



Evaluating Awareness and Legal Challenges in Online Virtual Property Crime in China: Building Foundations for Enhanced Protection Strategies

¹² Li Wei, ³⁴Ma. Xenia Z. Bitera,

¹Student, College of Criminology and Criminal Justice, Lyceum of the Philippines University ,

² Teacher, Huainan Normal University

³Faculty, College of Criminology and Criminal Justice, Lyceum of the Philippines University Batangas ,

⁴Faculty, Center for Research and Innovation, ceum of the Philippines University Batangas

Abstract: In the dynamic digital landscape, cyberspace presents opportunities and risks, necessitating robust protection against unscrupulous activities. This descriptive-correlational study focuses on online virtual property crime awareness and legal issues in China to enhance safeguarding measures. The study aims to profile respondents, assess online virtual property crime awareness, explore legal issues, identify differences across demographic groups, and establish relationships between awareness and legal issues. The research involves 305 participants, including college students, teachers, unemployed individuals, public institution staff, government personnel, enterprise workers, and business professionals who have encountered online virtual property crimes. The findings show that most respondents are male, aged 18-39, undergraduates, and college students. They moderately engage in virtual property, primarily within online gaming, typically trading 500-200 yuan worth of virtual currency. Respondents exhibit high awareness of online virtual property crimes, information sources, and protection mechanisms but express strong concerns about the effectiveness of legal protection for infringed or cheated online virtual property. Significant differences in awareness and legal issues exist among different demographic groups, and a notable relationship emerges between awareness and legal issues. The study's outcomes inform the proposal of enhanced protection strategies for online virtual property.

Keywords - *online virtual property; virtual property crime; online legal issues; digital literacy*

I. INTRODUCTION

In the rapidly evolving landscape of the information age, cyberspace has become an expansive realm offering significant opportunities and, concomitantly, substantial risks. One of the growing challenges pertains to the illicit acquisition of online virtual property—a virtual phenomenon that can yield substantial economic gains for wrongdoers while inflicting severe social harm. However, a distinct disconnect exists between virtual and tangible criminal activities, resulting in notable differences in the qualitative and quantitative aspects of illicitly obtaining online virtual property as observed in judicial practice (Dwivedi, 2023). China has seen a growing trend of online virtual property crimes in recent years. Taking virtual currencies, which have risen in recent years, as an example, cases involving bitcoin show a year-on-year upward trend, according to a search on China's adjudication documents website: from 12 documents in 2014 to 618 in 2019. This distinction between criminal acts in the virtual and physical realms poses a unique challenge. As a result, it becomes imperative to scrutinize the current state of awareness and the legal framework surrounding these offenses in order to develop a comprehensive approach aimed at safeguarding the interests of online users and curbing the burgeoning menace of virtual property crime.

In practical terms, the array of convicted crimes in the realm of online virtual property spans a wide spectrum, encompassing offenses such as theft, fraud, job embezzlement, and computer crimes like the illicit acquisition of computer information system data and the destruction of computer information systems (Rakhmanova, 2018). However, despite similarities between these acts, disparate charges are often imposed, leading to contrasting sentencing standards, particularly for property crimes (Kaplan, 2021). This incongruity in the penal consequences undermines the fundamental principle of adapting guilt to punishment and raises concerns about the efficacy of legally prescribed punishments for specified crimes. Consequently, the sentencing consequences for property crimes appear disproportionately severe compared to similar offenses, highlighting the critical need for a coherent and equitable legal framework. Upholding the principles of justice and fairness is essential to bridge this gap, ensuring that online virtual property crime sentencing is proportionate and aligned with the gravity of the offenses committed (Seguin, 2019).

In the quest for an enhanced protection system, it is imperative to conduct a comprehensive examination of the multifaceted nature of online virtual property crime. These offenses have a substantial economic impact and are intricately intertwined with cyberspace's workings, necessitating innovative approaches to tackle them effectively. This article delves into the extent of awareness and explores the legal intricacies surrounding online virtual property crime in China. By scrutinizing the existing legal framework and highlighting disparities in sentencing, the study aims to identify areas needing reform and formulate comprehensive policies to bolster protection against such offenses. Ultimately, the goal is to establish a fair and just legal landscape that safeguards the rights and interests of every citizen while deterring potential wrongdoers in the virtual realm (Scholz, 2021).

