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### Dimensions of the University Lecturers Behaviour in Using Non-original Software

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**Abstract:** The research reveals the behaviour of lecturers in copying non-original software. It focuses on the individual decision-making process in using software. The research model uses integration of two theories between the Theory of Planned Behaviour / TPB and the Expected Utility Theory. This explanatory research aims to explain the causal relationship between variables through hypothesis testing. The total sample of 159 lecturers of Economics and Business Faculty from 10 public and private universities in the city of Malang, East Java is determined based on the Cochran formula with a probability random sampling technique. Structural Equation Modelling (SEM) is used as the multivariate data analysis technique. The research findings reveal: 1) Lecturer's knowledge of software does not have a negative effect on their attitudes in using non-original software; 2) Lecturer's attitude does not have a negative and significant mediating effect on their knowledge of software and its impact on the intention to use non-original software; 3) Perception of price has a positive and significant influence directly on the decision in using non-original software; 4) The mediation attitude positively and significantly influence the price of the software on the intention to use non-original software; 5) Lecturer's attitude has a positive and significant effect on the intention to use non-original software; 6) Subjective Norms has a positive and significant impact directly on the intention of using non-original software; 7) Control Behaviour perceived has a positive and significant effect on the intention to use non-original software. The research has revealed that attitude change is not only necessary for those who are educated, but also the educators when it comes to non-original software. It is necessary to enforce the lecturer's code of ethics, the provision of open source software, and the awaiting change of attitudes towards intellectual property ownership.

**Keywords:** knowledge of software, price perceptions, attitudes, subjective norms, perceived behavioural control, intention to use non-original software.

## 1. INTRODUCTION

This study is closely related to consumer education in the economic behaviour of transaction events, which occurs on the side of demand. Consumer education is the liberation of people to use information effectively and to be more confident and concerned about the decisions they make when buying and/or using goods and services. Consumer education (economy) in essence involves the consequences of the obligations for producers and rights for consumers and vice versa. The obligation for producers means the fulfilment of what should be the rights of producers, without losing the right as a consumer. Consumer education concerns the literature of using the information and skills, with development, to address consumer protection and copyright laws into the realm of sufficient knowledge, which is also the responsibility of government and society. The market is increasingly complex in the 21st century, resulting in greater challenges for effective and wise consumer decision making due to the high level of unlicensed software (Business Software Alliance (BSA), 2017, Rawlinson & Lupton, 2007). In the future, the more complex the widespread differences in the needs and capacities of the community in terms of consumer education, the more ability needed to consider sensible decision making (moral) as a challenge of consumer education (Clement, 2005). Information obtained by well-educated people certainly encourages them to realize that the right decision with sufficient knowledge is becoming increasingly important. Nonetheless, whether they are educated, knowledgeable, or skilled enough after they get a lot of education in making the good and wise decision as consumers still need to be studied in depth. This educational (educational) consumer education study is important considering that consumer education is tied to the skills, attitudes, knowledge, and understanding required being a smart consumer. This is known in the form of behaviour that is aimed at all stages of life in empowering young to old consumers to be capable of being confident, healthy, and independent in making decisions. The government itself through Peraturan Pemerintah Republik Indonesia Nomor 58 Tahun 2001 Tentang Pembinaan dan Pengawasan Penyelenggaraan Perlindungan Konsumen, assigns the Minister of Trade to coordinate the implementation of consumer protection with the relevant technical ministers in terms of 1) increasing understanding and awareness of business actors and consumers on their rights and obligations; 2) improving consumer empowerment through education, training, and skill improvement; and 3) socializing the legislation in the form of information dissemination. Researchers realized that software piracy is a negative behaviour, thus significant studies in an effort to prevent software piracy in addition to predict the behaviour characteristics of piracy are needed.

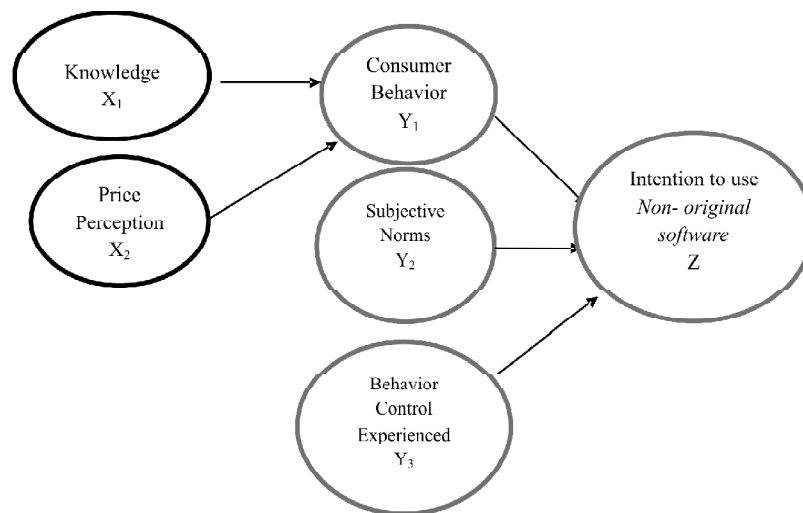
Based on three points mentioned above, it has become the responsibility of the government to realize the education for the public to socialize and implement their role as an educator of the economic behaviour of the community. Provision of education, training, and skills to form the awareness of moral, knowledge and self-consciousness are in line with this research. This is one form of evaluation of the results and impact of the application of economic values and behaviour in society. Consequently, this study leads to the evaluation of the results of economic education to the general public and consumer education, especially regarding the behaviour of academics in making consumption decisions. The contribution of economic education (business) is to provide the possibility of creating a better communication in the form of an acceptable policy in order to protect intellectual property rights in the college environment.

