literatures, this research hypothesizes whether ethical accounting software development positively affects accounting software credibility as well as to study whether accounting software credibility positively affects firm performance. In addition, the moderating effects of corporate governance environment and information technology intensity on the relationship between ethical accounting software development and accounting software credibility are also postulated. To clarify the concept, the summary of research hypotheses is shown as Figure 1.
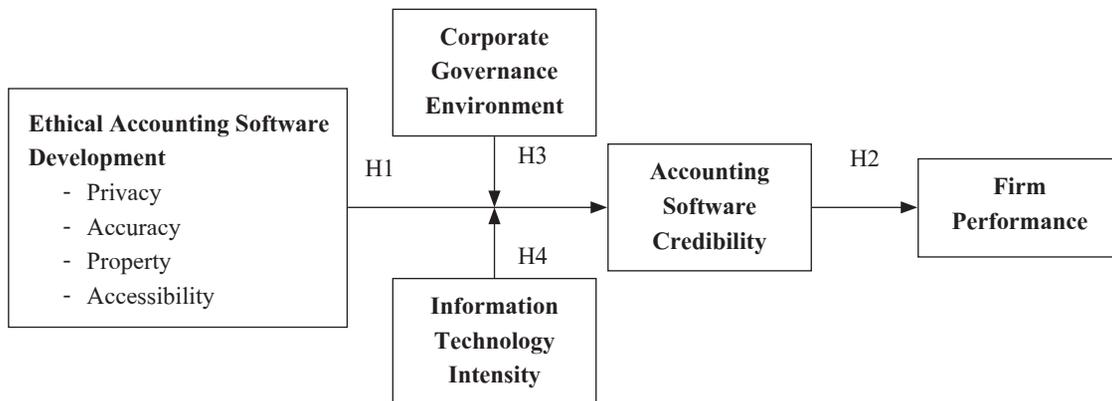

Figure 1 Conceptual Model

Mason's Ethical Issues (PAPA) and Accounting Software

Mason (1986) suggested four issues of computer ethic including privacy, accuracy, property, and accessibility. The definitions of each issue are described as follows;

Privacy, the privacy perspective is related to how personal data is fraud and misuse. Due to the growth of information technology, the capacities for observation,

communication, computation, storage, and retrieval of information are enhanced. Information is also more valuable for the business policy formulation. Hence, there are insidious risks on privacy information protection. For accounting processing, accounting software uses DBMS to summarize and store the related data such as employee incomes, account receivable turnover, financial information, and customer credit and payment. This information is

extremely important and should be incommunicable to any unauthorized users. Consumers of accounting software must be confident that the software is carefully designed under the privacy concerns.

Accuracy, presenting the accuracy is one of the important factors in user's decision making efficiency. In this research, accuracy is defined as correctness, fairness, and neutral. Software developers should concern the accuracy of data entering (Input), data transformation (Process), and information presentation (Output) of their products. The appropriate information system is analyzed and designed according to information system controls, both general controls and application controls, to guard against errors and to correct known mistake.

For instance, the input form is designed including validity check, sign check, and limit check. Also, using dialog boxes is advantageous alerting users asking them the confirmation to delete or update the operated data, that can be reduced the input errors. For accounting software, the accuracy issue is an extreme point because financial information and financial statements will be published to related users—to make appropriate decisions. They must be constructed under regulations and consisted of international financial reporting standards (IFRS). Appropriate accounting software should additionally contain the application controls such as zero-balanced check, check-digit calculation, and other input controls, comprising with the controls of accounting policy's examination and accounting information sharing.

Property, property perspective involves intellectual property rights. "This issue is related to the power to posses, dispose of, and use information resources."—as defined by Mason (1986). Producing any information item can be quite costly to do in the first instance. Yet, once it is produced, that information has the illusive quality of being easy to reproduce and to share with others. Imitation or reproducing invades the rights of producers. For the copyrighted

product, it confidently enhances customer belief to developers. Customers are ensured that they will be attended and received the responsibility from providers (Yang et al., 2009). In Thailand, the accepted accounting software from Revenue Department of Thailand is regulated that customer will not acquired source-code from developers or agents to protect the tax evasion problems.

