Title: A Study of The Factors Influencing Digital Piracy Adoption: Portraying Bangladesh Perspective

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Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Abstract

The aim of this thesis is to understand the concept of digital piracy in the context of Bangladesh. This study focused on the factors that can successfully predict digital piracy intention and its ultimate behavior. Understanding the predictors would give a clear indication of what makes people getting involved in unethical acts while considering it to be very much acceptable. This paper focused on the Theory of Planned Behavior and Neutralization Theory, where both can interpret one's intention towards a particular behavior. Theory of planned behavior explains how attitude, subjective norms and perceived behavioral control can influence piracy intentions, and Neutralizing Constructs shows in what ways one can justify his/her intention towards piracy. Data was collected from 203 respondents mostly from students, using a structured questionnaire. The findings show that all the predictors mentioned in the model have high significance level and can influence the intention and behavior of digital piracy. This study hopes to contribute in the field of information and technology.

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1. Introduction

The rapid expansion of the internet and the transformation of virtual commodities over the last couple of decades has caused a spike in the number of users copying and distributing virtual items without the permission of their registered owners, an event known as digital piracy (Belleflamme & Peitz, 2010). According to Go-Globe, in 2020, worldwide piracy websites got a total visit of 357 million per day, which was around 130.5 billion visits that year. Digital piracy persists and poses a severe threat to the expansion of creative markets, particularly in developing nations (Gema, 2018). The International Intellectual Property Alliance has placed numerous Asian nations on their target list for patent monitoring and security difficulties, particularly Russia, Taiwan, China, India, Indonesia, and Thailand (IIPA, 2018). Likewise, IVIR (2018) noted that illegal downloading is a major problem in nations such as Indonesia and Thailand. In the last couple of decades, Bangladesh has invested heavily towards becoming a digital economy. Despite this, infringement of copyright and data theft continue to be a major issue (Ahmed & Shafiullah, 2020). Watching movies that are available on various platforms, might even before they are officially launched, is a typical occurrence in Bangladesh. Very few people recognize that circulating without permission is a significant violation of the laws of the nation, including the Copyright Act 2000 and Rules 2006 and 2010 (Azam & Synthia, 2021). Bangladeshis are not financially stable enough to invest money on original virtual items. Currency value and living standards both are quite low for this nation compared to the first world countries, so even if they can afford licensed digital products, the value of money becomes a major concern. For instance, a fresh graduate who earns around 15,000 taka per month will not be interested to pay 5,000 takas for a video game or 848 takas for a movie in Amazon Prime (Ahmed & Shafiullah, 2020). When it comes to buy expensive products, Bangladeshi people tend to invest the lowest price for it (Gani et al., 2020).

In 2019, 2020 and 2021, Bangladesh ranked 116th in global innovation index. Bangladesh continues to experience significant rise in the ICT sector, given the availability of inexpensive cellphones and computers, the quick rise of social media, and the growing digitally advanced users of the nation (Zaman, 2019). With this emerging advancement, people of Bangladesh look for quality products but affordability is a major issue (Gani et al., 2020). Copyright piracy has emerged as a great problem in Bangladesh, and according to BSA in 2017 it was 84%. A country where technological advancement and poverty live together, piracy of digitized item is both a curse and a door towards innovation for them. Although Herjanto et al., (2014) opined that digital piracy increases artist popularity, and social welfare, along with introducing new ways for innovativeness, Harvard Business Review (2020) states that, situations in which the advantages of piracy surpass the drawbacks of piracy only occur few times, over a limited range of systems, and for a tiny percentage of items. People who engage in digital piracy are seen to have poor ethics (Serenko,2022). To fight their ill motives, Wolfe et al., (2008) suggested that computer viruses can combat such activity through punishing the offender. According to Wulandari (2014), people are influenced to continue conducting digital piracy by the availability of internet networks, internet connection bandwidth, and illegal downloading sites. According to Ajzen (1991), Theory of Planned Behavior can measure various kinds of intention and its behavior (e.g. smoking, online service usage, marketing services, substance use etc.) Neutralization theory is a useful base for understanding information systems security policy violations (Kim et al., 2014). This study intends to find out the significance of certain variables towards the intention and involvement in digital piracy. The concerned digital items will include movies, software, music, games, e-books etc. This study falls under the field of information systems, where the main focus will be on data, information piracy and factors affecting such action.

2. Literature Review

2.1 Digital Piracy

According to Al-Rafee & Cronan (2006), digital piracy is an act of illegally copying or duplicating software and media items. Audios, Visuals and software are the major portion of pirated contents (Serenko, 2022). This can happen through peer-to-peer sharing network sites, online acquisitions and from various blogs. Digital piracy occurs for various reasons, which also includes the price factor (Wang et al., 2009). Even if the digital items are very costly to produce, the marginal cost of illegally supplying or reproducing them is almost zero. Moreover, the pirated content carries the same value as the authorized one (Bhattacharjee et al., 2006). Then again, accessing virtual commodities does not necessitate a high level of technical competence (Serenko, 2022). Such easy road towards piracy has caused a great economic loss for almost every country (Liao et al., 2010). Criminal groups seek significant profit margins from massive duplication and infringing products. Understanding the incentives underlying end-user piracy–that is, the unlawful copying of patentee – is lot more difficult. It's puzzling to see such widespread violations of rules safeguarding digital products by people who are otherwise law-abiding citizens. (Belleflamme & Peitz, 2010). It can be considered a small criminality rather than a grand theft. However, although the amount stolen by one user may be little, when combined, the quantities are clearly considerable, totaling roughly $50 billion every year (Hill, 2007).