Objectives of the Study

The study aimed to determine the Extent of Awareness and Legal Issues on Online Virtual Property Crime in China as a Basis for Enhanced Protection. Specifically, this study aims to describe the respondents' profile in terms of sex, age, educational attainment, occupation, participation in virtual property in terms of frequency in playing online games and amount of virtual currency traded online; assess the extent of awareness of online virtual property crime in terms of type, sources type of online virtual property, source of information, and providing protection; determine the perception on the observations as to issues in the legal protection of online virtual property, test for significant difference of responses on the extent of awareness of online virtual property crimes, observations as to issues in the legal protection of online virtual property when grouped according to profile variables; test for significant relationship among extent of awareness of online virtual property crimes and observations as to issues in the legal protection of online virtual property; and based on the results of this study, propose enhanced protection strategies for online virtual property.

Literature Review

Online Virtual Property Crime in China

Online virtual property crime has emerged as a significant concern in the digital era, encompassing illicit activities conducted through internet platforms, computer networks, and other online technological means, specifically targeting virtual assets in cyberspace (Gao, 2019). This pressing issue has gained attention not only in China but also on a global scale. As the internet becomes increasingly pervasive and virtual assets are extensively utilized, the value of online virtual property has grown significantly, making it an attractive target for cybercriminals (Anderson, 2019).

Types of Online Fraud Crime

Online fraud involves criminal activities that deceive others into surrendering their virtual property through false information or deceptive transactions. Activities like fraudulent transactions, fake investments, and false advertisements fall under the purview of online fraud. Criminals typically use fake trading platforms or bogus online stores to trick victims, enticing them to purchase counterfeit goods or promise high returns, thereby swindling their virtual assets. Recent studies indicate that online fraud crimes are becoming increasingly rampant in the Internet age, with ever-evolving tactics necessitating strengthened regulatory and enforcement efforts.

Types of Online Gambling Crime

Online gambling refers to the criminal activity of engaging in illegal gambling through internet platforms. Criminals exploit the anonymity provided by virtual currencies to conduct illegal gambling operations, ensnaring many respondents who find themselves unable to break free from the addictive allure. In recent years, online gambling crime has become a global issue, and its containment requires enhanced international cooperation and technological means (Feijóo, 2020). Law enforcement agencies

around the world are facing a daunting task in combating online gambling crime due to its border-less nature and ever-evolving tactics.

Types of Online Copyright Infringement Crime

Online copyright infringement refers to criminal activities that violate the legitimate rights of others on the internet. Online piracy, pyramid schemes, and intellectual property infringement all fall within the scope of online copyright infringement (Hunter, 2021). Criminals engage in unlawful profit-making by disseminating pirated software and infringing on trademarks and copyrights online. Online copyright infringement crime covers a wide range and poses significant challenges, necessitating the comprehensive use of legal and technological means to curb it.

Countermeasures for Threat of Online Theft Crime

Strengthening cybersecurity awareness among users is paramount, as it empowers them to recognize and respond to potential risks associated with virtual asset transactions. Educating individuals about safe online practices, such as using strong passwords and avoiding suspicious links, can significantly reduce the vulnerability to cyberattacks. Moreover, relevant businesses and institutions must prioritize enhancing of security measures to fortify their online platforms against potential breaches and fraudulent activities during virtual property transactions (Kshetri, 2023).

Impact And Loss Caused By Cyber Virtual Property Crimes

Impact and Losses On Individuals

Online virtual property crime directly and profoundly affects individuals, resulting in various adverse consequences. Personal virtual property may suffer attacks from crimes such as theft, fraud, and infringement, leading to significant financial losses. The leakage and misuse of personal information may lead to identity theft and privacy breaches, causing severe psychological and economic distress for individuals. Furthermore, financial repercussions may arise from unauthorized transactions using stolen virtual assets, leading to potential hardships in real-life finances.

Impact and Losses on Businesses

Online virtual property crime also significantly impacts and losses on businesses. Enterprises' virtual assets may face serious security threats. Theft of virtual currencies and virtual goods of game developers and operators can result in revenue losses and damage to brand reputation. When a company's virtual assets are stolen or manipulated, users may become suspicious of their credibility, leading to sustained impacts on the business. Additionally, frequent occurrences of online fraud can result in user attrition, affecting the company's user retention and business growth.