Accessibility is the condition of rights or privilege to obtain information of person and organization including the levels of access and safeguards. As the regulation, Revenue Department of Thailand prescribed that accepted accounting software must contain authorization and user identification functions to protect the unauthorized users. Due to the control activities, user identification can be segregated duties in an organization.

Based on the literatures and ethical framework of Mason, this research postulates that accounting information system that agreeing with the ethical concerns related to the perception of accounting software credibility. Hence, hypothesis 1 is postulated as follows.

Hypothesis 1: Ethical accounting software development positively impacts accounting Software Credibility

Accounting Software Credibility and Firm Performance

This research defines accounting software credibility as the perception of reliability, trust, and the acceptance from customers or users. The perceptions from customer that accounting software has an accurate processing and reporting, according to GAAP, and containing the data integrity, therefore, contribute to the goal accomplishment of customer's business.

Based on related literatures, Yang et al. (2009) illustrated that perceived ethical performance of on-line business positively influences trusting belief and trusting intention; therefore, affects system adoption. Consistently, Taherdoost et al. (2010) found that ethical software

impacted on customer satisfaction and system adoption. Additionally, Bailey and Pearson (1983) discovered that user satisfaction is derived by users weighted reaction to a set of criteria and ethical issues are the most significant one to evaluate and select the software. Furthermore, Wolfinbarger and Gilly (2003) indicated that there was the positive relationship between reliability, security, privacy, and satisfaction. Also, satisfaction of computer system directly affects system adoption (Igbaria & Parasuraman, 1989; Yoon, 2002). However, this research assumes that software developers can obtain the benefit from accounting software credibility and adoption. Thus, hypothesis 2 is postulated.

Hypothesis 2: Accounting software credibility positively impacts firm performance

Moderating Effect of Corporate Governance Environment

Nowadays, corporate governance becomes the effective tools to eliminate conflict of interest—the conflict between agents and owners of the firm. Corporate governance refers to the system by which corporations are directed and controlled. It specifies the distribution of rights and responsibilities of participants within corporation (such as the board of directors, managers, shareholders, creditors, auditors, regulators, and other stakeholders) and also specifies the rules and procedures of decision makings in the directed affairs. Governance provides the structure through corporations which initiate and accomplish their objectives reflecting with social contract, regulatory, and market environment. Governance includes monitoring the actions, policies and decisions of corporations and also involves interests sharing among the stakeholders.

Prior research studies have widely examined how business, ethics, and profits that can be related and compatible under the rules of corporate governance. Friedman (1970) argued that only responsibility is the key

success of profitability. Conversely, many scholars counter this argument. Owen and Scherer (1993) indicated that information disclosure negatively related to market share. Also, Ghosh, Ghosh, and Zaher (2011) revealed that moral codes, public interest, and social values pose no threat to profit maximization of any firm. However, O'Neil and Pienta (1994) suggested that firm's long-term profitability must be moderated by ethical considerations. Accordingly, hypothesis 3 is postulated.

Hypothesis 3: Corporate governance environment positively moderates the relationship between ethical accounting software development and accounting software credibility.

Moderating Effect of Information Technology Intensity

Information technology intensity refers to the speed of forward change of technology associated with new technology products that impact operation procedures (Glazer & Weiss, 1993). Intense information technology also supports organization when it decided to choose the best coordination mechanisms and implemented into organization system. To deal with intensity, firms need to continuously modify their processing systems and develop innovation to absorb supreme benefit from technology innovation (Auh & Menguc, 2005). Consequently, the related hypothesis is postulated.

Hypothesis 4: Information technology intensity positively moderates the relationship between ethical accounting software development and accounting software credibility.