2.2 Theory of Planned Behavior

TPB model is basically a modification of the theory of reasoned action, introduced by Fishbein & Ajzen in 1975. This model was proposed to understand intention and its outcome in particular contexts (Yoon, 2011). A person's desire to perform a behavior can be predicted using the TPB model. This theory claims that all actions are intentional, reasoned, and deliberate, but it does not

take emotions into account (Brookes, 2021). According to Ajzen, (1991), motivation and behavioral control, both work behind behavioral achievement. It has three main factors affecting the intention towards a behavior – attitude, subjective norm and perceived behavioral control. Attitude in this model refers to extent to which a consumer views the behavior of interest in a positive or negative light. It requires thinking about the consequences of executing the action. Subjective norm is the perspective of whether the majority of individuals agree or disagree with that behavior. Perceived behavioral control relates to a person's sense of how easy or difficult it is to conduct the desired action. These three factors influence behavioral intention towards the actual behavior (Ajzen, 1991). In information systems, the TPB serves as a framework for explaining the complexities of human social interaction (Jokonya, 2017).

2.3 Attitude

An attitude is a collection of feelings, thoughts, and actions toward a certain entity, individual, object, or circumstance (Cherry, 2021). Attitude is one of the primary components of the TPB, and it is widely believed that it is the best predictor of intention (Allport, 1935). Among 29 out of 30 investigations, attitude was the greatest determinant of intention (Trafimow, 1996). Behavioral beliefs influence attitudes toward actions, which indicate the outcomes of such activity (Ahadiat et al., 2021). A user's favorable or unfavorable assessment of doing a particular behavior is referred to as attitude (Fishbein & Ajzen, 1977). It is generally thought to be a powerful predictor of behavioral intentions, based on the notion that individuals are more driven to commit a behavior in which they have a positive attitude. Prior to engaging in a behavior, an individual will assess the positive and negative repercussions of that behavior, and will act accordingly (Koay et al., 2021).

2.4 Subjective Norm

Subjective norm is a person's sense of social pressure to do or to refrain from performing a behavior. These are described as a person's view that the majority of individuals who matter to him believe he might or might not execute the activity (Ajzen, 1991). Subjective norms are founded on normative views, which is the desire of the other party to carry out such activities. The TPB model estimates these views by increasing the subjective odds of significant referents who consider that someone must conduct that behavior based on their behavior and their intentions (Cooper, 2016). Referent groups are people who are important for a person. For instance – family, siblings, friends, colleagues may have great influence on how an induvial will behave. However, the importance of the referent group depends on the person himself. A person can consider his friend's opinion to be more important than his parent's opinion. Those that contact with the individual frequently and intensely likely to have a dominant impact on him (Ajzen, 1991).

2.5 Perceived Behavioral Control

The whole set of available control beliefs, i.e., beliefs regarding the availability of circumstances that may promote or hinder behavior performance, is thought to influence perceived behavioral control. Perceived Behavioral Control (PBC) refers to how easy or challenging it is to conduct an activity (Ajzen, 1991). Perceived Behavioral Control is the ability of controlling beliefs, that is, viewpoints about variables contributing to or adversely impacting behavior implementation, as well as understanding about the strength of these variables (Ahadiat, 2021). Perceived hurdles of an action affect the intention and behavior of an activity (Godin et al., 1993). This can have internal control. For instance, an individual can think he or she can possess a skill, resource or ability. Again, it can have external control, for instance, when a certain task is easy to perform, and doesn't have any external barrier to it (Kidwell & Jewell, 2003).

2.6 Neutralizing Constructs

Piracy has a connection with people's ethical intentions (Gopal et. Al., 2004). Neutralization has been used to illustrate a wide range of illicit and penalty conduct (Morris & Higgins, 2009). Individuals who can verbalize explanations in advance for committing a crime seem to be more likely to engage in such activity (Maruna & Copes, 2005). Neutralizing theory according to Gresham Sykes and David Matza, can neutralize the guilt and safeguard the self-image of a person who got engaged in a criminal or deviant activity. It is a way for the criminal to justify his criminal act. The constructs of neutralizing include – i) denial of responsibility, ii) denial of pain, iii) denial of victims, iv) defense of necessity, v) condemnation of condemners. Applying one or more of these strategies, a person can persuade himself or herself that what he/she is doing is appropriate, regardless of what society standards require (Sykes & Matza, 1957). If an act is viewed as essential, one should not feel bad about performing it, even if it is ethically wrong in general (Minor, 1981). This factor may fit well to any unlawful conduct under the assumption that such crimes may be readily justified as "normal practice" or for the sake of some greater achievement. Self-reported piracy and engagement into it has neutralizing effect working behind of such behavior (Morris & Higgins, 2009). When people are engaged in online piracy, they unconsciously have little compassion for wealthy copyright holders and believe that their activities do not harm them (Serenko, 2022).

