

## Students' Intention to Use of Pirated Software in Rajarata University of Sri Lanka

<sup>1</sup>Munasinghe PG, <sup>2</sup>Pemarathna RMMD,

<sup>1</sup>Department of Business Management, Faculty of Management Studies, Rajarata University of Sri Lanka, pgm653@yahoo.com

<sup>2</sup>Department of Business Management, Faculty of Management Studies, Rajarata University of Sri Lanka, rmdmpemarathna@gmail.com

---

**Abstract:** In the current context, use of pirated software is increasing and it is becoming a critical issue to the economy of the world. Though use of pirated software is an unethical and illegal activity most of the university students addict to use that type of software using various methods. It is not clear of reasons of using pirated software by students. This study examines the students' intention to use of pirated software among university students in Rajarata University of Sri Lanka (RUSL). Pilot phase reveals that 96% of students of the RUSL use pirated software. Based on the result of former studies self-administrative questionnaire was developed. Data were collected from 142 students using purposive sampling technique of the faculties Applied Sciences, Management Studies and Social Sciences and Humanities in RUSL. Research Model was developed on software piracy including Intension to use pirated software as dependent variable and Computer Experience, Attitudes, Awareness, Social Influence and Moral Obligation as independent variables. The results reveal that Computer Experience, Attitudes, Awareness of software and Social Influence positively affected to the use of pirated software while Moral obligation is negatively affected. Students should be enlightened about the consequences of use of pirated software to the economy of the country. Also, they should be informed that use of pirated software is an illegal activity. Results of this study is limited to undergraduates of Mihintale premises of RUSL and to generalize and validate the results more researches are needed with wider sample of selecting all national universities in Sri Lanka and selecting students who belong to other domains.

**Keywords:** Attitudes, Awareness, Computer Experience, Social Influence, Moral Obligation, Pirated software

---

Date of Submission: 25-11-2017

Date of acceptance: 02-12-2017

---

### I. Introduction

The Business Software Alliance (BSA) conducts surveys on use of copy software of almost all the countries in globe. According to the BSA (2016a) Computer users around the globe use unlicensed software at an alarming rate, despite being well aware of the associated cyber security danger. The survey which is conducted by Business Software Alliance revealed that 39% of software installed on computers around the world is not properly licensed. Another survey of the Business Software Alliance (2016b) found that unlicensed software installation in Sri Lanka is 79% and commercial value of it is 163 million American dollars.

Pirated software is defined as the illegal copying of software for distribution within the organization, or to friends, clubs and other groups, or for duplication for the purpose of resale and usage of pirated software is a serious problem among students especially among computer science students in India (Shubhnanandan and Nishant, 2012). Further, the research disclosed that it is difficult to deal with the piracy issue due to availability of pirated software product in the Internet. Further, Gunasekera (2010) has strengthened this idea in his research which is address copy right law. He had mentioned that in his study intellectual community was creating new work and shares those with others by selling, freely distributing and making them freely available through the Internet. Norizan, Mursyiddin, and Farrah (2015) stated that whenever, individual install and use unlicensed illegal copy of certain proprietary software, it's considered software piracy no matter how they get it, whether it's being downloaded from the Internet, bought it illegally or transferred from friends.

Piracy had become a major problem for the software industry and software developers (Ahasanul, Sabbir and Ali, 2010; Shubhnanandan and Nishant, 2012; Pamela, 2010). According to the Norizan, Mursyiddin, and Farrah (2015) not millions but billions of dollars lost by software house companies due to software piracy. The numbers keep increasing year-by-year and Shubhnanandan and Nishant (2012) illustrated that the software industry loses billions of dollars each year due to piracy issue. Accordingly, install an application on a couple of additional machines (called "softloading" and "softlifting"), shatter the profitability of a small software companies. Ahasanul, Sabbir and Ali (2010) stated that consumers were facing problems when attempting to

distinguish the pirated products from the original ones. For instance, which one would they buy; because the prices of the original products are much higher than the pirated?

According to Ahasanul, Sabbir and Ali (2010) there was a significant relationship between consumer moralities, social influence, and consumer moral judgment towards the consumer ethical decision-making when purchasing pirated software in Malaysia. Arli and Tjiptono, (2016) highlighted that moral obligation was negatively related to consumer attitude and intention toward digital piracy in Indonesia. Shubhnandan and Nishant (2012) stated that Software piracy committed by university students in the metro states of India had been published widely in various computer literatures. Moreover, it was discussed that very few studies had been reported about why and what proportion of students were using pirated software.

