An Investigatory Study into Students' Attitudes towards the Piracy of Digital Material

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Abstract

The aim of this study was to investigate students' attitudes relating to favourableness/ unfavourableness towards digital piracy, specifically with regard to gender differences, age differences, levels of self efficacy, machiavellianism and subjective norms. This was a cross-sectional survey design combined with a correlational study in which 102 participants from Psychology classes in Dublin Business School were surveyed with three questionnaires: the Digital Piracy Scale, the General Self Efficacy Scale and the MACH-IV Scale. The findings provided three significant results – i) males have a more favourable attitude over females; ii) younger students have a more favourable attitude over older students and iii) subjective norms and attitudes were found to have an existing correlation; no significant results were found with self-efficacy and machiavellianism.

1. Introduction

Digital piracy has been defined as "…the illegal copying of digital goods, software, digital documents, digital audio (including music and voice) and digital video…" This is classed as illegal when it is for any purpose other than to back-up without specific permission from and credit to the owner of copyright (Higgins, 2007; Gopal, Sanders, Bahattacharjee, Agrawal & Wagner, 2004).

It is evident from the definition alone that digital piracy is a crime yet there are very few consequences for those who engage in this illegal activity. The possible reasons for this lack of implementation of punishment could be due to a) an absence in the understanding of the key causes that motivate people to engage in digital pirating and b) the amount of people downloading material illegally; to reprimand all of these individuals would cripple the legal system. Digital piracy is often viewed as a "normal" activity instead of an illegal one due to the generalised assumption that "everyone is doing it". Additionally, pirating is accepted as being something minor in terms of illegality due to the fact that people carry out acts far worse than pirating, like murder. By allowing pirating to be viewed as a lesser criminal activity than other far worse ones is simply justifying the act and ignoring the consequences which can be severely damaging to music and film companies (Liang, 2010).

Therefore, by finding a means of comprehending the reasons behind digital piracy, many institutions such as educational, governmental and business, will be able to tackle this more efficiently. The best way of doing this would be to use methods of persuasion to change individuals' attitudes towards digital piracy (Van der Byl & Van Belle, 2008). Some older research which is still relevant today shows that the Theory of Planned Behaviour can be used to pinpoint various types of behaviour but also provide an explanation for it, including behaviour regarding one's ethics (Cronan, & Al-Rafee, 2007; Randall & Gibson, 1991;

Dubinsky & Loken, 1989). With regard to this research study, by investigating these areas in a university setting, a program could be developed to help promote the negative side of digital pirating which could ultimately decrease the use of illegal downloading within the student population. Additionally, by using psychological theory to try and understand the behavioural causes for digital piracy, professionals within the area could address these causes and try to reduce the vulnerability of becoming engaged in this way of acting.

Some worrying statistics have been revealed in recent years regarding the pirating of digital material. The Motion Picture Association of America (MPAA) in Hollywood gave approximations that between 400,000 and 600,000 films were being downloaded illegally over the internet every day (Al-Rafee & Cronan, 2008; MPAA Report, 2003). In terms of Irish issues regarding digital piracy, there have been many statistics developed with regard to the extent in which this activity is carried out and the damage it is causing the economy. In a global piracy study carried out in 2011, it was found that the piracy rate in Ireland was 34%. The cost of this to the economy was estimated at $144 million. This is a quite a substantial figure and is constantly growing one due to expanding technology and the consumers' need to constantly purchase goods as cheap as possible, even if it is required of them to do so by illegal means (Business Software Alliance, 2011).

Furthermore, IBEC and Retail Ireland compiled results from various surveys in recent years and published a report in August 2012. They found in one survey that 50% of people that engaged in downloading films confessed to rarely, if ever, paying for their purchase. Within the Irish music and recording industry, income and profits are being substantially hit and are declining rapidly. Figures show that the amount of this decrease was €64 million between 2005 and 2009. This segment of the economy is approximating that there are about "770,000 illegal downloaders in Ireland (p. 21)." These are just a few of the limited pieces of

research that have been carried out in Ireland regarding digital piracy; one of the main reasons this study is being conducted is due to this lack of studies.

However, it is necessary to identify possible causes within research studies regarding digital piracy and the motivating factors that may influence an individual to engage in such behaviour. In order to do this though, some theories (including the Theory of Planned Behaviour and Theory of Reasoned Action) need to be discussed before each of the variables can be introduced.

1.1   Literature Review

Many people partake in digital pirating due to the availability and reduced cost compared to that of purchasing original media: the price of downloading pirated media is reduced significantly, even free in the majority of cases. Regardless of the income of the individual pirating, he/she feels worthy of doing this because they feel they are being overcharged with the authentic material (Van der Byl & Van Belle, 2008; Al-Rafee & Cronan, 2006; Kin-wai Lau, 2006). In addition, with the advancements in modern technology, the quality of copied goods is extremely good which heightens the attractiveness of pirating (Van der Byl & Van Belle, 2008; Kin-wai Lau, 2006; Moores & Dhillon, 2000; Cheng, Sims & Teegen, 1997; Simpson, Banerjee & Simpson, 1994).

Theory of Reasoned Action

One of the most prevalent and important theories that have been referred to again and again in digital piracy studies can be found in the numerous works of Fishbein and Azjen. The theories of these two highly recognisable figures within psychology have been applied to many cases to help predict behaviours (Cronan et al,

2007; Madden & Ellen, 1992). From these applications, the Theory of Reasoned Action (TRA) was introduced in 1975. Its foundations lie upon the belief that "human behaviour is quite rational and makes use of the limited information available to individuals" (Cronan et al., 2007, p. 529). The TRA emphasises three primary predictors of human behaviour: intention, attitude and subjective norms. Intention is referred to as "an act or instance of determining mentally upon some action or result (n.d., 2013)". The definition for attitude provided is "a persons' feeling of favourableness or unfavourableness for that behaviour" and subjective norms has been defined as "a persons' perceptions that most people who are most important to him/her think that he/she should or should not perform a behaviour in question" (Cronan et al. 2007; Ajzen, 1985). This theory was extended to cover another factor which is perceived behavioural control.

The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is an expansion upon the TRA and the reason for this extension is due to the fact that Ajzen believed that the original TRA was unsatisfactory as it did not take into account times when an individual's behaviour is not under their sole control (Cronan et al., 2007, p. 529) The additional component within the TPB is representative of a person's view of the ease or difficulty in executing a particular behaviour (Cronan et al., 2007; Ajzen & Madden 1986). As mentioned, one of the primary parts of the TPB is attitude. Attitude has been discussed among many psychologists within the discipline and it has "been long acknowledged as the most important construct in social psychology" (Cronan et al. 2007; Allport, 1935). Several research studies have been carried out in this area emphasising this very fact (Cronan et al., 2007; Ajzen, 2002a; Petty & Wegener, 1997; Olson, & Zanna, 1993). A study carried out in 2003 found that attitude had the

biggest influence on the intent to engage in pirating behaviour (Peace, Galletta, & Thong, 2003).

Moral Development

Moral development or moral reasoning plays a key role in how individuals approach decision making. Individuals' subsequent choices are influenced by their ethical and moral beliefs and values. Lawrence Kohlberg developed three levels of moral reasoning, which were then subdivided. However, this will just be focusing very briefly on the initial three levels.

Pre-conventional reasoning involves the emphasis of reward and punishment and the ability to avoid getting caught. This is relevant in younger individuals who engage in digital pirating. The second level is called conventional reasoning which discusses social rules and boundaries present within one's society. The final level is post-conventional reasoning and this focuses on moral principles (Berger, 2008, p. 336). Again, research in the area of pirating digital media will further explain the links that are in existence between them, moral reasoning in differing age groupings and its consequential effect on the ultimate choice of whether to engage in pirating activity or not. With reference to this research, moral reasoning plays a very important role. Some questions that will be used will be exploring the participant's morality levels towards digital piracy among other brief moral questions with regard to themselves. Due to the fact that moral reasoning has been found to affect individuals' intention to pirate material as well as influence their attitudes towards it, it is a relevant spectrum that needs to be addressed within this research study.