2.7 Intention Towards Engagement

The desire to behave ethically/unethically refers to a person's decision to do or to refrain from performing a given behavior. Intention is also viewed as a crucial predictor of behavior in the Model of Interpersonal Behavior (Triandis, 1977). The Model of Interpersonal Behavior (MIP), like the Theory of Planned Behavior, asserts that effective fulfillment of an intention necessitates

control over action or adequate "facilitating circumstances." The TRA (Fishbein & Ajzen, 2011) considers intention to be the most obvious and significant behavior motivator. Triandis (1977) states, “Behavioral intentions are instructions that people give to themselves to behave in certain ways”. Typically, completing a certain activity entail selecting one of several different alternatives. Furthermore, because the intention assessment cannot always take place close to the moment when the action is performed, a variety of variables may intercede between this assessment and the execution of the behavior. Behavior can be predicted when intention is confirmed (Balau, 2018).

3. Research gap

3.1 Theoretical

Since social control systems are ineffective in cyberspace, the incentives affiliated with easily obtained digital items are significant, as well as many contextual justifications can be referred when an opportunity for lawbreaking is offered. In such cases, neutralization theory proves to be a good foundation for digital item piracy intention (Hinduja, 2007).

3.2 Practical

In Bangladesh, digital piracy is a regular act. However, very few researches happened in this particular issue. News reports (e.g., TBSnews, Dhaka Tribune etc.) often talk about it, but concrete evidence and literature is still very low in number. This study will therefore, focus on Bangladeshi people, mostly on the young generation who have a certain level of academic competency.

4. Theoretical Framework

To understand piracy activities, many academic disciplines provided unique models to figure out what factors drive such behavior. In many studies regarding digital piracy, researchers have used TPB model. This has been a well-known intention model which can effectively forecast behavior

across a broad array of disciplines. To understand human decision making, Theory of Planned Behavior is very useful (Ajzen, 1991). This theory focuses on the specific user behavior of interest. The TPB seeks to provide a foundation for explaining and predicting any action. (Ajzen, 2015). The TPB is a development of the Theory of Reasoned Action (Fishbein & Ajzen, 1977; Ajzen & Fishbein, 1980). Three separate factors of intention are suggested by the TPB. The first one is the attitude, which corresponds to the extent to which a user evaluates or appraises the action (whether it is favorable or unfavorable). The second predictor is a social element known as subjective norm, which refers to the felt social pressure to do or to refrain from executing the activity. The third one is the level of perceived behavioral control, which relates to the observed ease or difficulty while performing the activity. Attitude, Subjective Norm and Perceived Behavioral Control can forecast the level of intention with high accuracy. In consequence, these desires can make up a significant percentage of the variability in action. Intentions are thought to convey the motivating forces that influence the final action; they show how hard individuals are ready to try, or how much effort they want to put in to accomplish the activity. The higher the desire to participate in an activity, the more likely its execution would take place (Ajzen, 1991). It is assumed that the relative effectiveness of attitude, subjective norm, and perceived behavioral control in predicting intention will vary across events and circumstances. Hence, in some situations, just attitudes have a major influence on intentions, while in others, attitudes plus perceived behavioral control are equally responsible for intentions, in some subjective norm might have a greater influence, and in others, all three variables might contribute independently and equally (Ajzen, 1991). The Theory of Planned Behavior can explain some of the most major theories in the scientific community, and it describes these theories that allows for the prediction and comprehension of specific actions in specific conditions (Ajzen, 1991). TPB has a great predictive relevance and is capable of critically

evaluating the concept of digital piracy (Yoon, 2012). On the other hand, Neutralization Theory constructs can clearly determine how an individual perceives his/her actions. It focuses more on their morality and judgment process. These constructs can help to understand one's psychology very well (Morris & Higgins, 2009). After analyzing various theories and data analysis results, we will find out -

"What factors influence intention towards digital piracy and results into its adoption?"

4.1 Attitude and Intention Towards Digital Piracy

Attitudes are described as a person's sentiments, ideas, and preferences toward specific components of his surroundings that are more or less constant. Attitude is very much of a judgmental bias towards an item or subject that has ripple effects, such as how a person reacts when confronted with an object of attitude. This is consistent with the assertion of Pardana, (2019) that an attitude is a positive or negative assessment of something or someone expressed in a person's ideas, emotions, or actions. It is about the appreciation or value a person wants to give to a certain situation, thing or individual (Pardana, 2019). In social psychology, attitude has been counted as the most crucial construct. A lot of study is done on the change of attitude and its persuasion (Cronan & Al-Rafee, 2008). One convincing justification for the importance of attitude is that it may be changed via influence and other ways. In many piracy intention researches, it is proven that attitude determines how the behavior is going to be. According to Peace et al., (2003), attitude has a great significance when it comes to the intention of illegally copying software. Similar results came when Cronan & Al-Rafee conducted research in 2008, which shows that attitude has a positive impact of the piracy intention. Similar finding was noticed in the study of Liao et al., (2010). That study was done on software and media piracy context. Yoon (2011) discovered that attitude and intention relationship in context of digital piracy is significant at the

0.01 level. Significant attitude – intention relationship was found in study of Pham et al., (2020). In different contexts, attitude's significance is always greater when the behavior is executed (Hati et al., 2019). Such as – in China (van Rooij, 2015), in Indonesia (Arli & Tjiptono, 2016), in Vietnam (Pham et al., 2020) etc. Thus, the following hypothesis can be addressed -

H1. Attitude has a positive direct impact on the intention to get engaged in digital piracy.