Data and Sample

Population and Sample

Accounting development firms were designated as the population and sample for the data analysis as these accounting development firms' accounting software were

accepted by Revenue Department of Thailand. They contained the characteristics which were in accordance with the regulations of Revenue Department. The main characteristics of accounting software regulated by the department of revenue including: 1) double-entry of accounting transaction, 2) unprovided source code for customer and prevented from the tax evasion, 3) undeleted posted transaction without audit trails, and 4) security and authorization systems.

With regard to the population and sample, 522 accounting development firms are gathered from the provided database of Revenue Department of Thailand. Mailed-questionnaire is used as instrument for data collecting distributed to all companies. For the analysis, 119 returned mails were completed and usable for the analysis according to the suggestion of Aaker, Kumar, and Day (2001), the acceptable response rate should exceed 20%. The response rate of this study is 22.80% indicating that the gathered data for the analysis of this study is acceptable. In addition, non-response bias between early and late respondents were also examined using t-test comparison (Armstrong & Overton, 1977). However, the results indicate that there is no different between both groups of respondents.

Data Collection

Mail-questionnaire is designated as data collection instrument consisting of seven parts including the characteristics of key informants, firm characteristics, perceptions of the ethical concerns, perceptions of accounting software credibility, perceptions of firm performance, perceptions of corporate governance environment and information technology intensity.

Test of Non-Response Bias

Test of non-response bias was examined to ensure that the non-response bias in mail surveys was not debatable. The non-response bias testing procedure was evaluated by comparing between early and late complete returned questionnaires, whereas the late responses represented to non-respondents (Armstrong & Overton, 1977). A t-test comparison was operated to examine the significant difference of authorized fund between both groups of respondents.

In this research, all 119 received questionnaires are equally separated into two groups. The 60 early respondents are in the first group and the 59 late respondents are in the second. To test the non-response bias, both groups of respondents are compared with demographic data. The result shows that no statistically significant difference between early and late respondents, indicating non-response bias between respondents and non-respondents in terms of demographic factors. As a result, non-response bias is not an issue in this research.

Methodology

Measurements

With regard of the conceptual model, the first investigated relationship is the relationship between ethical accounting software development and accounting software credibility. Ethical accounting software development is posited as independent variable, containing four ethical issues; privacy, accuracy, property, and accessibility. Also, accounting software credibility is assigned as dependent variable of such relationship. For second hypothesis testing, accounting software credibility is designed as independent variable, while financial performance and non financial performance are designed as dependent variables. For the moderating effects, corporate governance environment and information technology intensity are designed as moderators of the relationship between ethical accounting software development and accounting software credibility. To measure each construction in the conceptual model, this research uses five-point Likert scale ranging from 1 to 5, which 1 represents strongly disagree and 5 represents strongly agree, respectively.

Ethical Accounting Software Development

There are 17 items to measure this construction, including four issues of accounting software development; privacy, accuracy property, and accessibility (Mason, 1986). Firstly, privacy is defined as the personal information security. Accounting software should protect the important personal information of other entities, such as customer's credit, account receivable turnover, and employee's information. The poor security system of accounting software causes the loose of data accessibility. Therefore, hackers can easily access to the personal data of customers, firms, and employees. Hence, the ethical accounting software development should strongly concern the privacy issues to increase the credibility of products.

Secondly, Accuracy can be defined as the presentation of real information that accurately transformed. The accuracy of financial statements is important for the stakeholders in order to use this information to support their decision making. The informed financial statement must be in accordance with IFRS. To promote the credibility of products, developers should concern the accuracy of transaction processing and reporting.

Thirdly, this study describes property as the intellectual property rights. There are substantial economic and ethical concerns surrounding these rights; concerns revolving the special attributes of information itself and the means by which it is transmitted. In this study, the property issue is asked for the protection of accounting software source code, the imitation of accounting software, and the cost of accounting software copyrights.

Finally, accessibility is defined as the ability to reach the information storing in accounting database. The accounting software development must concerns the appropriate access to data, including authorization and login systems.

Accounting Software Credibility

This research describes accounting software credibility as the reliability and the acceptance from customers or users. The perception that software has an accurate processing and reporting, and contains data integrity will contribute to the goal accomplishment of customer. Hence, this research designs 5 items to measure the construction.

