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An Empirical Assessment of Factors Contributing to Individuals' Propensity to Commit Software Piracy in The Bahamas

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An Empirical Assessment of Factors Contributing to Individuals’ Propensity
to Commit Software Piracy in The Bahamas

by
Raymond Wells

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in
Information Systems

Graduate School of Computer and Information Sciences
Nova Southeastern University
2012
An Abstract of a Dissertation Submitted to Nova Southeastern University In Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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Raymond C. Wells

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Researchers have found that software piracy worldwide over the years has significantly contributed to billions of dollars in lost revenue for many software firms. Software developers have found it difficult to create software that is not easily copied, thus, creating a software protection problem. Software piracy remains a global problem despite the significant effort to combat its prevalence.

Over the years, significant research has attempted to determine the factors that contribute to individuals’ propensity to commit software piracy. Most of the research on software piracy has been limited to larger societies, with recommendations by researchers to extend similar studies to smaller ones. The literature indicating the need for additional research on this topic in different populations and cultures is significant. Given that, the key contributions of this study were to assess empirically factors such as personal moral obligation (PMO), cultural dimensions, ethical computer self-efficacy (ECSE) and the effect it has on individuals’ propensity -- in cultures that support it -- to commit software piracy in smaller geographical locations.

Therefore, this research empirically assessed the contribution that PMO, Hofstede’s cultural dimension of individualism/collectivism (I/C), and ECSE have made on individuals’ propensity to commit software piracy. The study extended the current body of knowledge by finding answers to three specific questions. First, this study sought to determine whether the PMO component contributed to individuals’ propensity to commit software piracy in The Bahamas. Secondly, this study sought to determine the level of contribution of Hofstede’s cultural dimension of I/C to individuals’ propensity to commit software piracy in The Bahamas. Finally, this study sought to determine the contribution of ECSE to individuals’ propensity to commit software piracy in The Bahamas.

A total of 321 usable responses were collected over a one-month period from students from the school of business at a small Bahamian college, to determine their level of PMO, I/C, and ECSE contribution to individuals’ propensity to commit software piracy. This represents, approximately, a 64% response rate. The results showed the overall significance of the models of the three factors in predicting individuals’ propensity to commit software piracy. Furthermore, the results indicated that PMO and ECSE subscale PMO and ECSE_DB were significant, however, I/C, and ECSE (as a whole) were not.
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Chapter 1

Introduction

Background

This study addressed factors that contribute to individuals’ propensity to commit software piracy in The Bahamas. Software piracy has become a significant issue for the software industry worldwide (Bagchi, Kirs, & Cerveny, 2006; Cronan & Al-Rafee, 2008; Lau, 2006; Villazon, 2004). Significant research on factors that contribute to individuals’ propensity to commit software piracy has been conducted in larger societies (Bagchi et al., 2006; Banerjee, Cronan, & Jones, 1998; Cronan & Al-Rafee, 2008; Goles, Jayatilaka, George, Parsons, Chambers, Taylor, et al., 2008; Husted, 2000; Kuo & Hsu, 2001; Leonard & Cronan, 2005; Wang, Zhang, Zang, & Ouyang, 2005). However, little attention has been given in the research of factors such as personal moral obligation (PMO), cultural dimensions, ethical computer self efficacy (ECSE) and the effect they have on individuals’ propensity to commit software piracy in smaller geographical locations and cultures that appear keen to commit software piracy.

This study outlines the extent of the problem facing the software industry as it relates to contributions by PMO, cultural dimensions, and ECSE. The sections that follow outline the goal of this study and the specific research questions the study will address. Moreover, the study also outlines the relevance and significance of software piracy worldwide, as well as provides a brief review of the literature that was conducted on PMO, cultural dimension, and ECSE contributions. Barriers, issues, approach to the study, as well as instrument validity and reliability are also outlined below.
Problem Statement

The research problem that this study addresses is the ethical issue of software piracy and its impediment on the world’s software economy (MacDonald & Fougere, 2002). According to MacDonald and Fougere (2002), software piracy is defined as “the unauthorized reproduction of copyrighted software” (p. 325). Cavico and Mujtaba (2005) defines ethics as “the sustained and reasoned attempt to determine what is morally right or wrong” (p. 5). Atallah (2008) found that “worldwide, for every $2 worth of software purchased legitimately, $1 worth was obtained illegally” (p. 26). Software piracy is a problem that has taken on a global reach (Bagchi, Kirs, & Cerveny, 2006; Robertson, Gilley, & Crittenden, 2008).

There is strong evidence from the research that personal moral obligation (PMO) contributes to individuals’ propensity to commit software piracy (Banerjee, Cronan, & Jones, 1998; Cronan & Al-Rafee, 2008; Goles et al., 2008; Leonard & Cronan, 2005). Cronan and Al-Rafee (2008) defined PMO as “the feeling of guilt or personal obligation to perform or not to perform a behavior” (p. 530). According to Goles et al. (2008), PMO “reflects whether the individual feels guilty because the behavior violated an internalized norm, or does not feel guilty because the behavior was consistent with the norm” (p. 486). Leonard and Cronan (2005) indicated that further studies are needed to determine the contribution of PMO in both genders to individuals’ propensity to behave in an unethical manner using computers. Moreover, Cronan and Al-Rafee (2008) suggested that more research was needed in different populations and cultures to verify PMO’s role in individuals’ propensity to commit software piracy.
Developers of software found it increasingly difficult to create software that is not easily copied, thereby making the protection of the ownership of software rights complex (Atallah, 2008; Lau, 2003). In 2002, more than $10.9 billion was lost worldwide to software piracy (Business Software Alliance, 2002). Several years later, there seems to be little improvement in restraining individuals from committing software piracy. The Business Software Alliance (BSA) (2006) revealed that the software industry still recognized software piracy as a significant problem facing the software industry and estimated worldwide losses of more than $39.57 billion for 2006.

Microsoft Corporation has indicated that it loses more than $10 billion a year worldwide from pirated desktop software, and that half its products used in businesses and homes worldwide are illegal copies (Glover, 2003). It was argued that software piracy, when viewed in the larger context of digital piracy, can amount to $50 billion a year (Hill, 2007). For example, the software piracy rate worldwide remained at 35% for three years in a row, from 2003 to 2006 (BSA, 2006). The BSA (2006) indicated that understanding human factors, especially from a cultural dimension point of view, is warranted as it relates to an individuals’ propensity to commit software piracy.

There are cultural contributions to software piracy that may warrant consideration. According to Hofstede (1983), culture is defined as “part of our conditioning that we share with other members of our nation, region, or group but not with members of other nations, regions or groups” (p. 78). Bagchi et al. (2006) found that, in certain countries, there were significantly higher software piracy incidents, explainable by only the notion of culture. They suggested that culture appears to have significant influence on individuals’ propensity to commit software piracy.
Hofstede (1983), in his seminal work, developed four cultural dimensions including individualism/collectivism (I/C), large or small power distance, strong or weak uncertainty avoidance, and masculinity/femininity. Gibson, Ivancevich, Donnelly, and Konopaske (2003), explained that Hofstede’s (1983) cultural dimensions differentiate various cultures and contribute to behavior that “can cause misunderstandings, disagreements, or conflicts” (p. 60). Bagchi et al. (2006) found that a highly collectivist society has positively contributed to high software piracy. Collectivism is defined by Daft (2000) as “a preference for a tightly knit social framework in which individuals look after one another and organizations protect their member interest” (p. 116). Yang and Sonmez (2007) found that countries with high individualism traits, such as the U.S., engaged less frequently in software piracy. According to Gibson et al. (2003), individualism is defined as “each person’s highest priority is his own welfare and that of his family” (p. 61).

Husted (2000) indicated that Hofstede’s (1983) cultural dimension of individualism significantly contributed to an individuals’ propensity to commit software piracy. Wang, Zhang, Zang, and Ouyang (2005) as well as Husted (2000) indicated that countries that are considered collectivist societies, such as Singapore, showed a positive correlation in their software piracy rates. However, additional research is needed to investigate the contribution of culture has to individuals’ propensity to commit software piracy in other countries that appear to have high level of software piracy (Lau, 2006; Wang 2005).

Several researchers have studied computer self-efficacy (CSE) and its contribution towards individuals’ propensity to commit software piracy (Villazon, 2004). Compeau and Higgins (1995) defined CSE as “an individual’s perception of his or ability to use computers in the accomplishment of a task” (p. 191). However, most of these CSE
studies were conducted in the U.S. (Villazon, 2004). Compeau and Higgins (1995) found CSE significantly contributed to individuals’ unethical behavior when using an information system. Kuo and Hsu (2001) proposed the use of CSE in investigating individuals’ ethical conduct in using a computer system, and referred to it as Ethical CSE (ECSE). Kuo and Hsu (2001) found that there was a significant correlation between ethics, CSE, and individuals’ propensity to commit software piracy. Their model showed that three dimensions of software piracy – use&keep (ECSE_UK), distribution (ECSE_DB), and persuasion (ECSE_PS) self-efficacy -- positively contributed to individuals’ propensity to commit software piracy. Kuo and Hsu (2001) also indicated that additional research is needed to investigate the contribution of ECSE to an individuals’ propensity to commit software piracy.

Research on PMO by Goles et al. (2008) was centered on a large business school of a state university in the U.S. Moreover, although research on individuals’ propensity to commit software piracy has been conducted on a wide variety of cultures, such studies were limited to larger countries such as the U.S. (Husted, 2000; Villazon, 2004). Unfortunately, little research has been done to investigate the effects of factors such as PMO, cultural dimension, and ECSE on individuals’ propensity to commit software piracy in smaller geographical locations and cultures that appears keen to perform more digital piracy.

Dissertation Goals

The main goal of this research study was to assess empirically the contribution of individuals’ PMO, cultural dimensions, and ECSE to their propensity to commit software piracy. Cronan and Al-Rafee (2008) found that PMO contributed to an individuals’
propensity to commit software piracy, but indicated more research was needed in
different cultures, whereas Villazon (2004) found ECSE contributed a significant an
impact on an individuals’ propensity to commit software piracy. However, Cronan and
Al-Rafee (2008), as well as Villazon (2004) indicated further research must be conducted
on diverse cultures and populations, to verify and validate their results and to increase the
generalizability of their studies.

Bagchi et al. (2006) also found that factors explaining an individuals’ propensity to
commit software piracy fell into four categories that included cultural factors. They found
that there was a significant positive contribution towards collectivistic cultural behavior
and individuals’ propensity to commit software piracy in the societies studied (Bagchi et
al., 2006). However, they concluded more research was needed on an “individual
characteristics” (p. 83) to understand better its role in one’s propensity to commit
software piracy (Bagchi et al., 2006).

The need for the current study is demonstrated by the work of Husted (2000) and
Villazon (2004), who found that there was little examination of individuals’ propensity to
commit software piracy in smaller countries. Moreover, they both suggested that
additional investigation into factors that contribute to an individuals’ propensity to
commit software piracy in countries other than the U.S (Husted, 2000; Villazon, 2004)
was needed. Lau (2006) indicated that it was not clear whether the factors that
researchers have determined to be responsible for software piracy are “generalized across
different geographical settings” (p. 416). Thus, this study attempts to fill this void by
determining whether the factors outlined by these researchers (Husted, 2000; Villazon,
that contribute to individuals’ propensity to commit software piracy is valid and
generalized to a smaller population, specifically, The Bahamas.

This dissertation builds on previous research by Goles et al. (2008), Kuo and Hsu
(2001), as well as Husted (2000). According to Goles et al., there is a significant
relationship between PMO and an individuals’ propensity to commit software piracy.
Moreover, the work by Kuo and Hsu (2001) will serve as the theoretical foundation for
the needed additional work on the contribution of ECSE to individuals’ propensity to
commit software piracy. Husted (2000) called for more research on the understanding of
culture towards an individuals’ propensity to commit software piracy.

Goles et al. (2008) researched the piracy of copyrighted software by individuals for
personal use. Goles et al. (2008) found that PMO offered strong evidence on an
individuals’ propensity to commit software piracy by showing significant negative
relationship between PMO and attitude towards software piracy. They called for more
research with the PMO component present to validate the present studies conducted.

Kuo and Hsu (2001) provided the ECSE, thereby introducing the positive
contribution of ethics on an individuals’ propensity to commit software piracy. Kuo and
Hsu (2001) as well as Villazon (2004) utilized three constructs to confirm how ESCE
contributed to an individuals’ propensity to commit software piracy, but found more
work was needed. Thus, Tan (2002) called for a cross-cultural validation of his study that
focused on ethical contributions to an individuals’ propensity to commit software piracy,
to ensure there is a consistent significant contribution.

Although individuals’ PMO, cultural dimensions, and ECSE have been identified in
research as individually contributing to software piracy, it appears that not much attention
has been given to a predictive model in determining propensity to commit software piracy. As such, in this study, propensity to commit software piracy was the dependent variable.

The first specific goal of this study was to measure the impact of PMO on an individuals’ propensity to commit software piracy in The Bahamas. Gore et al. (2007) found that PMO brought out feelings of guilt in an individual when he/she violated some intrinsic belief as it related to software piracy or did not bring out guilty feelings when he/she did not violate an intrinsic belief. Leonard and Cronan (2005) found that PMO contributed to ethical behavior toward an individuals’ propensity to commit software piracy. Thus, this study investigated whether individuals’ PMO contributed to their propensity to commit software piracy.

The second specific goal of this study was to measure the contribution of individual’s Hofstede’s (1983) cultural dimension of I/C to their propensity to commit software piracy in The Bahamas. Numerous research studies have been conducted using all the cultural dimensions developed by Hofstede (1983) to explain software piracy, yielding mixed results (Yang & Sonmez, 2007). Parboteeah, Bronson, and Cullen (2005), Yang and Sonmez (2007), as well as Husted (2000) found that the I/C dimension significantly contributed to an individuals’ propensity to commit software piracy. However, they all called for more studies in different cultures to validate their research. Thus, this study investigated whether cultural dimensions of I/C offered any answers to an individuals’ propensity to commit software piracy.

The third specific goal of this study was to measure the contribution of ECSE to an individuals’ propensity to commit software piracy in The Bahamas. Cronan and Al-Rafee
(2008) as well as Zhang, Smith, and McDowell (2009) found that persons that were highly skilled exhibited a higher propensity to commit software piracy. However, both indicated that more research was needed in different cultures and countries to validate their study. Moreover, Villazon and Dion (2004) indicated that an individual's ECSE is positivity correlated to his/her propensity to commit software piracy, and called for more research from different geographical areas to validate their results.

The fourth specific goal of this study was to measure the differences among the measured constructs PMO, I/C, and ECSE based on age, gender, years of computer use, and college standing.