In 2015, Norizan, Mursyiddin, and Farrah revealed that though there were continuous research work being done and reported across the world, nothing has been done to control the phenomena and what should be done to make piracy to stop and Shubhnandan and Nishant (2012) said that Software piracy was impossible to halt entirely. Software companies struggled to prevent software piracy by different measures. However, such measures have generally met with little success, as determined users soon discover ways to avoid or defeat them. Use of pirated software is common among university students and not clear of reasons of using pirated software by them. The article consists five sections and second section reviews the literature deals with the usage of pirated software due to various reasons. Based on literature Conceptual framework was developed and five hypotheses were formulated. Third section discusses the methodology used in the study. Next section presents the results and discussion of the study. Final section concludes the study with recommendations, the limitations and the directions for future works.

## **II. Literature Review**

In 2015, Shubhnandan and Nishant indicated that extensive use of computers and the Internet has provided many advantages to everyday life, but it is created new opportunities for unethical and illegal acts such as software piracy which is the unauthorized copying or distribution of copyrighted software. Besides being an economic problem, software piracy is also an ethical issue, especially in academic and professional settings. Limayem, Khalifa and Chin (2004) has highlighted that the unauthorized use or illegal copying of computer software, continues to be a major drain on the global economy.

Shubhnandan and Nishant (2015) highlighted that students won't be able to take advantage of the many technology-based educational opportunities without access to unaffordable software. Since software budgeting is often inadequate, and occasional upgrade of hardware makes older versions of software obsolete after several years, some think the only "solution" to the problem is to pirate newer versions of past purchased software.

According to the Mishra et. al. (2006) as cited in Shubhnandan and Nishant (2015), gender, age and experience have significant impact on software piracy among information and communication technology professionals. In the study of Rajeev K. Goel, Michael A. Nelson (2009) as cited in Shubhnandan and Nishant (2015) determines the various influences on software piracy using a large sample of countries. The results have been showed that economic, institutional, and technological factors utilize important influences on software piracy, albeit with some qualitative and quantitative differences.

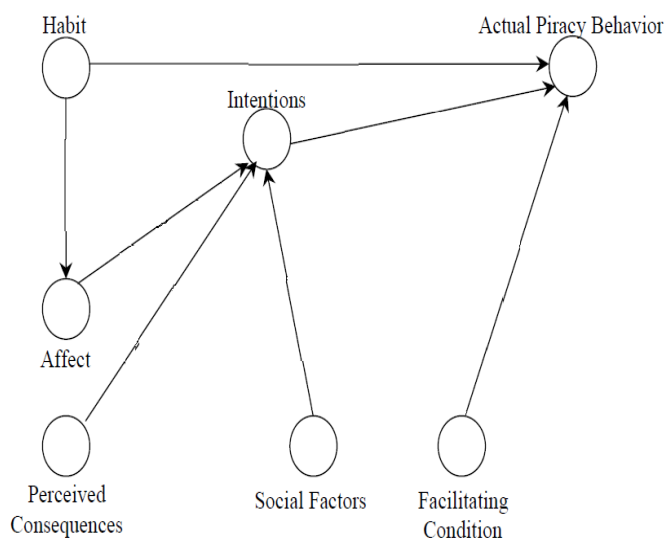
In the study of Arli and Tjiptono, (2016) regarding Consumer digital piracy behaviour among youths in Indonesia had considered constructs of Consumer attitude, Subjective norms, and Perceived behavioral control and the constructs were positively related to consumer intention to pirate digital products. Further, the study mentioned that Perceived behavioral control is positively related to consumer attitude toward digital piracy and Moral obligation is negatively related to consumer attitude toward digital piracy. Further, the study assumed that fear of legal consequences, perceived likelihood of punishment were not significant predictors of consumers' attitude towards digital piracy, but the results of the study were not supported. Ahasanul, Sabbir and Ali (2010) have given a contradictory argument in his study concerning factors influencing consumer ethical decision making of purchasing pirated software: structural equation modeling on Malaysian consumer. Accordingly, there is a significant relationship between consumer moralities, social influence, and consumer moral judgment towards the consumer ethical decision-making when purchasing pirated software.