Some research which was carried out in 1994 examined the area of moral judgement with regard to digital piracy. Logsdon and research colleagues surveyed

363 students. In their study, their aim was to investigate if there was any correlation between the levels of moral judgement and students' attitudes towards the piracy of material. They found that there was no significant relationship which is surprising (Logsdon, Thompson & Reid, 1994). Many of the research studies examined further on in this study are quite contradictory of each other which provide us with a strong foundation to work on and hopefully improve upon. Therefore, in concluding this section, the study will now introduce the key variables involved, some research studies in support of them and finally, the reason why these variables were chosen.

Gender

Gender can be seen as quite a noteworthy variable when it comes to digital piracy. There have been conflicting results between many studies carried out on this issue. In some studies that have taken place, there has been no existent relationship found between gender and attitudes towards digital piracy (Van der Byl & Van Belle, 2008; Al-Rafee et al, 2006; Kin-Wai Lau, 2006; Kini, Ramakrishna, & Vijayarama, 2004; Simpson et al., 1994). However, in several other studies, males are seen to engage more often in digital piracy compared to females. They are profiled more as they are believed, with supporting empirical evidence, to download illegal pirated material but also to actively pirate digital material moreso than simply buying it. This is in comparison to their female counterparts who, similarly to older individuals, are more focused on maintaining healthy and strong ethical values (Lending & Slaughter, 2001; Moores et al., 2000; Borkowski & Ugras, 1998; Sims et al., 1996; Khaznachi, 1995).

Also, a recent study from last year carried out by Kreie and colleagues (2012) discussed different research studies carried out regarding gender differences and

digital piracy. In their work, they stated how research has indicated that males and females have varying viewpoints on the "acceptability" of particular unethical actions including different motivations for selecting a certain direction of action. These comprised of the "social, business or professional environment" in which important ethical choices are considered (Kreie & Cronan, 1998). However, both males and females were in agreement that the most important motivating influence for their ethical decisions was the "legal environment and a sense of moral obligation". This suggests that the consequences of certain actions are taken into account before any such action is taken, therefore inferring that this knowledge can possibly change the behaviour of an individual. More importantly, this was regardless of gender (Robertson, McNeill, Green & Roberts, 2012). However, as mentioned, there are conflicting pieces of research, some as recent as last year that also need to be discussed. For example, regarding gender, a piece of research which was carried out in 2009, had some interesting results. Mandel and Sussmuth discovered that ethical standards do not play a role in attitudes towards digital piracy. The researchers did find a similar outcome in their results to other studies in that males participated on a larger scale to women in digital pirating. However, if it is assumed that higher ethical standards are the core of gender differences, there should be a variation both in the extent of pirating as well as in the frequency. But, as they suggested, if there was a large difference in the extent of piracy regarding gender with no difference in frequency, it makes in comparison to other studies (Mandel & Sussmuth, 2009). Therefore, gender is included as a variable in this study as it is necessary to try and validate or confirm what exactly the influence of gender is on attitudes towards digital piracy.

Age

As seen with gender, ethics plays a very significant role in the impetus behind the pirating of digital media. Personal ethical beliefs are also seen to be influential among different age groups. Lending et al. (2001) and Borkowski et al. (1998) found that individuals who are older do not seem to participate in digital pirating because of their ethical values and beliefs; younger people hold a more carefree attitude regarding this and do not anticipate any problems or difficulties with digital piracy, even if it is classed as being an illegal activity.

In similar research, it is suggested that younger people have lower standards regarding ethics compared to older individuals. These young people have little or no worry when faced with making ethical or moral choices, such as whether or not to download pirated material (Al-Rafee et al. 2006; Barger, Kubitschek & Barger, 1998; Coombe & Newman, 1997; Auerbach & Welsh, 1994). More recent research has found similar findings. Liebowitz (2004) carried out a research study by means of a survey two years prior and found evidence to confirm that 41% of internet users aged between 18 and 29 disclosed that they had illegally downloaded digital material in comparison to 21% of individuals aged between 30 and 44 who claimed they had not. Regarding this, there has been little, if any, negative consequences for those who engage in digital pirating either by holders of copyright or by places where pirating is rife; due to the low chances of being punished and their feelings of self-fulfilment, younger people tend to be inclined towards digital pirating, which is aided along by their under developed moral reasoning abilities, which become more prevalent with age. However, in a contrasting manner, if higher levels of risk are perceived in relation to illegal downloading and digital piracy, then those pre-conventional individuals would seemingly be less likely to become involved in pirating of any

level. Additionally, younger individuals with low morality and very little ethical regard would be less likely to take part in pirating if the risk increased their chances of being caught. So even though ethics is important to many individuals, it appears that if there is an increased chance of negative consequences, then the probability of pirating occurring is reduced significantly (Tan, 2002). Age therefore is included as a demographic variable in this study due to its inclusion and relevance in many studies involving digital piracy.

Self Efficacy

Self-efficacy refers to an individuals' personal judgement of their own abilities to carry out a certain task. In this study, it is judging their capability to pirate digital media. An individual that pertains to have high self efficacy has been found to have a minimal chance of being caught engaging in digital piracy (Phau & Liang, 2012; Zhang, Smith & McDowell, 2009; Krueger, & Dickson, 1994). It was Albert Bandura (1986) who introduced the initial term self efficacy through his Social Cognitive Theory (SCT). This again can explain the specific behaviours of media consumers. The model of self efficacy is most appropriate for individuals who have yet to fully understand the technological skills required to complete imperative objectives online. In 2001, Kuo and Hsu identified self-efficacy as a motivating factor for digital pirating. They created and validated a "computer self-efficacy construct" that was seen as an advanced version of the previous planned behavioural control construct (Cronan, et al., 2007; Kuo & Hsu, 2001). Research in the same year found another link between self efficacy and the total quantity of internet usage by individuals (La Rose, Mastro & Eastin, 2001). More recent research was carried out in 2012 by Thatcher and Matthews. They examined and correlated results of two different educational institutions composed of graduate students from South Africa and

Zambia. Their study found that self-efficacy had no statistical significance with regard to digital piracy which puts forward the point that there may be other elements at play that decrease the intention to pirate digital media (Thatcher, A. & Matthews, M., 2012, p. 1-12). Self-efficacy is going to be used as a variable within this study because a person's judgement of their ability, particularly regarding digital piracy, is a key element for consideration. Also, due to the fact there is conflicting research, it is necessary to gather more data and analysis to understand more about this area.

Machiavellianism

Machiavellianism, moral reasoning and ethical decision making possibly contain strong links, especially when speaking in terms of digital pirating. Before continuing however, machiavellianism must be defined. It has been stated that it is a "strategy of social conduct that involves manipulating others for personal advantage, often to the detriment of the people being exploited" (Colman, 2009). There have been many research studies carried out in the area of digital piracy regarding machiavellianism, some of which will be discussed briefly now. Levin, Dato-on & Rhee (2004) conducted research to find out how the ethical values of consumers were linked to the pirating of music media. In this study, both qualitative and quantitative research was carried out with college students which allows for a scientific yet personal insight into the moral reasoning of a specific sample. The results found that people who participated in digital pirating of music had very little "ethical concern" and they also did not believe that what they were doing would damage the copyright holders (record company, an artist etc.) in any way.

Further research four years later found similar results and also found that individuals reprimanded for engaging in pirating did not seem to be affected by their

punishment (Lysonski & Durvasula, 2008). These findings contradict with research involving the demographic variable of gender and age where, as found by Robertson, McNeill, Green & Roberts (2012), the prospect of punishment decreased the likelihood of the act being carried out. However, this will be investigated further in this study. Individuals with high levels of machiavellianism are seemingly blind to the consequences of their actions regarding digital piracy. They cannot see the wrong doing in their actions, specifically the unethical means by which they are acting. Due to this lack of awareness of their behaviour, people who have machiavellianism present as a trait within their personality will not attempt to correct or fix a situation that they have create unethically. This, of course, raises many concerns for the so-called victims of digital piracy (Ford & Richardson, 1994). Based on this research, it seems that individuals with high levels of machiavellianism will display a higher attitude towards engaging in digital piracy in addition to ignoring the after effects of their actions (Al-Rafee et al., 2006). Machiavellianism is therefore included as a variable in this study as it seems to have a high correlation with pirating. Also, its inclusion is necessary due to the contrasting results present within different studies on the topic.

