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Pirated Software: The Relationship between Factors

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Abstract

The advancement of Information Technology (IT) gadgets will indirectly encourage or influence users out there to use pirated software for any reason. Users may claim why they commit software piracy for varied reasons. Thus, this study aims to investigate the relationship of software piracy among information professionals in Klang Valley, Malaysia. The dependent variable is the Degree of Hardcore Pirate (DHP) while the independent variables include the Impression Management (IM), Personal Attributes (PA), Pirating Behavior (PB), Reciprocal Fairness (RF), Procedural Fairness (PF), Perceptions (P), Subjective Norms (SN), Intention (I) and Ethical Standards (ES). The finding of this study reveals that only two (2) out of nine (9) factors are significantly related to software piracy among information professionals in Klang Valley, Malaysia.

Keywords: Pirated Software, Degree of Hardcore Pirate, Impression Management, Personal Attributes, Pirating Behavior, Reciprocal Fairness, Procedural Fairness, Perceptions, Subjective Norms, Intention, Ethical Standards, Information Professionals

1. Introduction

No computers, tablets or smartphones can operate without dedicated software. Thus, the software needs and dependency are high. In addition, (Liu & Fang, 2003) in their study highlighted that due to the advanced development of information technology (IT), lifestyle and social structure of the individual have been revoked completely, which in return have causes strong dependence on IT. Thus, it is not surprising if the number of total lost by software vendors is increasing year-by year as reported by the Business Software Alliance (BSA).

In addition to that, in Johor, Malaysia, the Business Software Alliance (Business Software Alliance Website, 2013) reported that there are raids for software piracy in September 2013 where computers and suspected pirated software seized cost more than RM266, 000. During the raids, the branch head of Enforcement Officers from the Enforcement Division of the Ministry of Domestic Trade, Co-operatives and Consumerism (MDTCC) Muar Branch Office, mentioned that their ministry targeted to turn over a new leaf during the 'Ops Tulen Semak' (software piracy) campaign. Therefore, any organization in Malaysia must obey and follow the enforcement where the MDTCC is able and will take enforcement action against any organization that runs or operates in violation of the Copyright Act 1987, which stipulates that only licensed and legal software can be used in a business environment. The organization and its management are liable to be fined from RM2, 000 and up to RM20, 000 for each illegal copy of any software if caught violating the law. In addition, the organization's directors and/or senior management may also be imprisoned for up to five years.

Furthermore, in October 2013, a dialogue with the PC manufacturers and IT associations organized by the Ministry Enforcement Division was held where they discussed on how they can collectively help to reduce piracy risk and malware infections arising from illegal software activities which put consumers at risk (The Malaysian Times Website, 2013).

In relation to the above literature, this study attempts to measure the relationship between pirated software factors.

2. Literature Review

Quite a number of studies have been conducted on software piracy across several disciplines such the ethics, ethical behavior, use, and etc. (Glass & Wood, 1996; Douglas, Cronan, & Behel, 2007; Liu & Fang, 2003; Siegfried, n.d.; Hinduja, 2003; Becker & Ulstad, 2007; Namlu & Odabasi, 2007; Haque, Rahman, & Khatibi, 2010; Nill, Schibrowsky, & Peltier, 2010; Suki, Ramayah, & Suki, 2011 and Anwar, Bahry & Amran, 2012). Due to the varied studies carried out, we can see various terms and definitions in regards to software piracy. Through these literatures, pirated software can be defined as the activity of installation and use of any type of software with unauthorized permission.

Furthermore, (Liu & Fang, 2003) used the theory of reasoned action (TRA) as their theoretical intention model where they studied on the intention factors that affect the behavior. To support this study on ethical behavior, a study was conducted by (Becker & Ulstad, 2007), where they measured if there are any significant effects on academic cheating between

genders among students by adopting the Personal Attributes Questionnaire (PAQ) which is studied by (Spence et. al., 1975) previously. Moreover, (Siegfried, n.d.) found that the students' attitude on ethical use of computers, IT and software piracy has become a subject of great interest in the past decade. Quite a number of students have also committed software piracy in many ways in Universities (Hinduja, 2003). In a circumstance to reduce unethical and illegal behavior, as cited by (Hinduja, 2003), (Hinduja, 2002) they mentioned that there are techniques of neutralization that can be imposed by software pirates such as blaming the relatively high/expensive software prices which induces to their misappropriation, or faulting the greedy profiteering motives by software corporations.

