Computer Ethics Opinion and Pattern of Ethical Problem Decision

Wasun Khan-Am[1], Kritiya Rangsom[2]
[1]Information Systems Department
Rajamangala University of Technology Thanyaburi
Rangsit-Nakornnayok Rd. Khlong 6 Thanyaburi Pathumthani 12110
e-mail: am.siamese@gmail.com

[2]Information Systems Department
Rajamangala University of Technology Thanyaburi
Rangsit-Nakornnayok Rd. Khlong 6 Thanyaburi Pathumthani 12110
e-mail: gritiya@hotmail.com

***Abstract*— this article describes the opinion of first-year undergraduate student and their decision-making pattern in computer ethical issue. This research tool was a questionnaire. The data of 88 samples was collected and analyzed by descriptive statistics and multiple regressions. The research finding was all of respondents studied ethics course, and religion course. The 86 samples also studied law course. In ethical issues, most of the respondents used only their common sense in deciding what is right or wrong. The thirty-two of them used common sense, religion approach, and law together for decision-making. Two samples made a decision by either religion approach or law. Three samples made a decision by either to combine common sense with religion approach or to combine common sense and law. Their opinions on five precepts were strongly agreed level. For both of 10 commandments of computer ethics and hacker ethics, their opinions were agreed level. In analysis of relationship, the third precept (v11), Abstain from false speech, and gender could predict the opinion on ten commandments of computer ethics in terms of fraud (y).**

Keywords-: computer ethics, opinion, decision-making pattern

I. INTRODUCTION

Today, Thai student life style has been affected by the Computer and Internet Technologies. Thai student spends a lot of hours for using Computer and the Internet, especial first-year undergraduate student. Since they have become to a student in a university, they have more spare time a day. The social always have the questions; do they use ICT in the just way? What do they use for decide in ethical issue? This research takes this chance to find a solution of social questions about ethics and the pattern of deciding for ethical issue. The result of this research would be a guideline of the Institute to complete their computer ethics.

A. Objectives

1) To measure an opinion on ethics

2) To study pattern of decision-making in ethics issues

3) To analyze a relationship between both of personal factors and five precepts with computer ethics

B. Hypothesis

1) Combination of five precepts and personal factors could predict opinion on ten commandments of computer ethics.

2) Combination of five precepts and personal factors could predict opinion on hacker ethics.

C. Framework

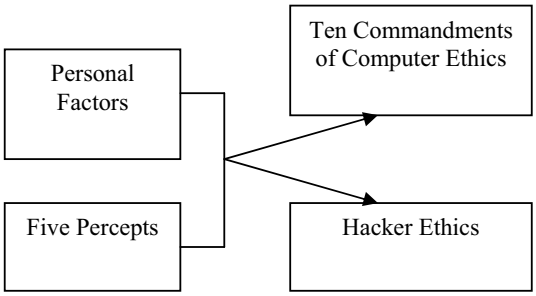

Figure 1. Research Framework

II. LITTERTURE REVIEW

A. Ethics [4]

The precepts/morality is used to decide what is right or wrong, but the ethic study is a standard which uses to reason for decision and to encourage a decision. .

B. Five Percepts [1-2]

The meaning of the precepts is to abstain from action; they look like a morality rule. The abstaining is done caused of predetermine or the presence of the conscious mind. The five precepts are the most basic precepts for householder for purifying the holder's mind. The society is peaceful whether everyone follows this rule. The details are as follow:

1. Abstain from killing
2. Abstain from take someone belonging's without permission
3. Abstain from sexual misconduct
4. Abstain from false speech
5. Abstain from intoxicant

According to five precepts, there is not only Buddhist but layperson also practices them. In this research, three precepts were applied to measure ethics for living.

C. Computer Ethics Historical [1-2]

The concept of computer ethics happened suddenly when computer was invented. They concern about misuse of computer may lead to make a social problem. The beginning of computer ethics was 1940s at MIT, and the concerning was continued until now.