**Research Questions**

The main research question that this study addressed was: what is the contribution of Hofstede’s (1983) cultural dimensions of I/C, ECSE, and individual’s PMO on the propensity to commit software piracy in The Bahamas?

The four specific research questions that this study addressed are:

1. What is the contribution of PMO to individuals’ propensity to commit software piracy in The Bahamas?

2. What is the contribution of Hofstede’s (1983) cultural dimension of I/C to individuals’ propensity to commit software piracy in The Bahamas?

3. What is the contribution of ECSE (UK, DB, and PS) to individuals’ propensity to commit software piracy in The Bahamas?

4. What are the differences among the measured constructs PMO, I/C, and ECSE based on age, gender, years of computer use, and college standing?
Figure 1. Conceptual model on the factors that contribute to an individuals’ propensity to commit software piracy in The Bahamas.
Relevance and Significance

The issue of piracy of copyrighted digital material is a significant problem that continues to grow in “the music, computer software, videogame, and film industries” (Hill, 2007, p. 9). Priest (2006) indicated that pirated software, including compact discs (CDs), movies, and digital video discs (DVDs) caused industry-wide losses of $1.85 to $2.54 billion, and found that a significant amount of the pirated material ended up in Western markets from China. Moreover, Crittenden, Robertson, and Crittenden (2007) found that the ease of access and of copying software has created a worldwide software piracy market valued at $512 billion in 2004. The ability to access the Internet freely has created a market to distribute pirated software, which has become a significant problem for software development firms (Crittenden et al., 2007; Robertson et al., 2008). This study adds to the existing body of knowledge on factors that contributed to individuals’ propensity to commit software piracy (Cronan & Al-Rafee, 2008; Goles et al., 2008; Husted, 2000; Kuo & Hsu, 2001; Yang & Sonmez, 2007). Thus, the relevance of this study was to investigate factors that contribute to individuals’ propensity to commit software piracy in The Bahamas. Villazon and Dion (2004), as well as Villazon, (2004) indicated that further research is needed on different populations in different geographical settings to increase the validity of their results on individuals’ propensity to commit software piracy, thereby validating The Bahamas as a new geographic area to investigate.

According to Crittenden et al. (2007), “it's easy to find impressive statistics on the enormous amount of money lost due to software piracy, an oft-overlooked element of software piracy is the information technology risk associated the pirated product” (p. 30). Users of pirated software are more likely to experience computer infections from
malware, compared with users of legally obtained software (Crittenden et al., 2007).

From an economic perspective, piracy continues to impact the software industry with significant financial losses. Increased access to, and knowledge of, computer systems, will continue to drive the software piracy problem (Seale, Polakowski, & Schneider, 1998; Woolley & Eining, 2006). Thus, the significance of this study was that it investigated key constructs that contribute to individuals’ propensity to commit software piracy is valid in The Bahamas.

**Barriers and Issues**

The first significant barrier that might affect this study was the limited research on the ECSE construct. Compeau and Higgins (1995) were the first to measure and validate the CSE construct. Ever since the development of this construct, there has been significant research on the CSE’s impact on individuals’ use of computers (Blanke, 2008; Danet, 2006; Hasan, 2006; Hayashi, Chen, Ryan, & Wu, 2004; Marakas et al., 2007; Marakas, Yi, & Johnson, 1998; Villazon, 2004). Villazon (2004) as well as Villazon and Dion (2004) used the instruments developed and validated by Kuo and Hsu (2001) in their study that examined the influencing factors of software piracy. However, the ESCE construct has not been extensively reviewed as the other constructs in their study.

The second significant barrier that might affect this study was the difficulty in ensuring that survey participants answer accurately. Survey participants may be reluctant to give honest answers due to self-incrimination (Straub, 1986). To overcome this issue, participating students received a cover letter that outlined the assurance of complete anonymity and confidentiality (Blanke, 2008).
There is a lack of a structured research approach at The College of The Bahamas (COB), where this research was administered. Permission to perform research at COB was granted by the Office of Research, Graduate Programmes and International Relations (RGPIR). The RGPIR simply required a form to be filled out outlining briefly the work that is being carried out. Access was then granted to conduct the work for a period of one year. Additionally, approval from Nova Southeastern University's Institutional Review Board (IRB) was obtained prior to performing the research.

**Limitations and Delimitations**

As no research study can be perfect, weaknesses should be pointed out at the outset, according to Leedy and Ormrod (2005). The collection and analysis of the study was limited to students within The College of The Bahamas’ School of Business. As a result, the results and conclusion may be applicable to only this institution but can be generalized to other populations within The Bahamas’ Archipelago and the Caribbean. Also, since a Web-based survey was used, an incorrect assumption could have been made that the students had access to a personal computer with suitable Internet access, thereby limiting the response rate.

Also according to Leedy and Ormrod (2005), delimitations should be clearly outlined so that the readers know exactly how far the “research efforts extended and where the limits were set” (p. 284). To this end, the reader may encounter such delimitations as the present study pursued its main research question: what is the contribution of Hofstede’s (1983) cultural dimension of I/C, ECSE, and individual’s PMO on the propensity to commit software piracy in The Bahamas? As such, the stated constructs may not be the only ones that predict an individuals’ propensity to commit software piracy within The
Bahamas. Therefore, additional research may be needed to determine if other constructs contribute to individuals’ propensity to commit software piracy in The Bahamas. Another limiting factor was that this survey was conducted at a single college within The Bahamas. As a result, additional surveys at other locations in The Bahamas may be needed to validate any findings this study reached, vis-a-vis Hofstede’s (1983) cultural dimensions of I/C, ECSE, and individual’s PMO as predictors of the behavior being studied. Finally, the survey instrument was a Web-based one, thereby making it difficult to ascertain whether the intended target did take the survey or whether the survey participants were honest.

**Definition of Terms**

**Computer Self-Efficacy (CSE)** - “An individual’s perception of his or ability to use computers in the accomplishment of a task” (Compeau & Higgins, 1995, p. 191)

**Collectivism** - The preference of individuals to a tightly-knit social framework in which they look after one another (Daft, 2000)

**Culture** - Part of our conditioning or beliefs that we share with other members of our nation, region, or group, but not with members of other nations, regions or groups (Hofstede, 1983)

**Distribution Self-Efficacy Dimension** - Element that determines individuals’ willingness to distribute pirated software to others (Kuo & Hsu, 2001)

**Ethical Computer Self-Efficacy (ECSE)** - “People’s perceived confidence in sanctioning their conduct using computers” (Kuo & Hsu, 2001, p. 302)

**Ethics** - “The sustained and reasoned attempt to determine what is morally right or wrong” (Cavico & Mujtaba, 2005, p. 5)
**Individualism** - An individual's concern with his own self-interest or welfare (Gibson et al., 2003)

**Personal Moral Obligation (PMO)** - The feeling of guilt or personal obligation by an individual to perform, or not to perform, a behavior (Cronan & Al-Rafee, 2008)

**Persuasion Self-Efficacy Dimension** - Element that determine individuals’ propensity to convince others to use pirated software (Kuo & Hsu, 2001)

**Self-Efficacy (SE)** - “People’s beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives” (Wood & Bandura, 1989, p. 364)

**Software Piracy** - The unauthorized reproduction of copyrighted software (MacDonald & Fougere, 2002)

**Use-and-Keep Self-Efficacy Dimension** – Element that determines an individual's willingness to use and keep pirated software (Kuo & Hsu, 2001)

**Summary**

This chapter began by describing the significant problem of software piracy for the software industry worldwide. Significant research is being undertaken worldwide on individuals’ propensity to commit software piracy (Bagchi et al., 2006; Banerjee, Cronan, & Jones, 1998; Cronan & Al-Rafee, 2008; Goles, Jayatilaka, George, Parsons, Chambers, Taylor, et al., 2008; Husted, 2000; Kuo & Hsu, 2001; Leonard & Cronan, 2005; Wang, Zhang, Zang, & Ouyang, 2005). However, in smaller societies, research on this topic has been far more limited. PMO, cultural dimensions, and ESCE were discussed. Definitions of software piracy (MacDonald & Fougere, 2002), PMO (Cronan & Al-Rafee, 2008), cultural dimensions (Hofstede, 1983), and ECSE (Huo & Hsu, 2001) were examined.
The problem statement and goals were also analyzed and discussed. According to Glover (2003), Microsoft has indicated that more than $10 billion a year worldwide is lost from pirated desktop software, and half of its products used in businesses and homes worldwide were illegal. Additionally, according to BSA (2006), the software piracy rate worldwide remained at 35% for three years in a row. The framework for the problem statement as it relates to PMO, cultural dimension, and ECSE was discussed. The main goal of this research study was also analyzed and noted to assess empirically the contribution of individuals’ PMO, cultural dimensions, and ECSE to their propensity to commit software piracy. Finally, four specific goals of the research study -- PMO, cultural dimension of I/C, and ECSE, as well as their differences based on age, gender, years of computer use, and college standing -- were discussed and analyzed.

Four research questions were presented. The first three outlined the contribution of individuals’ propensity to commit software piracy in The Bahamas to the single constructs of PMO, cultural dimension of I/C, and ECSE. The forth question outlined the differences among the measured constructs PMO, I/C, and ECSE based on age, gender, years of computer use, and college standing, on individuals’ propensity to commit software piracy in The Bahamas. A conceptual model on the research study was also presented.

The relevance and significance of this study was also analyzed and discussed. The relevance of this research study was presented and noted as an investigation into factors that contribute to individuals’ propensity to commit software piracy in The Bahamas. Also, the significant loss in revenue that occurred due to software piracy was discussed (Hill, 2007; Priest, 2006; Crittenden et al., 2007, Robertson et al., 2008). The significance
of the study was also analyzed and noted as to investigate whether key constructs that contribute to individuals’ propensity to commit software piracy is relevant in The Bahamas.

The barriers and issues of the research study were also defined, analyzed, and presented. The first barrier was the limited research on the ECSE construct. The second barrier was ensuring that the participants answered accurately. This barrier was addressed by assuring the respondents of complete anonymity and confidentiality in the handing of their answers. The lack of a structured IRB at COB was discussed. This was minimized, since IRB from Nova Southeastern University had to be granted. Limitation and delimitations of the research study were discussed. Finally, a listing of definitions and relevant terms were presented with referenced citations.
Chapter 2

Review of the Literature

Introduction

For this chapter, a review was conducted on the relevant literature regarding the factors that contribute to individuals’ propensity to commit software piracy. A successful review of literature in academic research contributes significantly to ensuring the viability of a study, and results in creating a more refined topic for the researcher (Hart, 2005; Leedy & Ormrod, 2005, Levy & Ellis, 2006). An effective literature review can also offer new approaches to the research question, as well as provide the researcher with insight into how to conduct the research (Leedy & Ormrod, 2005, Levy & Ellis, 2006). An effective literature review also provides a firm theoretical basis for the research, creating a foundation for the study (Levy & Ellis, 2006; Maxwell, 2005).

Levy and Ellis (2006) indicated, “quality IS research literature from leading, peer-reviewed journals should serve as the major base of literature review as it provides sufficient theoretical background as well as leads for additional references on the specific subject matter” in conducting additional research (p. 185). In line with this recommendation, much of the literature reviewed were quality, peer-reviewed and valid sources from the system (IS) research domain. This wide and systematic research in the IS realm helped to chart the research direction, and provide a strong theoretical background for this research. Research was also garnered from other areas, such as business, psychology, and management. The main constructs of this research -- Personal Moral Obligation (PMO), Cultural Dimension of Individualism/Collectivism (I/C),
Ethical Computer Self-Efficacy (ECSE) -- were extensively researched to determine what was known from each area, providing a basis for the theoretical background.

**Personal Moral Obligation (PMO)**

There is significant evidence from the research that suggests an individual's PMO significantly influences his intention to behave in an ethical or unethical manner (Beck & Ajzen, 1991; Gorsuch & Ortberg, 1983; Haines, Street, & Haines, 2008; Leonard & Cronan, 2005). Additionally, Leonard and Cronan (2005) found that PMO “influenced attitude in all five cases” (p. 1160). This study examined the influence of PMO on one’s propensity to behave in a certain manner by synthesizing prior literature on PMO theories.

Ajzen and Fishbein (1969), as well as Beck and Ajzen (1991), found that PMO significantly contributed to the predictive powers of an individual's intention to behave in a certain manner. They found that in all of the choice scenarios, the predictive formula was significantly improved when PMO construct was added (Ajzen & Fishbein, 1969). However, Ajzen and Fishbein (1970) indicated that the PMO component in their research did not influence intention to behave in a certain manner.

There has been strong evidence from the research indicating that when the PMO construct is added to a statistical model in determining an individuals’ intention to behave in an ethical/unethical manner, the predictive powers of the model are significantly improved (Ajzen & Fishbein, 1969; Beck & Ajzen, 1991; Gorsuch & Ortberg, 1983; Haines et al., 2008). Gorsuch and Ortberg (1983) as well as Schwartz and Tessler (1972) indicated that PMO was a significant predictor of an individual's intention to behave in a certain manner, and contradicted the findings of Azjen and Fishbein (1970). Moreover,
Swartz and Tessler (1972) found that the PMO component in their study on blood donor behavior may be single most significant predictor of intention.

Jones (1991) found that Rest’s (1986) ethical decision making model contained “all the elements of moral decision making behavior” (p. 379) (see Figure 2). The ethical decision making model began with the recognition of a moral issue that compelled individuals to make a decision that may either be detrimental to others or provide assistance to them (Jones, 1991). The manner by which an individual made his ethical decision was dependent upon individual traits (Bommer, Gratto, Gravander, & Tuttle, 1987; Jones, 1991), which included one’s moral intensity toward the moral issue (Jones, 1991). An issue of high moral intensity will be more apparent to an individual, compared with an issue of low moral intensity (Jones, 1991). The higher the level of pronouncement of a moral issue, the greater the likelihood that the individual will recognize and act on that moral issue (Banerjee et al, 1998; Jones, 1991).

**Figure 2.** Stages of ethical decision making (Jones, 1991).

After an individual has recognized the existence of a moral issue, the next step in Rest’s (1986) Ethical Decision Making Model will be to make a moral judgment (Jones, 1991). Kohlberg (1976) grouped six Stages of Moral Judgment into three categories
called the Preconvention Level (Stages 1 and 2), the Conventional Level (Stages 3 & 4), and the Postconventional Level (Stages 5 & 6). These levels are on a continuum that starts with a minimal understanding and acceptance of society’s (or social) rules and expectations, to the endpoint, where these rules are internalized and accepted by the individual (Kohlberg, 1976). Further research by Banerjee et al. (1998) supported Kohlberg (1976), and concluded that moral judgment influences individuals’ to behave in an ethical manner.