From the literature review conducted above, the variables division used in this study is as follows:

Table . The Division of Variables Used

Variable	Author(s)
Degree of Hardcore Pirate (DHP)	Hinduja, 2003
Impression Management (IM)	Becker & Ulstad, 2007
Personal Attributes (PA)	Becker & Ulstad, 2007
Pirating Behavior (PB)	Hinduja, 2003
Reciprocal Fairness (RF)	Douglas, Cronan, & Behel, 2007; Suki, Ramayah, & Suki, 2011; Anwar, Bahry & Amran, 2012
Procedural Fairness (PF)	Douglas, Cronan, & Behel, 2007; Suki, Ramayah, & Suki, 2011; Anwar, Bahry & Amran, 2012
Perceptions (P)	Siegfried, n.d.
Subjective Norms (SN)	Anwar, Bahry & Amran, 2012
Intention (I)	Liu & Fang, 2003
Ethical Standards (ES)	Hinduja, 2003

In measuring the objective of study, we basically adopted and adapted the works of (Hinduja, 2003; Liu & Fang, 2003; Becker & Ulstad, 2007; Douglas, Cronan, & Behel, 2007; Suki, Ramayah, & Suki, 2011; Anwar, Bahry & Amran, 2012 & Siegfried, n.d). Hence, the dependent variable is the Degree of Hardcore Pirate (DHP). The independent variables include the Impression Management (IM), Personal Attributes (PA), Pirating Behavior (PB), Reciprocal Fairness (RF), Procedural Fairness (PF), Perceptions (P), Subjective Norms (SN), Intention (I) and Ethical Standards (ES).

3. *Research Framework*

Figure 1 depicts the framework for studying the relationship of pirated software and its factors. The framework is adopted and adapted based on the works of (Hinduja, 2003; Liu & Fang, 2003; Becker & Ulstad, 2007; Douglas, Cronan, & Behel, 2007; Suki, Ramayah, & Suki, 2011; Anwar, Bahry & Amran, 2012 & Siegfried, n.d). The factors measured in this study are the dependent variable, which is the Degree of Hardcore Pirate (DHP) whereas the independent variables are the Impression Management (IM), Personal Attributes (PA),

Pirating Behavior (PB), Reciprocal Fairness (RF), Procedural Fairness (PF), Perceptions (P), Subjective Norms (SN), Intention (I) and Ethical Standards (ES).