Subjective Norms

Subjective norms are stated as being the perceived influence of important people and norms of significant others which have a knock on effect to one's own beliefs, ethics, morals and decision making; a person's awareness of the pressure in society to act on a particular behaviour or to behave in a certain way (Van der Byl et al., 2008). As will be briefly discussed further on, subjective norms are influential in the intent to act in a particular manner (Al-Rafee et al., 2006). These are seen to be important in many areas of people's lives and are not just confined to that of digital

piracy. However, at the same time, they are very significant in terms of forming attitudes of those in relation to digital pirating. In support of this statement, there are many empirical pieces of evidence from research studies to discuss.

A study involving music piracy in Canada found that there was a strong correlation between subjective norms and pirating behaviour (d'Astous, Colbert & Montpetit, 2005). In Al-Rafee and Cronan's study in 2006, subjective norms were found to have a considerable influence on a specific individual's attitude towards pirating. In research conducted in the same year, a survey of 481 accountancy students found that their attitudes and subjective norms towards software piracy were "directly related" to pirating behaviour (Woolley & Eining, 2006). However, as has been observed in the already mentioned variables, there are studies which show contrasting results. Subjective norms were seen to not be influential towards piracy intention in the US in two studies carried out twelve years apart which indicates that there are divisions with regard to digital piracy (Cronan et al., 2008; Peace & Galletta, 1996). Additionally, Veitch & Constantiou (2012) carried out research in two Danish universities examining the impact of subjective norms on digital pirating behaviour. They surveyed 618 students and found no significant results in this study when trying to find a possible correlation between the influence of significant others and the behaviour of engaging in digital pirating.

A final study to be mentioned took a different approach towards measuring attitudes towards digital piracy and the influence of subjective norms. Giletti, (2012) was responsible for this research where a measurement was taken to see whether attitudes towards intellectual property (such as digital media) and perceived risk were the motivators behind an individuals' willingness to pay for genuine software. The results found that subjective norms had very positive powerful influences on this

willingness to pay. However, they also concluded that the risk of punishment did not have any influence which, again, makes a very interesting finding in comparison to previous findings. Hsu & Shiue (2008) also found similar results in their study. Obviously due to this, subjective norms needs to be examined more and has been included as the final variable to be measured in this study.

To clarify, the variables that have been addressed are gender, age, subjective norms, self-efficacy and machiavellianism. With previous research now discussed in detail, the main hypotheses will now be put forward.

H1 – It is hypothesized that males will have a stronger attitude towards engaging in digital piracy compared to females.

H2 – It is hypothesized that younger individuals will have a more lenient attitude towards pirating compared to older individuals.

H3 – It is hypothesized that self efficacy of a high level will have a positive correlation with attitudes towards digital piracy.

H4 – It is hypothesized that high levels of machiavellianism will have a positive correlation with attitudes towards digital piracy.

H5 – It is hypothesized that subjective norms will have a positive correlation with attitudes towards digital piracy.

2. Methodology

The present study aims to sample a population of college students which consists of 102 participants from varying programmes within the school of Psychology. A questionnaire was administered to students which had been previously approved. The questionnaire is divided into subsections and all details on method of completion are included. All results will be discussed in addition to a full breakdown of the sample, including gender and age, as well as means of acquiring the said participants.

2.1   Participants

This research project was carried out in a student population of Psychology students of varying degree levels and programmes within Dublin Business School. In total, 102 students (N=102) were surveyed in this study but due to two questionnaires having missing values, the number valid for consideration of analysis was 100. (N=100). The method of sampling was convenience. Permission was sought from several lecturers who were in charge of the Psychology classes in question as well as from the research co-ordinator in charge. In relation to age, the range was between 18 and 52 with the mean age being 26.6. The standard deviation regarding age is calculated as being 7.87. The division of gender has quite a gap between the number of males and females; males account for 21% of the research group whereas the figure for females is 79%.

2.2   Design

This research project consists of a cross-sectional survey design combined with a correlation study. The variables in question are sub-divided into independent and dependent variables; the independent variables are machiavellianism, self-

efficacy and subjective norms and the dependent variables contain the demographic variables of the study – gender and age.

2.3   *Materials*

The measures used in this study are the General Self Efficacy Scale [GSE] which is used to measure perceived self efficacy within a person, specifically with regard to coping abilities related to daily tasks (Schwarzer, R. & Jerusalem, M. 1995); the MACH-IV scale measures an individual's level of machiavellianism (Christie, R. & Geis, F. 1970) and the Digital Piracy Scale which was constructed to assess a number of factors regarding a person's attitude, intention and prior behaviour among others with relation to digital pirating (Cronan, T.P. & Al-Rafee, S. 2008).

The General Self Efficacy Scale was developed by Ralf Schwarzer and Matthias Jerusalem (1995). As mentioned, it relates to the perceived self efficacy of an individual. More specifically, self-efficacy refers to a person's positive belief in themselves; it relates to an individual's ability to carry out any new tasks that they may not have been faced with before or how well they are able to cope with conflict or struggles in their personal life (Schwarzer, R., 1992). The scale contains 10 items which are measured on a 4 point Likert scale with one signifying "Not at All True" and four an indicator for being "Exactly True". From being administered worldwide by the original developers, Cronbach's alphas for this measure ranged from .76 to .90, with the Majority in the high .80s.

The MACH-IV Scale was developed by Richard Christie and Florence Geis in the 1960s; originally it was just a scale of machivellianism but it was updated and revised to what we now call the MACH-IV Scale. Machiavellianism is a term that describes an individual's propensity to mislead and manipulate others for their own

personal advantage (Christie & Geis, 1970). This scale measures three different aspects of machiavellianism: 1) the belief in tactics of manipulations; 2) a cynical view of the world; and 3) a pragmatic morality (Jones, D. N. & Paulhus, D.C., 2009, p. 97). The scale contains 20 items which are measured on a Likert scale of 1 to 5; one being "Strongly Disagree" and five being "Strongly Agree". The Cronbach's Alpha for this measure is 0.73.

The final scale is the Digital Piracy Scale which was developed by Timothy Paul Cronan and Sulaiman Al-Rafee (2008). This model is sub-divided into a number of sections, each examining a different factor within a participant: 1) demographic variables of gender and age; 2) intention to pirate digital material; 3) ability to pirate digital material; 4) opinions of significant others; and 5) attitudes towards the morality of digital piracy. Firstly, the demographic variables are straightforward questions with a question to clarify what gender the participant is and what age they are. The second part assesses intention which describes an individual's objective of choosing to carry out certain behaviours or not. This study does not measure behaviour itself but instead measures a person's intent to behave in a particular manner. Intention is believed to be a significant factor in the motivation which determines the performance of an action (Cronan, T.P. & Al-Rafee, S., 2008, p. 530). The ability to pirate digital material is also referred to as perceived behavioural control. This relates to a person's ease or difficulty in carrying out the said behaviour (Ajzen, I, 1991). The third aspect is the opinions of significant others which is also referred to in this study as subjective norms. This describes how a person perceives social pressure from peers or significant others with regard to carrying out a behaviour. Several research studies have proven that this is seen as a predictor for behavioural intent also (Shepherd, G. & O' Keefe, D., 1984; Shimp, T.A. & Kavas, A., 1984; Vallenard, R.J. & Pelletier, L.G.,

1991; Chang, M., 1998). The final area, attitudes towards the morality of digital piracy, examines the possible emotional feelings of guilty a person may feel before carrying out a certain behaviour (Cronan et al., p. 532). This has been proven to be an important element in forming a person's intent to behave in a certain way; it has been found to be so strong a predictor that Ajzen (1991) professed that moral obligation could be an additional indicator in the Theory of Planned Behaviour for determining the intention of one's actions (p. 532). Schwartz and Tessler (1972) also stated that moral obligation provides a decent prediction of possible ethically or unethically approvable behaviour (p. 532). Trafimow and Finlay (1996) found that attitude was the "best predictor of intention" in twenty nine out of thirty studies (p. 531).