The next stage in Rest’s (1986) Ethical Decision Making Model is the establishment of moral intention (Jones, 1991). Much of the social psychological literature made reference to the word intention, however, the word intent can be substituted (Jones, 1991). A significant contributor to predicting an individual’s behavior is his intention to perform a behavior (Ajzen & Fishbein, 1969, 1980, in press; Beck & Ajzen, 1991).

The final component of Rest’s (1986) Ethical Decision Making Model was the engagement in moral behavior (Jones, 1991). Bommer et al. (1987) as well as Jones (1991) indicated that the decision to engage in a particular behavior is based on several factors, including individual attributes, such as moral behavior. Other factors contributing to the engagement in moral behavior included coworkers, friends, spouses as well as teachers and peers (Bommer et al., 1987; Chang, 1998).

Haines et al. (2008) indicated that Rest’s (1986) Ethical Decision Making Model was incomplete and called for the PMO construct to be included as a sub-component of Rest’s (1986) four-stage model of Ethical Decision Making (see Figure 3). They found that PMO was significantly directly related to moral intent, and concluded than an individual’s ethical-decision making process went from moral judgment to PMO, followed by moral
intention (Haines et al.). Haines et al. (2008) found that individuals account more heavily
their PMO, compared with their moral judgment, as previously concluded by Jones
(1991) when they have to make an ethical decision.

Haines et al. (2008) studied Rest’s (1986) Ethical Decision Making Model and found
that individuals’ PMO should be included along with their moral judgment and moral
intent, to increase the predictive powers or moral intent. They found that individuals’
PMO in four of the five cases they examined, when taking into consideration their
perceived importance of an ethical issue (PIE), found that contribution to moral intent
was stronger than that of moral judgment (Haines et al., 2008). By paying attention to
PMO, persons would be able to ascertain moral intent, and ultimately, influence moral
behavior (Bobek & Hatfield, 2003; Haines et al., 2008).

Figure 3. Stages of ethical decision making with PMO component (Haines et al., 2008).

Cronan and Al-Rafee (2008) indicated that more research was needed in different
population samples to verify the existing results and generalizability of PMO contribution
to individuals’ propensity to commit software piracy. Additionally, Leonard and Cronan
(2005) indicated that attitudes towards unethical computer use shift, causing a continued
reassessment of the influencers that cause unethical behavior. As a result, this study in
The Bahamas is warranted. Table 1 summarizes research in PMO that was used for this study.

The PMO component research study conducted found that these studies were centered on larger societies. It is not known if similar studies in smaller cultures would produce similar results. This study aims to address whether the PMO component construct measure explains similar behavior in smaller geographic locations.

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Sample</th>
<th>Instrument/ Constructs</th>
<th>Main findings or contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beck &amp; Ajzen, 1991</td>
<td>Empirical and Survey</td>
<td>146 college students (28 males, 118 females)</td>
<td>Attitudes, Subjective norms, Perceptions of behavioral control, Intentions, Perceptions of moral obligations, and Self-reports of behavior.</td>
<td>Developed a model to predict dishonest behavior using theory or reasoned actions (TRA) and theory of planned behavior (TPB) models. Results showed TRA predicted intentions with a high degree of accuracy and ultimately predicted behavior.</td>
</tr>
<tr>
<td>Gorsuch &amp; Orberg, 1983</td>
<td>Empirical and Survey</td>
<td>113 adults from a Baptist church Sunday School in a city in the Midwest US</td>
<td>Attitudes, Behavioral intention, Social norms, Moral obligation</td>
<td>Expanded Fishbein and Ajzen (1970) model to include moral obligation. Results suggested that moral obligation added significantly to the prediction of behavioral intention.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<tr>
<td>Haines et al., 2008</td>
<td>Empirical and Survey</td>
<td>235 college students in a major Northwestern University in U.S.</td>
<td>Moral obligation, Ethical decision making, Perceived importance of an ethical issue, Moral Intensity, Moral judgment</td>
<td>Expanded Rest’s (1986) four-stage ethical decision making model to include moral obligation. Moral obligation is a process that was found to occur after a moral judgment is made.</td>
</tr>
<tr>
<td>Ajzen &amp; Fishbein, 1969</td>
<td>Empirical and Survey</td>
<td>100 undergraduate students</td>
<td>Attitude, Normative beliefs, Behavioral intentions,</td>
<td>Results suggested that behavioral intentions to act in a certain manner can be best predicted by including both the attitude and normative beliefs components.</td>
</tr>
<tr>
<td>Ajzen &amp; Fishbein, 1970</td>
<td>Empirical and Survey</td>
<td>96 undergraduates from University of Illinois, US</td>
<td>Behavioral intention, Behavior, Individualism</td>
<td>Results suggested behavioral intent is highly correlated with an individual’s behavior which in turn can be predicted from the individual’s attitude towards the act their social normative beliefs.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<tr>
<td>Schwartz &amp; Tessler, 1972</td>
<td>Empirical and Survey</td>
<td>195 adults from a Midwestern city, U.S.</td>
<td>Attitude, Normative beliefs, Moral obligation.</td>
<td>Results suggested that the moral obligation component of personal normative beliefs maybe the single most significant predictor of individuals’ intentions and behavior.</td>
</tr>
<tr>
<td>Jones, 1991</td>
<td>Literature review, Theoretical</td>
<td>Ethical decision making, moral intensity,</td>
<td>Proposed an issue-contingent model for ethical decision-making in organizations.</td>
<td></td>
</tr>
<tr>
<td>Rest, 1986</td>
<td>Literature review, Theoretical</td>
<td>Moral judgment</td>
<td>An individual's moral judgment in a positive way changes with time and education.</td>
<td></td>
</tr>
<tr>
<td>Ajzen &amp; Fishbein, 1980</td>
<td>Empirical and Survey</td>
<td>Performed a series of studies aimed toward predicting human behavior</td>
<td>TRA, Attitudes, Behavior</td>
<td>Used the TRA to predict, explain, or influence behavior. The writing included several research studies as well as particular applications to the study.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<tr>
<td>Chang, 1998</td>
<td>Empirical and Survey</td>
<td>181 students from several Hong Kong universities</td>
<td>Attitude, Subjective norm, Perceived behavioral control (PBC), Behavioral intention, TRA, TPB</td>
<td>Study compared the usefulness of TRA and TPB to the predicting of unethical behavior. Results suggested that TPB is better than TRA in predicting unethical behavior.</td>
</tr>
<tr>
<td>Cronan &amp; Al-Rafee, 2008</td>
<td>Empirical and Survey</td>
<td>280 university students located in Midwest, US</td>
<td>Behavioral intention, Attitude, Norms, PBC, Moral obligation</td>
<td>Study used TPB as a framework to conduct the research. Results found that factors such as planned behavioral factors, moral obligation, and individuals’ past behavior influenced individuals’ to pirate digital material.</td>
</tr>
<tr>
<td>Leonard &amp; Cronan, 2005</td>
<td>Empirical and Survey</td>
<td>422 university students located in a Midwestern university in US</td>
<td>Ethical behavior, Ethical decision making, Attitudes, Moral obligation, Personal values, Belief systems</td>
<td>Results showed that individuals’ attitude toward ethical decision making is influenced by society, professional, legal, business environments, one’s belief system, personal values, personal environment, moral obligation and awareness.</td>
</tr>
</tbody>
</table>
Cultural Dimension of Individualism/Collectivism (I/C)

There is significant evidence from the research that suggests distinct behavioral differences between societies that are individualistic and those that are collectivistic (Chen, Meindl, & Hunt, 1998; Hofstede, 1997; Kagitcibasi & Berry, 1989; Triandis, Chen, & Chan, 1998). The cultural models of I/C have been researched significantly for a wide spectrum of disciplines (Chen et al., 1997), including ethical decision-making (Vitell, Nwachukwu, & Barnes, 1993). This study examined the influence of the cultural dimension of I/C on one’s propensity to behave in a certain manner by synthesizing prior literature on I/C.

Hofstede (1997) developed a statistical model that was used to determine the origin of I/C in various cultures. He found that geographic region, economic standing, and historic background were dependant variables in determining individuals’ I/C status (Hofstede, 1997). Further, there was a significant correlation between a country’s wealth and its individualism, which could be calculated using the individualism index (IDV) for each country (Hofstede, 1997). Yang, Sonmez, Bosworth, and Fryxell (2009) supported these findings, and concluded that a country’s IDV is inverse to its software piracy levels.

Table 2 outlines Hofstede’s (1997) indication of the primary differences between individualists and collectivists.

Table 2. Key differences between collectivist and individualist societies (Hofstede, 1997, p. 73).

<table>
<thead>
<tr>
<th>Collectivist</th>
<th>Individualist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collective interests prevail over individual interests</td>
<td>Individual interests prevail over collective interests</td>
</tr>
<tr>
<td>Private life is invaded by group(s)</td>
<td>Everyone has a right to privacy</td>
</tr>
</tbody>
</table>
Table 2. Key differences between collectivist and individualist societies (Hofstede, 1997, p. 73) (continued)

<table>
<thead>
<tr>
<th>Collectivist</th>
<th>Individualist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinions are predetermined by group membership</td>
<td>Everyone is expected to have a private opinion</td>
</tr>
<tr>
<td>Laws and rights differ by group</td>
<td>Laws and rights are suppose to be the same for all</td>
</tr>
<tr>
<td>Low per capita GNP</td>
<td>High per capita GNP</td>
</tr>
<tr>
<td>Dominant role of the state in the economic system</td>
<td>Restrained role of the state in the economic system</td>
</tr>
<tr>
<td>Economy based on collective interests</td>
<td>Economy based on individual interests</td>
</tr>
<tr>
<td>Political power exercised by interest groups</td>
<td>Political power exercised by voters</td>
</tr>
<tr>
<td>Press controlled by the state</td>
<td>Press freedom</td>
</tr>
<tr>
<td>Imported economic theories largely irrelevant because unable to deal with collective and particularistic interests</td>
<td>Native economic theories based on pursuit of individual self-interests</td>
</tr>
<tr>
<td>Ideologies of equality prevail over ideologies of individual freedom</td>
<td>Ideologies of individual freedom prevail over ideologies of equality</td>
</tr>
<tr>
<td>Harmony and consensus in society are ultimate goal</td>
<td>Self-actualization by every individual is the ultimate goal</td>
</tr>
</tbody>
</table>

Yang and Sonmez (2007) as well as Husted (2000) researched the cultural impact on intellectual property violation. The former performed a regression analysis of aggregated data from 76 countries, and found the individualism variable significantly explained the variation in software piracy. These findings were supported by Husted (2000), who concluded that this cultural dimension was significantly linked to software piracy. Yang and Sonmez (2007) as well as Husted (2000) suggested that individualism had an inverse correlation to software piracy.
Wang et al. (2005) included the I/C component in their study on Chinese intention to purchase pirated software. Wang et al. (2005) study proposed four questions to address I/C component which indicated an individual’s propensity to share. Their analysis included 302 respondents, and found that collectivism significantly influenced attitudes toward software piracy behavior (Wang et al.). Hui and Triandis (1986) supported these findings, and indicated that collectivists went to significant lengths to share resources to maintain their “social network of reciprocation” (p. 229).

Li and Vermillion (2006) researched cultural differences and their effect on behavior and ethical decision-making. They indicated that I/C significantly contributed to ethical decision-making by examining the difference in the value systems that ultimately influence individuals’ ethical standards (Li & Vermillion, 2006). Similarly, Li and Vermillion (2006) indicated that I/C ethical decision-making was contingent upon moral development. For instance, individualistic cultures place a higher priority on personal goals than on group goals, as opposed to collectivist cultures (Li & Vermillion, 2006). The ethical decision-making of individualistic cultures was more consistent and less prone to situational influence, whereas collectivistic cultures vary with “context and situations” (Li & Vermillion, 2006, p. 13). As stated by Li and Vermillion (2006), “lying violates social norms and is a serious offense to individualists, but it may be acceptable to collectivists” (p. 13).

Li and Vermillion's (2006) study produced different results from those of Man and Lam (2003). Man and Lam (2003) found that I/C played a role in group performance in a study conducted between 381 teams from Hong Kong and U.S. branches of an organization (Man & Lam, 2003). The results indicated that a significant number of the
203 teams analyzed in Hong Kong were collectivist (Man & Lam, 2003). In contrast, an insignificant number of the 178 teams analyzed in the U.S. were collectivistic (Man & Lam, 2003). However, Man and Lam (2003) indicated that individualists, when presented with complex tasks, exhibited a higher degree of group cohesiveness, compared with their collectivist counterparts.

Triandis (1989) as well as Triandis, Bontempo, Villareal, Asai, and Lucca (1988) used the terms "idiocentrism" (based on individualism) and "allocentrism" (based on collectivism) to identify individualism and collectivism at the individual level. They indicated that tight and loose cultures may impact the individualistic or collectivist state of individuals (Triandis, 1989; Triandis et al., 1988). For instance, Triandis and Triandis et al. (1988) indicated collectivism was linked to tight cultures, and individualism appeared to be linked to be loose cultures. Tight cultures possessed clearly defined norms from which members were not allowed to deviate, whereas loose cultures possessed undefined norms from which its members were allowed to deviate (Triandis, 1989). Moreover, individualism appeared to be linked to affluence, permitting the individual the means to exist outside his ingroup (Hofstede, 1997; Triandis, 1989; Triandis et al., 1998). Collectivism, on the other hand, was consistently linked to cultures where individuals were non-literate, or their survival depended on the collective (Triandis, 1989).

Hui and Triandis (1986) indicated that I/C is made up of a set of beliefs and behaviors. Their research included 49 psychologists and anthropologists from various parts of the world to measure seven situations for 10 groups of persons (Hui & Triandis, 1986). Hui and Triandis (1986) indicated that these situations were used to define I/C and mainly focused on “concern” (p. 231) for others. Their model found that the respondents
showed significantly higher t-values for the concern of siblings (7.92), relatives (9.62), and neighbors (8.71), compared with their concern for foreigners or strangers (3.25) (Hui & Triandis, 1986). The results indicated that concern for others was significantly related to individuals’ feelings of oneness or cohesiveness toward others as a group taking the same route (Hui & Triandis, 1986).