Impact and Losses on the Nation

Online virtual property crime significantly affects a nation's economy and social order. Large-scale online virtual property crime may result in substantial economic losses, impacting the stability and development of the national economy. Theft and gambling of virtual currencies may lead to massive capital outflows, affecting the financial system's stability. Additionally, the increasing prevalence of online virtual property crime may burden law enforcement and judicial departments, affecting the efficiency of social governance (Owens, 2021).

II. METHODS

Research Design

This study adopts a quantitative descriptive research methodology to assess the extent of awareness and legal issues surrounding online virtual property crime in China. The key purpose is to validate formulated hypotheses pertaining to the current situation to provide clarification and explanation. Descriptive research is well-suited for examining the existing conditions of objects, individuals, and events, allowing for a comprehensive exploration of the subject matter.

Respondents of the Study

Nine nurse entrepreneurs were chosen from the initial respondents. In qualitative analysis, the researchers randomly picked 25 respondents from selected areas of Region IV-A CALABARZON. The respondents included 305 respondents, determined by an effect size of 0.25, a power probability of 0.95, and an alpha level of 0.05 using G*Power3.1.9.2. They were college students, teachers, unemployed people, personnel of public institutions, government personnel, enterprise workers, and individual business personnel who have experienced online property loss, social account theft, important information leakage, and loss of important personal rights.

Data Collection Instrument

In this study, data collection primarily relies on questionnaires developed by the researchers. The questionnaire is structured into three distinct sections. The first section captures respondents' demographic profiles, encompassing gender, age, educational background, occupation, and their involvement with virtual property in online gaming. The second section assesses

respondents' awareness of online virtual property crimes. This is done through a 4-point scale, enabling the identification of knowledge gaps that can inform the development of targeted awareness campaigns and educational initiatives. The third section of the questionnaire centers on respondents' observations concerning legal protection issues related to online virtual property. This section also employs a 4-point scale to pinpoint key challenges and potential areas for improvement in virtual property protection.

The instrument underwent a rigorous validation process involving input from the researcher's advisor and three subject experts, one with extensive experience in workplace violence from the hospital setting and two from the academic sphere. A pilot testing phase was conducted to ensure its reliability, and the results demonstrated excellent internal consistency. The computed Cronbach's alpha values for various sections of the questionnaire, such as types (0.969), source type of online virtual property (0.969), source of information (0.978), providing protection (0.965), and observations of issues in the legal protection of online virtual property (0.986), confirmed the instrument's high reliability.

In terms of the sampling technique, this study employs [insert specific sampling technique, e.g., random sampling, stratified sampling] to ensure the selection of a representative sample from the [type of population, e.g., college students, teachers, unemployed individuals, public institution personnel, government employees, enterprise workers, individual business professionals] who have had direct experience with online virtual property crimes. Inclusion criteria encompass [specify criteria for inclusion, e.g., individuals who have encountered online virtual property crimes], while exclusion criteria involve [specify criteria for exclusion, e.g., those without experience with online virtual property crimes].

Data Gathering Procedure

Data for this study was collected through the administration of a survey questionnaire. Privacy and confidentiality were paramount in this research. The questionnaire was distributed anonymously, safeguarding the personal information and opinions of the respondents. This approach created an environment where respondents felt secure expressing their genuine viewpoints objectively.

In terms of the sampling technique, a [insert specific sampling technique, e.g., random sampling, stratified sampling] method was employed to ensure the selection of a representative sample from the [type of population, e.g., college students, teachers, unemployed individuals, public institution personnel, government employees, enterprise workers, individual business professionals] who possessed direct experience with online virtual property crimes. Inclusion criteria were defined as [specify criteria for inclusion, e.g., individuals with prior encounters with online virtual property crimes]. In contrast, exclusion criteria were established to exclude [specify criteria for exclusion, e.g., those without experience with online virtual property crimes].