The purpose of this study is to explore the relationship between the seven variables, which are the knowledge of the software, the perception of price, the consumer attitude, the subjective norms, the perceived behavioural control, and the intention to use non-original software. The research will examine

based on the Theory of Planned Behaviour / TPB of Ajzen and Fishbein (1980) concerning the knowledge, the price, the individual attitudes, the subjective norms, and the controlling behaviour perceived by the individual in deciding his purchase decision against software piracy that would generate a mechanism for the development of efforts to reduce illegal practices. Expected utility theory (theory hope to benefit) will also be used, which is a theory in economics that contains the hypothesis that a person with a preference of expect to good quality will get it despite having to bear the possible risks. The implication of this theory is that people will take risks that are considered neutral when the stakes are small (Rabin, 1999). In this study, the theory applied is to study the preference that there is a high price difference between the original software and non-original software considering the cost and benefit. Individuals taking the decision to choose the less expensive software benefit from obtaining lower cost, despite the risks of punishment for being normative and factual that would violate existing intellectual property and moral standards (Mascus 2000, Samuelson 2000, Wikipedia, 2012).

In this study, the research questions developed are: 1) How does the perception of lecturers regarding the condition (description) of knowledge of software, price perception, attitude, subjective norms, perceived behavioural control and intention to use the non-original software?; 2) How does the perception of lecturers on the factors that affect the knowledge of non-original software, price perception, attitudes, subjective norms, perceived behavioural control and intention in using the non-original software? 3) Does the lecturers' knowledge about software have a significant negative effect directly in the attitude regarding the choice of non-original software? 4) Does the attitude of mediation have a negative and significant effect on lecturers' knowledge of software to use the non-original software? 5) Does the price perception on software have a positive and significant effect directly on the attitudes of choosing non-original software? 6) Does the mediation price attitude toward software have a positive or significant indirect negative on the use of non-original software? 7) Does the attitude of lecturers have a significant positive effect directly on the intention to use the non-original software? 8) Do the subjective norms of software have a positive and significant effect on the intention to use the non-original software? 9) Does behaviour control perceived by lecturers have a significant positive effect directly on the intention to use the non-original software?

As an overview, the following illustration of the direction of the research model is developed.



**Figure 1: Illustration of Direction of the Research Model Hypothesis**

## **2. METHOD**

The survey study tested the Theory of Planned Behaviour on the data collected through questionnaires. The goal is to re-examine the existing model with the empirical facts of the relationship of several variables. The focus of this study is to assess the influence of knowledge, perceptions of price, consumer attitudes, subjective norms, and behaviour perceived on the intention to use non-original software.

The population and sample consisted of lecturers of the Faculty of Economics and Business from 10 public and private universities in Malang, with a minimum B reputation and accreditation. Determination of the number of samples is taken from Path analysis (Line) and SEM that requires a sample of 100-200 respondents. The number of samples is determined by using the Cochran formula (1977) by using probability random sampling in order to provide equal opportunities for the members of the population and to avoid disproportionate stratified random sampling techniques where the probability sampling of the number of samples are stratified but less proportionate. It is finally set at 159 samples from a population of 536. The questionnaire of this study consisted of a questionnaire on the knowledge of software (consisting of 2 questions of Nills *et al*, 2010); the perception of software prices (3 questions of Peace, 2003); the attitude towards non-original Software (4 questions of Woolley & Eining, 2006); the subjective norms (4 questions from Woolley & Eining, 2006); the behaviour control perceived (3 question from Chen, 2008) and the intention to use non-original software (5 questions of Woolley & Eining, 2006).

SEM (Structural Equation Modelling) is applied as multivariate data analysis technique in this research, which aims to determine causal relationship model among a number of variables (Hair, 1998). A complete modelling of SEM consists essentially of Measurement Model and Structural Model (Wijanto 2008, Ghozali, 2005). The Measurement Model is intended to confirm the dimensions developed on a factor. Moderate Structural Model or Structural Model is a model of relationship structure that forms or explains the causality between factors, by using Ferdinand's opinion (2000, p.30).

## **3. LITERATURE REVIEW**

Software piracy is the act of copying what is not entitled or the act of distributing the legal software (the one that has intellectual property rights). This is done by copying, downloading, sharing, selling or installing copies of software for personal work or employment interest. Software piracy is threatening the ability of technology companies, local resellers and corporate services; reducing state tax revenues; and increasing the risk of cyber crime and security problem (Suki *et al*, 2011). The behaviour of software piracy has led to the existence of laws on copyright protection. Software developers are legally protected where users are not entitled to copy and distribute a copy of the software without the permission of the inventors. Nevertheless, the development of copyright protection law is relatively unable to protect the copyright.

Findings by Rahim *et. al* (2000) in Brunei Darussalam concludes that more than two-thirds (69%) of the lecturers surveyed are using the non-original copy of the software and 27 percent of the academic personnel does not support the imposition of copyright laws. Things are less perturbing compared with the data by Wickham *et al* (1992), who determine that 38.5 percent of academics working at the University in the US use pirated software. A research by Cheung & Prendergast (2006) where they ask 1,152 buyers of pirated products claims these buyers are college educated with the white collars type of work. They are

the main buyers of pirated VCDs and they are interested in buying these because of the range of varieties and the fastness of the VCDs release. Research conducted by Peace *et al* (2003) is developed from a theoretical model of the theory of planned behaviour, the expected utility theory, and the deterrence theory. By surveying 201 respondents' employees who take the MBA, the results indicated that the individual's attitude, subjective norm, and control behaviour significantly affect the perceived intention of copying the non-original software.