Hui (1988) developed and validated an instrument that could be used to measure I/C. The study included university students in Hong Kong, along with 132 American students from Illinois. The study format included a six-point scale of 96 items designed to measure eight target groups on their level of collectivism. The targets in the research included “spouse, parents, kin, family, neighbors, friends, co-workers/classmates, and unknown persons/acquaintances” (Hui, 1988, p. 21). Hui's (1988) research indicated the study was reliable, with a significant number of the reliability coefficients at .60 or higher. The results found by Hui (1988) were also consistent with the findings of Hui and Triandis (1986). Hui (1988) validated his I/C scale by performing six further validation studies. Table 3 presents a summary of Hui's (1988) validation studies.

The I/C validation study conducted by Hui (1988) found that the subscales presented in Table 3 significantly predict the I/C measure, however, the study was focused on large societies, such as American and Chinese cultures. It is not known if similar studies in smaller cultures will produce similar results. This study aimed to address whether I/C measure explains behavior in smaller geographic locations.
Table 3. Summary of Hui (1988) I/C validation studies

<table>
<thead>
<tr>
<th>Validation Study</th>
<th>Methodology</th>
<th>Sample</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert Judgment</td>
<td>Empirical and</td>
<td>41 responses from Social scientists located in Africa, Asia, Australia, Europe, and the Americas</td>
<td>Results indicated the I/C scale measured what it intended to. The scale was considered acceptable in different cultures and the items did not appear to be biased.</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Interest</td>
<td>Empirical and</td>
<td>The study included two samples which consisted of 50 Hong Kong University and 121 American university students.</td>
<td>The I/C scale and the General Collectivism Index (GCI) showed a positive correlation between both American and Chinese students.</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need for Approval</td>
<td>Empirical and</td>
<td>30 items were selected from Crowne and Marlowe (1964) social desirability scale and administered to 108 Chinese and 132 Americans attending universities.</td>
<td>Social desirability and collectivism is significantly positively correlated.</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obligation-Intention Correspondence</td>
<td>Empirical and</td>
<td>A obligation-intention scenario was presented to 25 females</td>
<td>Results suggested that obligation and behavioral intention to act in a certain manner are significantly correlated to one’s closeness to the target.</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibility Sharing (1)</td>
<td>Empirical and</td>
<td>25 American female college students were given scenarios with six options of varying responsibility levels.</td>
<td>Sharing responsibility for an action was significantly correlated to collectivists.</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
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</tbody>
</table>
To improve on the results of the data, Yang et al. (2009) as well as Husted and Allen (2008) called for more research to be conducted on the effects of culture on unethical computing behavior in other countries. Lau (2006) indicated that it may be inappropriate to use an American approach to solving the software piracy dilemma in other countries, and called for more research approaches for different cultures. As a result, conducting research in The Bahamas is warranted. Table 4 summarizes research in the cultural dimension of I/C that was used for this study.

<table>
<thead>
<tr>
<th>Validation Study</th>
<th>Methodology</th>
<th>Sample</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibility</td>
<td>Empirical and Survey</td>
<td>45 American male and female college students were given two scenarios where responsibility was assumed by the individual or shared with a friend.</td>
<td>Sharing responsibility for an action was significantly correlated to collectivists.</td>
</tr>
</tbody>
</table>

The cultural dimension of I/C research study conducted found that these studies were centered on larger societies. It is not known if similar studies in smaller cultures will produce similar results. This study aims to address whether the cultural dimension of I/C measure explains similar behavior in smaller geographic locations.
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Sample</th>
<th>Instrument/Constructs</th>
<th>Main findings or contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chen, et al., 1998</td>
<td>Theory, Literature</td>
<td>Culture, Individualism, Collectivism,</td>
<td>Developed a culturally contingent model of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>review</td>
<td>Operational citizen behavior (OCB)</td>
<td>cooperation to show the moderating effects of</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>culture. The model can be used to reduce bias</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>and misunderstanding in different cultures.</td>
<td></td>
</tr>
<tr>
<td>Kagitcibasi &amp;</td>
<td>Literature review</td>
<td>Culture, Perception, Cognitive, Attitudes,</td>
<td>Researched literature in the domains of cross</td>
<td></td>
</tr>
<tr>
<td>Berry, 1989</td>
<td></td>
<td>Personality, Individualism, Collectivism</td>
<td>cultural psychology and provide new</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>studies direction for the field in areas such</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>as individualism and collectivism.</td>
<td></td>
</tr>
<tr>
<td>Triandis et al.,</td>
<td>Empirical and</td>
<td>28 University of Illinois students</td>
<td>Individualism, Collectivism, Cross-culture</td>
<td>Results found that cultural change seem to be taking place in Hong Kong as the collectivist</td>
</tr>
<tr>
<td>1998</td>
<td>Survey</td>
<td>181 Hong Kong students</td>
<td></td>
<td>component scores were significantly lower than in recent studies.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<td>-----------------------</td>
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<td>----------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Li &amp; Vermillion, 2006</td>
<td>Literature review</td>
<td>Sample</td>
<td>Moral Action, ethical decision making, Collectivism, Individualism, Moral reasoning, Behavior</td>
<td>Examined studies that focused on the I/C component of culture. The research found that collectivism can have direct and indirect influence on individuals’ perception, judgment, moral reasoning, and behavior.</td>
</tr>
<tr>
<td>Man &amp; Lam, 2003</td>
<td>Empirical and Survey</td>
<td>Sample</td>
<td>Cross-cultural</td>
<td>Results suggested that an increase in job complexity and task autonomy increased overall group cohesiveness. Three dimensions of cultural variations (individualism, collectivism, tightness, looseness, and cultural complexity) were discussed.</td>
</tr>
<tr>
<td>Triandis, 1989</td>
<td>Literature review and Analysis</td>
<td>Sample</td>
<td>Individualism, Collectivism, Culture</td>
<td>Research provided an analysis of the individualism and collectivism constructs and their linkage to social phenomena, social behavior, and health. Results revealed cultural themes such as self-reliance, achievement, hedonism, competition, and interdependence have different meanings to the two kinds of culture.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<tr>
<td>Husted &amp; Allen, 2008</td>
<td>Literature review</td>
<td></td>
<td>Individualism, Collectivism, Cross-cultural ethics, Ethical decision making, moral reasoning</td>
<td>Argued that including business practices within the moral domain by an individual is due in part to cultural factors such as I/C.</td>
</tr>
<tr>
<td>Hui, 1988</td>
<td>Empirical and</td>
<td>108 Chinese university students and 132 American university students</td>
<td>Culture, Individualism, Collectivism, Behavioral intention</td>
<td>Developed and validated a multifaceted instrument to measure individualism and collectivism scale for individuals. The result of four studies concluded collectivists held favorable attitudes toward sharing others' burdens and troubles.</td>
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<td>Survey</td>
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<td></td>
<td></td>
<td>Validation Study One:</td>
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<td></td>
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<td>60 colleagues in Africa, Asia, Australia, Europe, and the Americas</td>
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<td>Validation Study Two:</td>
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<td>50 Hong Kong University students and 121 American university students</td>
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<td>Validation Study Three:</td>
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<td></td>
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<td>Administered to the original sample of 108 Chinese university students</td>
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<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<tr>
<td>Lau, 2006</td>
<td>Empirical and Survey</td>
<td>132 American university students</td>
<td>Validation Study Four: 25 female Americans Validation Study Five: 25 American female college students Validation Study Six: 45 American college students</td>
<td>Results showed that excessive price of software was a key factor in committing software piracy. Findings also concluded that there was a leniency towards persons that committed software piracy.</td>
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<td></td>
<td>Study One: 84 respondents to a Web-based survey posted to a Chinese university newsgroup. Study Two: An analysis conducted on 209 Chinese messages concerning software piracy posted to USENET</td>
<td>Computer crime, Ethics, Software piracy, computer software, Motivating factors</td>
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</tr>
<tr>
<td>Vitell et al., 1993</td>
<td>Literature review, Theory</td>
<td>Cultural dimensions, Ethical decision-making, Behavioral intentions</td>
<td>Found that ethical decision-making was influenced by Hofstede (1983) cultural dimensions.</td>
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<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<tr>
<td>Yang et al., 2009</td>
<td>Empirical and</td>
<td>Used four year data on piracy rates from 59</td>
<td>Culture, Individualism, Software piracy, economic development, Information computing</td>
<td>The results showed that increasing ICT spending, improving economic conditions, and changing culture to become more individualistic lowers software piracy.</td>
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<td></td>
<td>Survey</td>
<td>countries</td>
<td>technology (ICT)</td>
<td></td>
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<tr>
<td>Yang &amp; Sonmez, 2007</td>
<td>Empirical</td>
<td>Data obtained from BSA, World Bank, United</td>
<td>Cultural, Economic, Intellectual Property (IP), Software piracy</td>
<td>Examined the relationship of culture, piracy, and piracy of IP. Results found that culture component explained 76% of variation in software piracy.</td>
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<td>Nations Educational, Scientific, and Cultural</td>
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<td>Cooperation (UNESCO), US Central Intelligence</td>
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<td>Agency</td>
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<tr>
<td>Husted, 2000</td>
<td>Empirical</td>
<td>Data obtained from archival sources: BSA,</td>
<td>Culture, Software piracy</td>
<td>Results found that software piracy is significantly correlated to gross national product (GNP) per capita, income inequality, and individualism.</td>
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<td>World Bank (1996)</td>
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<tr>
<td>Wang et al., 2005</td>
<td>Empirical and</td>
<td>302 university students in Beijing, China</td>
<td>Culture, Individualism, Collectivism, Software piracy, Behavior</td>
<td>Results found four personal and social factors influenced Chinese consumers attitude towards software piracy: purchase intention, normality susceptibility, novelty seeking, and collectivism.</td>
</tr>
<tr>
<td></td>
<td>Survey</td>
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Table 4. Summary of I/C-Related Literature (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Sample</th>
<th>Instrument/Constructs</th>
<th>Main findings or contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hui &amp; Triandis, 1986</td>
<td>Empirical and Survey</td>
<td>81 psychologist and anthropologists worldwide</td>
<td>Culture, Individualism, Collectivism</td>
<td>Results suggested that individualists showed less concern for others and were independent, whereas collectivists engaged in the sharing of resources were willing to adopt others' opinions, expressed feeling of involvement and contributed to other persons’ lives.</td>
</tr>
</tbody>
</table>

**Ethical Computer Self-Efficacy (ECSE)**

There is significant evidence from the research that suggests that ethical decision-making influences individuals’ propensity to commit software piracy (Kuo & Hsu, 2001; Swinyard, Rinne, & Kau, 1990; Thong & Yap, 1998). The validation of an ethical component to CSE suggested an adequate measure of individuals’ intention to behave in an ethical/unethical manner toward computers (Kuo & Hsu, 2001). This study examined the influence of ECSE on one’s propensity to behave in a certain manner by synthesizing prior literature on ECSE theories.

There is significant evidence from the research that indicated individuals’ self-efficacy (SE) influences or influenced their behavior (Bandura, 1977; Bandura & Schunk,
Wood and Bandura (1989) defined SE as “people’s beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives” (p. 364). Bandura (1977) indicated that if an individual possessed the level of skills in a particular area, SE can be a significant factor in determining their choice of activity.

Bandura (1977) found that expectation of one’s SE is based on four sources of information perceived by the individual. The Performance Accomplishments Source of SE is based on individuals’ gaining personal expertise, in a particular field (Bandura, 1977). The Vicarious Experience Source of SE is based on individuals’ observing others successfully performing a task or activity with consistently positive results (Bandura, 1977). The Verbal Persuasion Source of SE is based on individuals’ being convinced that they can perform a task or activity through the suggestive powers of others (Bandura, 1977). Finally, the Emotional Arousal Source of SE is based on individuals’ level of arousal in performing a task or activity (Bandura, 1977). For instance, an individual tends or tended to be averse to performing an activity that carried or carries a high level of anxiety or stress (Bandura, 1977).

Thong and Yap (1998) added the ethical decision-making model to the domain of information systems (IS). Their research was to determine whether Hunt and Vitell's (1986) ethical decision-making model, originally designed for the marketing domain, could be adapted for use within the IS domain. Their research included 243 entry-level IS professionals biased on ethical decision-making toward software piracy.

Thong and Yap (1998) focused on deontological and teleological evaluations and their influence on individuals in making IS ethical decisions or judgments. Deontological
processes are the universal rules that define the notion of right or wrong and can be based on religious, personal, or aesthetic beliefs (Thong & Yap, 1988). Teleological processes address the notion of right or wrong based on the consequences of that particular action, and can be determined by an individual based on his/her assessment that the consequences of a particular action outweighs the consequences of the alternative action (Thong & Yap, 1988).

Thong and Yap (1998) found that Hunt and Vitell’s (1986) theory significantly explained the ethical decision-making in the IS context. Their research showed $R^2$ values of deontological and teleological evaluations on ethical decision-making were between 60% and 66%. $R^2$ values are expressed by the proportion of variation in the $y$ variable that is explained by the multiple regression equation (Weiers, 1998). The results indicated that, given the ethical issue of software piracy, there was a significant explanation offered through deontological and teleological evaluations.

Kuo and Hsu (2001) developed and validated the ECSE in the context of software piracy. The ECSE model was based on Bandura (1986) Social Cognitive Theory of SE (Kuo & Hsu, 2001). The construct of ECSE was a second-order factor model derived from three first-order constructs "Use&Keep," (ECSE_UK), "Distribution" (ECSE_DB) and "Persuasion" (ECSE_PS) SE (Kuo & Hsu, 2001). The Use&Keep SE dimension is defined as individuals’ willingness to use and keep pirated software (Kuo & Hsu, 2001). The Distribution SE dimension is defined as individuals’ willingness to distribute pirated software to others (Kuo & Hsu, 2001). The Persuasion SE dimension is defined as individuals’ propensity to convince others to use pirated software (Kuo & Hsu, 2001).
The ECSE construct was empirically assessed by querying 209 participants using a 12-item questionnaire (Kuo & Hsu, 2001). The result indicated that the three SE dimensions of Use&Keep, Distribution, and Persuasion all significantly measured a unique portion of the ECSE construct (Kuo & Hsu, 2001). Hsu and Kuo (2001) found that the first-order model, which included all three dimensions, independently predicted the ECSE construct with a significant Goodness of Fit Index and a marginally accepted Goodness. The second-order factor also had a significant relationship coefficients to the first-order dimensions for Use&Keep, and a significant relationship for Distribution and Persuasion, as well as high t-values (Kuo & Hsu, 2001). The ECSE was also found to exhibit generalizability between ethical intention (EI) and ECSE (Kuo & Hsu, 2001).