4.2 Subjective Norms and Intention Towards Digital Piracy

Subjective norms relate to whether to indulge or not to indulge a given behavior. It can be social pressure or perceived expectations or how the individual values those expectations. It refers to the social acceptance of a particular action (Ajzen, 1991). In case of digital piracy, it means whether the surrounding people of an individual accept this piracy behavior or not, or whether they judge the individual for doing piracy or not, and if this judgement has any impact on the individual's piracy behavior. Subjective norms have been hypothesized to impact intention since one's conscientious viewpoint toward a given activity is directly or indirectly influenced by important individuals (Al-Rafee & Cronan, 2006). In earlier studies, the effect of subjective norms on developing intention was shown to be lower than the impact of attitude (Ham et al., 2015). According to one of the studies, it is found that subjective norm was not impacting digital piracy (software & media) intention (Al-Rafee & Cronan, 2008). The similar result was found on a study of Liao et al., (2010). However, opposite findings are also there. Subjective norm affects human intentions in a positive direct way in case of software pirating (Peace et al., 2003). According to a research of Yoon (2011), subjective norm has a great impact on the intention towards digital piracy where the significance level is 0.01. Then again, relationship between subjective norm and intention was found to be insignificant in the study of Pham et al., (2020). Shepherd and O'Keefe in 1984 analyzed that subjective norm has a great influence on intention towards a particular

behavior. Social values, factors and norms can affect one's intention towards digital piracy (Phau et al., 2014). So, we can hypothesize the following -

H2. Subjective norm is positively related to intention towards digital piracy

4.3 Perceived Behavioral Control and Intention Towards Digital Piracy

It is described as a person's sense of how tough it is to complete a specific task (Ajzen, 1991). Performance of a particular behavior highly depends on the available resources, favorable situations and opportunities. These resources and opportunities have to be perceived by the induvial who is going to perform that behavior. The more convenient the situation will be, the more likely a person will conduct a behavior (Hardin-Fanning & Ricks, 2017). In case of digital piracy, PBC refers to the ease of finding out the digital products, or the ease of using it. If the digital products are easy to find, easy to download, and easy to possess by the individual then it shall positively impact the intention towards digital piracy. According to Peace et al., (2003), perceived behavioral control has a positive impact on illegal software copying. PBC also impacts intention in a positive direct way in case of software and media piracy (Cronan & Al-Rafee, 2008). Similar result was found in a study of Liao et al., (2010). In 2011, Yoon discovered that PBC has a great impact on digital piracy intention at a significance level of 0.01. Relationship between PBC and intention towards digital piracy was found to be very significant (Pham et al., 2020). Previous researchers have found that perceived behavioral control is highly related to the propensity to pirate virtual goods (Chen et al., 2009; Morton and Koufteros, 2008). They discovered that individuals who are competent to steal digital items with minimal effort are more likely to participate in digital piracy. Therefore, we can hypothesize that -

H3. Perceived behavioral control has a positive direct effect on digital piracy intention.

4.4 Neutralizing Constructs and Intention Towards Digital Piracy

If an employer cuts salary of his employees, they might find it legal to steal from the employer, thinking that they deserve that money, and they are the rightful owner of it. Most miscreants, according to Sykes and Matza, share similar values, beliefs, and attitudes as law-abiding individuals. Some teenagers, on the other hand, discover capabilities that help them to effectively "neutralize" such ideals and behaviors. According to this view, miscreants reject the limiting impacts of regulations and employ these neutralizing strategies to lessen current societal grasp (McDonald, n.d.). In the context of digital piracy, according to the study of Morris & Higgins, (2009) neutralizing constructs and piracy intention has positive significant relationship. In one of the studies of digital piracy, Asian and American students took part to see if they justify their piracy acts or not. In the study, mostly the Asians were seen to neutralize their piracy intentions (Yu, 2013). Again, in another experiment it was seen that university students were perceiving the piracy act as non-harmful, which is a technique of neutralizing (Smallridge & Roberts, 2013). Describing the influence of neutralization theory in music piracy, Ingram and Hinduja (2008) discovered that neutralization techniques developed by Sykes and Matza (1957) were statistically significant in predicting music piracy intention in a survey of 2,032 students of one university. According to neutralization theorists, justifying thoughts emerge prior to a behavior (Morris & Higgins, 2009). Therefore, we can come up with the following hypothesis -

H4. Neutralizing constructs have a positive impact on the intention towards digital piracy.