The study developed based on the Theory of Planned Behaviour (TPB) by Ajzen (1995) is expanding from the previous theoretical basis of the Theory of Reasoned Action (TRA). In TRA, Ajzen (1980) states that the intention of a person to perform a decisive behaviour will be determined or not be determined by the behaviour. Furthermore, Ajzen argued that the intention of doing or not doing a particular behaviour influenced by two basic determinants, the first dealing with the attitude (attitude towards behaviour) and the other dealing with the social environment that influences subjective norm (subjective norms). Theory of Reasoned Action of Fishbein and Ajzen, states that people will consider the consequences of their behaviour alternatives before doing so, and they chose a particular behaviour as it relates to the expectations of desired results. This theory was later re-developed by Ajzen, who compiled it by using the basic assumption that humans behave in a conscious way and consider all available information. In an effort to reveal the influence attitudes and subjective norms on the intention to do or not do the behaviour, Ajzen complements the TRA's beliefs (beliefs). He proposed that the attitude comes from the confidence in the behaviour (behavioural beliefs), while subjective norms are derived from normative beliefs (normative beliefs). Theory of Planned Behaviour (TPB) is a further development of the Theory of Reasoned Action (TRA) where Ajzen (1988) added a construct that is not in TRA, which is the perceived behavioural control (perceived behavioural control). This construct is added in an effort to understand the limitations of the individual in order to perform certain behaviours (Chau and Hu, 2002). In other words, to do or not to do behaviour is not only determined by the attitude and subjective norm alone but also the individual's perception of control that can be done which is based on one's belief in the control (control beliefs).

### **3.1. The Influence of Knowledge of Software on Attitude**

Product knowledge is known as a characteristic that affects all phases in the decision-making process (Bian, 2009). This refers to consumers with a better level of product knowledge and has a more complex, better experience in formulating their decision-making. When they process information that cognitively lacks information, they will seek to gather more information to make decisions. According to Kempf and Smith (1998) consumers with a higher level of knowledge about products have a more diagnostic and a more information-absorbing capability than those with lower knowledge. With minimal education level at S2, lecturers tend to have a higher knowledge and understanding regarding the legal consequences of illegal software and social norms compared with general people. In the context of illegal products, consumers with a higher knowledge are able to evaluate information more accurately and more carefully in choosing fake branded products (Bian & Moutinho, 2011). There are some evidences where BSA finds that countries with strict rules and strong law enforcement policies have a lower software piracy rate than the state that is less strict in enforcing the law (2008). This is supported by the findings of Lau (2007), Marchetti & Shelley, 2009, which found that consumer knowledge about software has a negative effect on attitudes toward software piracy. However, the research by Wooley and Eining (2006) and the research Bian and



Moutinho (2011) show the opposite. Thus, the knowledge of lecturers can reduce their preference on illegal software. Nitat relates the behaviour using software as a negative behaviour, but the increasing knowledge will provide awareness for someone to do so. Based on these deductions of this research, the hypothesis is concluded as:

- H<sub>1</sub>: The knowledge of Software has a direct negative effect on the behaviour in using non-original software
- H<sub>2</sub>: Mediation behaviour has a negative and significant effect on the influence lecturers' intention to use non-original software

### **3.2. The Influence of Software Price Perception on Attitudes**

In most cases involving the use of computer software, consumers either choose to buy the software, copy the software illegally, or do not use the software. For this option, consumers are economically faced with a rational choice in the hope to gain benefit for the use of the software. The choice is related to the theory of expected utility theory that in making a decision, the consumer as a user considers the costs and benefits. In regard to illegal copying, the price becomes a consideration of the attitude in buying software, because consumers are faced with a price gap between the original and pirated products. However, the hope of obtaining a copy of non-original is also confronted with the calculation of the applicable legal law and public morals. Individuals who are going to copy non-original software hopes to benefit more from the pirated software compared with the benefits that are acquired when they are using the original software. The economic model predicts that people are copying the software to others when they get some profits back or when they receive compensation (Wooley and Eining 2006). The consideration of the price is a form of reflection of the individual's belief that by using non-original software they will likely be financially burdened. Initial research reveals the opposite of what is expected, that non-original product buyers do not always come from lower socioeconomic groups (Phau *et al.*, 2001; Prendergast *et al.*, 2002). Although the findings in Singapore by Swee *et al* (2001) found that low-income groups preferred to use pirated CDs. Thus this research is relevant to study lecturers as the middle and upper economic class. Peace research results (2003) on employees who took an MBA degree and Lau (2007) have shown that the influence of price perception variable affects the attitude towards pirated software. Theoretically, a higher software price is likely to encourage individuals to illegally copy the software package. From these findings, the hypothesis of this study is:

- H<sub>3</sub>: The software price perception has a direct positive effect on the attitudes in using non-original software.
- H<sub>4</sub>: Mediation attitude toward software has a positive and significant indirect negative effect of the intention to use non-original software.

### **3.3. The Influence of Attitudes toward the intention in Using Non-original Software**

The attitude of the lecturers and their perceptions regarding the use of the non-original software is very important for education. The lecturers are important figures to transmit the positive aspects. From lecturers, more valuable communication in terms of educational application and intellectual property rights policy will be created. The social psychology literature on behavioural research has confirmed that attitudes are as

important predictors of a behaviour, behavioural intentions and explanatory factors that affect individual's behaviour. Attitude is a belief that consequences exist as a manifestation within the individual (Shih and Fang, 2004). All studies that are conducted concerning attitudes find that attitudes affect the intention of using pirated software (Wee, *et al* (1995), Ang *et al* (2001), Peace *et al* (2003), George (2004), Wang *et al* (2005), Wooley and Eaning (2006), de Matos *et al* (2007), and Chen *et al* (2008), Phau and Min Teah (2009), Lee and Yoo (2009), Marcketti and Shelly (2009), Shoham *et al.* (2010), Nill *et al* (2010), and Suki *et al* (2011). They also found that attitude is a powerful predictor of the use of pirated software among internet users. This brings the research with the hypothesis:

H<sub>5</sub>: The attitude of lecturers has a direct positive effect on the intention to use non-original software