In this study, attitude is assessed with questions regarding the favourableness of the actions of digital piracy (p. 532). The breakdown of scaling within the questionnaire is as follows: 1) Gender is clarified by simply ticking a box under male or female and a participant supplies their age in the relevant box; 2) intention measurement contains three statements assessed by a 7 point Likert scale (one being "Definitely Do; five being Definitely Don't); 3) Attitudinal measurement contains one statement with four separate opposing ending statements (for example, my attitude towards digital piracy is… favourable/unfavourable, harmful/beneficial and so on) being measured on a 7 point Likert scale, i.e. One being "Favourable", seven being "Unfavourable" etc. 4) Ability to pirate measurement is examined with five statements being assessed on a 7 point Likert scale (one being "Strongly Agree", seven being "Strongly Disagree"); 5) Subjective norms is measured with three statements on a 7 point Likert scale (one being "Strongly Agree" excluding the third statement which is "Not Care", seven being "Strongly Disagree" excluding the third being "Disapprove"); 6) The morality of digital piracy was measured with three

statements on a 7 point Likert scale (1 being "Strongly Agree"; 7 being "Strongly Disagree"). The Cronbach's Alpha for this scale was as follows: i) attitudes = 0.908; ii) subjective norms = 0.753; iii) perceived behavioural control = 0.760; iiii) moral obligation = 0.760 and iv) intention = 0.979.

2.4   Procedure

The study gained approval from the Ethics Review Board at Dublin Business School. Each questionnaire was fronted with an informed consent form with information regarding the content of the questionnaire and what it entailed. Prior to administering the questionnaires, students were briefed on the study and on the questionnaire itself. The questionnaires were then distributed and took approximately 15-20 minutes to complete. A copy of the questionnaire is attached (see appendix). Once completed, all questionnaires were gathered and all responses were anonymous and were kept confidential. After all questionnaires were gathered, the participants had the opportunity to ask any questions they had regarding the study and had the chance to discuss any concerns they had about the process. Even though the content of the study was not deemed to be sensitive in its content referring to digital piracy, a support service contact sheet was attached for students if they felt the need to talk to someone in the rare chance that the questionnaire may have raised any issues for students. The support numbers provided were for the Samaritans and for the Welfare Officer in Dublin Business School; the researcher's contact details were also provided in case of any further queries. With regard to statistical analysis, SPSS/PASW (version 18) was used to test the subsequent data.

3. Results

The aim of the study was to see if there were any significant differences in students' attitudes towards digital piracy. This was further examined and tested in the following manner: 1) differences between male and female attitudes towards digital piracy; 2) differences between younger and older students attitudes towards digital piracy; 3) a correlation between levels of self efficacy and attitudes towards digital piracy; 4) a correlation between levels of machiavellianism and attitudes towards digital piracy, and finally, 5) a correlation between levels of subjective norms and attitudes towards digital piracy.

A total of 102 questionnaires were administered to participants with 97 to 102 counted as being valid due to some questionnaires having missing values i.e. some questions not having answers while others did in some participants' questionnaires. However, even though some of these questionnaires had missing data, they were still deemed significant enough to include in the analysis section. The range in age of participants was 18-52 years (M=26.6). The following table, Table 1, displays this demographic information and characteristics of the respondents.

TABLE 1:- *Demographic Characteristics of Respondents of Gender & Age*

VARIABLES	N	%
Gender		
Male	21	21
Female	79	79
Age		
18-24	53	*55
25-34	30	*31
35-55+	14	*14

Age rounded up to whole number; 97 responses within the age category.

The next table to be included displays the results of an Independent Samples T-Test which was carried out to investigate the first hypothesis; possible gender differences with regard to attitudes towards digital piracy.
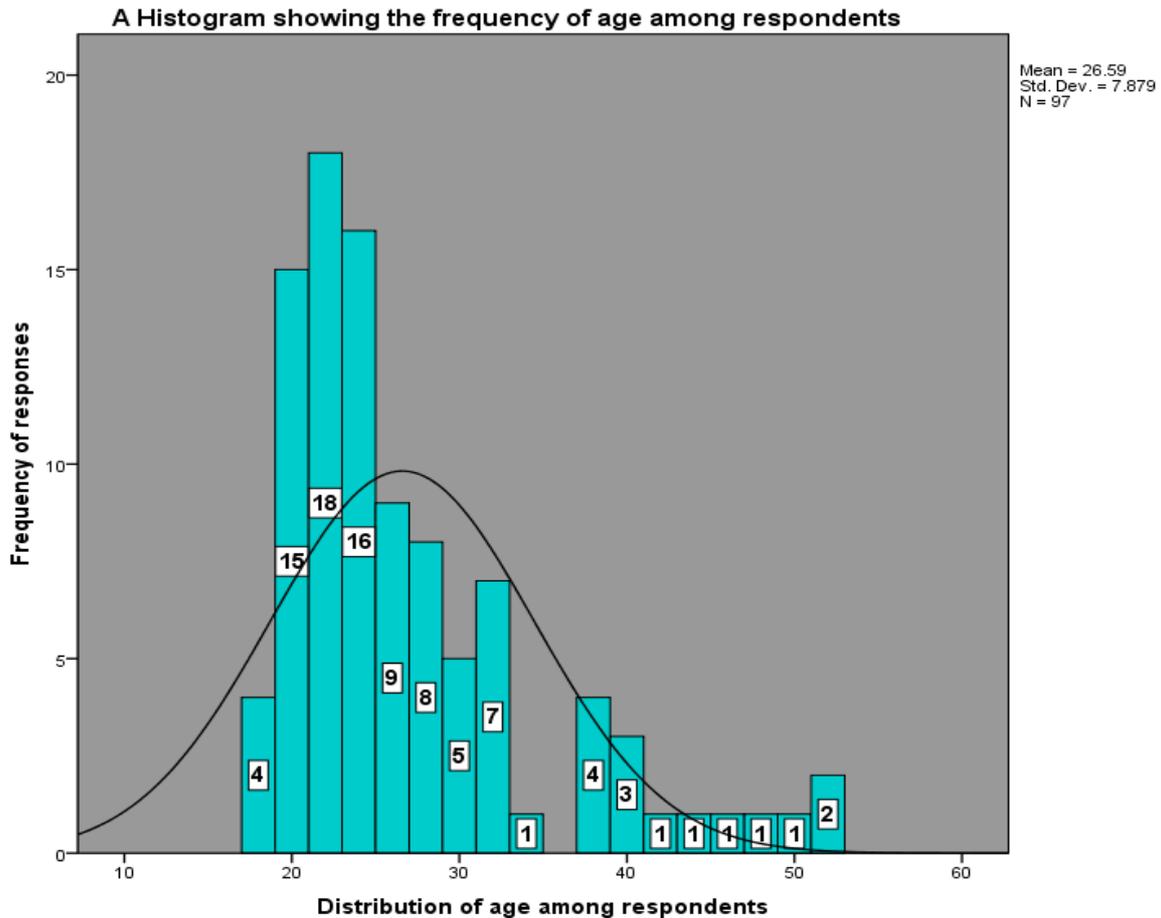
TABLE 2:- *An Independent T-Test table displays the differences between Male and Female Students regarding their Attitudes towards Digital Piracy.*

VARIABLE	GROUP	M	SD	t	Df	P
	Male	21.48	5.50	4.28	98	<.001*
Attitude to Digital Piracy						
	Female	15.66	5.54	4.30		

**p is significant at the .05 level. M = Mean.*

As can be seen from Table 1, an independent samples t-test was conducted to compare attitudes to digital piracy among males and females. There was a statistically significant difference in the scores for males (M = 21.48, SD = 5.50) and females (M = 15.66, SD = 5.54); (t (98) = 4.28; p = <.001). These results suggest that there are gender differences in attitudes towards digital piracy. Specifically, males have a more favourable attitude towards digital pirating. Therefore the null hypothesis is rejected.