Data Analysis

The following statistical tools were used to perform data analysis. Frequency and percentage distribution were used to describe the demographic profile of the respondents. Weighted mean and ranking were utilized to assess the extent of awareness and legal issues on online virtual property crime in China. The data were subjected to normality test to determine if parametric or non-parametric tests are necessary. Therefore, the Mann-Whitney U test for two groups and the Kruskal Wallis test for three groups were used as part of the parametric and non-parametric tests to determine the significant differences. Likewise, Spearman rho was used to test the significant relationship between the three variables. The following Likert Scale assessed the variables: 3.50 – 4.00 – Highly Aware; 2.50 – 3.49 – Aware; 1.50 – 2.49 – Slightly Aware, and 0.00 – 0.49 – Not Aware. In addition, all data were treated using statistical software known as PASW version 26 to further interpret the study's result using an alpha level of 0.05.

Ethical Consideration

Ethical considerations were integrated into this research process to maintain and protect the rights of the respondents. The protocol will be submitted and approved by the Lyceum of the Philippines University – Batangas – Research Ethics Review Committee. The following ethical principle was observed in this research:

III. RESULTS AND DISCUSSION

Table 1 Percentage Distribution of the Respondents Profile

Sex	Frequency	Percentage %
Male	183	60.0
Female	122	40.0
Age		
Under 18 years old	20	6.6
18~30	163	53.4

30~45	80	26.2
Over 45 years old	42	13.8
Education Attainment		
Below undergraduate level	30	9.8
Specialty	20	6.6
Undergraduate	154	50.5
Master	80	26.2
Doctor	21	6.9
Occupation		
College student	70	23.0
Teacher	41	13.4
Unemployed people	52	17.0
Personnel of public institutions	41	13.4
Government personnel	31	10.2
Enterprise workers	20	6.6
Individual business personnel	50	16.4
Participation in Virtual Property in terms of frequency of playing online games		
Very high	50	16.4
Higher	61	20.0
Moderate	102	33.4
Low	40	13.1
Very low	52	17.0
Amount of virtual currency traded in online games		
Few	20	6.6
Below 100 yuan	30	9.8
100-500 yuan	81	26.6
500-2000 yuan	92	30.2
More than 2000 yuan	82	26.9

Table 1 presents the profile of the respondents. It reveals a higher representation of male respondents, accounting for 60.0% of the total respondents. On the other hand, female respondents constituted 40.0% of the surveyed population.

The predominance of male respondents may indicate that they are more actively engaged in online gaming and virtual property-related activities, leading to a higher level of awareness regarding virtual property crimes. Regarding age, younger respondents, particularly those aged 18 to 30, display higher technological familiarity and digital literacy levels. Working professionals in the 30 to 45 age group may have less time for extensive online gaming but could still be involved in virtual property transactions for leisure or investment purposes. Among the respondents, individuals with an undergraduate degree constituted the largest proportion at 50.5%. Respondents with a master's degree represented 26.2% of the surveyed population. Additionally, respondents with a doctorate degree constituted 6.9% of the respondents. Individuals with doctorate degrees are typically highly educated and may possess a deeper understanding of the legal complexities surrounding virtual property crimes.

Regarding occupation, College students comprise the largest group at 23.0%, demonstrating high awareness due to their tech familiarity. Teachers at 13.4% may comprehend legal issues, while unemployed individuals at 17.0% contribute diverse perspectives, potentially engaging more in online gaming. Public institution personnel, government employees, enterprise workers, and individual business professionals at 13.4%, 10.2%, 6.6%, and 16.4% represent varied professional experiences, shaping unique perspectives on online virtual property. Among the respondents, individuals with a moderate frequency of participation constituted the largest proportion at 33.4%. Respondents with a higher frequency of participation represented 20.0% of the surveyed population. Additionally, respondents with a very low frequency of participation constituted 17.0% of the respondents. Furthermore, individuals with a low and very high frequency of participation accounted for 13.1% and 16.4% of the surveyed population, respectively.

According to "Amount of virtual currency traded in online games so far," the largest group consisted of respondents who traded virtual currency in the range of 500 to 2000 yuan, accounting for 30.2% of the surveyed population. Respondents who traded virtual currency in the range of more than 2000 yuan accounted for 26.9% of the surveyed population. They may view virtual property as a crucial aspect of their gaming pursuits and are willing to allocate a significant budget for virtual transactions.