Firm Performance

This research separates firm performance into financial and non financial performance. Financial performance is asked for the perceptions of net profit, sales, and market shares. Whereas, non financial performance contains the questions requested for the perceptions of customer performance, innovation creation, internal process development, and process reengineering. Ten questions were designed to measure this construction in this study.

Corporate Governance Environment

This study designates corporate governance environment as the moderators of the relationship between ethical accounting software development and accounting software credibility. In the corporate governance environment, firm needs to focus on the transparency and ethical concerns (Ghosh et al., 2011), the operation evidences for auditing, timely transaction processing and reporting, and friendly with stakeholders (Robertson, Gilley, & Street, 2003; Kelton & Yang, 2008). In this study, therefore, four questions were asked to measure this construction.

Information Technology Intensity

This study defines information technology intensity as the uncertainty and volatile of information technology. New information technology is always developed; the efficiency of information technology is increased while the cost of operations via information technology is opposed. This study determines information technology intensity as the moderating variable of the relationship between ethical accounting software development and accounting software credibility.

Methods

The method shows the test of appropriate instrument to collect the data and the credibility of developed constructions. In this research, the tests of validity and reliability are concerned. Furthermore, the method also presents the statistic techniques and statistic equations that utilized in the analysis.

Validity and Reliability

To be acceptable for the results, this research concerns the validity and reliability of the data collection instrument. Validity of operated instrument was concerned in this investigation. Confirmatory factor analysis (CFA) examines the constructed validity of data in the questionnaire. It is used to investigate the underlying relationships of a large number of items and determine whether they can be reduced to a smaller set of factors. As the rule-of-thumb, the acceptable cut-off score is 0.40, as minimum (Nunnally

& Berstein, 1994). Table 1 presents factor loading of each construction that shows a value higher than 0.40 which is cut-off score recommended by Nunnally & Berstein (1994). The factor loading is ranging from 0.483-0.949.

This research also examines the reliability of the measurements using Cronbach's alpha coefficient (Cronbach, 1951) ,which is commonly used as a measure of the internal consistency or reliability of constructs, to evaluate the reliability. As the suggestion of Nunnally and Berstein (1994), Cronbach's alpha coefficient was recommended that its value should be equal or greater than 0.60 as widely accepted. According to the results from Table 1, Cronbach's alpha coefficients are ranging from 0.607-0.912, respectively. Internal consistency of the measures used in this research must be considered good for all constructions.

Table 1 Results of validity and reliability testing

VARIABLES	Factor Loadings	Cronbach's Alpha Coefficients
Privacy Issue (PRI)	0.545-0.807	0.616
Accuracy Issue (ACC)	0.569-0.889	0.753
Property Issue (PRO)	0.483-0.844	0.607
Accessibility Issue (ACE)	0.643-0.922	0.827
Accounting Software Credibility (CRE)	0.822-0.898	0.903
Financial Performance (FPER)	0.878-0.949	0.912
Non Financial Performance (NPER)	0.566-0.907	0.850
Corporate Governance Environment (CGE)	0.560-0.854	0.687
Information Technology Intensity (ITT)	0.603-0.904	0.709

Statistics

In this research, variance inflation factors (VIFs) was applied to test multicollinearity among independent variables and Pearson's correlation analysis was determined to test the primary correlations between two variables. Importantly, regression analysis using ordinary least squared method (OLS) was operated to statistically estimate the coefficient of hypotheses testing. The proposed hypotheses in this research were transformed to five statistical equations, as follows;

Equation 1: CRE $= \alpha_{01} + \beta_1 PRI + \beta_2 ACC + \beta_3 PRO + \beta_4 ACE + \beta_5 AGE + \beta_6 SIZ + \varepsilon_1$

Equation 2: FPER $= \alpha_{02} + \beta_7 CRE + \beta_8 AGE + \beta_9 SIZ + \varepsilon_2$

Equation 3: NPER $= \alpha_{03} + \beta_{10} CRE + \beta_{11} AGE + \beta_{12} SIZ + \varepsilon_3$