D. Ten Commandments of Computer Ethics [5]

The well-known 10 commandment are as:

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people's computer work.
3. Thou shalt not snoop around in other people's computer files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness.
6. Thou shalt not copy or use proprietary software which you have not paid.
7. Thou shalt not use other people's computer resources without authorization or proper compensation.
8. Thou shalt not appropriate other people's intellectual output.
9. Thou shalt think about the social consequences of program you are writing or the system designing.
10. Thou shalt always use computer in ways that insure consideration and respect for your fellow humans.

In this research, Ten Commandments except number 9, was applied to measure computer ethics of the respondents.

E. Hacker Ethics [3]

The first step of hacker ethics emerges from Stephen Levy who defined hacker ethics framework in activity between MIT and Stanford University, late 1950 – 1960. The details of ethics are:

1. Hands On Imperative
2. Information Wants to Be Free
3. Mistrust Authority
4. No Bogus Criteria
5. You can create truth and beauty on a computer
6. Computers can change your life for the better

The hacker ethics no. 1 and 2 will be used to measure hacker practices of the respondents.

III. RESEARCH MEHODOLOGY

A. Population And Sample

The research population is first-year undergraduate student who studies in information systems department. The population size is 125 students. (information from registration students in 2nd semester 2011 of office of registrar. Retrieve on Feb 2, 2012)

The sample size is 100 students which calculate from Taro yamani [6] formula at error level 0.05. The data was collected by convenient sampling method from samples.

B. Statistics

- Descriptive Statistics such as Frequency distribution, Percentage, Mean, and Standard Deviation are used to describe demographic characteristics and opinion on computer ethics.
- The dependent variables are analyzed by factor analysis for creating component.
- The hypotheses are tested by using Multiple Regressions.

IV. RESEARCH FINDING

After data collected, questionnaire was classified and verified. There are only 88 sets of questionnaire was conducted in this research. The research finding presents in 2 parts.

A. General Results

The descriptive result shows as follows:

TABLE I. THE DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Demographic Characteristics	Value	Freq.	%
Gender	Male	36	40.9
	Female	52	59.1
Age	18 yrs.	17	19.3
	19 yrs.	61	69.3
	20 yrs.	10	11.4

Table 1 show the large number of respondents, 59.1 percentages, is female, and the 69.3 percentages of respondent age 19 years old.

TABLE II. EXPERIENCE OF STUDIES

Subject	Value	Freq.	%
Ethics	Studies	88	100.0
	Not studies	0	0.0
Religion	Studies	88	100.0
	Not studies	0	0.0
Law	Studies	86	97.7
	Not studies	2	2.3

Table 2 shows: all of respondents studied ethics and religion subject. There are only two respondents did not study law subject; the rest (86 respondents) did.

TABLE III. CRITERION FOR DECISION-MAKING

Criterion	Value	Freq.	%
Common senses	Use	82	94.2
	Not use	6	6.8
Religion	Use	37	42.0
	Not use	51	58.0
Law	Use	37	42.0
	Not use	51	58.0

Table 3 shows: most of respondents made decision by their common sense, the percentages are 94.2. Using religion and law are equal which 37 respondents are

TABLE IV. PATTERN OF DECISION MAKING

Pattern	Ferq.	%
Only common sense	46	52.27
Only religion	3	3.41
Only law	3	3.41
Common Sense and Religion	2	2.27
Common Sense and Law	2	2.27
Common Sense, Religion, and Law	32	36.37
Total	**88**	**100.00**

The primary pattern of decision is only common sense; they are 52.27 percentages. Together with common sense, religion and law are a second pattern. Both of law and religion are ranked a third pattern. The last patterns are to combine common sense and religion as the same level with to combine common sense and law.

TABLE V. OPINION OF ETHICS

Level of Opinion	Mean	S.D.
Precepts	4.68	0.48
Commandments of Computer Ethics	4.04	0.98
Hacker Ethics	4.47	0.55

Table 5 shows: the opinion on precepts is in strong agreed level. Both of opinion on commandments of computer ethics and opinion on hacker ethics is agreed level.