With regard to our second hypothesis regarding age and attitudes to digital piracy, a histogram is provided on the next page to better display the range of ages among participants.

A Histogram showing the frequency of age among respondents

Mean = 26.59
Std. Dev. = 7.879
N = 97

Distribution of age among respondents

As can be seen from this histogram, it is positively skewed. The reason for this will be discussed in the next section. However, the results regarding age will be stated now. The mean score for age was 26.59 (SD = 7.88) and for attitudes towards digital piracy was 16.88 (SD = 6.00). A spearman's rho correlation coefficient found a strong negative significant relationship between age and attitudes to digital piracy. (r (93) = - .453, p < .001) Therefore the null hypothesis is rejected.

The third hypothesis examined if there was any correlation between levels of machiavellianism and attitudes towards digital piracy. The following histogram displays the frequency of responses regarding this question.

A Histogram showing the distribution of Machiavellianism levels
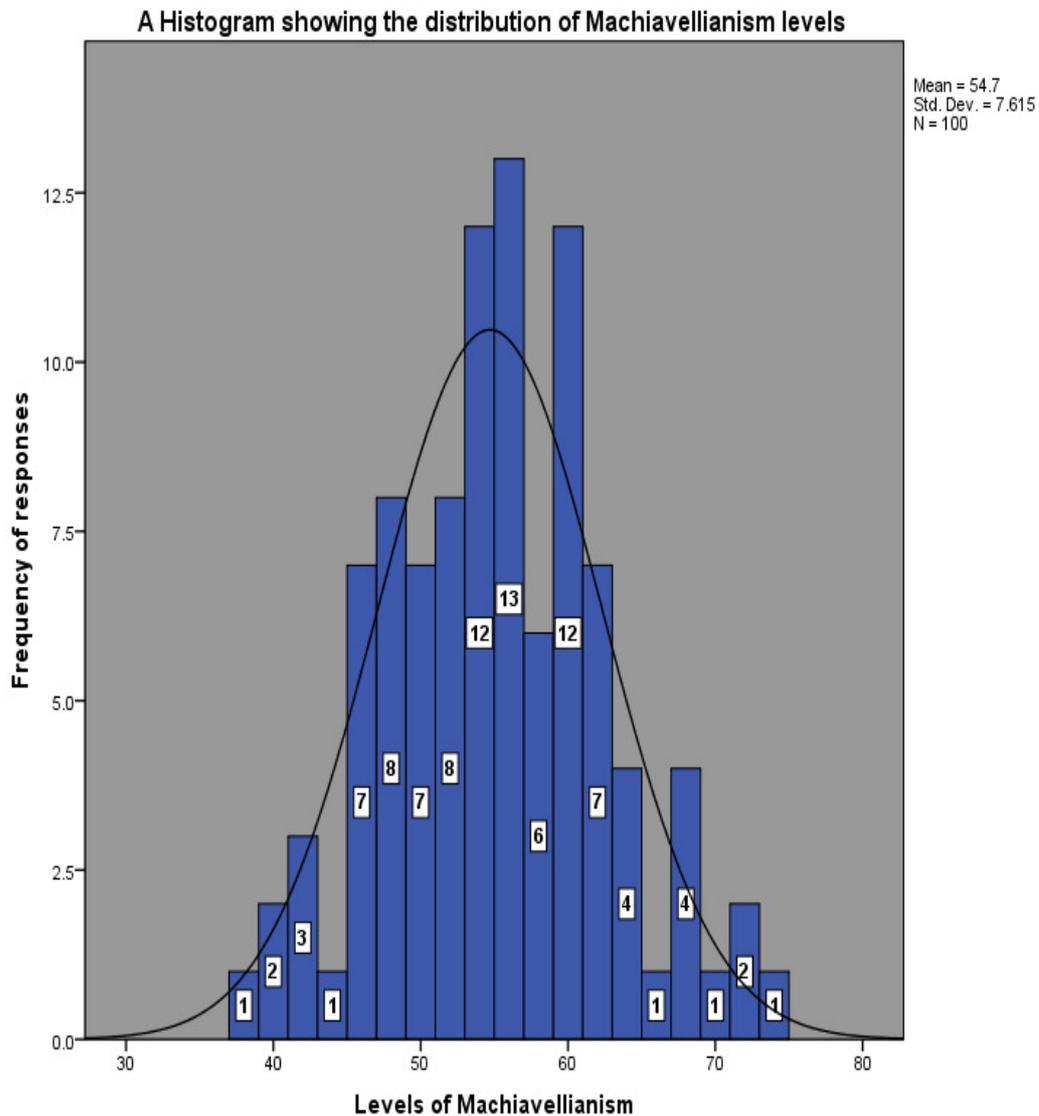
The mean scores for machiavellianism were 54.70 (SD = 7.62) and for attitudes towards digital piracy were 16.88 (SD = 6.00). A Pearson correlation coefficient found that there was a moderate positive insignificant relationship between levels of machiavellianism and attitudes towards digital piracy; (r (95) = .082; p = .422). Therefore the null hypothesis can be accepted.

The fourth hypothesis examined levels of subjective norms with relation to attitudes towards digital piracy. The following histogram displays the frequency of responses for this variable.
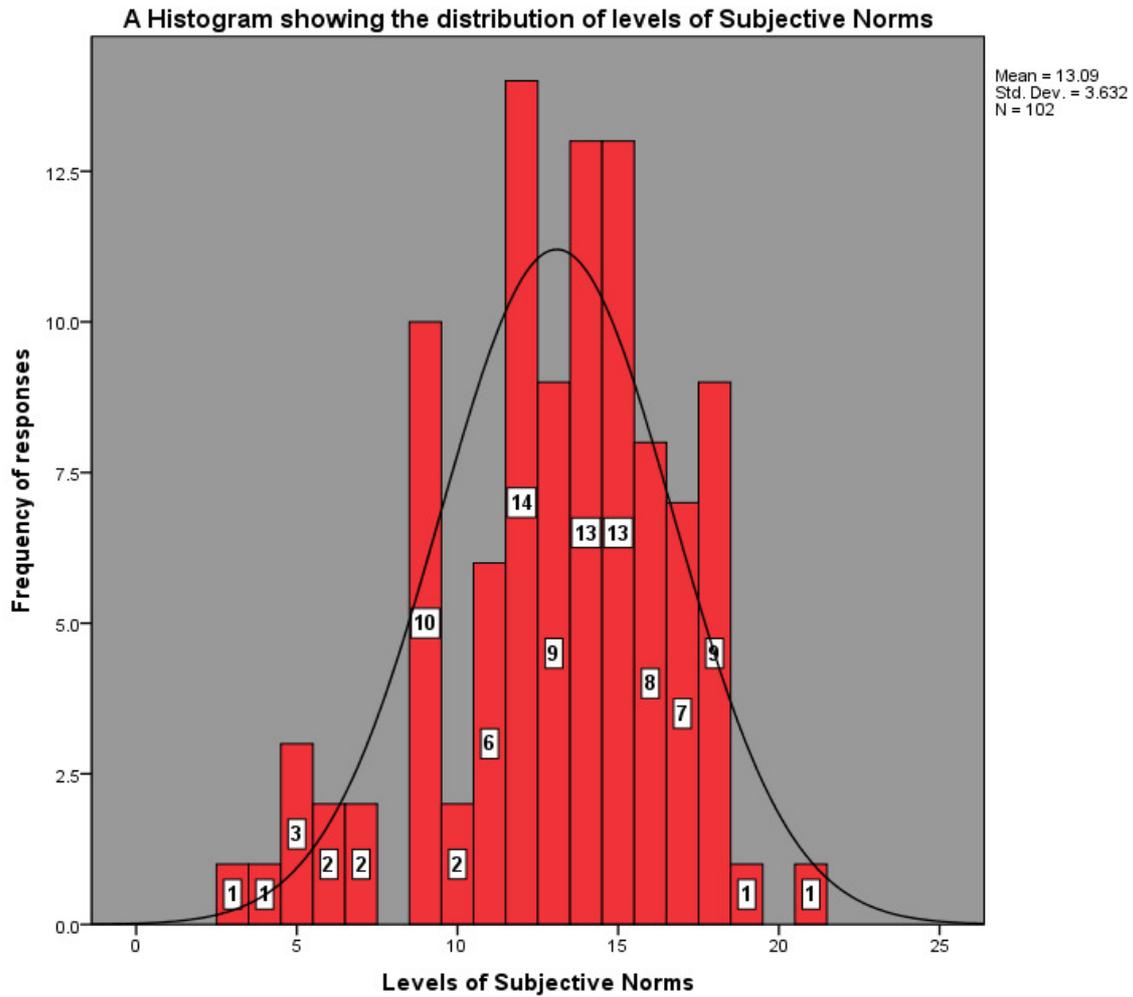
The mean scores for subjective norms were 13.09 (SD = 3.63) and for attitudes to digital piracy were 16.88 (SD = 6.00). A Pearson correlation coefficient found a strong positive significant relationship between subjective norms and attitudes towards digital piracy; (r (98) = 0.549, p < .001). Therefore, the null hypothesis can be rejected.