### **3.4. The Influence of Subjective Norms on the Intention to Use Non-original Software**

Generally, the influence of social norms on non-original software has been well studied. The German society has a non-significant effect on the use of non-original software (Nill *et al* 2010). The structure of the individual norms is shaped in the form of belief in behaviour based on the theory that directly affects subjective norms or perceptions because of the social pressure to obey them in the hope of encouraging them to behave. Subjective norms thus affect the tendency to behave. If the expectations of colleagues and faculty encourage certain behaviour, the individuals will tend to do it. Researches by Peace *et al.* (2003), De Matos *et al.* (2007), Chen (2008), Phau & Teah, Lee and Yoo (2009), Shoman *et al* (2010) and Suki *et al* (2011) have revealed the influence of subjective norms on the intention of using illegal software. The findings are not supported by individualistic communities in Germany in Nill *et al* (2010), and George (2010) where he is studying the internet use. This research proposes the following hypothesis:

H<sub>6</sub>: The subjective norms of lecturers have a direct significant positive effect on the intention to use non-original software

### **3.5. The Influence of Behaviour Control perceived on the Intention to Use Non-original Software**

Control behaviour perceived is the embodiment of the function of self-control, which is based on factors that facilitate or complicate the implementation of behaviour and perceptions regarding these factors. In other words, how far any of these factors have the power to facilitate or complicate the implementation of behaviour (power of control belief or belief power control) is discussed. Peace *et al.* (2003) and Chen (2008) find that the control behaviour perceived has an influence on the intention to pirate the software. The opposite was found by George (2004) where there is no influence on these two variables. The hypothesis of this research is:

H<sub>7</sub>: The control behaviour perceived has a direct positive influence on lecturers' intention to use illegal software

## **4. RESULT AND FINDING**

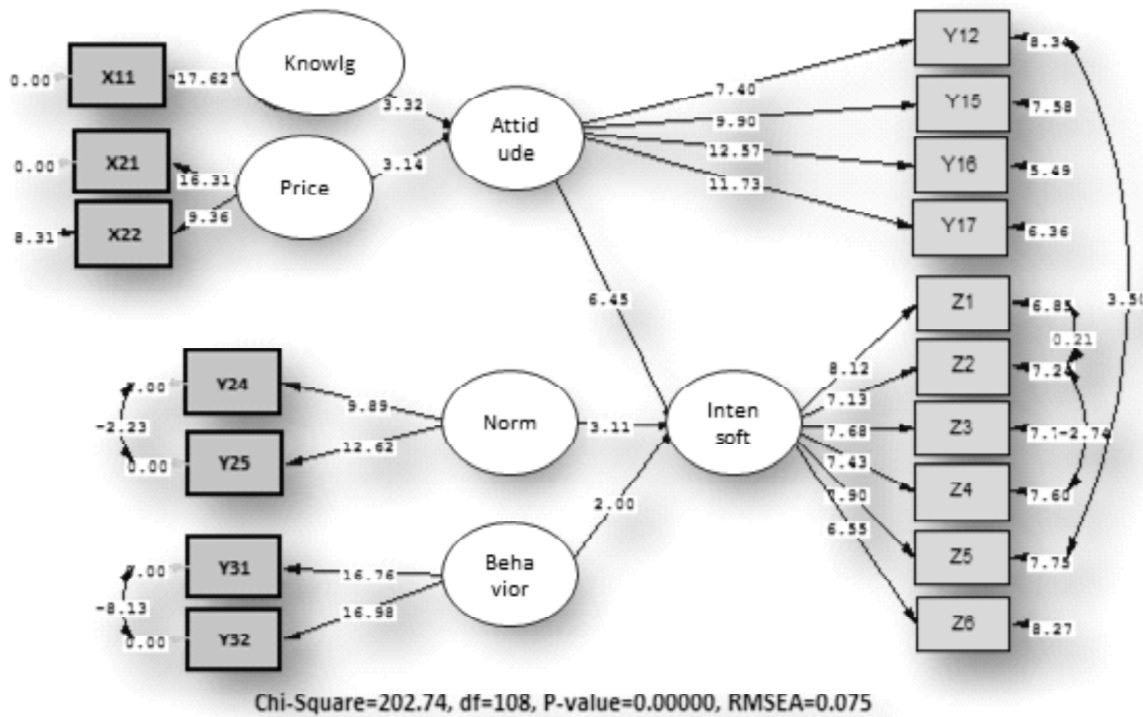
The findings showed that all the parameters of the construct form: knowledge of Software, software price perception, Attitude toward non-original software, subjective Norms, control behaviour perceived, intention to use non-original software is varied 1 construct at the level of quiet low (knowledge of non-original Software); 4 constructs at a level good enough (attitude, subjective norms, behavioural control

and intention of using non-original software) and 1 construct at the level of high (price perception). This is indicated by the value of the average (mean) of each construct in Table 1 below.

**Table 1**  
**Average Construct of Descriptive Findings**

Notation	Construct	Average (mean)	Interpretation
X <sub>1</sub>	Knowledge of non-original Software	2.4874	Low enough
X <sub>2</sub>	Software price perception	4.1843	High
Y <sub>1</sub>	Attitude towards non-original software	3.2759	High enough
Y <sub>2</sub>	Subjective norms	3.1698	High enough
Y <sub>3</sub>	Control Behaviour Perceived	3.1682	High enough
Z	Intention of using non-original software	3.0220	High enough
The average construct		2.588	

Theoretically, based on the steps in the SEM-Lisrel program, researchers always try to do a modification of the structural model in several steps in the hope to improve the final structural model results. The steps taken by researchers are based on the suggestions contained in the modification of existing indices, which is by modifying the values of error as the only way to improve the models. After the following steps are done in Figure 2, the results of the final trajectory diagrams can be exposed below based on solution standards and t values.