4.5 Engagement in Digital Piracy

According to Unified theory of acceptance and use of technology, and Theory of Planned Behavior, intention leads to actual behavior. The greater a person's intention, the more likely that action will be executed (Balau, 2018). Ajzen (1985) found that intention is a very suitable variable

to measure the actual behavior. The TPB model suggests that attitude, subjective norm and perceived behavioral control predicts intention, and subsequently, intention predicts the actual behavior. In numerous social psychology theories of behavior, intention is the essential indicator of an individual's psychological preparedness for behavior. The "gap" among the behavioral intention and behavior is not insignificant (Sheeran, 2002). Any behavior shall occur if the intention is strong enough, and if behavior is in volitional control. In many cases intention might end up in behavior, in many cases the behavior might not take place (Ajzen, 1991). According to the study of Serenko (2022), relationship between the intention towards digital piracy and its behavior was highly significant at 0.01 level. Furthermore, in another study, digital piracy behavioral intentions positively and directly influenced its behavior at the significance level of 0.001. (Pham et al., 2020). Similar type of significance was found in the study of Taylor in 2012. Therefore, we can hypothesize –

H5. Intention towards digital piracy has a positively direct effect on the engagement of it.

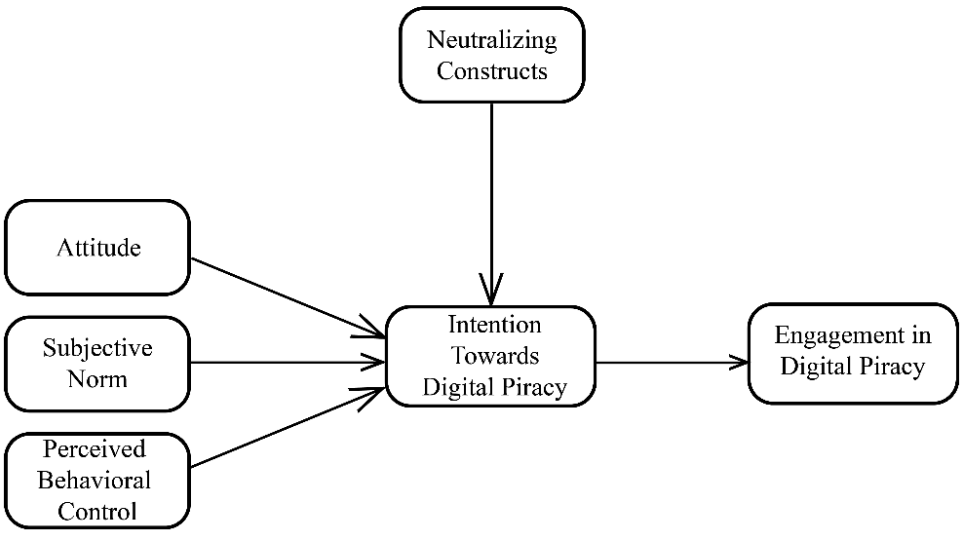

Figure 1: Proposed Structural Model

The proposed research model is based on the Theory of Planned Behavior. Proposed factor is Neutralizing Constructs that enables people to justify their criminal act. Based on the hypothesis, the analysis will be done, and later we will analyze if all the independent variables truly affect the intention toward digital piracy. Lastly, we will see if the intention leads to the actual behavior or not. Here, the dependent variable is the intention (INT) & engagement (ENG), and independent ones are – attitude (ATT), subjective norms (SN), perceived behavioral control (PBC) and neutralizing constructs (NEU).

5. Methodology

For this study the researcher aimed to follow quantitative research methods. Quantitative research method is appropriate for this paper, as it allows to visualize situations into statistical results. Sample size can be as large as needed (Mander, 2022). The results will be in numbers. Hence, it will be easier to explain the analysis part.

The sample size was determined using the GPower 3.1 software. While calculating the sample size, the criteria were set to F-test and Linear Multiple Regression: Fixed Model R^2 deviation from zero. F – test is used for testing hypotheses and comparing variances. While testing the hypotheses if the results are significant, then we can reject the null hypotheses or else we cannot. In our case we want to figure out if the variables have impact on the dependent variable or not. Therefore, we are using F-test. Another criteria was set to Linear Multiple regression: Fixed model. Conducting regression analysis is a practical way for determining which factors have an influence on a certain topic of interest. It determines to what degree the independent variable is affecting the dependent variable (Alchemer, 2021). On the other hand, linear multiple regression is used when we want to see how strongly multiple independent variables affect a particular dependent variable (Bevans, 2020). Again, this goes with our model. As our model has 4 predictors (ATT, SN, PBC, NEU)

affecting the dependent variable (INT), the sample size was determined to be 129. However, a total of 203 responses were collected in the end where majority of the respondents were undergraduate or postgraduate students.

The researcher has used Convenience Sampling method. As our target audience was anyone who uses digital items, a wide range of age group was able to participate in the survey. Convenience sampling can also be called grab/opportunity or accidental sampling. It is a type of non-probability sampling and the targeted population is near to the researcher. Non probability sampling is when the probability of the respondent participating in the survey cannot be measured. Anyone around the researcher can be a part of the sample. It can be students, service holders, employers etc. To collect sufficient number of responses, the researcher will circulate the questionnaire to everyone around her, to as many people as possible. Hence, it is called convenient sampling. It is a quick, easy and inexpensive way of collecting the data for research (QuestionPro, n.d).