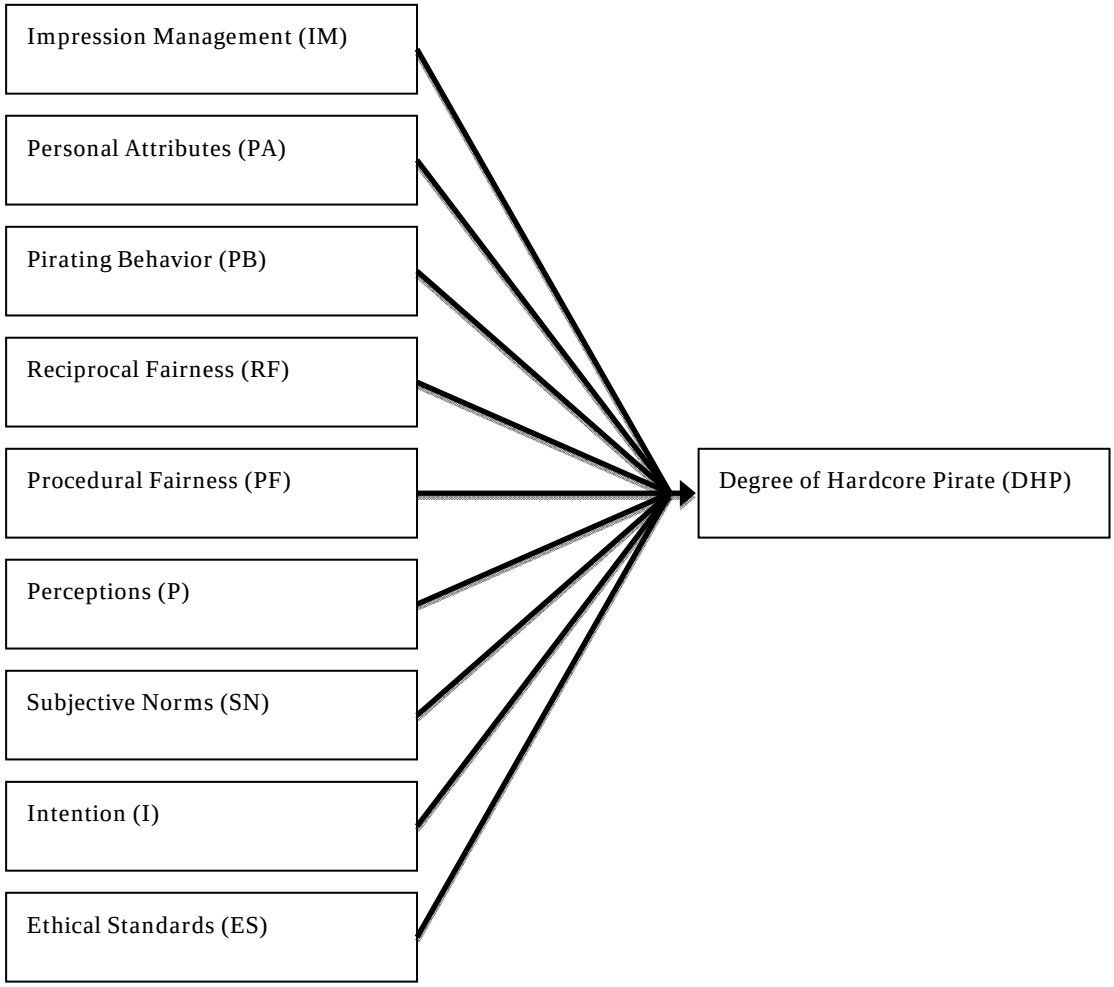

Figure . Research Framework

4. *Methodology*

4.1 Instrument and Method

The instrument used for collecting data is the questionnaire. The questionnaire is adapted and adopted from (Hinduja, 2003; Liu & Fang, 2003; Becker & Ulstad, 2007; Douglas, Cronan, & Behel, 2007; Suki, Ramayah, & Suki, 2011; Anwar, Bahry & Amran, 2012 & Siegfried, n.d). However, some modifications were made to suit and cater for the environment. The questionnaire is divided into 11 parts, where part A captures the information on demographic whereas parts B to K capture the information for measuring the independent and dependent variables. There are 8 questions in Part A, 20 questions in Part B, 16 questions in Part C, 8 questions each in Parts D and E, 2 questions each in Parts F and G, 30 questions in Part H, 3 questions each in Parts I and J and 7 questions in Part K. Thus, overall, there are 107 items all together used in the questionnaire.

All measures for the variables are shown in Figure 1 which use several scale styles. Part B uses the Likert scale with seven extremes with 1 for "Not True" and 7 for "Very True", Part C uses the semantic differential scale, Parts D, F, G, H, I, J use the Likert scale with five extremes with 1 indicating "Strongly Disagree", 2 for "Disagree", 3 for "Undecided / Neutral", 4 for "Agree" and 5 for "Strongly Agree", Part E uses the combination of "Yes" and "No" and the number of frequency and Part K is similar to Part E which uses the Likert scale with five extremes with 1 for "Strongly Disagree", 2 for "Disagree", 3 for "Undecided / Neutral", 4 for "Agree" and 5 for "Strongly Agree" and "Yes" and "No".

4.2 Population and Sampling

This study was conducted among information professionals in Klang Valley, Malaysia which includes the Federal Territory of Kuala Lumpur and Shah Alam areas. Basically, they work in varied business functions. This study uses the simple random sampling technique where 400 questionnaires were distributed to these information professionals and only 384 questionnaires were returned. However, 190 questionnaires were found unusable after data cleaning and only 194 qualified for data analysis. The Statistical Package for the Social Sciences version 20 is employed to analyze data.

5. Results and Discussion

5.1 Respondents Profiles

Table 2 presents the respondent's demographic profile. Looking at the gender, 109 out of all respondents are male and 85 are female. The majority of respondents are of the age of between 20 – 30 years old while the minority i.e. 3% is less than 20 years old. In terms of education, 29% are diploma holders, 16% each are SPM/MCE and STPM/ Matriculation holders, 14% are degree holders, 10% are SRP/PMR holders, 8% are specialized certificate holders and 3% are Master holders.

Table . Respondents Profiles

Characteristics	Items	Frequency	Percentage
Gender	Female	85	44%
	Male	109	56%
Age (years)	Less than 20	6	3%
	20-30	107	55%
	31-40	69	36%
	More than 40	12	6%
Educational	SRP/PMR	20	10%
	SPM/MCE	32	16%
	STPM/ Matriculation	32	16%
	Specialization Certificate	15	8%
	Diploma	57	29%
	Degree	27	14%
	Master	6	3%
	PhD	0	0%
	Others	5	3%

5.2 Reliability Analysis

The Reliability analysis was performed to ensure the scale's internal or reliability consistency strength. As stated by (Nunnally, 1967), the recommended minimum value of Cronbach's Alpha of 0.50 or above is consistent. Table 3 indicates that all variables are above the recommended cut-off value which is 0.6. Hence, it suggests that the scale used in the study is highly reliable (Nunna0lly, 1978).

Table . Reliability Analysis

Variables	No. of Items	Cronbach's Alpha
Degree of Hardcore Pirate (DHP)	8	0.923
Impression Management (IM)	20	0.861
Personal Attributes (PA)	16	0.861
Pirating Behavior (PB)	8	0.796
Reciprocal Fairness (RF)	2	0.803
Procedural Fairness (PF)	2	0.843
Perceptions (P)	30	0.905
Subjective Norms (SN)	3	0.609
Intention (I)	3	0.852
Ethical Standards (ES)	7	0.751

5.3 Correlation Analysis

Tables 4 and 5 exhibit the details of correlation coefficients across all variables. Hence, accoding to (Bryman & Crammer, 2001), it is provision when any study measure strengths of a relationship.