Equation 4: CRE $= \alpha_{04} + \beta_{13} PRI + \beta_{14} ACC + \beta_{15} PRO + \beta_{16} ACE + \beta_{17} CGE$
$+ \beta_{18} PRI*CGE + \beta_{19} ACC*CGE$
$+ \beta_{20} PR*CGE + \beta_{21} ACE*CGE + \beta_{22} AGE + \beta_{23} SIZ + \varepsilon_4$

Equation 5: CRE $= \alpha_{05} + \beta_{24} PRI + \beta_{25} ACC + \beta_{26} PRO + \beta_{27} ACE + \beta_{28} ITT$
$\beta_{29} PRI*ITT + \beta_{30} ACC*ITT + \beta_{31} PR*ITT + \beta_{32} ACE*ITT$
$+ \beta_{33} AGE + \beta_{34} SIZ ++ \varepsilon_5$

Where;

PRI	=	Privacy Issue
ACC	=	Accuracy Issue
PRO	=	Property Issue
ACE	=	Accessibility Issue
CGE	=	Corporate Governance Environment
ITT	=	Information Technology Intensity
CRE	=	Accounting Software Credibility
FPER	=	Financial Performance
NPER	=	Non Financial Performance
AGE	=	Firm Age (Control Variable)
SIZ	=	Firm Size (Control Variable)
ε	=	Error term

Results

Correlation Analysis

For the examination of multicollinearity problems, this study employed Pearson Correlation to evaluate the correlation coefficients among independent variables. The results from Table 2 show that the coefficients among independent variables were smaller than 0.80. As suggested by Hair et al. (2006), there was no multicollinearity problem in this analysis. In addition, this study also employed the variance inflation factors (VIFs) to examine the multicollinearity concerns. Thus, the VIFs for all variables were smaller than 10 which indicated that the independent variables were not correlated with each other (Neter, Wasserman, & Kutner, 1985).

Table 2 Descriptive Statistics and Correlation Matrix

Variables	PRI	ACC	PRO	ACE	CGE	ITT	CRE	FPER	NPER	AGE	SIZ
Mean	4.441	4.265	4.235	4.471	4.103	4.074	4.118	3.294	3.753	2.824	1.824
S.D.	0.390	0.555	0.706	0.509	0.448	0.493	0.589	0.595	0.718	1.155	0.709
PRI											
ACC	0.207*										
PRO	-0.146	0.373**									
ACE	0.040	0.475**	0.481**								
CGE	0.369**	0.370**	0.033	0.590**							
ITT	0.254**	0.322**	0.227*	0.585**	0.497**						
CRE	0.198*	0.707**	0.549**	0.582**	0.576**	0.532**					
FPER	0.023	0.231*	0.166	0.339**	0.350**	-0.097	0.339**				
NPER	0.249**	0.609	-0.044	0.186*	0.436**	0.229*	0.389**	0.231*			
AGE	0.000	0.520**	0.087	0.347**	0.207*	-0.138	0.289**	0.131	0.291**		
SIZ	0.115	0.108	-0.377**	0.065	0.209*	0.036	0.110	0.169	0.109	0.179	

* $p<0.05$, ** $p<0.01$

Effects of Ethical Accounting software development

The result of OLS regression analysis of the relationship between accounting software development and accounting software credibility indicated that privacy issue had positive effect on accounting software credibility ($\beta_1 = 0.126$, $p < 0.05$). Accuracy issue had positive effect on accounting software credibility ($\beta_2 = 0.478$, $p < 0.05$). Property issue had positive effect on accounting software credibility ($\beta_3 = 0.379$, $p < 0.05$). Also, Accessibility issue had positive effect on accounting software credibility ($\beta_4 = 0.188$, $p < 0.05$), as shown in Table 3. Consistently, prior research found that ethical issues associated with customer satisfaction and software adoption (Wolfinbarger & Gilly, 2003; Taherdoost, Jalaliyoon, Namayandeh, Forghani, & Zamani, 2010) Therefore, Hypothesis 1 was strongly supported.