An online survey questionnaire (google form) was distributed among the respondents. The questionnaire was structured and close ended. Structured questions can be nominal, ordinal, scaled, multiple responses etc. In our case scaled questions were used (Strongly agree – Strongly disagree). Structed questions can be open ended and close ended. With the help of it, it is easy to collect vast amount of data from a large group of respondents. Later, by analyzing the data it is easy to find out the results for that subject group. Close ended questions are definite and rigid. Thus, it is very easy to draw results from their answers (MBA Skool, 2022).

Questions were based on two theories – i) Theory of Planned Behavior ii) Neutralization Theory. Survey questions were derived from previous two literatures based on digital piracy (Pham et al., 2020; Morris & Higgins, 2009). Each variable was measured by a 7-point Likert scale (Strongly Agree – Strongly Disagree) to find out their significance level.

Table 1: Profile of Respondents

	Frequency	Percentage
Age Range		
< 18	3	1.48
18-24	128	63.05
25-34	65	32.02
35-44	6	2.96
45-54	1	0.49
Gender		
Male	84	41.38
Female	119	58.62
Study Level		
School	1	0.49
College	11	5.42
Undergraduate	150	73.89
Postgraduate	41	20.20
Likes Digital Products		
Yes	199	98.03
No	4	1.97

A few demographic information was collected. The table shows that majority of the respondents were between 18 to 34 age group, and almost 93 percent of the respondents were undergraduate or postgraduate students. A big portion of them were female (58.62%) and the rest were male (41.38%) Furthermore, when asked about their preference, 98% of them agreed that they liked using digital items (e.g., software, games, music, online movies, e-books etc.).

6. Data Analysis

For the data analysis the researcher used Partial Least Square (PLS) analyses, while using the SmartPLS software. Using this software is hassle free and easy, also it gives deep insights of the data. Its powerful modeling ability creates path models in few minutes. Path analysis (modelling) is used in statistics to explain the directed dependencies between a group of variables (Crossman, 2019). In our case, we tried to check the dependencies between ATT & INT, SN & INT, PBC & INT, NEU & INT, INT & ENG. SmartPLS is also good for checking data normality. If there is a

data anomaly, it can impact not only the capacity to produce significant findings, but also the functionality of scores in preparing quality research. The goal of implementing reliability and validity in investigation is to make sure that the data is reliable and consistent, and that the findings are exact (Mohajan, 2017).

6.1 Measurement Model

The measurement model was tested with two step procedures (validity and reliability) suggested by Anderson and Gerbing in 1988 (Alzahrani et al., 2017). Later on, with the help of structural model, the hypothesized relationships were analyzed and through bootstrapping method the significance of the variables were measured (Hair et al., 2014). Lastly, remarks were given based on the significance level to the relationships between the variables. The researcher imported all the survey data to SmartPLS and organized them according to the model. After connecting the variables based on their relationship, PLS algorithm was checked.

We began with evaluating the convergent validity (Hair et al., 2014), by assessing Average Variance Extracted (AVE) & Composite Reliability (CR). According to Hair et al. (2014), CR should be > 0.7 and AVE should be > 0.5. Here, table 2 shows that AVE is > 0.5 and CR is > 0.7. Next, we evaluated discriminant validity (Fornell and Larcker, 1981). Here, we compared the square root of AVE values with the correlations. According to table 3 all the square root of AVE values (right side bolded values) are greater than the off-diagonal correlations. It proves that there is enough discriminant validity.

Based on the above discussion, we can say that the measures of this research carry enough validity and reliability. It means, under the similar conditions, these results can be produced again and the results do measure what they are meant to measure (Middleton, 2019). Therefore, we can conclude that it is a consistent and accurate measure.

Table 2: Measurement Model

Construct	Composite Reliability	Average Variance Extracted (AVE)
ATT	0.933	0.874
ENG	0.920	0.742
INT	0.957	0.918
NEU	0.918	0.508
PBC	0.866	0.619
SN	0.886	0.667

Table 3: Discriminant Validity

	ATT	ENG	INT	NEU	PBC	SN
ATT	**0.935**					
ENG	0.713	**0.861**				
INT	0.663	0.716	**0.958**			
NEU	0.707	0.671	0.636	**0.713**		
PBC	0.598	0.725	0.586	0.633	**0.786**	
SN	-0.583	-0.611	-0.589	-0.497	-0.504	**0.817**

Note: Values on the diagonal (bolded right ones) are the square root of AVE, and off-diagonals are correlations

6.2 Structural Model

Then the hypotheses were tested through bootstrapping method (Hair et al., 2014). Bootstrapping is a statistical method that resamples a single observation in order to generate a large number of simulated observations. This procedure calculates error variance, statistical significance, and hypothesis testing (Joseph, 2020). The table 4 shows the p values (significance level). If the p value is < 0.05 it shows a significant relationship between the dependent and independent variable. A p-value expresses the likelihood of getting the measured values on the assumption that the null hypothesis is true. The stronger the significance level of the observed difference, the lower the p-value. A p-value of 0.05 or less is commonly regarded as statistically significant (Beers, 2022). The bootstrapping

procedure shows – attitude and intention, subjective norm and intention, perceived behavioral control and intention, neutralizing constructs and intention and lastly intention and engagement in digital piracy all these relationships have p values < 0.05. Therefore, these relationships prove the hypotheses to be true. In this study, all the variables are proven to have a significant relationship with the intention towards digital piracy. Moreover, intention towards digital piracy is also positively related to the engagement of piracy behavior.