Norizan, Mohd Mursyiddin, and Farrah (2015) of their study regarding the use of Pirated Software among Information Professionals in Malaysia reported that factors such Impression Management, Degree of Hardcore Pirate, Perceptions and Intention were significant difference with position hold among information professionals and the factors such Personal Attributes, Reciprocal Fairness, Procedural Fairness and Subjective Norms were not significant difference with position hold among information professionals.

The study of regarding Software piracy that is exploring awareness of the law as a determinant of soft lifting attitude and intention in United States by Pamela (2010) has derived from the belief that many individuals have a vague understanding of the restrictions and penalties for copying software. The study mentioned that awareness of the Law is defined as the degree to which a person is aware of the legal consequences of software piracy. Further, the study revealed that understanding student attitudes concerning illegal software copying

behaviors may lead to thoughtful and innovative educational strategies to deal with this serious and pervasive problem.

According to Limayem, Khalifa and Chin (2004) Software piracy can be conceptualized as a behavior. They have developed a research model considering the behavioral theories in the elaboration of a model that can identify key factors influencing software piracy and build a relationship between individuals' intentions to pirate software and the actual behavior of software piracy. Accordingly, the following research model was developed to examine the piracy behaviour of software.

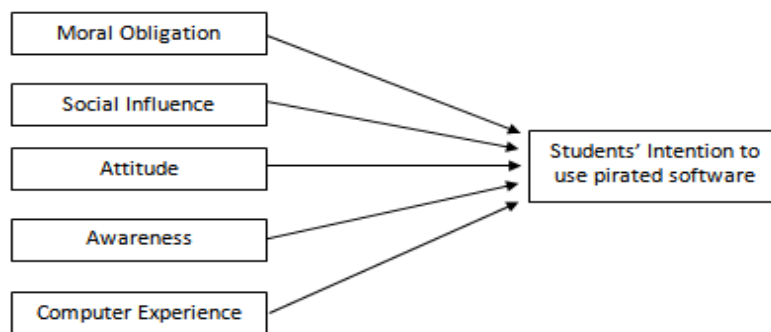


**Figure 1** - Piracy behaviour of software (Source: Limayem, Khalifa and Chin (2004))

Accordingly, Figure 1 it is revealed that affect, social factors and perceived consequences are having relationship with intention to use of pirated software. Facilitating conditions and habits having relationship with actual behavior of software piracy and intentions have relationship with actual behavior of use of pirated software.

In 1999, Yogesh and Dennis emphasized that a person's performance of a specified behavior was determined by his or her behavioral intention to perform the behavior, and behavioral intention was jointly determined by the person's attitude and subjective norm concerning the behavior in question. Davis, Bagozzi and Warshaw (1989) as cited in Yogesh and Dennis (1999) defined perceived usefulness was defined as the user's "subjective probability that using a specific application system would increase his or her job performance within an organizational context". Furthermore, Yogesh and Dennis (1999) discussed that actual use of the system is predicted by behavioural intention based on on Davis et al. (1989) and Based on Fishbein & Ajzen (1975).

Hence, literature can be summarized as follows. People change the attitude to use pirated software due to the awareness of the pirated software for their work and it would impact to the respondents' behavioral intention to use the pirated software. The moral obligation, experience of use of computer software and social influence affect to change respondents' behavioral intention to use pirated software. Based on the above facts the following research model was developed and five hypotheses were formulated.



**Figure 2** - Research Model

### Hypotheses

- H1: Moral Obligation negatively affects the students' Intention towards the use of Pirated Software.
- H2: Social Influence positively affects the students' Intention towards the use of Pirated Software.
- H3: Attitude of the students positively affects the students' Intention towards the use of Pirated Software.
- H4: Awareness of pirated software positively affects the students' Intention to use of Pirated Software.
- H5: Computer Experience positively affects the students' Intention to use of Pirated Software.

### III. Methodology

Accordingly, literature it is found that use of pirated software is rapidly growing in the globe and becoming a serious issue to the world economy. This issue is common to Asian countries including Sri Lanka. In this study examines the Intention of students to use of pirated software.