B. Hypothesis Testing Result

The first step is to reduce the observed variable to component. The factor analysis is conducted. The result shows in table below.

TABLE VI. FACTOR ANALYSIS RESULT

	Component	
	1	2
v12	0.576*	0.559
v13	0.602*	0.548
v14	0.729*	0.395
v15	0.002	0.876*
v16	0.256	0.592*
v17	0.895*	0.175
v18	0.864*	0.162
v19	0.447	0.688*
v20	0.468	0.696*

Table 6 determines number of component. The first component consists of v12, v13, v14, v17, and v18. The other component consists of v15, v16, v19, and v20. The first component names harm; the second component names fraud.

In second step, to test both of personal factor and precept factor with hands and fraud. The test result is both 3rd precept (v11) and gender could predict opinion on commandments of computer ethics in terms of fraud (y). The result tables follow as:

TABLE VII. MODEL SUMMARY

R	R Square	Adjusted R Square	Std. Error of the Estimate
.633	.401	.387	.37280

Table 7 explains the strength of relationship between model and the fraud component. R value is a mild value (0.633) that indicated intermediate relationship.

TABLE VIII. ANOVA

	Sum of Square	df	Mean Square	F	Sig.
Regression	7.911	2	3.955	28.461	.000
Residual	11.813	85	.139		
Total	19.724	87			

Table 8 shows a significant F statistic (0.00) indicates the model is good enough to predict the opinion on commandments of computer ethics in terms of fraud.

TABLE IX. COEFFICENTS

	B	SE	t	Sig.
Constant	2.056	.359	5.724	.000
v11	.472	.079	6.000	.000
GENDER	.228	0.84	2.712	.008

Table 9 shows the stepwise algorithm chooses the third precept (v11) (t = 6.000, Sig. = .000) and gender (t = 2.712, Sig. = 0.008) as a predictor. The coefficient of third precept is 0.472; the coefficient of gender is 0.228. The constant value is 2.056.

The equation model is

$$y = 2.056 + 0.472v11 + 0.228gender \quad (1)$$

where

y	is opinion on commandments of computer ethics in terms of fraud
v11	is third precept
gender	is gender of respondents

V. CONCLUSIOIN

A. Summerize

The demographic characteristics of the respondents are female, age 19 years old. The backgrounds of them are: all of them studied ethics and religion, and only two did not study law. In opinion level, they have a strongly agreed level with five precepts and agreed level in Ten Commandments of computer ethics and hacker ethics. In pattern of decision-making, primary pattern of decision is use common sense only. The second pattern is merge religion, common sense, with law. The third patterns are both of law and religion. The last patterns are merge religion with common sense and merge law with common sense.

The hypothesis test found the 3rd precept (v11), Abstain from false speech, and gender could predict the opinion on commandments of computer ethics in term fraud (y), and the equation model is y = 2.056 + 0.472v11 + 0.228gender

B. Suggestions

According to the research result, there are 3 suggestions as:

- In case of respondents' opinion in hacker ethics, agreed level. It is a bad trend for social. Cause of their though, they should be educated in copyright law and Intellectual property law.
- In case of the decision-making pattern in ethics issues, most of them use common sense, but they are teenager. They ought to be gained more experience in ethical situation.
- By regression model, encourage in understanding third precept of five precepts will make a better student's opinion on computer ethics.

C. Future Researchs

This research is built informative about computer ethics and decision-making pattern. Five precepts, ten commandments of computer ethics and hacker ethics are used as a measured equipments. The regression model indicates third precept and gender as the predictor for forecasting some of the opinion on computer ethics. The future research may be study in computer ethics behavior, the correlation between opinion and behavior in computer ethics, the model to forecast opinion or behavior in computer ethics, the model to forecast ethical behavior from any factors, to analyze between ethical opinion and ethical behavior, or change a sample to computer professional.

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