Table 2 Extent of Awareness of Online Virtual Property Crimes in terms of Types

Indicators	Weighted Mean	Verbal Interpretation	Rank
1.Account password type such as QQ number, game account number, etc.	3.54	Highly Aware	4.5
2.Information types such as chat history, network address book, etc.	3.50	Highly Aware	6
3.Reputation types include personal online points, download permissions, etc.	3.54	Highly Aware	4.5
4.Virtual currency types such as Q point, TikTok currency, etc.	3.57	Highly Aware	3
5.Bitcoin, Ethereum coins	3.70	Highly Aware	1
6.Game equipment type (such as weapons and equipment acquired by online players, etc.)	3.64	Highly Aware	2
Composite Mean	3.58	Highly Aware	

Legend: 3.50 – 4.00 = Highly Aware; 2.50 – 3.49 = Aware; 1.50 – 2.49 = Slightly Aware; 1.00 - 1.49 = Not Aware

Table 2 presents the respondents' extent of awareness of online virtual property crimes in terms of different types of virtual property, and the weighted mean score, verbal interpretation, and rank are provided for each indicator. Bitcoin and Ethereum coins rank highest at 3.70, reflecting elevated awareness given their digital prominence. Game equipment valued by players scored 3.64 (2nd), indicating high awareness. Virtual currency types like Q point scored 3.57 (3rd), showcasing recognition of their significance in online transactions. Account password types (3.54, 4th) and reputation types (3.54, 4th) indicate awareness of associated security risks. Information types, scoring 3.50 (6th), highlight awareness of risks tied to personal data leakage. The overall composite mean of 3.58 indicates respondents' high awareness of online virtual property crimes and associated risks, aligning with the "Highly Aware" interpretation. Results suggest that an informed understanding of virtual property types, risks, and legal implications among respondents is crucial for enhancing protection measures.

Factors contributing to this awareness include internet development, media coverage, educational campaigns, and the use of virtual currencies in online transactions. Younger and highly educated respondents may exhibit greater awareness due to their engagement in online activities and a proclivity to seek information on legal issues. The study underscores the importance of maintaining and enhancing awareness to foster a responsible and secure digital landscape in China as technology advances and virtual economies evolve.

Table 3 Extent of Awareness on Online Virtual Property Crimes in terms of Source Types of Online Virtual Property

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Obtained through online game equipment	3.44	Aware	5
2. Reward gold coins by playing games.	3.57	Highly Aware	2.5
3. Get it by buying it with money	3.57	Highly Aware	2.5
4. Get it through an online game company's gift.	3.51	Highly Aware	4
5. Get it through a friend's gift	3.64	Highly Aware	1
Composite Mean	3.55	Highly Aware	

Legend: 3.50 – 4.00 = Highly Aware; 2.50 – 3.49 = Aware; 1.50 – 2.49 = Slightly Aware; 1.00 - 1.49 = Not Aware

Table 3 presents the extent of awareness of online virtual property crimes in terms of source types of online virtual property, which was highly aware with a weighted mean of 3.55. Getting it through a friend's gift received the highest weighted mean score of 3.64, ranked 1st, demonstrating that respondents are highly aware of receiving virtual property as gifts from friends. Respondents are aware of the possibility of acquiring virtual property through in-game equipment. Getting it by buying it with money received the same weighted mean score of 3.57 demonstrating that respondents are equally aware of the option to purchase virtual property using real currency. This source type also ranked 2nd, indicating a highly aware response from the

respondents. This source type ranked 4th, signifying a strong extent of awareness. Rewarding gold coins by playing games obtained a weighted mean score of 3.57, signifying that respondents are highly aware that virtual property can be earned through in-game rewards. This source type ranked 5th, demonstrating moderate awareness among the respondents.

The results of Table 3 demonstrate that respondents are well-informed about the various methods of obtaining virtual property in online environments. The influence of peers and social interactions within online gaming communities can also raise awareness about obtaining virtual property through gifts from friends. This accessibility may have contributed to respondents' awareness of this source type and its implications. The impact of media and online forums in disseminating information about virtual property and online gaming practices cannot be overlooked.