The pilot phase of this study was conducted by using 50 undergraduate from the faculty of Management Studies, RUSL to confirm the research issue which identified from the brief literature review. Almost all the students (98%) of the above students were using pirated software by knowing or unknowing the impact to the software industry. The research model was developed considering empirical support of previous research studies and five hypotheses were formulated. The comprehensive questionnaire was developed and primary data were collected using purposive sampling technique from 142 respondents from the three faculties such as Faculty of Applied Sciences, Faculty of Management Studies and Faculty of Social Sciences and Humanities in the Rajarata University of Sri Lanka. The questionnaire was divided into two parts. First Part was reserved for the demographic information of the respondents such as their Gender, Study Discipline, knowing about the software, awareness of licensed software and pirated software and second part was used to test relationship between dependent variable and independent variables. Five point Likert scales were used where (1) is strongly disagree and (5) is strongly agree. Correlation analysis and regression analysis were used to identify relationship between independent and dependent variables and to comment about the hypotheses. Demographic variable analyses were analyzed using descriptive statistics such as mean, standard deviation etc. Statistical tools such as reliability test (Cronbach's Alpha values) is used to measure internal consistency that is how closely related a set of items are as a group of statistics of collected data.

### IV. Results And Discussion

#### Demographic Analysis

According to Table 1, the majority of the respondents are female (62%) students and male students are 38%. Among them 29.6% are from Faculty of Applied Sciences, 32.4% are from Faculty of Management Studies and rest 34.5% students are from Social Sciences and Humanities. Sample consists of the undergraduates having their own personal computers are 132 (93%) and having the Internet connectivity at home are 136 (95.8%). Among them 115 (81%) undergraduates are having knowledge of uses of software. Knowledge of pirated software, 54.2% of the respondents are having the knowledge about it while 45.8% of the respondents are not having the knowledge. Knowledge of licensed software is also almost in similar status, 53.5% respondents are having the knowledge about it and 46.5% students are not having the knowledge of licensed software.

**Table 1-** Respondents' Demographic Information

Do you have Internet connectivity at home?	Yes (136 - 95.8%)	No (6 - 4.2)
Do You have your own Personal Computer?	Yes (132 - 93%)	No (10 - 7%)
Do you have knowledge of the software?	Yes (115 - 81%)	No (27 - 19%)
Do You have knowledge about pirated software?	Yes (77 - 54.2%)	No (65 - 45.8%)
Do You have knowledge about licensed software?	Yes (76 - 53.5%)	No (66 - 46.5%)
Gender	Male (54 - 38%)	Female (88 - 62%)
Science (42 - 29.6%)	Management (46 - 32.4%)	Social Sciences & Humanities (49 - 34.5%)
Total = 142		

#### Reliability Test

There are five independent variables to investigate the dependent variable students' intention to use of pirated software among university students in RUSL. Table 2 demonstrates Cronbach's Alpha values of the research variables with the number of questions. All alpha values are above seven (07) and it indicates the results of interpretations of the variables are reliable. The highest value is 0.864 for the dependent variable students' intention and lowest value is 0.705 for perceived moral obligation which is one of the dependent variables.

**Table 2 - Cronbach's Alpha values of Research Variables**

Variables	Cronbach's Alpha	No. of Items
Computer Experience	0.846	6
Students' Attitude	0.853	7
Perceived Moral Obligation	0.704	5
Social Influence	0.728	6
Students' Awareness	0.705	3
Students' Intention	0.864	9

**Descriptive statistics for research variables**

The Table 3 describes descriptive statistics of responses of respondents related with independent and dependent variables of the study. Almost all the mean values of the research variables are relatively high and above 3. The mean values of the variables are ranging from 3.191 to 3.785; the standard deviation values are ranging from 0.552 to 0.642. Maximum mean is having the Computer Experience (3.785) of undergraduates of using web, email and using computers for various academic purposes of their studies and lowest mean value is having for Social Influence (3.191) to use the pirated software of undergraduates by their teachers, friends and relatives.