Table 4: Hypotheses Testing

Relationships	Beta Values	T Values	P Values	Remarks
ATT -> INT	0.265	3.393	**0.001**	**Supported**
INT -> ENG	0.716	21.364	**0.000**	**Supported**
NEU -> INT	0.226	2.900	**0.004**	**Supported**
PBC -> INT	0.164	2.452	**0.015**	**Supported**
SN -> INT	-0.239	3.693	**0.000**	**Supported**

Significance Level: *(p <0.001), **(p<0.01), *(p<0.05)**

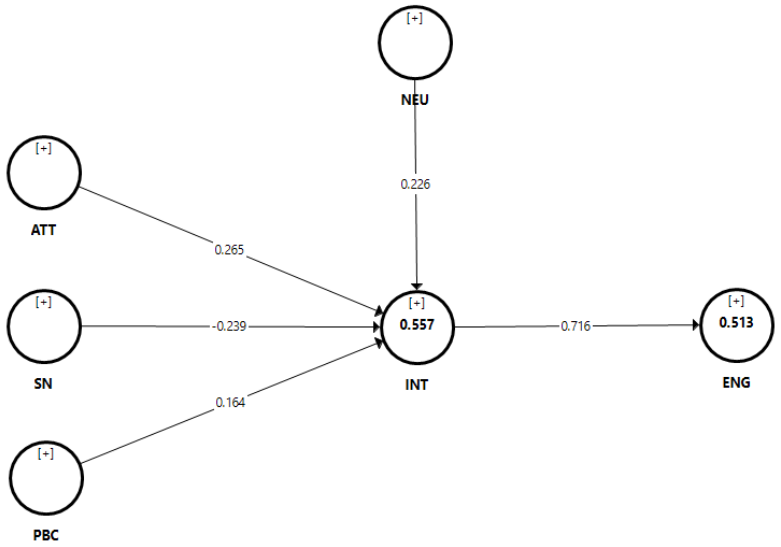

Figure 2: Structural Model

7. Discussion

It is determined that all the hypotheses are supported. Therefore, it can be stated that the proposed model fits well with the data we have collected. In the findings, attitude and subjective norm has the highest significance than other variables, neutralizing constructs are also found to be effective and intentions also show a highly significant relationship with engagement. Now, we will discuss the importance of each variable and will mention researches with similar type of findings –

7.1 Attitude

In a past survey on illegal software duplication it was discovered that attitude had the greatest impact on the willingness to pirate software (Peace et al., 2003). According to Pham et al., (2020) attitude and intention towards digital piracy has a good significance level (p value 0.031). They showed that attitude plays an important role on how someone perceives digital piracy, and they found out a positive direct relationship between piracy and attitude. However, in this study attitude towards digital piracy intention is more significant with a p value of 0.001. The measurement scale was similar to other researches. Our finding also supports other studies where attitude is proven to be in a positive direct relationship with digital piracy intention, such as - van Rooij, (2015), Alam & Sayuti (2011), Arli & Tjiptono, (2016) and many more.

7.2 Subjective Norms

Subjective Norm again has great significance in the study by Pham et al., (2020). According to their research subjective norm was one of the most positively related variables which is again true in our case. Subjective norm proves to have the highest significance, which is even more than attitude. Looking at the findings we can interpret that people around us do not disapprove it when someone near to them gets involved in it. This means, digital piracy acts are not discouraged by

people whom we consider close and important to us. Similar findings can also be discovered in other studies of - Phau et al., (2014); Loch and Conger, (1996).

7.3 Perceived Behavioral Control

In our case perceived behavioral control seems to have less significance (p value 0.015) than attitude and subjective norm. However, in the study done by Pham et al., (2020) found it highly significant. Therefore, we can see a slight change in the finding. This finding was rarely reported in most of the earlier studies, but it verified our assumptions regarding the importance of technology and users' technical competence in this type of behavior. Also, it indicates that people are getting more used to the technology and we can sense the high necessity of deterrence technologies.

7.4 Neutralizing Constructs

According to the study done by Morris & Higgins (2009), it was shown that neutralizing effect has a significant relationship with the willingness towards digital piracy act. In our study, we have found the similar result. Here, it can be said that neutralizing constructs – can more strongly influence the intention towards digital piracy compared to perceived behavioral control. Although neutralizing constructs are less mentioned in the information systems field, this study can claim its high significance on the intention of the users of information and technology. The results are alarming as neutralizing constructs in human beings are threat to the cyber security and mankind, therefore, it is also to be considered what can truly fight such justifying nature of individuals.

7.5 Engagement Towards Digital Piracy

This was another motive of this paper, to find out if the intention towards digital piracy actually leads into the behavior or not. In the study of Pham et al., 2020 they found that intention towards

digital piracy has a strong direct relationship with its engagement. We found the same results (high significance level). It is thus obvious that if intention is there, engagement will be there too. Interpreting the findings, we can say that when a person feels the necessity of a digital product, whether it be a movie or a software or even an e-book, he or she will find a way to get it which ensures the behavior or execution of piracy. Therefore, it can be concluded that intention towards digital piracy leads to its behavior which again ensures the effectiveness of the Theory of Planned Behavior and Neutralizing Constructs in human nature. Some similar types of findings are – Taylor et al., (2009; Yoon (2011); where they found the digital piracy intention and engagement relationship to be significant.