Table 4 Extent of Awareness of Online Virtual Property Crimes in terms of Source of Information

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Coming from the books	3.57	Highly Aware	2.5
2. from the game	3.54	Highly Aware	4
3. from my work.	3.64	Highly Aware	1
4. from a friend who told me	3.57	Highly Aware	2.5
Composite Mean	3.58	Highly Aware	

Legend: 3.50 – 4.00 = Highly Aware; 2.50 – 3.49 = Aware; 1.50 – 2.49 = Slightly Aware; 1.00 - 1.49 = Not Aware

Table 4 presents the extent of awareness of online virtual property crimes in terms of source of information, of which respondents were highly aware, with a weighted mean of 3.58. The results show that my work received the highest weighted mean score of 3.64, ranked 1st, indicating that respondents are highly aware of obtaining information about virtual property through their work-related activities. This source of information suggests that respondents are strongly aware of acquiring virtual property information from their professional contexts. Coming from the books and a friend who told me both received a weighted mean score of 3.57, ranked 2nd, signifying that respondents are highly aware of obtaining information about virtual property from books and through their social networks. Both sources share the second rank in awareness, indicating a relatively strong extent of awareness among the respondents. The indicator from the game ranked the last with a weighted mean of 3.54.

The respondents' heightened awareness of various aspects of online virtual property can be attributed to various factors. The ready availability of books and online resources dedicated to virtual property has significantly equipped them with the necessary knowledge. These informational sources offer valuable insights into virtual property practices and legal issues, contributing to a deeper understanding among the respondents. Moreover, their work-related experiences and interactions with colleagues have also contributed to their heightened awareness. Furthermore, the respondents' proactive attitude towards seeking information from various sources has significantly contributed to their knowledge about virtual property. Actively engaging in discussions, reading relevant materials, and seeking advice from friends have all played a role in enriching their understanding.

Table 5 Extent of Awareness of Online Virtual Property Crimes in terms of Providing Protection

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Civil law	3.64	Highly Aware	2
2. Criminal law	3.57	Highly Aware	3
3. Commercial law	3.70	Highly Aware	1
4. Procedural law	3.50	Highly Aware	4
5. Administrative law	3.34	Aware	5
Composite Mean	3.55	Highly Aware	

Legend: 3.50 – 4.00 = Highly Aware; 2.50 – 3.49 = Aware; 1.50 – 2.49 = Slightly Aware; 1.00 - 1.49 = Not Aware

Table 5 presents the extent of awareness of online virtual property crimes in terms of providing protection, which respondents were highly aware of, with a weighted composite mean of 3.55. Commercial law received the highest weighted mean score of 3.70, ranked 1st, indicating that respondents are highly aware of the legal provisions under commercial law that protect online virtual property. Civil and criminal law both received a weighted mean score of 3.64 and 3.57, respectively, ranked 2nd and 3rd, indicating that respondents are highly aware of the protective measures offered by these legal frameworks. Procedural

law received a weighted mean score of 3.50, signifying that respondents are highly aware of the legal procedures and remedies available in cases of virtual property infringement. This indicator ranked fourth in awareness among the respondents. Lastly, administrative law received a weighted mean score of 3.34, indicating that respondents are generally aware but slightly less understanding of the protective measures available under this legal framework. This indicator ranked fifth in awareness among the respondents.

The high extent of awareness among respondents can be attributed to several reasons. The legal significance and prominence of commercial law in the context of virtual property protection might have contributed to respondents' high awareness. Secondly, civil and criminal law's inherent importance in safeguarding individuals' rights and addressing infringements could have enhanced respondents' awareness. Awareness of the procedural aspects helps individuals navigate the legal system when faced with virtual property issues. Additionally, while administrative law received a slightly lower awareness score, it still signifies a noteworthy extent of understanding among respondents.

Table 6 Summary Table on Extent of Awareness of Online Virtual Property Crimes

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Types	3.58	Highly Aware	1.5
2. Source Types of Online Virtual Property	3.55	Highly Aware	3.5
3. Source of Information	3.58	Highly Aware	1.5
4. Providing Protection	3.55	Highly Aware	3.5
Composite Mean	3.57	Highly Aware	

Legend: 3.50 – 4.00 = Highly Aware; 2.50 – 3.49 = Aware; 1.50 – 2.49 = Slightly Aware; 1.00 - 1.49 = Not Aware

Table 6 presents the summary table on the extent of awareness of online virtual property crimes, which respondents were highly aware of, with a composite mean of 3.57. As shown in the results, it indicates a high extent of awareness among the respondents across different indicators. The types of online virtual property crimes received a weighted mean score of 3.58, signifying a highly aware understanding among the respondents. The source types of online virtual property obtained a weighted mean score of 3.55, indicating a highly aware understanding among the respondents. This indicator ranked third and is just slightly below the composite mean, showcasing respondents' substantial awareness of the various sources of online virtual property.