Kuo and Hsu (2001) built on Swinyard et al.’s (1990) research on software piracy. Swinyard et al. used a sample of 221 students from a major Western U.S. university and 150 students from the National University located in Singapore. The students were asked questions that captured four possible decisions, “1. Do not copy the software and do not use it; 2. Copy the program and destroy the copy after using it for the assignment; 3. Copy the program and keep a copy for use on other projects, or, 4. Copy the program and sell copies to other people that ask for it,” (Swinyard et al., 1990, p. 659). Swinyard et al. (1990) indicated that the Use&Keep dimension of unauthorized software demonstrated two distinct factors. This was a noted difference from Kuo and Hsu, who indicated that using and keeping was only one factor or dimension (Swinyard et al., 1990). The Bahamas provides a unique setting to validate the results as reported by Kuo and Hsu (2001) in their study. Table 5 summarizes the research in the ESCE that was used for this study.
The ECSE construct research study conducted found that these studies were centered on larger societies. It is not known if similar studies in smaller cultures will produce similar results. This study aims to address whether the ECSE construct measure explains similar behavior in smaller geographic locations.

Table 5. Summary of ECSE-Related Literature

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Sample</th>
<th>Instrument/Constructs</th>
<th>Main findings or contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuo &amp; Hsu, 2001</td>
<td>Theoretical, survey, and empirical</td>
<td>209 university students</td>
<td>Ethics, self-efficacy, Social Cognitive Theory (SCT), software piracy</td>
<td>Developed and validated a 12-item instrument with three subscales: use&amp;keep, distribution, and persuasion. Results found the 12-scale instrument was able to measure individuals’ ethical computer self-efficacy.</td>
</tr>
<tr>
<td>Swinyard et al., 1990</td>
<td>Empirical and survey</td>
<td>221 students from a major Western university and 150 students attending the National University of Singapore</td>
<td>Culture, software piracy, behavioral intentions, attitudes</td>
<td>Results concluded Asians have a more casual attitude toward software piracy than their American counterparts, because of their culture, which lends itself to sharing creative work.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample</td>
<td>Instrument/Constructs</td>
<td>Main findings or contribution</td>
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<tr>
<td>Thong &amp; Yap, 1998</td>
<td>Empirical and Survey</td>
<td>243 entry-level IS professionals</td>
<td>Computer ethics, ethical decision making, software piracy, moral judgment.</td>
<td>Results found respondents used both deontological and teleological evaluations to arrive at an ethical judgment when faced with a moral issue. Moral intention to pursue software piracy can be mostly determined by ethical judgment.</td>
</tr>
<tr>
<td>Bandura, 1977</td>
<td>Literature review, Theory</td>
<td>Self-efficacy, behavior,</td>
<td>Developed a theoretical framework called &quot;Self-Efficacy.&quot; Proposed framework stated that personal efficacy is derived from four sources: performance accomplishments, vicarious experience, verbal persuasion, and psychological states.</td>
<td></td>
</tr>
<tr>
<td>Bandura &amp; Schunk, 1981</td>
<td>Empirical and Survey</td>
<td>40 children</td>
<td>Behavior, self-efficacy, self-motivation</td>
<td>Results found that perceived self-efficacy contributed to accuracy in mathematical performance and heightened interest in mathematical activities.</td>
</tr>
</tbody>
</table>
Table 5. Summary of ECSE-Related Literature (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Sample</th>
<th>Instrument/Constructs</th>
<th>Main findings or contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee &amp; Bobko, 1994</td>
<td>Empirical and Survey</td>
<td>Study One: 207 third-year undergraduates</td>
<td>Self-efficacy, Beliefs</td>
<td>Results from measuring self-efficacy using a task specific instrument showed the five self-efficacies operationalization is highly correlated.</td>
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<td>Study Two: 92 undergraduates</td>
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<tr>
<td>Wood &amp; Bandura, 1989</td>
<td>Literature review, Theory</td>
<td></td>
<td>SCT, Self-efficacy, self-regulation, Managerial decision making, Self-influences, behavior, personal factors</td>
<td>Psychological theory value is judged by explanatory and predictive power as well as operational power to improve human functioning.</td>
</tr>
<tr>
<td>Hunt &amp; Vitell, 1986</td>
<td>Literature review, Theory</td>
<td></td>
<td>Ethics, Ethical decision-making, Marketing, Behavior, Cultural, Norms</td>
<td>This research developed a theory of marketing to lead research and analysis. The model included the use of deontological and teleological evaluations by marketers to resolve ethical problems.</td>
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</table>

Summary of What is Known and Unknown in Research Literature

The foundation of this study was provided from a literature review. Research showed that personal moral obligation contributed significantly to predicting behavior (Beck & Ajzen, 1991; Haines et al., 2008; Schwartz & Tessler, 1972). Cronan and Al-Rafee
(2008) reported that an individual's sense of moral obligation played a large role in his intention to pirate digital material. Leonard and Cronan (2005) as well as Banerjee et al. (1998) found that an individual's personal moral obligation played a role in his intention to behave in an ethical manner toward information systems. Researchers have suggested that the role of an individual's personal moral obligation in predicting intention to pirate software in different cultures is unknown, and should be explored (Al-Rafee & Cronan, 2006; Cronan & Al-Rafee, 2008; Banerjee et al., 1998).

Li and Vermillion (2006) as well as Husted and Allen (2008) found that individualism and collectivism contribute to ethical decision-making in individuals. The impact of individualism and collectivism on ethical decision making is unknown (Husted & Allen, 2008). Lau (2006) found that there are significant cultural differences between Asian and Western countries that could possibly explain the difference in attitudes towards software piracy. Researchers have found that persons in individualistic societies tend to pirate less, compared with persons in collectivistic societies (Yang et al., 2009; Husted, 2000, Swinyard et al., 1990). It is unknown whether the cultural dimensions of individualism and collectivism and their roles in software piracy are generalized across different geographic settings (Lau, 2006).

Researchers found self-efficacy to be an accurate predictor of behavior (Bandura, 1977, Lee & Bobko, 1994). The construct of ECSE is made up of three dimensions that were captured in a single scale measurement (Kuo & Hsu, 2001). Further research is needed to determine the linkage of an individual's behavioral intention to ECSE (Kuo & Hsu, 2001).
Summary

This study attempted to assess factors related to PMO, I/C, and ESCE that contribute to individuals’ propensity to commit software piracy in The Bahamas. Researchers found that software piracy has become a significant issue for the software industry worldwide (Bagchi, Kirs, & Cerveny, 2006; Cronan & Al-Rafee, 2008; Lau, 2006; Villazon, 2004). Research on the importance of this study identified factors associated with individuals’ propensity to commit software piracy as provided in literature such as: Bagchi et al. (2006), Banerjee, Cronan, and Jones (1998), Cronan and Al-Rafee (2008), Goles et al. (2008), Kuo and Hsu (2001), Leonard and Cronan (2005), and Yang and Sonmez (2007).

The literature review provided support for this study and discussed investigating factors that contribute to individuals’ propensity to commit software piracy in The Bahamas. A review of three key constructs that contribute to individuals’ propensity to commit software piracy -- PMO, I/C, and ECSE --identified in the literature, will be explored. Secondly, this study contributes to the existing body of knowledge by attempting to show the generalizability of using PMO, I/C, and ECSE as factors that contribute to individuals’ propensity to commit software piracy. Thus, this study will determine that individuals’ propensity to commit software piracy using three key constructs of PMO, I/C, and ECSE are applicable to smaller geographical locations.
Chapter 3

Methodology

This was a predictive study that attempted to forecast individuals’ propensity to commit software piracy, based on contributions of PMO, Hofstede’s (1983) cultural dimension of I/C, and ECSE. This study took a survey approach to assess empirically the contribution of individuals’ PMO, cultural dimensions, and ECSE to their propensity to commit software piracy at a small college in The Bahamas. A letter was sent to dean of the School of Business requesting permission to conduct the study and to request each student’s email address. Next, the students were sent an explanatory email outlining the study and requesting their participation in completing the Web-enabled survey instrument.

This study addressed the following specific research questions:

1. What is the contribution of PMO to individuals’ propensity to commit software piracy in The Bahamas?
2. What is the contribution of Hofstede’s (1983) cultural dimension of I/C to individuals’ propensity to commit software piracy in The Bahamas?
3. What is the contribution of ECSE to individuals’ propensity to commit software piracy in The Bahamas?
4. What are the differences among the measured constructs PMO, I/C, and ECSE based on age, gender, years of computer use, and college standing?
The first step in addressing the specific questions above was to develop a survey instrument based on validated studies. An expert panel of information system (IS) faculty members and IS professionals was assembled to evaluate the questions qualitatively to ensure they were clear, concise and precise. This panel of experts was asked to (a) indicate whether the survey questions measure the constructs being evaluated, and (b) provide any recommendations that may enhance the survey instrument. The feedback from the expert panel was used to make necessary adjustments to the final survey instrument to enhance its readability and to provide clarity to the survey participants.

**PMO Measure**

Beck and Ajzen (1991) measured PMO using a three-item Likely/Unlikely scale to determine whether an individual’s PMO influenced cheating, shoplifting and lying. Haines et al. (2007) expanded Beck and Ajzen (1991) research on PMO to determine an individual’s perceived importance in ethical decision-making with significant results. The instrument that was used in this study to assess an individual’s PMO was a modified version adapted from Cronan and Al-Rafee (2008) as well as Haines et al.’s (2007) three-item scale. Cronan and Al-Rafee (2008) adapted the original scale to include a seven-point Likert scale, where participants indicated their level of agreement along the scale that ranged from one, which indicated “Strongly Disagree,” to seven, which indicated “Strongly Agree.” Their study validated the significant contribution PMO makes to an individual’s propensity to commit software piracy (Cronan & Al-Rafee, 2008). The three items are numbered PMO1 through PMO3, and are located in Appendix A.
I/C Measure

The I/C component was measured using a 20-item questionnaire developed by Wagner (1995), using the works of Wagner and Moch (1986), Erez and Eardley (1987), Triandis et al. (1988), Hui (1988), and Wagner (1995). Wagner (1995) performed factor analysis, reduced an 11-factor instrument to a five-factor instrument and validated the questionnaire. Participants were required to respond to a seven-point Likert scale, where they indicated their level of agreement along a scale that ranges from one, which indicated "Strongly Disagree," to seven, which indicated “Strongly Agree.” The 20 items are numbered I/C1 through I/C20, and are located in Appendix A. Factor 1 addressed personal independence and self-reliance (I/C1 – I/C5); Factor 2 addressed competitive success (I/C6 – I/C10); Factor 3 addressed an individual preference to working alone or in teams (I/C11 – I/C13); Factor 4 addressed personal preference versus the needs of the group (I/C14 – I/C17); and Factor 5 addressed one’s personal quest and its effect on group productivity (Wagner, 1995).

ECSE Measure

The ECSE were measured using a 12-item instrument with three subscales developed by Kuo and Hsu (2001). Kuo and Hsu (2001) found that the instrument was significantly reliable in determining an individual’s ECSE. Participants were required to indicate their level of confidence with a series of questions using a seven-point Likert scale. Kuo and Hsu (2001) found that there were three dimensions of ECSE, including Use&Keep, Distribution, and Persuasion. The items are numbered UK1 to UK6, DB1 to DB3, and PS1 to PS3, respectively, and are provided in Appendix A.
Software Piracy Measure

The propensity of individuals to commit software piracy’s dependent variable was measured using a three-item instrument developed by Cronan and Al-Rafee (2008). The original survey consisted of five survey items, but the final two items were not considered for the current study, because they were intended to measure past behavior, and was not part of this study’s scope. Participants were required to respond to a seven-point Likert scale, where they indicated their level of agreement along the scale that ranges from one, which indicated "Strongly Disagree,” to seven, which indicated “Strongly Agree." The three items are numbered CSP1 through CSP3 and are located in Appendix A.

Demographic Indicators

Demographic information was collected on each respondent for this survey to provide a means to conduct analysis for each independent variable in this study. The purpose of collecting demographic data was to examine characteristics such as age, gender, years of computing experience, and college level. The purpose of collection was also to show the survey participants are good representation of the sample.

Validity and Reliability

The survey for this paper was developed using validated constructs and survey questions from the following sources: Beck and Ajzen, (1991), Cronan and Al-Rafee (2008), Hofstede (1983), Kuo and Hsu (2001), as well as Wagner (1995). According to Cronbach and Meehl (1955), an instrument is valid if it is drawn from a wide pool, however, validity can also be obtained if an instrument has been previously validated using similar studies or settings.
Internal Validity

Leedy and Ormrod (2005) as well as Straub (1989) indicated that internal validity determined if the observed variables and their effects could have been caused by some other variable that was not considered in the equation. As a result, Zikmund (1997) indicated that, to avoid risking internal validity, external variables such as history, maturation, testing, instrumentation, selection, and mortality must be considered. Leedy and Ormrod (2005) indicated that, to ensure internal validity during research, one must take all the necessary precautions to dismiss other explanations for the given results. This study addressed research questions using instruments validated from prior research. Ball (2008) indicated that using valid research instruments minimized threats to internal validity in her study.

External Validity

External validity is the ability of the research to be generalized in situations beyond the study itself (Leedy & Ormrod, 2005; Zikmund, 1997). Leedy and Ormrod (2005) indicated that when researchers conduct research, there is a general rule that it should extend beyond the specific research and “contribute more to humanity’s knowledge” (p. 99) as a whole. Zikmund (1997) indicated that external validity is the ability to generalize the study not only to other subjects, but to other populations as well. Therefore, while the results of this study should be assumed to be localized to students in the School of Business at The College of the Bahamas, they can be generalized to other colleges and universities in the Caribbean.
Instrument Validity

Straub (1989) indicated that focusing on instrumentation validity brings about a clearer process as it relates to the “formation and interpretation” (p. 148) of research questions. Straub (1989) argued that “instrument validation at any level can be considerable help to MIS researchers in substantiating their findings” (p. 162). Instrument validation is primarily composed of two parts, namely, construct validity and content validity (Straub, 1989; Ball, 2008). Construct validity occurs when empirical evidence is consistent with what has been theoretically hypothesized (Zikmund, 1997). On the other hand, according to Straub (1989) as well as Zikmund (1997), an instrument can be considered to have content validity if the content properly reflects the items being measured. Ultimately, Straub (1989) recommended using previously validated instruments in research to minimize the risk on invalidating the research. This research used previously validated instruments from Beck and Ajzen (1991), Erez and Eardley (1987), Hui (1988), Kuo and Hsu (2001), Triandis et al. (1988), Wagner (1995), and Wagner and Moch (1986).