**Figure 2: Diagram Re-specification Tracks of Structural Model (t-value)**



Based on the two trajectory pictures over data-based standard solution (Standardized Solution) and  $t_{(t\text{-value})}$ , improvement in results can be seen when they are compared to the data constructs earlier, which is especially evident in three key areas: RMSEA = 0.075 that already meet the threshold  $\leq 0,080$ , although the value of Chi-Square ( $\chi^2$ ) is still high at 202.74 after the reduction compared to the previous value of 239.75, although the p-value = 0.0000 is still  $< 0, 05$ . Previously the t-value of 1.73 becomes 2.00, which means that it is beyond the standard  $< 1.96$ . Thus control behaviour perceived variable has a significant effect on the intention to use non-original software.

While the comparison of results based on the overall suitability test data model or overall model fit in regard to the analysis of statistical GOF is presented in Table 2 below:

**Table 2**  
**Re-specification Result of GOF Index Model Software on Non-original Structure**

<i>GOF Index</i>	<i>Match Rate Received</i>	<i>Original Value</i>	<i>Re-specification Value</i>	<i>Re-specification Conclusion Model</i>
Chi-square (p-value) expected lower (p>0,05)		239,75 (P=0,000)	202.74 (P = 0.00)	Compatibility is not good
GFI	GFI $\geq 0,90$ good fit 0,80 $\leq$ GFI $<$ 90 marginal	0.85	0.87	Marginally compatible
RMSEA	RMSEA $\leq$ 0,08 good fit RMSEA $<$ 0,05 close fit	0.086	0.075	Good compatibility
NFI	NFI $\geq 0,90$ good fit 0,80 $\leq$ NFI $<$ 90 marginal	0.91	0.92	Good compatibility
TLI or NNFI	TLI $\geq 0,90$ good fit 0,80 $\leq$ TLI $<$ 90 marginal	0.93	0.94	Good compatibility
AGFI	AGFI $\geq 0,90$ good fit 0,80 $\leq$ AGFI $<$ 90 marginal	0.80	0.81	Marginally compatible
RFI	RFI $\geq 0,90$ good fit 0,80 $\leq$ RFI $<$ 90 marginal	0.89	0.90	Good compatibility
IFI	IFI $\geq 0,90$ good fit 0,80 $\leq$ IFI $<$ 90 marginal	0.95	0.96	Excellent compatibility
CFI	CFI $\geq 0,90$ good fit 0,80 $\leq$ CFI $<$ 90 marginal	0.95	0.96	Excellent compatibility
Normed lower limit of Chi Square	1.00; upper limit 2.0 or 3.0	2.1599	1.8772	Good compatibility

From the GOF Test Table 4:22 above, there is a marked improvement of the constructed model reflecting the 10 conditions of the GOF that analyzed 9 indexes entered in three categories of marginal compatibility, good compatibility, and excellent compatibility. Thus the general conclusion of the findings based on GOF analysis is that the overall fit of the model is good.

In the same way as the measurement of CR and VE, on the following unidimensional is presented the reliability and validity of structural models in Table 3.

**Table 3**  
**List of Validity and Reliability of Structural Model**

Variable	SLF	Errors	Reliability		Information
			CR $\geq$ 0,70	CR $\geq$ 0,70	
Knowledge			1.00	1.00	Good reliability
X <sub>11</sub>	1.00	0.00			Good validity
Price			0.805878	0.681671	Good reliability
X <sub>21</sub>	0.96	0.08			Good validity
X <sub>22</sub>	0.67	0.56			Good validity
Attitude			0.838645	0.570651	Good reliability
Y <sub>12</sub>	0.57	0.60			Good validity
Y <sub>15</sub>	0.72	0.48			Good validity
Y <sub>16</sub>	0.86	0.27			Good validity
Y <sub>17</sub>	0.82	0.33			Good validity
Norm			0.763261	0.628738	Good reliability
Y <sub>24</sub>	0.74	0.45			Good validity
Y <sub>25</sub>	0.84	0.29			Good validity
Behaviour			0.969101	0.940054	Good reliability
Y <sub>11</sub>	0.97	0.07			Good validity
Y <sub>12</sub>	0.97	0.05			Good validity
Nsoft			0.908188	0.623906	Good reliability
Z <sub>1</sub>	0.75	0.14			Good validity
Z <sub>2</sub>	0.67	0.01			Good validity
Z <sub>3</sub>	0.68	0.50			Good validity
Z <sub>4</sub>	0.68	0.14			Good validity
Z <sub>5</sub>	0.69	0.19			Good validity
Z <sub>6</sub>	0.57	0.67			Good validity

SLF: Standardized Factor Loading

From this evaluation we can summarize Figure 3 above by linking the hypotheses of the research as listed in Table 4 below:

**Table 4**  
**Evaluation of Structural Model Coefficients and Their Relationship with the Research Hypothesis**

Hip	Path	Estimates	T-value	Conclusion
1	Knowledge → Attitude	0.30	3.32	Significant (H1 not accepted) – should be a negative relationship
2	Knowledge → Attitude → Intsoft	0.34	3.07	Significant (H6 not accepted) – should be a negative relationship
3	Price → Attitude	0.30	3.14	Significant (H2 accepted)
4	Price → Attitude → Intsoft	0.33	2.94	Significant (H7 accepted)
5	Attitude → Intsoft	1.11	6.45	Significant (H3 accepted)
6	Norm → Intsoft	0.43	3.11	Significant (H4 accepted)
7	Attitude → Intsoft	0.19	2.00	Significant (H5 accepted)