8. Future Implications

Digital piracy risk will increase as technological advancement keeps increasing every day. It is important to explore this particular topic for the digital service providers and their survival in the market. As neutralizing constructs factor is less researched, more study can take place on this. This factor has one alarming fact that people tend to normalize criminal acts when they want something to happen their way. Citizens who talk about morals are involved in it, which raises a question on their subconscious criminal intentions. Hence, this neutralizing factor can be explored more not only in case of digital piracy, but also in cases of cybercrime or bullying. This study did not take income factors in the analysis, but it is a major factor for those who prefer to steal online products rather than spending money on it. Along with digital piracy intention and factors affecting it, more research can happen on how to stop this behavior. Very few researches focused on this aspect. Digital piracy falls under the field of cyber security as well, which also involves cyber security providers. It will be an interesting thing to explore if those people give their insights on such activity. As in most cases, those who violate the privacy, are often the ones who are good at

protecting it. Many peer-to-peer sharing websites, torrent sites are run by talented minds. Some research on this particular group of people can bring good insights on digital piracy and how to build deterrence technologies to restrict such occurrence.

9. Summary

This study is an extension to the existing literature of digital piracy intention. With the help of this study, we found that the three factors of theory of planned behavior can strongly measure the intention towards digital piracy. A unique predictor for digital piracy intention was measured in this study which is the neutralization constructs. Neutralization theory has five constructs which justifies the criminal acts a person executes, and this variable was proved to be a strong predictor of digital piracy intention which is a sort of criminal act. This study was done on students mostly, who are usually law-abiding citizens, however in this context they found to be supporting this piracy activities. Asian countries tend to use the most pirated items and there must be some logic behind of it. It might be their willingness to learn new technology, or it might be their lower income rate. In all cases it is causing economic loss, and normalizing unethical intentions. The digital item producers invest huge money on their production and innovation, and their innovations get stolen easily. The ultimate sufferers are the owners of such products and the worldwide economy. The predicted revenue is never generated, and often times technology-based companies lose their motivation. Throughout the paper, a lot of Asian country researches were mentioned and they also found this similar thing happening in their countries. As it is now proved through many researches that people often find this act as a normal practice. Therefore, it is time for the authoritative figures to think how can this be stopped or how can they bring some alternative and acceptable way to deal with people who are often getting involved in it.

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Questionnaire

Attitude	
ATT1	My attitude towards digital piracy is favorable/unfavorable
ATT2	I think digital piracy is harmful/beneficial
ATT3	I think the idea of digital piracy is foolish/wise
ATT4	I feel digital piracy is good/bad
Subjective Norms	
SN1	If I pirated digital products, most of the people who are important to me would disapprove
SN2	Most people who are important to me would look down on me if I pirated digital products
SN3	No one who is important to me thinks it is okay to commit digital piracy
SN4	My colleagues/classmates think digital piracy behavior is wrong
Perceived Behavioral Control	
PBC1	For me, it is easy to possess pirated digital products
PBC2	I have the knowledge and ability to make use of pirated digital products
PBC3	I could find pirated digital products if I wanted to
PBC4	Pirating digital products is entirely within my control
Neutralizing Constructs	
NEU1	I shouldn't have to pay for online items when most of the people I know download for free
NEU2	The university should be responsible for providing access to necessary software or other digital media; this way people would not have to download it illegitimately.
NEU3	If a college student gets in trouble for using a software file from an illegitimate source instead of paying for it, it is more the university's responsibility because they should provide the software to students.
NEU4	Artists make so much money from concerts, videos, sponsors, and other sources, they aren't really hurt by illegal downloading
NEU5	Digital item companies have so much money, it doesn't really matter if their products get pirated
NEU6	Online item producing companies are not really harmed when students download their products for free
NEU7	Illegitimate downloading is a victimless crime
NEU8	I don't really buy into the idea that digital media companies lose much from illegitimate downloaders and filesharing; my (or other students') downloading doesn't really hurt them
NEU9	If digital product companies don't want students to download their products for free, they should have better online security.
NEU10	Online item producers have been ripping people off for years, so illegitimate downloading is justified

NEU11	It's really not students' fault that they download digital items rather than paying for it; prices are just too high these days
NEU12	Illegitimate downloading should not be frowned on when people need those programs to do their job or their class work and the university doesn't make the software as available as it should be
NEU13	I think it is okay to use copied software and medias for research purposes, because everybody shares the benefits
NEU14	People who download necessary software or digital item because they can't afford it should not be held liable for doing such things
NEU15	If I had to pay for all the online items that I use, I would likely have to work more to pay for things like food, tuition, clothes, and so on
Intention Towards Digital Piracy	
INT1	I intend to pirate digital products in the near future
INT2	If I have a chance, I will pirate digital products
INT3	I never commit digital piracy
Engagement In Digital Piracy	
ENG1	I often pirated digital products
ENG2	I often used pirated digital products
ENG3	I often share pirated digital products
ENG4	I encouraged other people to use pirated digital products