Instrument Reliability

Instrument reliability is essentially the extent which to the measurement is error-free and consistent (Leedy & Ormrod, 2005; Straub, 1989; Zikmund, 1997). Peter (1979) indicated there were three methods of accessing reliability: test-retest method, split-half (internal consistency), and the equivalent-form method. However, Boudreau, Gefen, and Straub (2001) indicated that the majority of the studies that assessed their instruments' reliability did so by using the standard coefficient of internal consistency, or Cronbach’s alpha. Straub (1989) indicated that “high correlations between alternative measures or
large Cronbach alphas are usually signs that the measures are reliable” (p. 151). Shaft, Sparfman, and Wu (2004) indicated a Cronbach alpha of 0.70 is adequate to show reliability of an instrument.

Beck and Ajzen (1991) developed a Likert scale to measure PMO using a three-item Likely/Unlikely scale to determine whether an individual’s PMO influenced cheating, shoplifting, and lying. Haines et al. (2008) found a composite reliability of the questions to be greater than or equal to .898. The I/C component was measured using 20-item questionnaire developed by Wagner (1995) using the works of Wagner and Moch (1986), Erez and Eardley (1987), Triandis et al. (1988), and Hui (1988) (Wagner, 1995). Wagner (1995) study measured the reliability of each of the 20-item instrument and found all be to statistically reliable. The ECSE will be measured using a 12-item instrument with three subscales developed by Kuo and Hsu (2001). Kuo and Hsu (2001) found the Use&Keep, Distribution, and Persuasion constructs had composite reliability of 0.84, 0.71, and 0.78, respectively.

**Proposed Sample**

This study took a survey approach to assess the contribution of individuals’ PMO, cultural dimensions, and ECSE to their propensity to commit software piracy at a small college in The Bahamas. The population of the School of Business is 500 students, and response rate was 64.6 percent (323 students). It is important to note the entire population of the School of Business was sent the survey. According to Schonlau, Fricker, and Elliott (2002), the response rate for Web-based surveys can range from seven to 44 percent, thus, the reported rate of 64.6 percent response rate for this study far exceeds this range.
Pre-analysis Data Screening

According to Levy (2006), pre-analysis data screening is needed to detect any irregularities or other issues with the data that was collected. Levy (2006) outlined four specific reasons why pre-analysis data screening was important: (1) to address any accuracy problems associated with the collected data; (2) to address the response-set issue; (3) to address the issue of missing data; (4) to address any issues of extreme cases or outliers.

The first reason for pre-analysis data screening is to address any accuracy problems associated with the collected data. If the data collected is not accurate, there will be validity problems associated with the analysis (Levy, 2006). This can be caused by putting data from a paper-and-pencil instrument into a computer database (Levy, 2006). Ball (2008) indicated that accuracy problems were minimized in her study because data from her Web-enabled study was inputted or fed directly into a database. Ball (2008) also restricted her survey response to allow input of only valid responses, thereby minimizing errors. This study will take a similar approach and, thus, restrict the survey response to allow input of valid responses only.

The second reason for pre-analysis data screening is to address the response-set issue. According to Levy (2006) “response-set refers to cases where respondents submitted the same score for all items” (p. 151). It is important to eliminate all identified response-set cases prior to data analysis (Ball, 2008; Nichols, 2008). The responses that were marked the same on all items was evaluated and removed prior to conducting the data analysis.
The third reason for pre-analysis data screening is to address the issue of missing data. Nichols (2008) indicated in his study that missing data of three or fewer points were ignored, while those missing four or more points were removed from future data analysis. Mertler and Vannatta (2010) indicated that missing data in abundance can cause loss of data and measure. Levy (2006) as well as Ball (2008) indicated their study was administered using Web-enabled method, which allowed them to design the survey to prevent unanswered submissions. Similarly, this survey was designed in a manner that prevented unanswered submissions.

The fourth reason for pre-analysis data screening is to address any issues of extreme cases or outliers. Levy (2006) indicated that extreme case or outlier analysis is needed since skewed data from extreme cases should not be used to draw conclusions. Moreover, Mertler and Vannatta (2010) indicated that outliers significantly affect the values of the correlation of coefficients. Levy (2006) as well as Mertler and Vannatta (2010) indicated in their study that Mahalanobis Distance is a good method to measure extreme cases. Ball (2008) as well as Nichols (2008) indicated Mahalanobis Distance analysis could be used to determine if extreme cases or outliers can be removed from the data analysis.

“Mahalanobis Distance is a measure of distance between variables in the space defined by two or more correlated variables. In other words, it can be identified by the different patterns between variables,” (Keng, 2010, p.51). This study employed Mahalanobis Distance analysis to determine the elimination of outliers.

**Data Analysis**

This study used multiple linear regression (MLR) to answer the four research questions and to determine the extent to which PMO, I/C, and ECSE contribute to
individuals’ propensity to commit software piracy. According to Spicer (2005) as well as Zikmund (1997), MLR is employed when there are two or more independent variables used to determine a single dependent variable. Each independent variable will be used to determine its linear contributions to the dependent variable using the coefficient of partial regression (Zikmund, 1997). This is done by explaining each independent variable while holding the others constant. This study also predicted the coefficient of determination referred to as the $R^2$, which was used to predict the percentage of variation of the dependent variable, explained by the variation of the independent variables, assuming linearity (Spicer, 2005; Zukmund, 1997). To conduct the MLR analysis successfully, aggregation was conducted on each construct to determine the value from the relevant survey items. For instance, for each independent variable:

- $PMO = PMO1 + PMO2 + PMO3$
- $I/C = I/C1 + I/C2 + I/C3 +…+I/C20$
- $ECSE$  
  $Use&Keep Self-Efficacy = UK1 + UK2 + UK3+…UK6$
  $Distribution Self-Efficacy = DB1 + DB2 + DB3$
  $Persuasion Self-Efficacy = PS1 + PS2 +PS3$

And the dependent variable is:

- $CSP = CSP1 + CSP2 + CSP3$

**Resources**

The research questionnaires presented to the subjects were Web-based from the site [http://docs.google.com/](http://docs.google.com/). Given the fact that this is a free service offered by Google, no membership fees were incurred during the survey phase. The performance of the data
analysis were conducted using the IBM Statistical Package for the Social Sciences® Software (2010). Online resources, as well as the library assistants at Nova Southeastern University’s Alvin Sherman Library, provided a significant contribution to the research efforts and material. Another important resource was COB business students, who served as the research subjects.
Overview

In this chapter, this study’s results are presented and organized in the following way. The survey procedures and processes are presented first, followed by the results of the pre-analysis data screening including the Mahalanobis Distance analysis. Next, this study’s sample demographic data are presented, followed by the analysis of the Cronbach’s Alpha reliability tests.

The survey instrument, in Appendix A, was converted to a Web-based designed and hosted on the following Website: http://docs.google.com/. Email messages were sent to the 500 students attending The College of the Bahamas, located in New Providence, The Bahamas, and enrolled in that institution’s school of business. The invitation email message contained a URL to the Web-based survey instrument (Appendix D) as well as a weekly follow-up email (Appendix E). The delivery method was selected because an electronic format allowed the survey to be designed in a manner that significantly minimizes data entry errors. The survey took place during September, 2012. A total of 323 responses were received, providing a response rate of 64.6%.
Data Collection and Analysis

Pre-Analysis Data Screening

Three hundred and twenty-three responses were initially received from the participants of the survey. Pre-analysis data screening was carried out on the data before conducting any further analysis. According to Levy (2006), pre-analysis screening is performed for four reasons: (1) to ensure the accuracy of the data collected; (b) to address the issue of response-set, (c) to address any missing data; and (d) to address any extreme cases, or outliers. Accuracy of the data was not an issue, since the survey instrument used drop-down lists, so that participants could select only from answers in the drop-down list, thus, minimizing those responses. In addition, the software did not allow participants to submit their responses if the Likert-type questions were not answered. The data was automatically collected by the software; hence there was not any need for manual input post-data collection.

To address the issue of response-set, a thorough visual inspection of the responses was performed to identify cases that had the same responses to all of the questions. There were no responses found that exhibited this pattern, and all of the responses appeared random, thereby eliminating the potential for distortion of the accuracy of the final results.

Extreme cases were identified by conducting Mahalanobis Distance analysis. Table 6 shows the results of the Mahalanobis Distance analysis. Based on examination of Table 6, CaseID’s 37, 187, 219, 225, and 261 were identified as problematic multivariate outliers, and were selected for further evaluation.
Table 6. Mahalanobis Distance Extreme Values

<table>
<thead>
<tr>
<th>CaseID</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>225</td>
</tr>
<tr>
<td>2</td>
<td>219</td>
</tr>
<tr>
<td>3</td>
<td>187</td>
</tr>
<tr>
<td>4</td>
<td>37</td>
</tr>
<tr>
<td>5</td>
<td>261</td>
</tr>
</tbody>
</table>

Additionally, the Mahalanobis Distance analysis box plot (Figure 4) was reviewed and identified CaseID’s 219 and 225 as extreme multivariate outliers. Based on the overall Mahalanobis Distance analysis and the Mahalanobis Distance box plot, only CaseID’s 219 and 225 were removed.

As a result of the pre-analysis data screening, two cases in total were removed. The removal of these responses produced 321 usable records for further analysis.
Figure 4. Mahalanobis Distance Box Plot

Demographic Analysis

According to Sekaran and Bougie (2010), to estimate the population characteristics from a given sample with a degree of accuracy, the chosen sample must follow the same pattern of normal distribution as appears in the population. In this study, to determine if the sample represented the population, demographic data was requested from the participants of the survey. The population of the students in the school of business was 36% male and 64% female. The respondents of the survey were 34.4% for males 65.6% for females. The majority of the students in the School of Business are first-year students, at about 45%, followed by 25% for second-year students and an equal number of third- and fourth-year students, around 15%. The ages of first-year were between 17 and 18 years, or 45% of the student body; the students in their second year were between the ages of 19 and 20 years, or 25%; and third-year students were aged 21 to 22 years, or
15%. The distribution of data collected appears to represent the population of students in the School of Business. Table 7 shows the demographic data of the survey participants.

Table 7. Demographic Data of the Study Participants

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>111</td>
<td>34.3</td>
</tr>
<tr>
<td>Female</td>
<td>212</td>
<td>65.6</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 17</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>17-18</td>
<td>133</td>
<td>41.2</td>
</tr>
<tr>
<td>19-20</td>
<td>86</td>
<td>26.6</td>
</tr>
<tr>
<td>21-22</td>
<td>50</td>
<td>15.5</td>
</tr>
<tr>
<td>Over 22</td>
<td>52</td>
<td>16.1</td>
</tr>
<tr>
<td><strong>College Standing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>139</td>
<td>43</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>68</td>
<td>21.1</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>60</td>
<td>18.6</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>56</td>
<td>17.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Years using a computer</td>
<td>2</td>
<td>25</td>
<td>11.59</td>
</tr>
</tbody>
</table>

According to Sekaran and Bougie (2010), as the sample size increases, any random sample taken from a population approaches a normal distribution.
Reliability Analysis

Cronbach’s Alpha reliability tests were conducted for PMO, I/C, ECSE, and CSP constructs to determine the reliability of each scale. According to Sekaran and Bougie (2010), reliabilities measured via Cronbach’s Alpha (α) of less than 0.60 are as poor, above 0.70 range is considered acceptable, and those over 0.80 are considered good. Each construct was tested prior to aggregation of the construct to determine its reliability. Also, the Cronbach’s Alpha "If item is deleted option" was chosen to calculate each item’s reliability. From the analysis, it was determined the PMO construct reliability item PMO1 was not reliable, hence it was removed from further analysis in this study. Additionally, it was determined that during the I/C construct reliability test, I/C11 and I/C13 were not reliable and were removed from further analysis in this study. The results demonstrated reliability for all of the constructs, since they are extremely close to 0.70 for the PMO construct and significantly more than 0.70 for the remaining constructs. Table 8 outlines the reliability analysis results.

Table 8. Results of Reliability Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMO</td>
<td>.693</td>
</tr>
<tr>
<td>I/C</td>
<td>.745</td>
</tr>
<tr>
<td>ECSE_UK</td>
<td>.877</td>
</tr>
<tr>
<td>ECSE_DB</td>
<td>.820</td>
</tr>
<tr>
<td>ECSE_PS</td>
<td>.850</td>
</tr>
<tr>
<td>CSP</td>
<td>.965</td>
</tr>
</tbody>
</table>
Multiple Linear Regression

Multiple Linear Regression (MLR) was used to develop a predictive model to determine whether PMO, I/C, and ECSE influence individuals’ propensity to commit software piracy, as measured by the weight of the combined three independent variables to the dependent variable of CSP. Prior to performing MLR analysis, aggregation was carried out on each construct, followed by MLR using the aggregated measures. The overall model for predicting CSP from the three predictors (PMO, I/C, & ECSE) was found to be significant, given $F = 13.776, p < 0.05$.