→ : a direct influence

→ → : the indirect effect

From the data above, there are two hypotheses out of the seven hypotheses that are not accepted, namely  $H_1$  and  $H_2$  on the direct and indirect effects of the knowledge of the intention of using the software non-original. With the description of the interpretation of the results as follows: 1) Knowledge of Software directly impacts the attitude on non-original software, is not proven. Wherein from 4.29 and table image 4, 24 show the Pengeth estimated value 0, 30 (positive) and value-t 3, 32 (significant). These results are not consistent with the hypothesis that predicts the negative direct effect; 2) Knowledge of Software directly impacts the intention to non-original use software that is mediated by the attitude, is not proven. Wherein from 4.29 and table image 4, 24 show the Pengeth estimated value 0, 34 (positive) and value-t 3, 07 (significant). These results are not consistent with the hypothesis that expects the negative indirect effect; 3) Price perceived of the software impacts the attitude of the non-original software, is proven. Wherein from 4.29 and table image 4, 24 show the price estimated value 0, 30 (positive) and value-t 3, 14 (significant). These results are not consistent with the hypothesis that predicts an indirect positive effect; 4) Price perceived of the software impacts the intention to use non-original software that is mediated by attitude, is Proven. Wherein figure 4.29 and table image 4, 24 show the price estimated value 0, 33 (positive) and value-t 2.94 (significant). These results are not consistent with the hypothesis that expects a positive indirect effect; 5) Lecturer's attitude impacts the intention to use non-original software, is proven. Wherein from 4.29 and table image 4, 24 the attitude estimated value 1, 11 (positive) and value-t 6, 45 (significant). These results are not consistent with the hypothesis that expects a positive indirect effect; 6) Subjective norms impact the intention to use software non-original, is proven. Wherein from the picture 4.29 and table 4.24 show the norm estimated value at 0, 43 (positive) and value-t 3, 11 (significant). These results are not consistent with the hypothesis that expects a positive indirect effect; 7). Lecturer's perceived behavioural control impacts on intention to use software non-original is proven. Wherein from 4.29 and table image 4, 24 shows the attitude Estimated value at 0, 19 (positive) and value-t 2, 00 (significant). These results are not consistent with the hypothesis that expects a positive indirect effect; 8) Control behaviour perceived by the lecturer impacts the intention to use non-original software, is proven. Wherein from 4.29 and table image 4, 24 show the attitude estimated value at 0, 19 (positive) and value-t 2, 00 (significant). These results are not consistent with the hypothesis that expects a positive indirect effect; 9) Lecturer's control behavioural perceived impacts the intention to use software non-original, is proven. Wherein from 4.29 and table image 4, 24 show estimated value attitude at 0, 19 (positive) and value-t 2, 00 (significant). These results are not consistent with the hypothesis that expects the positive indirect effect.

The indirect effect occurs when the impact does not happen directly but through other latent variables. From the conclusions above, the indirect effect occurs in the knowledge of software mediated in the attitudes toward the intention in using the non-original software at  $0.28 \times 0.71 = 0.1988$ ; which also happens in the be price mediated attitude on the intention using software non-original  $0.27 \times 0.71 = 0.1917$ .

## 5. DISCUSSION

A research on non-original software is basically a rare study that is conducted in Indonesia, however at the realm of research with Asian setting it is quite commonly found, especially in international journals. The research model software that is developed is on the individual decision-making process as consumers in buying and using non-original software. The model developed in this study integrates theories and research from a variety of sources and extend previous studies based on social psychology and economics educational

construction to identify the factors, which lead to the decision to copy software illegally. Departing from the development of the existing model results of the study, this research would help people in the form of corrective action or pattern of education policy in an effort to reduce the negative effects of piracy software (Wickham *et al*, 1992).

The topic of non-original software has grown to be a major issue and concern in the academic literature in the mid-1980s, when Richard Mason (in Peace, 2010) discuss the issue of ethics violations of intellectual property rights concerning acts of piracy. The result of the research is that there is likely more declaration of alignments to the manufacturer, where the consumer is blamed as the most responsible for violations of the rights of intellectual property

Interestingly, several studies have found that copying software is legal and may not necessarily be an action that resulted in the software industry to lose money. Acts of software piracy rather provide an alternative flow of distribution for software and can lead to an increase in sales, as the individuals who may not care about software before become exposed to it. These people may eventually purchase the software or encourage others to buy the software. One study found that software piracy may have an impact on more than 80 percent of buyers of new software (Peace, 2010). The software industry, on these actions, obviously does not agree with this claim and piracy software would still be illegal, if not to say dangerous, in most countries. This supports the findings of previous studies by Shim & Taylor (1993) and Solomon & O'Brien (1990) who found that more than 70 percent of their sample feel that people are allowed to make copies of the software that is protected, where this is considered a normal practice in addition to socially and ethically acceptable.

The underlying theoretical foundation of one research model is supported by an exogenous variable which is knowledge, adopted from the research by Marcketti and Shelley (2009), which examines the problems of consumers and their knowledge, beliefs, and attitudes toward a renewable energy. It is then developed by researchers to widen the consumer education associated with their knowledge that will impact the attitude. This educational assessment is in accordance with the opinion of McGregor (2000) who states that "consumer education is accompanied with the skills; attitudes, knowledge, and understanding that individuals need to cope in an increasingly complex market". Plenty of knowledge does not always bring more positive behaviour; this is due to two reasons. First, increased knowledge on the savvy consumer will cause them to ask critical questions regarding the product, which could consequently cause sceptical reasoning (Sandoe in Chen 2008). Second, increased knowledge is often followed by a principle that is held by consumers before and it is then compared with the desire to change the attitude (Frewer *et al.*, In Chen, 2008).