**Table 3 - Descriptive statistics for research variables**

Variable	Mean	Std. Deviation
Computer Experience,	3.785	0.552
Students' Attitude	3.402	0.618
Perceived Moral Obligation	3.262	0.632
Social Influence	3.191	0.604
Students' Awareness	3.542	0.642
Students' Intention	3.446	0.635

**Correlation and Regression Analysis of the Research Variables**

The objective of the correlation analysis is to test an association between the two variables. According to Table 4 Pearson correlation values are 0.510, 0.543, 0.568, and 0.694 for the constructs Computer Experience, Students Attitude, Awareness, Social Influence, Moral obligation respectively with the Students intention to use pirated software. All of the above values are more than 0.3 and significant values are less than 0.01. Therefore, there are positive associations between students' intention to use pirated software and of the independent variables Computer Experience, Students Attitude, Awareness & Social Influence. Pearson correlation value is -0.176 between Moral obligation and students' intention to use pirated software and significant value (0.018) is less than 0.05. Hence, there is a negative association between the variables. According to the Pearson correlation analysis all the generated hypotheses are accepted.

**Table 4: Correlation Analysis (Pearson Correlation Value, (Sig. value))**

Variable	CE	SA	A	SoI	MO	SI
Computer Experience (CE)	1	0.310** (0.000)	0.165* (0.025)	0.329** (0.000)	0.057 (0.249)	0.510** (0.000)
Students Attitude (SA)		1	0.237** (0.002)	0.351** (0.000)	0.207** (0.007)	0.543** (0.000)
Awareness (A)			1	1	0.093 (0.137)	0.568** (0.000)
Social Influence (SoI)				1	-0.082 (0.166)	0.694** (0.000)
Moral Obligation (MO)					1	-0.176* (0.018)
Students Intention (SI)						1

Number of students = 142, \*\* - Correlation is significant at the 0.01 level (1-tailed),  
\* - Correlation is significant at the 0.05 level (1-tailed).

Table 5 display the output of regression analysis values. Hence, Adjusted R-Square value is 0.681, which means 68.1% of the variation in Students Intention to use pirated software can be explained by the

constructs Computer Experience, Students Attitude, Awareness of the pirated software, Social Influence and Moral Obligation. The Durbin-Watson statistic of 1.715 is not too far from 2. The p-value from the ANOVA table is 0.000 which less than 0.001, which means that at least one of the five variables: Computer Experience, Students Attitude, Awareness of the pirated software, Social Influence and Moral Obligation can be used to model Students Intention to use pirated software. The VIF values are below 5, indicating that there is no problem of multicollinearity.

**Table 5 – Regression Analysis**

Variable	B	Sig.	VIF
Constant	-0.278	0.370	--
Students Attitude (SA)	0.249	0.000	1.268
Moral Obligation (MO)	-0.141	0.006	1.108
Awareness (A)	0.270	0.000	1.639
Social Influence (SoI)	0.356	0.000	1.831
Computer Experience (CE)	0.330	0.000	1.209
<b>Adjusted R Square = 0.681, ANOVA Sig. = 0.000, F = 61.14, Durbin-Watson = 1.715</b>			
<b>Predictors:</b> (Constant),CE, SA, A, SI, MO, SoI, MO			
<b>Dependent Variable:</b> Students' Intention (SI)			

Finally, it is concluded that all the hypotheses H1 to H5 do not reject of considering the Correlation and Regression Analysis. Based on the results formulated hypotheses can be evaluated as follows (Table 6).

**Table 6- Summary of hypotheses testing**

Hypotheses	Correlation	Regression
H1: Moral Obligation negatively affects the students' Intention towards the use of Pirated Software.	Supported	Supported
H2: Social Influence positively affects the students' Intention towards the use of Pirated Software.	Supported	Supported
H3: Attitude of the students positively affects the students' Intention towards the use of Pirated Software.	Supported	Supported
H4: Awareness of pirated software positively affects the students' Intention to use of Pirated Software.	Supported	Supported
H5: Computer Experience positively affects the students' Intention to use of Pirated Software.	Supported	Supported

## V. Conclusion And Recommendation

Pilot phase of this study revealed that lot of students are using pirated software for their day today computer related activities. The reasons of using pirated software by students are not clear. Therefore, the objective of this research is to identify the factors affecting to the students' Intention to use of pirated software of the RUSL According to Literature review many constructs are caused to use pirated software. Among them Computer Experience, Students Attitude, Awareness, Social Influence and Moral Obligation have been used to measure the Intention to use pirated software by the students of RUSL. The Self administrative questionnaire was developed getting support from the literature and data were collected from 142 undergraduates from the three faculties namely Applied Science, Management Studies and Social Sciences & Humanities that were situated Mihintale premises of RUSL.