Table 3 Results of OLS Regression Analysis

Independent Variables	Dependent Variables
	CRE
Privacy (PRI)	.126* (.058)
Accuracy (Accuracy)	.478* (.075)
Property (PRO)	.379* (.075)
Accessibility (ACE)	.188* (.069)
Firm Age (AGE)	-.080 (.057)
Firm Size (SIZ)	.270* (.088)
Adjusted R^2	.657

* $p<0.05$

[a] Beta coefficient with S.D. in parenthesis

Effects of Accounting Software Credibility on Firm Performance

The results of OLS regression analysis of the relationship between accounting software credibility and financial performance indicated that accounting software credibility positively affects financial performance ($\beta_7 = 0.320$, p < 0.05). Moreover, the results also indicate that accounting software credibility positively affects non financial performance ($\beta_{10} = 0.330$, p < 0.05), as shown in Table 4. Consistently, Yang et al. (2009) illustrated that perceived ethical performance of electronic commerce business impacted on trusting belief and trusting intention. Consistently, Taherdoost et al. (2010) found that ethical issues, according to PAPA framework of Mason (1986), impacted on customer satisfaction and adoption. Additionally, Bailey and Pearson (1983) discovered that user satisfaction was derived by users weighted reaction to a set of criteria which ethical issues were the significant criteria to evaluate and select the software. Likewise, Wolfinbarger and Gilly (2003) indicated that there was the positive relationship between reliability, security, privacy, and satisfaction. Also, satisfaction of computer system directly affected system adoption (Igbaria & Parasuraman, 1989; Yoon, 2002). Thus, Hypothesis 2 was supported.

Table 4 Results of OLS Regression Analysis

Independent Variables	Dependent Variables	
	FPER	NPER
Accounting Software Credibility (CRE)	.320* (.091)	.330* (.088)
Firm Age (AGE)	.013 (.080)	.164* (.077)
Firm Size (SIZ)	.185 (.125)	.055 (.121)
Adjusted R^2	.110	.167

* p<0.05

[a] Beta coefficient with S.D. in parenthesis

Table 5 Results of OLS Regression Analysis

Independent Variables	Dependent Variables
	CRE
Privacy (PRI)	.003 (.052)
Accuracy (ACC)	.461* (.066)
Property (PRO)	.445* (.072)
Accessibility (ACE)	-.122 (.073)
CG Environment (CGE)	.614* (.088)
PRI*CGE	.014 (.049)
ACC*CGE	-.116* (.058)
PRO*CGE	-.206* (.097)
ACE*CGE	.108 (.073)
Firm Age (AGE)	-.093 (.049)
Firm Size (SIZ)	.040 (.112)
Adjusted R^2	.770

* p<0.05

[a] Beta coefficient with S.D. in parenthesis

Moderating Effects of Corporate Governance Environment

As the results presented in Table 5, the results indicated that corporate governance environment negatively moderates the relationship between accounting software development and accounting software credibility. Particularly, the results indicated that corporate governance environment negatively moderate the effects of accuracy and property issues of accounting software development on accounting software credibility ($\beta_{19} = -.116$, p < 0.05; $\beta_{20} = -.206$, p < 0.05). Interestingly, this study found that the moderating effect of corporate governance environment on the relationship between ethical accounting software development (accuracy and property dimensions) and

accounting software credibility was negatively significant while the direct effect of corporate governance environment is positive. In the intense corporate governance mechanism and as the regulations of Revenue Department of Thailand, the source code of accounting software was not allowed for customers, to protect tax evasion and the accuracy of accounting reports according to IFRS. Hence, customers cannot modify the accounting software to consist with their accounting policies by themselves. This reason might effect to the perceived credibility of accounting software. Therefore, Hypothesis 3 was not supported.