An exogenous variable of price perception is assessed from the economic issue point of view, such as the costs and benefits. It is also often claimed to be a factor in a person's decision-making process. For example, the lack of financial resources is the reason for non-original software copying behaviour (Gopal & Sanders 1998). The theoretical basis is the theory of human utility that states that rational, self-interested individuals will choose the action that can maximize the expected utility when they are faced with a risky choice. Individuals make decisions by considering the potential outcome of each alternative while taking into account on the expected costs and benefits, besides the probability of any kind of existing alternatives. Expected utility theory is a fundamental principle where a lot of analysis is done to date in the field of software piracy, especially in developing countries. Nills *et al.* (2010) indicated that in the presence of the

internet, it gets easier to get and download non-original software than ever before. This will continue to grow in the future with the increasingly easy access and inexpensive cost. The reaction to these consequences is whether there will be the downward trend in the price of the device, thus the piracy area is affected due to the increased access to non-original software over the Internet. On the other hand, the price of making original software is a very important aspect of piracy software. All buyers of software deny that they are doing something wrong and they blame the high price of the original product (Kwong *et al.*, 2003; Wee *et al.*, 1995). Consequently, the price of the software original is highly regarded as a key factor of software piracy (Eric, 2007). The production costs will have an impact on prices, and other situational factors that impact the price are fairness in the form of price disparity.

Exogenous and endogenous variables consist of attitudes, subjective norms and Control Behavioural perceived. A steady stream of research in social psychology shows that the intention of the person's behaviour is driven by their behaviour. In turn, their intention is predicted by individual's attitude toward their behaviour and subjective norms. This is referred to as the Theory of Reasoned Action (TRA). People's attitude is being happy or not happy to in relation with something tangible in their behaviour. This attitude is shaped by the belief of the individual from the consequences and outcomes of their behaviour. An individual who believes that an action would lead to positive results will have a favourable attitude towards the behaviour. This positive attitude will affect the intention, which in turn will lead to the actual behaviour. The discovery of Ang *et al.* (2001) shows individuals who have more integrity and attention will be more likely to consume pirated products. Peace *et al.* (2003) states that attitude is the most powerful influence on the intention of using non-original software; Wooley and Eining (2006) found the intention to use non-original software which is the individual's attitude towards the encouragement in non-original software. Shoham *et al.* (2010) found that the smaller the consumer's intention toward using on-original products, the less they use a non-original software. Suki *et al.* (2011) found that attitude significantly affects the intention to buy and use non-original software.

Subjective norm refers to the individual's perception of the pressure from the social environment, and often referred to as the peernorm. It is the pressure felt by the individual who comes from friends, colleagues, authority figures, and others to perform or not perform the behaviour in question. Many have found supports for the predictive ability of this theory, although it also has been found lacking in explanation of the ethical decision making in situations involving a particular behaviour. Interactions within the university organization more would result a mixed reaction when dealing with others. However, as the collegial spirit in descriptive studies and cultural groups (not individualistic) are estimated, it shows a variety intention to use the non-original software. Although there are indications that collegial support can encourage negative behaviour, refusal from colleagues can also serve as a deterrent (Now, *et al.*, 2004, Norum *et al.* 2010, Phau and Teah, 2009). On the other hand, Suki *et al.* (2010) suggest that behavioural norms also depends on the person's subjective character on the individual and the situation, attitude, and norms that may be the impacts on the intention, which is very different in each person.

The third additional factor is the perceived behaviour of control in the individual's perception of their ability to control their own behaviour. Someone with a high Control Behaviour perceived has a confidence in his ability to successfully run an action or a specific intention. Application of attitudes, subjective norms and control behavior perceived will vary depending on the situation and setting. While the norms and attitude have proven to be a factor in the behaviour of illegal software copying, Control



Behaviour perceived has not received adequate attention. The study compares the validity of Control Behaviour perceived attitude and subjective norms in predicting unethical. This study supports previous research conducted by Peace *et al.* (2003) who found that the control behaviour perceived has an effect on the intention of pirating software. George (2004) and Chen (2008) did not find any effect of control behaviour perceived on consumers' choice towards online purchases and the purchase of GM foods.

Secant (1998) suggested that basically, every human being has the urge to break the rules, among others, in certain situations and internal factors. Nonetheless, in most people, these impulses are not usually a tangible behaviour in reality of the irregularities, since a person can usually refrain from impetus for misbehaving. Self-control is an individual's ability to read the situation in the sensitivity of themselves and their surroundings as well as the ability to control and manage behavioural factors in accordance with the conditions to present themselves when someone is doing social communication. The ability to control the behaviour, the tendency to attract attention, the desire to change the behaviour and to conform to others, to pleasing others are always confirmed by others and closing the feelings (Robbins, 2008; Roosianti, 1994).

The findings of this study revealed that three variables (price, subjective norms, and behavioural control) out of the five main hypotheses have been proven to support the research tool of SEM analysis, while one variable (knowledge) is not proven to be the influence on the intention to use the non-original software. An exogenous variable of price remains a major problem for developing countries and this includes the university environment in the intention of using the software non-original. Some descriptive data on the statistical findings also indicate the widespread use of non-original software among lecturers (52%) and the belief that associates are also using the non-original software (69.2%). While there is a controversy of findings in relation to the variables of subjective norms and Control Behaviour perceived, since the findings support the hypothesis, there are theoretical reasons that could explain this. Norms and control behaviour are unique elements in a man. On norms variable, there are striking differences in individualistic society and communal society, and the people of West and East, where the orientation of people in sharing the products is a natural thing that does not occur in Western societies. The effect of kinship (collegial) can cause a high level of software copying activity. Control Behaviour is most difficult to explain because they tend to be internalized within the individual, thus it really requires a research that contains in-depth interviews with academic staff. Although proven theoretically and empirically, the t-value that indicates that the freedom of the choice of software really present in private. Variable of attitude is the variable that is proven to have the highest direct effect (0.71) compared to the price (0.27), subjective norms (0.25) and Control Behaviour perceived as the smallest (0.11). While knowledge (0.28) theoretically should prove the hypothesis of having a negative relationship but is not proven in this study. Attitude. However, is the only variable that does not show controversial theories, since all previous studies are supporting it? Knowledge of software is being the only variable that is not evident in this study. The interpretation is that high-end knowledge embodied in critical attitude regarding the product, which is due to they can be sceptical about the intentions of using the software non-original and increasing knowledge is often followed by the principle of the attitude that is already adhered compared with a desire to change the attitudes. Knowledge of software being the only variable that was not evident in this study. The interpretation is that high knowledge embodied in critical attitude regarding the product, which is due to being sceptical about the intentions of using the non-original software. Increasing knowledge is often

followed by the principle of the attitude that is already adhered compared with a desire to change the attitudes.