Descriptive statistics such as mean, standard deviation and percentage were used to predict the demographic analysis and found that majority of students having their own personal computer connected to the Internet. Further, majority of them are having sufficient knowledge of pirated software and licensed software. Results reveals that students who having much experience is tend to use more pirated software than other students specifically the students who is having good knowledge of the web surfing. Furthermore, lot of student who thinks that use of pirated software is not harmful activity is using more pirated software and giving them to their friends too. Then the students who are not knowing to get licensed software are tends to use more pirated software. But, the students who think uses of pirated software are harm to the society are reluctant to use pirated software.

Based on the results it is recommended that students have to be increase awareness and enlightened the harm of the use of pirated software to the society and to the country economy. Further, they should be informed that use of pirated software is an illegal and punishable activity. To generalize and to validate the above results more researches are needed with wider sample such as all university students and students who belong to other domains. The result of this research can be extended using some other constructs like perceived behavioral control and perceived usefulness of using licensed software to the society.

### References

- [1]. Ahasanul, H., Sabbir, R. and Ali, K. (2010). Factors influencing consumer ethical decision making of purchasing pirated software: structural equation modeling on Malaysian consumer. *Journal of International Business Ethics*, Vol. 3 (No. 1), 30-40.
- [2]. BSA (2016a). Unlicensed Software Use Still High Globally despite Costly Cyber security Threats. <http://globalstudy.bsa.org/2016/index.html>. Access on 17th August 2017
- [3]. BSA (2016b). BSA Global Software Survey. [http://globalstudy.bsa.org/2016/downloads/studies/BSA\\_GSS\\_InBrief\\_US.pdf](http://globalstudy.bsa.org/2016/downloads/studies/BSA_GSS_InBrief_US.pdf). Access on 17th August 2017
- [4]. Denni Arli, Fandy Tjiptono, (2016) "Consumer digital piracy behaviour among youths: insights from Indonesia", *Asia Pacific Journal of Marketing and Logistics*, Vol. 28 Issue: 5, pp.898-922, <https://doi.org/10.1108/APJML-11-2015-0163>
- [5]. Gunasekera, D. (2010). Copyright Protection and Distance Librarianship: provisions and constraints observed in copy right law of Sri Lanka. *Journal of the University Librarians Association of Sri Lanka*, Vol. 14 (No. 1), 89-105.
- [6]. Limayem, M., Khalifa, M., and Chin, W. W. (2004). Factors Motivating Software Piracy: A Longitudinal Study. *IEEE Transactions on Engineering Management*, Vol. 51 (No. 1), 414-425.
- [7]. Norizan, A., Mohd Mursyiddin, A. and Farrah, D. S. B. (2015). The Use of Pirated Software among Information Professionals: Measuring the Difference. *Journal of Management Research*, Vol. 7 (No. 2), 353-363.
- [8]. Pamela, A. D. (2010). Software piracy: exploring awareness of the law as a determinant of soft lifting attitude and intention. *Issues in Information Systems*, Vol. 11 (No. 01), 17-22.
- [9]. Shubhnandan, S. J. and Nishant, G. (2015). Demographic Factors of Software Piracy. *IJCSC*, Vol. 6 (No. 1), 129-139.
- [10]. Shubhnandan, S. J., and Nishant, G. (2012). Software Piracy among IT students of J&K: Ethical or Unethical. *International Conference on Recent Advances and Future Trends in Information Technology* (pp. 33-36). Proceedings published in *International Journal of Computer Applications*.
- [11]. Yogesh, M. and Dennis, F. G. (1999). Extending the Technology Acceptance Model to Account for Social Influence:. Proceedings of the 32nd Hawaii International Conference on System Sciences.

IOSR Journal of Business and Management (IOSR-JBM) is UGC approved Journal with Sl. No. 4481, Journal no. 46879.

Munasinghe PG "Students' Intention to Use of Pirated Software in Rajarata University of Sri Lanka." *IOSR Journal of Business and Management (IOSR-JBM)* 19.12 (2017): 52-58.