MLR was used to answer RQ1, RQ2, and RQ3. The results indicate that one of the three individual predictors and a partial construct was significant (PMO, $p < .001$ and ECSE_DB, $p < .05$). The negative regression weight shows an inverse relationship between the independent variables PMO and ECSE_DB and the dependent variable CSP. As the independent variables PMO and ECSE_DB variables decreases, there is an increase in the CSP or individual propensity to commit software piracy. The MLR coefficients are shown in Table 9. The proportion of variance in CSP that was explained by the combination of PMO, I/C, and ECSE was $R^2 = 0.179$ or 17.9%. Given the low $R^2$, the independent variables of PMO, I/C, and ECSE do not fully explain the dependent variable CSP.
Table 9. MLR Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>14.514</td>
<td>2.007</td>
<td></td>
<td>7.233</td>
</tr>
<tr>
<td>PMO</td>
<td>-.464</td>
<td>.098</td>
<td>-.263</td>
<td>-4.756</td>
</tr>
<tr>
<td>IC</td>
<td>.024</td>
<td>.023</td>
<td>.054</td>
<td>1.059</td>
</tr>
<tr>
<td>ECSE_UK</td>
<td>-.071</td>
<td>.043</td>
<td>-.112</td>
<td>1.650</td>
</tr>
<tr>
<td>ECSE_DB</td>
<td>-.167</td>
<td>.083</td>
<td>-.141</td>
<td>2.026</td>
</tr>
<tr>
<td>ECSE_PS</td>
<td>-.042</td>
<td>.077</td>
<td>-.035</td>
<td>-5.39</td>
</tr>
</tbody>
</table>

a. Dependent Variable: CSP
b. ** p < .001 * p < .05

Mann-Whitney U Test Analysis

According to Sekaran and Bougie (2010), the Mann-Whitney U Test, or the Wilcoxon signed-rank test, is a nonparametric test designed to examine the difference between two related samples. A Mann-Whitney U Test analysis was conducted using SPSS to determine if survey participants’ frequencies of gender differences were significantly related to any of the scores of the independent variables. This test was used to address the gender portion of RQ 4. Table 10 provides the results of the Mann-Whitney U Test analysis. The results of the analysis demonstrated frequencies of gender were significantly related to the partial independent ECSE constructs (ESCE_DB, p < .05 and ECSE_PS, p < .05).
Table 10. Results of Mann-Whitney U Test Analysis (N=321)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Z</th>
<th>Sig.(2-Tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMO</td>
<td>-.646</td>
<td>.518</td>
</tr>
<tr>
<td>I/C</td>
<td>-.846</td>
<td>.397</td>
</tr>
<tr>
<td>ECSE_UK</td>
<td>-1.393</td>
<td>.164</td>
</tr>
<tr>
<td>ECSE_DB</td>
<td>-2.224</td>
<td>.026*</td>
</tr>
<tr>
<td>ECSE_PS</td>
<td>-2.063</td>
<td>.039*</td>
</tr>
<tr>
<td>CSP</td>
<td>-3.672</td>
<td>.000**</td>
</tr>
</tbody>
</table>

** p < .001 * p < .05

**Kruskal Wallis Test**

According to Sekaran and Bougie (2010), nonparametric tests are used to assess the relationship between variables measured on both a nominal and ordinal scale. Kruskal Wallis analysis was used to address the fourth research question (RQ4): "What are the differences among the measured constructs PMO, I/C, and ECSE based on age, gender, years of computer use, and college standing?" Firstly, it was measured that the frequencies of age were significantly related to the I/C construct ($\chi^2$ (24) = 39.537, p = .024). Secondly, it was determined that the frequencies of years of computer use were not related to any of the constructs. Finally, the frequencies of college standing were not related to any of the constructs scores. Table 11 outlines the results of the Kruskal Wallis Test.
Table 11. Results of Kruskal Wallis Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sig</th>
<th>$\chi^2$</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMO</td>
<td>.248</td>
<td>28.286</td>
<td>24</td>
</tr>
<tr>
<td>I/C</td>
<td>.024*</td>
<td><strong>39.537</strong></td>
<td><strong>24</strong></td>
</tr>
<tr>
<td>ECSE_UK</td>
<td>.655</td>
<td>20.726</td>
<td>24</td>
</tr>
<tr>
<td>ECSE_DB</td>
<td>.243</td>
<td>28.420</td>
<td>24</td>
</tr>
<tr>
<td>ECSE_PS</td>
<td>.287</td>
<td>24.436</td>
<td>24</td>
</tr>
<tr>
<td>CSP</td>
<td>.437</td>
<td>11.658</td>
<td>24</td>
</tr>
<tr>
<td><strong>Years of computer use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMO</td>
<td>.730</td>
<td>16.685</td>
<td>21</td>
</tr>
<tr>
<td>I/C</td>
<td>.561</td>
<td>19.382</td>
<td>21</td>
</tr>
<tr>
<td>ECSE_UK</td>
<td>.061</td>
<td>31.797</td>
<td>21</td>
</tr>
<tr>
<td>ECSE_DB</td>
<td>.190</td>
<td>26.443</td>
<td>21</td>
</tr>
<tr>
<td>ECSE_PS</td>
<td>.287</td>
<td>24.130</td>
<td>21</td>
</tr>
<tr>
<td>CSP</td>
<td>.275</td>
<td>24.385</td>
<td>21</td>
</tr>
<tr>
<td><strong>College Standing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMO</td>
<td>.444</td>
<td>2.676</td>
<td>3</td>
</tr>
<tr>
<td>I/C</td>
<td>.770</td>
<td>1.127</td>
<td>3</td>
</tr>
<tr>
<td>ECSE_UK</td>
<td>.137</td>
<td>5.532</td>
<td>3</td>
</tr>
<tr>
<td>ECSE_DB</td>
<td>.285</td>
<td>5.556</td>
<td>3</td>
</tr>
<tr>
<td>ECSE_PS</td>
<td>.287</td>
<td>6.874</td>
<td>3</td>
</tr>
<tr>
<td>CSP</td>
<td>.417</td>
<td>2.838</td>
<td>3</td>
</tr>
</tbody>
</table>

* $p < .05$

**Summary of Results**

The purpose of this chapter was to provide the results of all of the data analysis so that the four research questions for this study can be answered. The chapter presented an empirical examination designed to measure the contribution of PMO, I/C, and ECSE on individuals’ propensity to commit software piracy. Prior to statistical analysis, pre-analysis screening was conducted to ensure the data collected was accurate. This included the Mahalanobis Distance analysis of the data and removal of any extreme outliers. Next, demographic analysis was carried out to determine if the sample collected appeared to be representative of the population. The data appeared to be consistent with a normal
distribution. Cronbach’s Alpha reliability tests were conducted on each variable using the Cronbach’s Alpha "If Item is Deleted" option to calculate each item’s reliability prior to construct aggregation. The final results of the Cronbach Alpha reliability tests demonstrated reliability for all of the variables.

MLR and nonparametric models were developed to answer the four research questions presented in the study. From the MLR model, RQ1, RQ2, and RQ3 were addressed. It was determined that only PMO and ECSE_DB were significant and had an inverse relationship with the dependent variable CSP. Higher levels of PMO and ECSE_DB lowers the overall CSP score. Nonparametric test were also conducted to address RQ4, specifically, the differences among the measured constructs PMO, I/C, and ECSE, based on age, gender, years of computer use, and college standing. The results of the analysis demonstrated that only the partially independent constructs, ECSE_DB and ECSE_PS, showed frequencies of gender were significantly related to the CSP. It was also determined that the frequencies of gender were significantly related to the dependent variable (CSP) as well. The frequencies of age were significantly related to the I/C construct while frequencies of computer use and college standing were not related to any of the constructs.
Chapter 5

Conclusions, Implications, Recommendations, and Summary

Conclusions

This chapter opens with the conclusions drawn from this study. It outlines each of the research questions and discusses implications for the study and contributions to the body of knowledge. The chapter ends with recommendations for future research and a summary of this investigation.

The main goal of this study was to assess empirically the contribution of individuals’ PMO, cultural dimensions, and ECSE to their propensity to commit software piracy. The population was students from the school of business at a single small college in The Bahamas. This main goal was achieved by answering four research questions.

The first research question that the author addressed was: "What is the contribution of PMO to individuals’ propensity to commit software piracy in The Bahamas?" Evidence from the multiple linear regression (MLR) demonstrated an inverse relationship between computer software piracy and personal moral obligation (PMO). Thus, an increase in an individuals’ PMO results in a decrease in computer software piracy. This finding validates results reported by Beck and Ajzen, (1991), Gorsuch and Ortberg (1983), Haines, et al. (2008), and Leonard & Cronan (2005), who found that an individual's PMO significantly influences his intention to behave in an ethical/unethical manner.

The second research question that this study addressed was: "What is the contribution of Hofstede’s (1983) cultural dimension of I/C to individuals’ propensity to commit software piracy in The Bahamas?" Evidence from MLR showed that cultural dimension
of I/C was not a significant factor in individuals’ propensity to commit software piracy in The Bahamas. Although findings reported by Bagchi et al. (2006), Wang et al. (2005), and Husted (2000) indicated that software piracy levels are contributed by individuals' I/C component, no direct evidence for such a contribution was found in this investigation. A possible explanation for these findings may be that only one aspect of Hofstede’s cultural dimensions were studied, while other factors may have contributed to individuals' propensity to commit software piracy in The Bahamas.

The third research question that the author addressed was: "What is the contribution of ECSE (UK, DB, and PS) to individuals’ propensity to commit software piracy in The Bahamas?" While ECSE_UK and ECSE_PS were not significant, it was determined that ECSE_DB did inversely contribute to an individuals’ propensity to commit software. While the ECSE_DB finding was consistent with research by Kuo and Hsu (2001), Swinyard et al. (1990), and Thong and Yap (1998) suggesting that ethical decision-making influences individuals’ propensity to commit software piracy, it was determined that ECSE_UK and ECSE_PS were not consistent. Although Kuo and Hsu (2001) validated an ethical component to CSE and suggested that this model adequately measures individuals’ intention to behave in an ethical/unethical manner toward computers, this study found the ECSE construct was not a significant factor in contributing to individuals' propensity to commit software piracy in The Bahamas.

The fourth research question that the author addressed was: "What are the differences among the measured constructs PMO, I/C, and ECSE based on age, gender, years of computer use, and college standing?" Evidence from nonparametric analysis suggested that frequencies of gender were related only to the partial independent constructs
ECSE_DB and ECSE_PS. The results also showed that frequencies of gender were related to the dependent variable CSP as well. Evidence from the nonparametric analysis also suggested that frequencies of age were related to the I/C construct score, however, it was determined that frequencies of years of computer use and college standing were not related to any of the constructs' scores.

**Implications**

This study has several implications for the existing body of knowledge in the IS field and the practice of IS in the field of software piracy. While a prediction model was developed and constructed with PMO, I/C, and ECSE, it is important to note that the context was a population of students in a school of business at a small college within The Bahamas. Additional research was conducted on constructs that have previously been identified from literature as having influence on individuals’ propensity to commit software piracy was conducted.

**Implications for Research**

Three important contributions that this study make to IS research include 1) an investigation into factors that contribute to individuals’ propensity to commit software piracy, in response to the serious worldwide issue of software piracy, 2) an investigation of key constructs contributing to individuals’ propensity to commit software piracy in The Bahamas, 3) the contribution made by the author of this dissertation to the body of knowledge, by investigating factors specifically within the context of individuals’ propensity to commit software piracy that were based on theoretical foundations, but
have not been investigated as contribution of individuals' propensity to commit software piracy within a single model.

**Implications for Practice**

This investigation also contributed to IS practice. The first contribution was to increase awareness that software piracy is wrong, hence providing an opportunity for the college to provide programs to reinforce this. Another contribution was that this study may help managers become aware of what causes persons to want to commit software piracy, and perhaps develop programs to stem the problem of software piracy within their organizations. The practice of software piracy is more apparent in certain genders, so developing training programs may prove helpful in curbing software piracy practice.

**Study Limitations**

There were four limitations identified in this study. The first limitation was that the sample comprised only students within The College of The Bahamas’ School of Business. As such, the results and conclusion may be applicable to only this institution but can be generalized to other populations within The Bahamas’ Archipelago and the Caribbean. Additional research within The Bahamas may be needed to determine the consistency of these results. A second limitation is participant self-reporting, and their honesty about their propensity to commit software piracy. It is possible that participants did not believe the survey and its results were anonymous, and did not answer the survey in line with their actual behavior. Additional research is needed to determine how to access adequately an individual's propensity to commit software piracy other than the self-report method. A third limitation is that approximately 41.2% of the students were
between 17 and 18 years of age, and 43% of the students were in their first year.

Different results may have been obtained if a greater percentage of the students were older. A fourth limitation of this study stemmed from the low $R^2$, in that the independent variables of PMO, I/C, and ECSE do not fully explain the dependent variable CSP. Additional research is needed to determine whether other independent variables (for example, personal ethics or a legal framework addressing intellectual property) contribute to CSP in The Bahamas.

**Recommendations for Future Research**

This dissertation provides the groundwork for several new research studies in the IS field. The first research study that might result from this investigation would be to develop a similar model on individuals’ propensity to commit software piracy in other small population within the Caribbean. More work is needed to determine if ECSE and I/C explain individuals’ propensity in small geographical settings. Additional research into what contributes to individuals’ propensity to commit software piracy in smaller geographical locations is needed, since such determination will aid the software industry in stemming the significant financial losses that results from software piracy. Another possible study could be an exploration of the contribution of gender differences to the propensity to commit software piracy in smaller geographic locations. Another potential research study could be an attempt to explore separately the three sub-constructs of ethical computer self-efficacy; Use&Keep self efficacy, Persuasion self efficacy, and distribution self efficacy, along with their contribution to individuals’ propensity to commit software piracy.
Summary

This dissertation investigation addressed the problem of individuals’ propensity to commit software piracy. Researchers such as Bagchi et al. (2006), Cronan and Al-Rafee (2008), Lau (2006), as well as Villazon (2004) suggested that the worldwide issue of software piracy remains a problem and suggested additional research is needed. Bagchi et al. (2006), Banerjee et al. (1998), Cronan and Al-Rafee (2008), Goles et al. (2008), Husted (2000), Kuo and Hsu (2001), Leonard and Cronan (2005), as well as Wang et al. (2005) provided significant research on factors that contributed to individuals’ propensity to commit software piracy in larger societies. However, little attention was given in the research for the investigation of factors that contribute to individuals’ propensity to commit software piracy in smaller geographic areas. Following a comprehensive literature review, three factors were identified as possible contributors to individuals’ propensity to commit software piracy.

The first factor identified in the literature as a possible contributor to individuals’ propensity to commit software piracy was personal moral obligation (PMO). Banerjee et al. (1998), Cronan and Al-Rafee (2008), Goles et al. (2008), as well as Leonard and Cronan (2005) showed strong evidence that PMO contributes to individuals’ propensity to commit software piracy. Leonard and Cronan (2005) indicated that further studies are needed to determine the contribution of PMO in both genders to individuals’ propensity to behave in an unethical manner using computers. Moreover, Cronan and Al-Rafee (2008) suggested that more research was needed in different populations and cultures to verify PMO’s role in individuals’ propensity to commit software piracy.
The second factor identified in the literature as a possible contributor to individuals’ propensity to commit software piracy was Hofstede’s cultural dimension of individual/collectivism. Research by Bagchi et al. (2006) found that a highly collectivist society was found to be positively contributes to high software piracy, whereas Yang and Sonmez (2007) found that highly individualist countries like the U.S., engaged less in software piracy. Husted (2000) indicated that Hofstede’s (1983) cultural dimension of individualism/collectivism significantly contributed to an individuals’ propensity to commit software piracy. Wang, Zhang, Zang, and Ouyang (2005) as well as Husted (2000) indicated that countries that were considered collectivist societies, such as Singapore, showed a positive correlation to their software piracy rates. However, additional research is needed to investigate the contribution that culture has on individuals’ propensity to commit software piracy in other countries that appear to have high levels of it (Lau, 2006; Wang, 2005).

The third factor identified in the literature as a possible contributor to individuals’ propensity to commit software piracy was ethical computer self-efficacy, or ECSE. Research by Compeau and Higgins (1995) found CSE significantly contributed to individuals’ unethical behavior when using an information system. Kuo and Hsu (2001) proposed the use of CSE in investigating individuals’ ethical conduct in using a computer system, and referred to it as "Ethical CSE" (ECSE). Kuo and Hsu (2001) found that there was a significant correlation between ethics, CSE, and individuals’ propensity to commit software piracy. Their model showed that three dimensions of software piracy -- Use&Keep, Distribution, and Persuasion self-efficacy positively contributed to individuals’ propensity to commit software piracy (Kuo & Hsu, 2001). Kuo and Hsu
(2001) indicated that additional research is needed to investigate the contribution of ECSE to an individuals’ propensity to commit software piracy.