To summarize the function of the Theory of Planned Behaviour as a basis for predicting model of software non-original, the findings of hypotheses have been able to confirm the existence of this theory. Research has shown a link between endogenous variables with the exogenous variables of the attitude, subjective norms and intention among and between perceived control and intention of behaviour. Therefore the proposition that is formed is that the more positive attitude towards non-original software, the higher subjective norm on the pirating of software. The higher level of control behaviour, the greater intention to make and use the non-original software. In short, theoretical debate still happens regarding some concepts, analytical modelling, and descriptive survey, but the TPB model is successful enough to examine the behaviour of the non-original software. It is especially in describing the actions of a person, a model that focuses on the individual behaviour in decision-making would be appropriate for the problem of piracy of non-original software. Just like Expected Utility Theory (Mongin, 1997) can be applied to explain the role of prices in shaping attitudes toward non-original software. It is especially in explaining the conditions of developing countries. Both theories have been pretty good at describing the existing model so that the model is enough to explain the strengthening theory and no new models are recommended in this study.

Theoretically, this research has also contributed scientific capital for Indonesian conditions by inserting exogenous variables, which are knowledge of software and Perceptions of Price, in an effort that characterizes the study of TPB and the Expected Utility theory. Comparing with the theory of the Technology Acceptance Model of Davis, who sees the perceived benefits and perceived ease-of-use as two variables that affect attitude variable and intention in using technology, the model used in this study has been thought to contribute another alternative model that exists and occurs in Indonesia. Both theories also substantially depart from the same basic theory of Ajzen & Fishbein, namely the theory of reasoned action (TRA).

In terms of education efforts to raise awareness about being safe with a genuine or original for the user, the education should be implanted and repeated continuously into themselves educators and learners. The positive effect brought by awareness through education will impact a higher awareness which begins with the law, and then concrete actions that start with the planning, implementation through education and making policy control over educational institutions. Each university needs to provide a subdomain (bolus.um.ac.id) to get software that is open source and free. How much interest and desire, as well as awareness of the academic community to utilize these resources, need to be further investigated. With the main question whether the future availability will also be able to form a better behaviour in accessing resources legally.

## **6. CONCLUSION**

Based on the research model and the proposed problem formulation, four positive and significant positive effects can be proved, one positive direct and significant influence cannot be proved, one indirect positive and significant influence can be proved, and one indirect negative and significant influence cannot be proven. Departing from the formulation of the problem, the conclusions of the study are 1) lecturer's perception concerning the knowledge of the software is quite low with a mean (average) of 2.4874; and the perception of price is 4.1384, while the latent variable of attitude on a non-original software, subjective

norms, control behavioural perceived, and the intention of using the non-original software are in a high enough position at the mean above 3; 2) Factors that contribute very significantly (*loading factor e*" 0,50) in shaping the intact construct ( full ) from the results of the research are manifest variables: impact of loss in reproducing software (knowledge), the level of the high price of software, financial sacrifice in buying software (Price Perception), attitude in not asking for compensation in sharing software, attitude on the benefit of copying software, attitudes toward price consideration, attitude in making consideration on all facets of the copying software, act of sharing software to peers, act of following co-workers for copying software (Subjective norm), independence in the copying software and all manifest variables on the intention to use the non-original software; 3) The higher knowledge that lecturers have on the software, the lower (negative) the attitude towards non-original software; 4) The higher knowledge that the faculty has about the software, the lower (negative) intention of using non-original software on the mediated attitude towards non-original software; 5) The higher lecturers' attitude towards non-original software, the more increasingly positive (support) on the intention to use the non-original software; 6) The higher the price, the more positive the same perception (supports) on one's attitude towards software non-original; 7) The higher the price, the more positive the same perception (supports) on the intention of using the non-original software on mediated attitude; 8) The higher the subjectively norms, the more positive (support) the intention of using the non-original software; 9) The higher the lecturers' control behaviour perceived regarding non-original software, the more positive (support) the intention of using the non-original software.

The theoretical implications of the findings reveal: 1) Educational institutions need to establish clear guidelines and consolidate the protection of intellectual property through the existing syllabus concerning the protection of interests of the two parties, namely the consumer with protection of consumers and producers who run their business in balance; 2) Teaching students to put forward the necessary level of consumer needs and considerations in terms of morality based on religious values and ethical norms in the process of economic education; 3) Further research is needed, especially on the relationship of variables, the option of qualitative approach by using FGD, observation and in-depth interviews are expected in order to improve the understanding of the conditions. The practical implications of the findings are: 1) The application of different prices (price differentiation) to consumers based on their level and location of the consumer is (per country) with the hope to reduce the amount of use of the non-original software; 2) Incorporate consumer education to increase the continuous efforts to protect copyrights.

As for suggestions the research: 1) A change in attitude is a long term process and a multi-year program are required to have an effect regarding confidence, and ultimately a change in attitude. Education on the software of the findings turned out to be necessary not only for the students but also the lecturers; 2) Every community and students should be required to read, understand and sign a code of ethics; 4) The study's findings need further exploration by viewing and reviewing of the supply side (manufacturer or seller/vendor), in addition to conducting a qualitative approach to see the narrative side of the software developer.

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