Table . Correlation Analysis

Correlations

Variables	DHP	IM	PA	PB	RF	PF	P	SN	I	ES
DHP	1.000									
IM	0.516	1.000								
PA	-0.021	0.240	1.000							
PB	0.299	0.189	0.003	1.000						
RF	0.497	0.365	-0.095	0.260	1.000					
PF	0.463	0.429	-0.052	0.173	0.733	1.000				
P	0.411	0.262	0.033	0.337	0.383	0.408	1.000			
SN	0.231	0.136	0.111	0.177	0.089	0.109	0.578	1.000		
I	0.298	0.147	-0.043	0.342	0.046	0.055	0.530	0.617	1.000	
ES	0.171	0.054	-0.041	-0.015	0.199	0.276	0.076	-0.045	-0.011	1.000

Table : Correlation Analysis

Independent Variable		Dependent Variable	r value	Correlation Analysis
Impression Management (IM)			0.516	Positive Strong Relationship
Personal Attributes (PA)			-0.021	Negative Very Weak Relationship
Pirating Behavior (PB)			0.299	Positive Weak Relationship
Reciprocal Fairness (RF)	➔	Degree of Hardcore Pirate (DHP)	0.497	Positive Moderate Relationship
Procedural Fairness (PF)			0.463	
Perceptions (P)			0.411	
Subjective Norms (SN)			0.231	Positive Weak Relationship
Intention (I)			0.298	
Ethical Standards (ES)			0.171	

5.4 Regression Analysis

To this effect, the following equation is formulated i.e. Relationship Between Pirated Software and Degree of Hardcore Pirate (DHP) = β1 IM + β2 PA + β3 PB + β4 RF + β5 PF +

β6 P + β7 SN + β8 I + β9 ES + ξ. Tables 6 and 7 exhibit the results of the multiple regression analysis. The R square value recorded 0.672 as shown in Table 6. Hence, it implies that 67.2% variance in the DHP can be explained by the combination of independent variables which include the Impression Management (IM), Personal Attributes (PA), Pirating Behavior (PB), Reciprocal Fairness (RF), Procedural Fairness (PF), Perceptions (P), Subjective Norms (SN), Intention (I) and Ethical Standards (ES).

Table . Model Summary of Regression Analysis Between Independent Variables and Dependent Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.672[a]	0.451	0.424	0.96846

a. Predictors: (Constant), IM, PA, PB, RF, PF, P, SN, I, ES

a. Dependent Variable: DHP

The results showed that out of nine (9) investigated independent variables, only two (2) turned out to be influential in predicting the DHP. These variables are the Personal Attributes ($t = 3.006$, $p < 0.05$) and Reciprocal Fairness ($t = 2.828$, $p < 0.05$). The other seven (7) variables were found to be not significant as the recorded p-values were greater than 0.05. Hence, based on the results, the equation is revised to DHP = -0.135 PA + 0.253 RF - 0.938.

Table . Coefficient Table for Variables Predicting ISRIS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.938	0.501		-1.871	0.063
	IM	0.409	0.073	0.361	5.573	0.000
	PA	-0.135	0.105	-0.076	-1.291	0.198
	PB	0.110	0.087	0.077	1.263	0.208
	RF	0.253	0.084	0.252	3.006	0.003
	PF	0.033	0.080	0.036	0.415	0.678
	P	0.172	0.149	0.092	1.157	0.249
	SN	0.011	0.087	0.010	0.129	0.898
	I	0.133	0.070	0.147	1.904	0.058
	ES	0.142	0.095	0.085	1.482	0.140

a. Dependent Variable: DHP

6. Results and Discussion

To achieve the objective, an empirical study based on the adopted framework consisting nine

(9) independent variables which include the Impression Management (IM), Personal Attributes (PA), Pirating Behavior (PB), Reciprocal Fairness (RF), Procedural Fairness (PF), Perceptions (P), Subjective Norms (SN), Intention (I) and Ethical Standards (ES); and one dependent variable i.e. Degree of Hardcore Pirate (DHP) was developed. Referring to the analyses conducted on collected data, two (2) of the independent variables were found to be relevant in determining the DHP. Thus, this study has proven two (2) factors that influence the DHP among information professionals.

Based on the analysis and findings above, in future, the developed research model framework can be extended and tested. Besides that, researchers or practitioners can further explore the topic in other settings as well. Furthermore, this study also exists with a limitation in which the scope of sample may also cover across all areas instead of the dedicated areas in Klang Valley.

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