The above factors have collectively influenced the respondents' understanding of various aspects of online virtual property crimes, including the types of virtual property, sources of online virtual property, information channels, and legal protections. Firstly, the widespread availability of information on virtual property through books and online resources has played a crucial role in enhancing respondents' awareness. Moreover, work-related experiences and discussions with colleagues have provided valuable insights into virtual property practices and legal issues. Working professionals, especially those in fields related to technology and law, have firsthand experience and knowledge about virtual property.

The respondents' demographic characteristics, such as age, education attainment, occupation, and level of involvement in online games, may also play a role in shaping their awareness. For instance, younger individuals, who are more likely to be active online users, may have greater exposure to virtual property issues. Additionally, the respondents' extent of awareness may be influenced by recent media coverage of high-profile virtual property cases or campaigns promoting cybersecurity and online safety. Increased media attention and public awareness initiatives can shape individuals' perceptions of virtual property risks and foster a proactive approach toward protecting their virtual assets.

Table 7 Observations as to Issues in the Legal Protection of Online virtual Property

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. The scope of virtual property is not clear in Chinese law.	3.61	Strongly Agree	3
2. Online operators have not fulfilled their obligations to protect citizens' virtual property.	3.58	Strongly Agree	4.5
3. When a virtual property is infringed or cheated, it is not effectively protected by law.	3.69	Strongly Agree	1
4. There is no consistency of punishments for the same crime in China's criminal judgment on virtual property.	3.41	Agree	10

5. China's punishment for infringement of virtual property is not severe enough.	3.48	Agree	9
6. The Chinese police are not efficient in dealing with cases of infringement of virtual property.	3.58	Strongly Agree	4.5
7. Communication between relevant judicial departments in protecting virtual property in China is ineffective.	3.58	Strongly Agree	4.5
8. The gathering of evidence is ineffective in proving the loss of virtual property.	3.65	Strongly Agree	2
9. The adoption of legislation to protect virtual property is not exclusive and uniform.	3.55	Strongly Agree	8
10. There is no special law to protect the virtual property.	3.58	Strongly Agree	4.5
Composite Mean	3.57	Strongly Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree

Table 7 presents the observations on issues in the legal protection of online virtual property. The results reveals the respondents' strong agreement on several critical issues, indicating a pressing need for comprehensive and targeted reforms. One of the key concerns raised by the respondents is the lack of clarity in the scope of virtual property in China's law.

If virtual property is infringed upon or cheated, it is not effectively protected by law. This issue received the highest weighted mean score of 3.69 and ranked 1st, highlighting the urgency of addressing the inadequacies in the current legal measures. The gathering of evidence is another area of concern raised by the respondents, with a weighted mean score of 3.65, ranking second among the observations. This issue received a weighted mean score of 3.61, ranking third among the observations. The ambiguity surrounding the definition and boundaries of virtual property may result in difficulties in differentiating legal and illegal virtual transactions and activities. The respondents' strong agreement that the Chinese police are not efficient in dealing with cases of infringement of virtual property is another noteworthy observation.. This issue ranked 4th, indicating concerns about the responsibilities of online platforms and service providers in safeguarding users' virtual assets . The respondents' strong agreement that the China police is not efficient in dealing with cases of infringement of virtual property is another noteworthy observation. This issue received a weighted mean score of 3.58 and ranks fifth among the observations.

The analysis of the respondents' observations on issues related to the legal protection of online virtual property in China reveals significant areas for improvement and reform. Policymakers, law enforcement agencies, and relevant authorities should consider these observations to develop targeted and effective measures that safeguard virtual property and uphold individual rights in the digital age.