The final hypothesis examined the levels of a student's self efficacy with regard to their attitudes to the pirating of digital media. The final histogram below informs us about the frequency of responses for self efficacy.

A Histogram showing the distribution of Self Effiacy levels
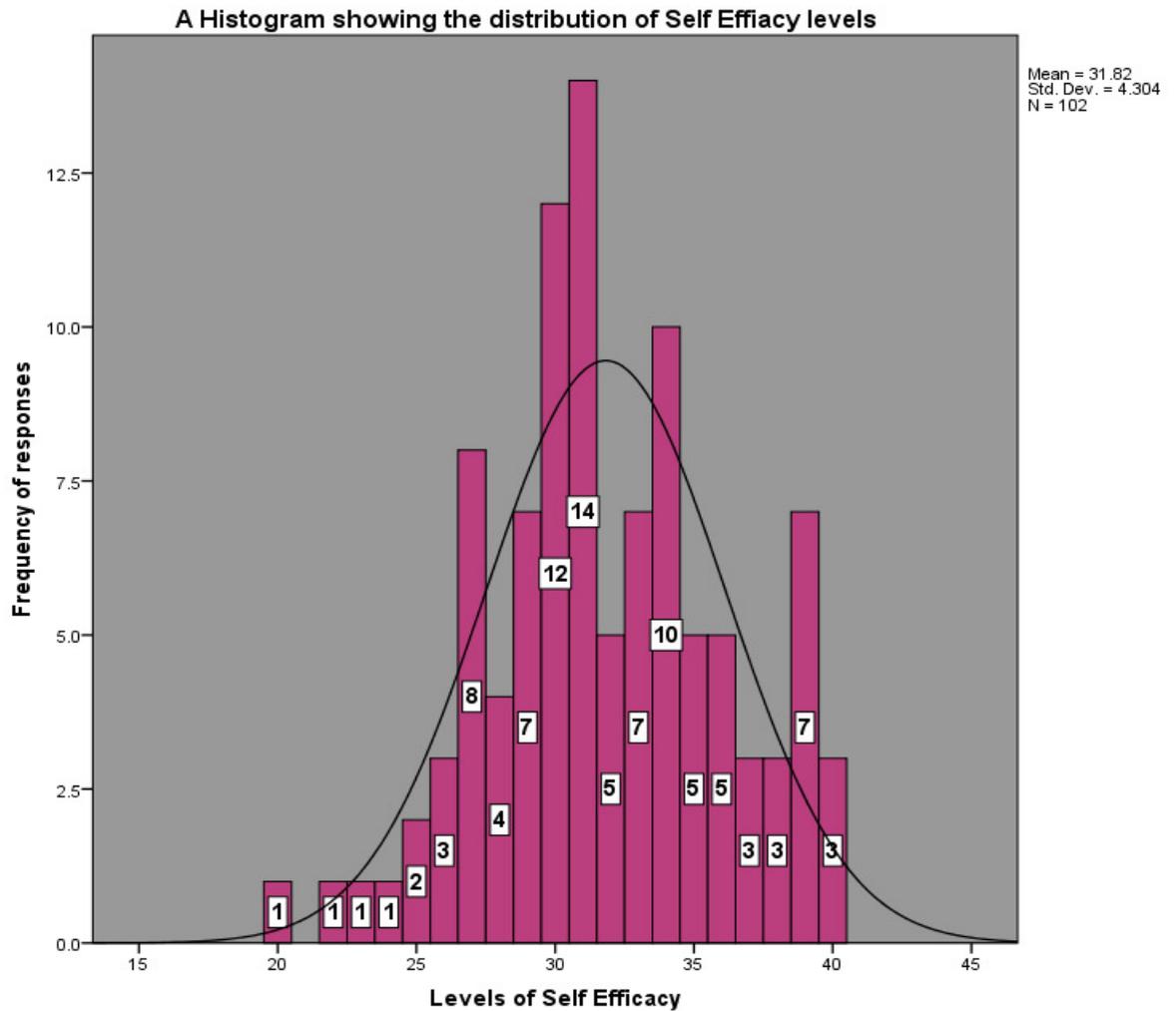
The mean scores for self efficacy were 31.82 (SD = 4.30) and for attitudes towards digital piracy were 16.88 (SD = 6.00). A Pearson correlation coefficient found that there was a strong positive insignificant relationship between self efficacy and attitudes towards digital piracy; (r (98) = .057, p = .570).

4. Discussion

4.1   Results

The main goal of this study was to investigate students' attitudes towards the act of engaging in digital piracy. The results of this were gathered by administering a number of questionnaires to Psychology students with the following inclusive scales: the MACH-IV Scale (Christie, R. & Geis, F., 1970); the Digital Piracy Scale (Cronan, T.P. & Al-Rafee, S., 2008); and the General Self Efficacy Scale (Schwarzer, R. & Jerusalem, M., 1995). As discussed in the introduction, there is a large amount of research evidence to support the variables included and analysed in this study. The variables which were included in this research and explored alongside the attitudes towards digital piracy were gender, age, self-efficacy, subjective norms and machiavellianism. These variables will be discussed on an individual basis with their relevant results and will also be linked back to the supporting (and opposing) research.

The first variable this study aimed to examine and explore was gender differences with regard to attitudes towards digital piracy. The hypothesis had the specific aim of investigating whether males had a more favourable attitude towards engaging in digital piracy than their female counterparts. This was examined in the demographic section of the Digital Piracy Scale (Cronan et al. 2008). An independent samples t-test (two-tailed) was used and the results found that there was a statistically significant difference; i.e. males had a more favourable attitude towards digital piracy than females. This was a surprising finding because of the division of male and female students employed for this study (21% males/79% females). As seen in the introduction regarding gender, there have been varying viewpoints but more

interestingly, varying results. Gender was included in this study due to the contradictory research that has been found in previous research. The findings in this study are supported by the research findings of Lending & Slaughter (2001), Moores et al., (2000), Borkowski & Ugras (1998), Sims et al., (1996) and Khaznachi (1995). In these studies, males were found to download and actively pirate digital material more than females which mean they clearly have a more favourable attitude to the act of digital pirating. Additionally, Mandel & Sussmuth (2009) found similar results with a higher percentage of males participating in digital pirating compared to females. However, there is opposing research out there by Van der Byl & Van Belle (2008), Al-Rafee et al., (2006), Kin Wai Lau (2006), Kini, Ramakrishna & Vijayarama (2004) and Simpson et al., (1994). These researchers all found that there were no significant differences in existence between male and female attitudes towards digital piracy; this makes quite an interesting variable in that sense. With regard to our hypothesis, the null hypothesis can be rejected.