Moderating Effects of Information Technology Intensity

As the results presented in Table 6, the results indicated that information technology intensity moderates the relationship between accounting software development and accounting software credibility. Specifically, the results showed that information technology intensity negatively moderates the effect of accuracy issue of accounting software development on accounting software credibility $(\beta_{30} = -.387, p < 0.05)$. Moreover, the results from Table 6 also indicated that information technology intensity positively moderates the relationships between property and accessibility issues, and accounting software credibility $(\beta_{31} = .407, p < 0.05; \beta_{32} = .630, p < 0.05)$. Likewise, Auh amd Menguc (2005) stated that firms need to adopt their processing systems according to the intensity of information technology to maximize their incomes. As the results, Hypothesis 4 was partially supported.

Contributions

Theoretical Contributions

This research extensionally applied computer ethical framework of Mason (1986), PAPA, into the context of accounting software development and also investigated in accounting software developers in Thailand. The results were accordingly related to the previous research, ethical

software impacts the software credibility. Also we found that accounting software credibility positively related to both financial and non-financial performance.

However, there are some suggestions for future research. First, future research needs to investigate these supposed relationships with other types of sample to generalize the contribution of Mason' PAPA. Second, future research needs to introduce and construct the alternative ethical factors that affect the credibility of accounting software, such as organization norms and social responsibility factors. Third, future research needs to investigate the ethical of others information system developments, beyond accounting information system. Finally, the other consequences of software credulity, such as firm reputation and firm image are appropriated to investigate

Table 6 Results of OLS Regression Analysis

Independent Variables	Dependent Variables
	CRE
Privacy (PRI)	.017 (.052)
Accuracy (ACC)	.231* (.074)
Property (PRO)	.431* (.075)
Accessibility (ACE)	.249* (.089)
IT Intensity (ITT)	.049 (.098)
PRI*ITT	.030 (.051)
ACC*ITT	-.387* (.099)
PRO*ITT	.407* (.108)
ACE*ITT	.630* (.108)
Firm Age (AGE)	-.015 (.058)
Firm Size (SIZ)	-.046 (.101)
Adjusted R^2	.764

* p<0.05

[a] Beta coefficient with S.D. in parenthesis

Managerial Contributions

For the contributions for management, software developers should concern the ethical issues including privacy, accuracy, property, and accessibility in the processes of information system development, to enhance the credibility of products. The results also indicate that software credibility positively impacts both financial and nonfinancial performance of accounting software businesses. Thus, software developers should add software application control into their system because it can improve the performance of internal controls of businesses, hence, the developed products will be satisfied and adopted. Therefore, the performance of developer firms will be increased. For example of software application controls, software should consist of user identification and authentication to support duties segregation activity of internal control. Moreover, developers should concern the moderating effects of corporate governance environment and information technology intensity.

Limitations

Some limitations of the research could be described as follows: 1) accounting software credibility is measured by the perception of software developer. Therefore, the credibility from owner perspective may relate to cognitive bias that is occurred when they evaluated the performance of themselves. Future research should measure the credibility from another perspective such as the perception of customer. 2) This research measures developer's firm performance, both financial and non-financial performance, using five-point Likert's scale. However, to improve the reliability of the results, future research should modify the construction of firm performance or use more objective data such as net income and return on investment from announced financial reports to measure this variable.

Conclusions

This study aims at the investigation on the relationship between ethical accounting software development and accounting software credibility. Mason's ethical framework was categorized in four perspectives including privacy, accuracy, property, and accessibility. Therefore, ethical accounting software development was measured as such framework. The relationship between accounting software credibility and firm performance was also investigated. Corporate governance environment and information technology intensity were investigated as the moderators influencing the relationship between ethical accounting software development and accounting software credibility. Accounting software development firm was designated as population and sample. However, 119 firms were utilized in the statistical analysis. This research assigns OLS regression technique as the statistical analysis to investigate among the hypothesized relationship.

The results showed that ethical accounting software development positively affected accounting software credibility. Accounting software credibility positively affected firm performance, both financial and non-financial performance. Also, this research indicates that corporate governance environment negatively moderated the relationship between ethical accounting software development and accounting software credibility. Additionally, this research also showed that information technology partially moderated the relationship between ethical accounting software development and accounting software credibility.

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