The goal of this dissertation investigation was to construct a model to assess empirically the contributions of individuals’ PMO, cultural dimensions, and ECSE to their propensity to commit software piracy. The study posed the following four specific research questions:

1. What is the contribution of PMO to individuals’ propensity to commit software piracy in The Bahamas?
2. What is the contribution of Hofstede’s (1983) cultural dimension of I/C to individuals’ propensity to commit software piracy in The Bahamas?
3. What is the contribution of ECSE to individuals’ propensity to commit software piracy in The Bahamas?
4. What are the differences among the measured constructs PMO, I/C, and ECSE based on age, gender, years of computer use, and college standing?

To address the specific research questions outlined above, a survey instrument was developed by using survey items from the following valid research pool: 1) Cronan and Al-Rafee (2008) adapted the scale developed originally by Beck and Ajzen (1991) to include a seven-point Likert scale consisting of three questions to address an individual PMO; 2) the I/C component was measured using a 20-item questionnaire developed by Wagner (1995), using the works of Wagner and Moch (1986), Erez and Eardley (1987), Triandis et al. (1988), Hui (1988), as well as Wagner (1995); 3) finally, ECSE was measured using a 12-item instrument with three subscales developed by Kuo and Hsu (2001).
A theoretical model was proposed, and two statistical methods -- Multiple Linear Regression and Nonparametric tests (Mann-Whitney U & Kruskal Wallis Tests) -- were used to formulate models, test predictive powers, and address the study’s research questions. It was predicted that PMO, I/C, and ECSE would contribute to individuals’ propensity to commit software piracy. A total of 321 usable responses were collected over a one-month period from students from the school of business at a small college to determine their level of PMO, I/C, and ECSE contribution to individuals’ propensity to commit software piracy, representing approximately a 63% response rate. The results showed the overall significance of the models of the three aforementioned factors in predicting individuals’ propensity to commit software piracy. Furthermore, the results indicated that PMO and ECSE subscale PMO and ECSE_DB was significant, however, I/C, and ECSE (as a whole) were not.

Subsequently, based on the analysis performed, the author discussed the results and conclusions and their agreement with prior IS literature. Next, the author provided and discussed the implication for IS research and practice. Finally, recommendations were made for future research to extend the body of knowledge in the area of ethical decision making.
Appendix A

Survey Instrument

Demographic Information

1. What is your gender? Male or Female

2. What year were you born?

3. How many years have you been using a computer?

4. What is the year in college are you attending? 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>

Please respond to the following statements from one (1) to seven (7), with one indicating “Strongly Disagree” and seven (7) indicating “Strongly Agree.”

The following set of questions are related to PMO toward software piracy.

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Undecided (4)</th>
<th>Somewhat Agree (5)</th>
<th>Agree (6)</th>
<th>Strongly Agree (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMO1: I would not feel guilty if I pirated software.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>PMO2: Software piracy goes against my principles</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>PMO3: It would be morally wrong to pirate software.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
</tbody>
</table>
Please respond to the following statements from one (1) to seven (7), with one (1) indicating “Strongly Disagree” and seven (7) indicating “Strongly Agree.”

The following set of questions are related to the cultural dimension of individualism versus collectivism.

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Undecided (4)</th>
<th>Somewhat Agree (5)</th>
<th>Agree (6)</th>
<th>Strongly Agree (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/C1: Only those who depend on themselves get ahead in life.</td>
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<td>I/C2: To be superior, a person must stand alone.</td>
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<td>I/C3: If you want something done right, you’ve got to do it yourself.</td>
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<td>I/C4: What happens to me is my own doing.</td>
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<td>I/C5: In the long run the only person you can count on is yourself.</td>
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<tr>
<td>I/C6: Winning is everything.</td>
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<td>I/C7: I feel that winning is important in both work and games.</td>
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<td>I/C8: Success is the most important thing in life.</td>
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<tr>
<td>Item</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
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<tr>
<td>I/C9: It annoys me when other people perform better than I do.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C10: Doing your best isn’t good enough, it is important to win.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C11: I prefer to work with others in a group rather than working on my own.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C12: Given the choice, I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C13: Working with a group is better than working alone.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C14: People should be made aware that if they are going to be part of a group then they are sometimes going to have to do things they don’t want to do.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
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<td>Item</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
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<td>I/C15: People who belong to a group should realize that they’re not always going to get what they personally want.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C16: People in a group should realize that they sometimes are going to make sacrifices for the sake of the group as a whole.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C17: People in a group should be willing to make sacrifices for the sake of the group’s well-being.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C18: A group is more productive when its members do what they want to do rather than what the group wants them to do.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
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<tr>
<td>Item</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
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<tr>
<td>I/C19: A group is more efficient when its members do what they think is best, rather than doing what the group wants them to do.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>I/C20: A group is more productive when its members follow their own interests and concerns.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
</tbody>
</table>

Please respond to the following statements from one (1) to seven (7), with one (1) indicating “Strongly Not Confident” and seven (7) indicating “Very Confident.”

The following set of questions is related to an individual ECSE toward software piracy (Kuo & Hsu, 2001). Use&Keep Self-Efficacy

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Not Confident (1)</th>
<th>Not Confident (2)</th>
<th>Somewhat Not Confident (3)</th>
<th>Undecided (4)</th>
<th>Somewhat Confident (5)</th>
<th>Confident (6)</th>
<th>Very Confident (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK1: When you badly need a software program but feel it is too expensive, how confident are you to refuse to use an illegal copy of that software.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td>Item</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
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<tr>
<td><strong>UK2:</strong> When you badly need a software program but do not have time to purchase a copy, how confident are you to refuse to use an illegal copy of that software.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td><strong>UK3:</strong> When you badly need a software program and have the opportunity to obtain an illegal copy without anybody else’s knowing, how confident are you not to take advantage of it.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td><strong>UK4:</strong> When you badly need a software program and have seen other colleagues use an illegal copy, how confident are you not to take advantage of it.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td>Item</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
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</tr>
<tr>
<td>UK5: When you badly need an illegal copy of a software program to benefit your work, how confident are you not to take advantage of it.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td>UK6: If a colleague has a software program that you like very much, how confident are you not to ask for an illegal copy.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
</tbody>
</table>

Please respond to the following statements from one (1) to seven (7), with one (1) indicating “Strongly Not Confident” and seven (7) indicating “Very Confident.”

**Distribution Self-Efficacy**

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Not Confident (1)</th>
<th>Not Confident (2)</th>
<th>Somewhat Not Confident (3)</th>
<th>Undecided (4)</th>
<th>Somewhat Confident (5)</th>
<th>Confident (6)</th>
<th>Very Confident (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB1: If a good friend badly needs a software program, how confident are you not to make an illegal copy for him or her.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
</tbody>
</table>
### Item

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Not Confident (1)</th>
<th>Not Confident (2)</th>
<th>Somewhat Not Confident (3)</th>
<th>Undecided (4)</th>
<th>Somewhat Confident (5)</th>
<th>Confident (6)</th>
<th>Very Confident (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2: If a good friend badly needs a software program and is asking for your help to obtain an illegal copy, how confident are you to refuse to accept that request.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td>DB3: If a good friend badly needs a software program that you own and is asking you for a copy, how confident are you to refuse to grant the request.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident I will refuse (7)</td>
</tr>
</tbody>
</table>

Please respond to the following statements from one (1) to seven (7), with one (1) indicating “Strongly Not Confident” and seven (7) indicating “Very Confident.”

### Persuasion Self-Efficacy

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Not Confident (1)</th>
<th>Not Confident (2)</th>
<th>Somewhat Not Confident (3)</th>
<th>Undecided (4)</th>
<th>Somewhat Confident (5)</th>
<th>Confident (6)</th>
<th>Very Confident (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS1: If you see colleagues using an illegal copy of a software program, how confident are you to try dissuade them from using it.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td>Item</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------</td>
<td>------------------</td>
<td>---------------------------</td>
<td>---------------</td>
<td>------------------------</td>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>PS2: If you see a colleague selling an illegal copy of software program for profit, how confident are you to try to talk him or her to give it up.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
<tr>
<td>PS3: If you see a colleague attempting to make an illegal copy of a software program, how confident are you to try to talk him or her out of it.</td>
<td>Strongly Not Confident (1)</td>
<td>Not Confident (2)</td>
<td>Somewhat Not Confident (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Confident (5)</td>
<td>Confident (6)</td>
<td>Very Confident (7)</td>
</tr>
</tbody>
</table>

Please respond to the following statements from one (1) to seven (7), with one (1) indicating “Strongly Disagree” and seven (7) indicating “Strongly Agree.”

The following set of questions is related to an individual's propensity to commit software piracy (Cronan & Al-Rafee, 2008).

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Undecided (4)</th>
<th>Somewhat Agree (5)</th>
<th>Agree (6)</th>
<th>Strongly Agree (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSP1: I intend to pirate software in the near future.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>CSP2: I will try to pirate software in the near future.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
<tr>
<td>CSP3: I will make an effort to pirate software in the near future.</td>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Somewhat Disagree (3)</td>
<td>Undecided (4)</td>
<td>Somewhat Agree (5)</td>
<td>Agree (6)</td>
<td>Strongly Agree (7)</td>
</tr>
</tbody>
</table>
Appendix B
IRB Approval Letter

MEMORANDUM

To: Raymond Wells
From: Ling Wang, Ph.D.
       Institutional Review Board

Date: Oct. 21, 2011

Re: An Empirical Assessment of Factors Contributing to Individuals’ Propensity to Commit Software Piracy in the Bahamas

IRB Approval Number: wang10151103

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1) CONSENT: If recruitment procedures include consent forms these must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.

2) ADVERSE REACTIONS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and 954-262-2020 respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.


Cc: Protocol File
Appendix C

Approval Letter to Collect Data from The College of The Bahamas

OFFICE OF RESEARCH, GRADUATE PROGRAMMES & INTERNATIONAL RELATIONS (RGPIR)
INSTITUTIONAL RESEARCH RECORD

STUDY NUMBER:_B9020174019_

SECTION I: INVESTIGATOR INFORMATION

Working title of project: An Empirical Assessment of Factors Contributing to Individuals’ Propensity to Commit Software Piracy in The Bahamas
The College of The Bahamas, Principal Investigator (PI): Wells, Raymond, C. Department/School: The School of Business
Name: Raymond Wells
Address: P.O. Box CB5259 Nassau, Bahamas
Phone: 242-376-6712
E-Mail: raywells@gmail.com

If being submitted on behalf of a student(s), give name(s) of student(s): Attach list

Sponsor/Funding Agency: P.I. on Grant:
Sponsor/Protocol #: Grant #: Period:
Sponsor Type: National/Industrial Not-for-Profit Unfunded Overseas Funded Internally Funded

SECTION II: TYPE OF REVIEW
☑ Behavioural or Social Sciences ☐ Non-human subjects ☐ Non-social sciences ☐ Biomedical ☐ Review exempt

SECTION III: FOR HUMAN SUBJECT POPULATIONS
☐ Minors ☑ Pregnant Women ☐ Cognitively Impaired ☐ Prisoners
☐ Economically or Educationally Disadvantaged ☐ Fetuses (or Fetal Tissue)
☑ General public ☑ Other, please specify: Undergraduate Students

SECTION IV: RESEARCH SUBMISSION
☑ Included with Research Submission: ☑ Informed Consent, dated*: September 12th, 2011 ☐ Protocol, dated**:
☐ Drug Brochure, dated**:
☐ Advertisement, dated*:
☐ Research Proposal/purpose, dated**: Sept 17, 2011
☐ Other: Description: An Empirical Assessment of Factors Contributing to Individuals’ Propensity to Commit Software Piracy in The Bahamas, dated**: September 2011
☐ Reason for exception for ethical review, dated**:
* version dates are required on the informed consent statements.
** dates are optional and only necessary if required by the investigator or sponsor.

SECTION V: INVESTIGATOR STATEMENT OF COMPLIANCE

I assure the Office of Research, Graduate Programmes & International Relations that all procedures performed under the project will be conducted in strict accordance with general College/University of The Bahamas research guidelines. (See attachment.) I agree to submit any deviation from the project (e.g. change in principal investigator, research methodology, subject recruitment procedures, etc.) to the Office of Research, Graduate Programmes & International Relations in the form of an amendment for institutional record prior to implementation. By signing this form, I am certifying that all co-investigators listed on the study are aware of the research and are agreeing to participate.

Signature of Principal Investigator: Raymond C. Wells
Date: September 12, 2011

SECTION VI: INSTITUTIONAL CONSENT

This protocol, informed consent statement, authorisation, and/or waiver of authorisation for use of human subjects in research has been reviewed by the Office of Research, Graduate Programmes & International Relations (RGPIR) for use for a maximum of one year period beyond the date below.

Authorised RGPIR Signature: [Signature]
Date: 17 October 2011

Form Developed: January 2008, revised July 2010
Office of Research, Graduate Programmes & International Relations
Appendix D

E-Mail to Survey Participants

Hi All,

My name is Raymond Wells and as a core requirement for the completion of my doctoral studies, I am required to present the results of a survey.

You are invited to assist with completing my survey.

This survey is comprised of 38 questions on Factors Contributing to Individuals’ Propensity to Commit Software Piracy in The Bahamas.

The survey will be submitted completely anonymously and should not take more than 20 minutes to complete.

Please be mindful that completing the survey indicates your voluntary participation in the study.

Thank you for agreeing to participate in this study.

Please select the link below to complete the survey

https://docs.google.com/spreadsheet/viewform?formkey=dG5Db0hjOTlCYXZxQmRXZ1BTYm52ekE6MQ#gid=0

Regards

Raymond Wells
Hi All,

(If you have already taken the survey, thank you and please disregard!)

My name is Raymond Wells and as a core requirement for the completion of my doctoral studies, I am required to present the results of a survey.

You are invited to assist with completing my survey.

This survey is comprised of 38 questions on Factors Contributing to Individuals’ Propensity to Commit Software Piracy in The Bahamas.

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Please select the link below to complete the survey

https://docs.google.com/spreadsheet/viewform?formkey=dG5Db0hhjOTlCyXZxQmRXZ1BYm52ekE6MQ#gid=0

Regards

Raymond Wells
References


IBM SPSS. [Computer software]. http://www.spss.com