The second hypothesis addressed in this study was regarding age differences relating to the favourableness (or unfavourableness of attitudes) towards digital piracy. The study aimed to find if there was any difference present between the attitudes of older versus younger individuals regarding their attitudes. Similar to the assessment of gender, the demographic section of the Digital Piracy Scale was employed to gather this data. The research again found a statistically significant difference with younger individuals having a more favourable attitude than older individuals. However, it should be noted that the age range was positively skewed, with a much higher number of younger students participating compared to older individuals. To be more specific, 83 students were under the age of 35 and only 14 between 35 and 55 years. Due to this obvious skewness, a Spearman's Rho test was

used. This issue with skewness is something that would need to be addressed in the future. However, it is still a significant difference and there is an abundance of supporting evidence in previous research. Lending et al., (2001) and Borkowski et al., (1998) specifically took attitudes into account in their research and found that younger people had a more favourable and carefree attitude towards engaging in digital piracy which is concrete support for this study. Other supporting research by Al-Rafee et al., (2006) and Barger, Kubitschek & Barger (1998) among several others found similar evidence with younger people having a more favourable attitude towards digital pirating than older. However, their studies also took into account the possible negative consequences of illegal downloading and this seemed to be an important factor in whether or not engagement in pirating activity actually took place. Relating to this study, it can be said that the null hypothesis can be rejected.

The third area of the research study which was examined was an individuals' level of self efficacy. Specifically, the hypothesis that this study put forward was to investigate whether or not there was a relationship between levels of self efficacy and a person's attitude towards the pirating of digital media. This part of the research study was investigated through the use of the General Self Efficacy Scale, designed by Schwarzer and Jerusalem (1999). After collection, analysis was carried out on this variable by means of a Pearson's correlation coefficient test. It found that there was a strong positive relationship between levels of self efficacy and attitude favourableness, but it was not in fact a significant outcome. This is yet another interesting finding as it contradicts several research studies who examined this area. Research as recent as 2012 found that people who have high levels of self efficacy have a very minimal chance of being caught engaging in digital pirating which relates to the fact that they have a very favourable attitude towards pirating due to their

perceived ability to carry out that activity successfully (Phau & Liang, 2012). Other research from 2012 carried out examining the differences between South African and Zambian students showed that there has to be other elements involving self-efficacy that influence a person's intention to or not to engage in digital piracy (Thatcher, A. & Matthews, M., 2012). Zhang, Smith & McDowell (2009) found similar findings to this and research dating back to 1994 supports this theory also (Krueger & Dickson, 1994). Regardless of the fact that these results are insignificant relating to the research, they are important findings in the sense that they oppose previous research in the field. Unlike the previous two variables, the null hypothesis must be accepted here due to the lack of any significant findings.

Machiavellianism is the fourth variable that was dealt with in this study. This was surveyed by means of a MACH-IV Scale developed by Christie and Geis in 1970. The hypothesis behind this variable was to find out if there was a correlation between a student's level of machiavellianism and the favourableness of their attitude towards digital pirating. Similar to the testing of self efficacy levels, this data was analysed by means of a Pearson's correlation coefficient. The results of this correlation found that there was a moderate positive relationship between machiavellianism and attitudes to digital piracy. However, it was found to be at an insignificant level. This again is an important finding, even though it is not a significant one. These results are contradictory of the research evidence provided in the introduction. Research studies carried out by Levin, Dato-on and Rhee (2004) found low levels of ethical concern which translates to high levels of machiavellianism i.e. manipulation of others for a personal gain, with regard to attitudes to illegal downloading and copying of digital material (Colman, 2009). Lysonski and Durvasula (2008) also found similar results in their study with higher

levels of machiavellianism being associated with agreeable attitudes to the pirating of digital media. A final piece of research by Al-Rafee et al., (2006) supports this theory which firmly opposes the findings within this research study. Subsequently, due to these findings, the null hypothesis must be accepted.

The final variable which was examined as part of this study was the area of subjective norms. This was involved in assessing an individuals' choice of action or behaviour when their family or friends or any other significant person in their lives has some form of influence on them. The important issue with this is finding out just how important this perceived social pressure is with regards to how favourable their attitude to digital piracy is. To reiterate the initial hypothesis, this study was concerned with levels of subjective norms in correlation with attitudes towards digital piracy. To determine the results of this, a Pearson's correlation coefficient was used. The consequential results found a strong positive significant relationship between levels of subjective norms and digital pirating attitudes. This is supported by the majority of previous research where subjective norms have been tested. For instance, a study in Canada which investigated this found a strong correlation between the two variables (d'Astous, Colbert & Montpetit, 2005). Al-Rafee and Cronan in 2006 also found similar findings whereby subjective norms were found to have a very strong influence on an individuals' course of action when referring to digital piracy. A direct relationship was additionally found in 2006 by Woolley and Eining when they surveyed just under 500 students with regard to subjective norms and digital piracy. However, as mentioned, it is the majority of research that supports this finding which means there is a minority here to be considered.

When Cronan et al carried out subsequent research two years after their initial digital pirating study, they found that the opinions of significant others did not have

any relevant form of influence on peoples' attitudes towards digital pirating. This is quite an interesting finding in itself which displays a contrasting result between two studies carried out in very close time proximity by the same researchers. Additionally, a second piece of opposing research was carried out by Peace and Galletta (1996) whereby they found similar results with significant others or subjective norms not having any influence on a person's subsequent choice of performing the act of digital piracy or not. With regard to this research study, the null hypothesis can be rejected due to the discovery of a significant result.

4.2   *Limitations*

There were a few areas within this research study that caused issues and may have possibly effected the subsequent findings. Firstly, there was a gender imbalance. With a 79/21 ratio of females to males, it is quite a substantial division. This was caused simply by the use of convenience sampling and by a possible stronger female population within Psychology classes compared to males. However, even though there is this significant imbalance, the results that were found are supported heavily in previous research which suggests that regardless of gender balancing, there will always be a stronger male audience participation in the act of digital piracy. It must not be forgotten that there is research out there that does contradict these findings but to have one more significant piece of research in favour of one side makes it a more promising and powerful gender debate. But, from this study, it appears that it is the males of the population who have a more favourable attitude towards digital pirating.

Secondly, the distribution of age among students who participated in this study is something that needs to be addressed. There was clearly a more dominant younger participant population compared to older participants. This again was due to the fact

that convenience sampling was employed. No limits were set on dividing the age categories up into even groups so there was always the possibility that there would be a majority/minority ratio at the end of the research. But, the findings within age are 100% supported, with younger individuals having the clear outcome of having more favourable attitudes towards digital piracy compared to their older counterparts. But the fact that there was a more prominent presence of younger individuals participating in this study makes it almost more likely that the hypothesis would have been accepted. The changes that need to be made here will be discussed under future research.

Finally, the method of sampling alone can be seen as a limitation. Due to the fact it was restricted to students within a particular department in a specific school, the broader spectrum of students in general were not examined. The fact that it was set to a specific school and subject matter though has allowed for some form of consistency to be present within this study which can be viewed as a positive aspect. However, as mentioned, a broader distribution of students of varying age, subject matter and culture background may have provided different findings in this study.

4.3   Strengths

Even though there are limitations to this research (as there are in any research study), it does have its strengths. The first one was mentioned previously under limitations as it falls into both categories. The matter of the sampling means can be seen to be a positive and negative aspect within this study. The method used was convenience and in terms of strength, it was seen to be a consistent method of this type of sampling. To expand further on this point, all of the data was collected via questionnaire from solely Psychology classes (granted, they were of different degree

perspectives) from DBS. Due to this, there was a consistency with the restriction (personally enforced) on just collecting from one subject level classes.

Additionally, the results of the study are strengths in themselves. As seen in the results and discussion section, three of the five hypotheses had to reject the null hypotheses due to significant findings. These findings form a very positive conclusion to this study. Regarding gender, as mentioned, previous research has had both opposing and supporting evidence so to get some confirmatory results here is a great boost for this study and others who discovered similar findings. With regard to the other two variables, age and subjective norms, both have had the majority with supporting evidence which again confirms these results even more.

4.4   Future Research and Implications

With regard to future research, there are a number of areas to address. Firstly, the limitations of this study would need to be corrected in future studies. For example, a more even distribution of gender would need to be analysed as well as the age range of individuals. This would rule out any possibility of any skewed information and any risk of a majority dominating the data. Secondly, a wider range of students would need to be analysed. To explain, a broader subject area and possibly different institutions could be examined in order to give a better idea of a student's overall perspective on the idea of digital piracy. This study has definitive implications for future research due to its findings, both significant and insignificant. The significant findings both oppose and support previous research which shows that further research is a necessity in order to get a concrete confirmatory answer regarding these variables. Similar to this, the insignificant findings also appear to both oppose and confirm previous research which calls for further research to be completed in the area.

With regard to applications in real life, this study does show that many individuals participate in digital piracy or at the very most, have a very strong favourable attitude towards it. In order to combat high levels of digital piracy, stronger punishments need to be enforced for this illegal activity. So far, previous research has shown that individuals who have high levels of self efficacy specifically, i.e. those who believe that they have the ability to download illegally without any consequences, tend to believe they can escape punishment which spurs them on to keep engaging in this behaviour (Phau & Liang, 2012; Zhang, Smith & McDowell, 2009; Levin, Dato-on & Rhee, 2004; Krueger & Dickson, 1994). Even though this study found differing results regarding self efficacy levels, the majority of previous research is an indicator not worth being ignorant of. Without enforcing effective punishments for these individuals, then it seems that they will keep engaging in this behaviour without caring for the possible damage they are causing to companies who have the legal copyright over the media that they are illegally downloading and copying. Methods of persuasion should also be a consideration as mentioned by Van der Byl & Van Belle (2008) as means of attempting to decrease digital pirating levels. Also, educational programs on the disadvantages of digital pirating should be enforced in school curriculums – the internet seems to be a very popular resource for teenagers and younger people today so in order to combat and prevent more people from engaging in this behaviour, it should be displayed from the beginning that it is not an activity that has any positive consequences.

4.5 Conclusion

To conclude this research study, the main findings will be reiterated along with some of the more important aspects of the discussion. Firstly, it was found that gender differences were evident with regard to more favourable attitudes towards

digital piracy. More specifically, males were found to have a more favourable attitude compared to females. This was one of the more surprising results of the study due to the large gender imbalance; however, it is one of the areas that require the most future research. Secondly, results showed that there were age differences relating to digital piracy attitudes. It found that younger individuals were more likely to have a more positive and favourable attitude towards digital pirating compared to their older counterparts. The real life application plays a large part here with informing younger people about the disadvantages of pirating being the key aspect. The third variable which was discussed was self efficacy. This was found to be insignificant in terms of students' attitudes being favourable towards digital piracy. However, this opposes the majority of previous research which leaves room for more studies to be instigated in the future. Machiavellianism was the fourth variable examined here. Again, similar to self-efficacy, an insignificant result was found. This is in comparison to numerous studies which show high levels of favourable attitudes in most. This can be nothing but a positive here as it allows for further testing to be prompted in this area. The final variable that was examined here was subjective norms. This had significant findings with peoples' significant others having a strong influence on their attitudes (how favourable or unfavourable they are) towards digital piracy. This is heavily supported in research which is a positive result for those concerned about the act of digital pirating – if more people are unsupportive of this activity, then this may result in a decrease in levels of the piracy of digital media. The most important finding within this study was that there is still conflicting evidence for several variables such as gender, self-efficacy and machiavellianism. Due to the lack of concrete evidence to fully support these areas with regard to pirating, the need for future research is imperative. Only with future research will more valid information and data be

gathered and it is this alone that will increase our knowledge of an ever-increasing activity that has single-handedly changed the music and film business worldwide.

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6. Appendices

Questionnaire: An Investigatory Study into Students' Attitudes regarding the Piracy of Digital Material

My name is Geraldine Holland and I am conducting research in the Department of Psychology that explores attitudes towards digital piracy. This research is being conducted as part of my studies and will be submitted for examination.

There are 6 (six) pages in this questionnaire, please complete all pages.

You are invited to take part in this study and participation involves completing and returning the attached anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected.

The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected

computer. All paper records will be shredded once collation of the resulting information is completed.

It is important that you understand that, by completing and submitting the questionnaire, you are consenting to participate in the study.

Should you require any further information about the research, please contact: Geraldine Holland at ███████████ or ███████████. My supervisor can be contacted at ███████████████ at (███████████

Thank you for taking the time to complete this survey.

Digital Piracy Study

1   Demographic Information:

Please provide the following background information:

Age	Gender (please tick relevant box)	
	Male	*Female*

2   Intention to Pirate Digital Material:

The following set of questions is related to your intention to pirate digital material.

Please read each statement carefully and, on a scale of 1 – 7, circle the number that

is most relevant to you.

I intend to pirate digital material in the near future

Definitely Do   1   2   3   4   5   6   7   Definitely

Don't

I will try to pirate digital material in the near future

Definitely Will   1   2   3   4   5   6   7   Definitely

Will Not

I will make an effort to pirate digital material in the near future

Definitely True   1   2   3   4   5   6   7   Definitely

False

Please read the statement and tick Yes or No.

	Yes	**No**
I have pirated digital material in the past		

Please read each statement carefully and, on a scale of 1 – 7, circle the number that

is most relevant to you.

My attitude towards digital piracy is that it is ….

Favourable	1	2	3	4	5	6	7	Unfavourable
Harmful	1	2	3	4	5	6	7	Beneficial
Foolish	1	2	3	4	5	6	7	Wise
Good	1	2	3	4	5	6	7	Bad

3   Ability to Pirate Digital Material:

The following set of questions is related to your ability to pirate digital material.

Please read each statement carefully and, on a scale of 1 – 7, circle the number that

is most relevant to you.

For me to pirate digital material, it would be …

Very Easy	1	2	3	4	5	6	7	Very Difficult

If I wanted to, I could easily pirate digital material

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

I believe that I have the ability to pirate digital material

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

I have the resources necessary to pirate digital material

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

I can find digital material to pirate if I wanted to

Strongly Agree   1   2   3   4   5   6   7   Strongly Disagree

4   Opinions of Significant Others regarding Digital Piracy:

The following set of questions relating to the opinions of significant others (friends & family) regarding digital piracy. *Please read each statement carefully and, on a scale of 1 – 7, circle the number that is most relevant to you.*

Most people who are important to me think I should not pirate digital material

Strongly Agree   1   2   3   4   5   6   7   Strongly Disagree

When considering digital piracy, I wish to do what people who are important to me want me to do

Strongly Agree   1   2   3   4   5   6   7   Strongly Disagree

If I pirate digital material, then most people who are important to me would…

Not Care   1   2   3   4   5   6   7   Disapprove

5   Attitudes to the Morality of Digital Piracy:

The following set of questions is related to the morality of digital piracy. *Please read each statement carefully and tick which response applies most to your attitudes.*

I would not feel guilty if I pirated digital material

Strongly Agree   1   2   3   4   5   6   7   Strongly Disagree

Digital piracy goes against my principles

Strongly Agree   1   2   3   4   5   6   7   Strongly Disagree

It would be morally wrong to pirate digital material

Strongly Agree   1   2   3   4   5   6   7   Strongly Disagree

The General Self Efficacy Scale

To what extent does each of the following describe you? *Please indicate, on a personal level, how **True** or **False** you believe each statement to be by ticking the relevant box.*

Statement	Not at all true	Hardly true	Moderately true	Exactly true
I can always manage to solve difficult problems if I try hard enough.				
If someone opposes me, I can find the means and ways to get what I want.				
I am confident that I could deal efficiently with unexpected events.				
Thanks to my resourcefulness, I know how to handle unforeseen situations.				
I can solve most problems if I invest the necessary effort.				
I can remain calm when facing difficulties because I can rely on my coping abilities.				
When I am confronted with a problem, I can usually find several solutions.				
When I am confronted with a problem, I can usually find several solutions.				
If I am in trouble, I can usually think of a solution.				
I can usually handle whatever comes my way.				

Contact Details for Support Services

Samaritans: 1850 60 90 90 (available 24/7).