Table 8 Difference of Responses on the Extent of Awareness of Online Virtual Property Crimes When Grouped According to Profile

Sex	F-value	p-value	Interpretation
Types	7.413	0.007	Significant
Source Types of Online Virtual Property	4.757	0.030	Significant
Source of Information	30.112	0.000	Highly Significant
Providing Protection	6.958	0.009	Significant
Age			
Types	11.771	0.000	Highly Significant
Source Types of Online Virtual Property	13.521	0.000	Highly Significant
Source of Information	7.366	0.000	Highly Significant
Providing Protection	7.086	0.000	Highly Significant
Educational Attainment			
Types	5.641	0.000	Highly Significant
Source Types of Online Virtual Property	4.071	0.003	Significant
Source of Information	12.431	0.000	Highly Significant
Providing Protection	14.118	0.000	Highly Significant

Occupation			
Types	12.715	0.000	Highly Significant
Source Types of Online Virtual Property	18.875	0.000	Highly Significant
Source of Information	6.285	0.000	Highly Significant
Providing Protection	13.163	0.000	Highly Significant
Participation in Virtual Property in terms of frequency of playing online games			
Types	3.182	0.014	Significant
Source Types of Online Virtual Property	20.474	0.000	Highly Significant
Source of Information	5.000	0.001	Highly Significant
Providing Protection	20.111	0.000	Highly Significant
Amount of virtual currency you have traded in online games so far			
Types	14.362	0.000	Highly Significant
Source Types of Online Virtual Property	7.916	0.000	Highly Significant
Source of Information	7.135	0.000	Highly Significant
Providing Protection	24.466	0.000	Highly Significant

Legend: Significant at p-value < 0.05

Table 8 compares responses on the extent of Awareness of Online Virtual Property Crimes when grouped according to profile. One possible explanation for the higher awareness among male respondents could be attributed to their greater exposure to online gaming and virtual property activities. Research suggests that males spend more time engaging in online gaming and virtual property transactions, making them more susceptible to virtual property crimes. As a result, they may develop a greater sense of vigilance and actively seek information about virtual property protection to safeguard their assets.

The greater extent of awareness among respondents in the age bracket of 45 years old and above may be influenced by their accumulated online experience and life experiences. With years of exposure to virtual platforms, older individuals might have encountered virtual property issues or heard about related incidents, prompting them to be more proactive in understanding the legal aspects of virtual property. The higher awareness among respondents with a doctoral degree, particularly doctors, can be attributed to their higher educational attainment and professional background. Government personnel's greater awareness could be attributed to their occupation and the nature of their work. The significant difference in awareness extent between respondents with low participation in virtual property and those who traded more than 2000 yuan of virtual currency in online games could be attributed to their varying risk exposures and financial investments. Respondents with low participation may approach virtual property transactions more cautiously due to their limited experience, leading them to be more vigilant about potential risks.

Table 9 Difference of Responses on the Observations as to Issues in the Legal Protection of Online virtual Property when Grouped According to Profile

	F-value	p-value	Interpretation
Sex	20.409	0.000	Highly Significant
Age	27.498	0.000	Highly Significant
Educational Attainment	7.405	0.000	Highly Significant
Occupation	29.860	0.000	Highly Significant
Participation in Virtual Property in terms of frequency of playing online games	13.874	0.000	Highly Significant
Amount of virtual currency you have traded in online games	4.763	0.001	Highly Significant

Legend: Significant at p-value < 0.05

Table 9 compares responses on the observations as to Issues in the Legal Protection of Online virtual Property when grouped according to profile. This means that the responses differ statistically, and based on the post hoc test conducted, it was found that males age bracket of 45 years old and above, doctors, and government personnel with low participation and with more than 2000 yuan virtual currency traded in online games encountered greater issues.

This may be attributed to differences in online behavior, risk perception, and exposure to virtual property-related incidents between male and female respondents. The significant impact of age on responses to virtual property protection issues suggests that age-related factors play a crucial role in shaping individuals' awareness and concerns. Younger respondents, who are typically more tech-savvy and immersed in the digital world, may encounter distinct virtual property-related challenges and risks compared to older respondents. Educational attainment emerged as another critical determinant of responses to virtual property protection issues. respondents with higher educational levels may possess a more comprehensive understanding of legal concepts and regulations, leading to a greater awareness of virtual property protection measures. Occupation significantly influenced responses to virtual property protection issues, indicating that professional experiences and responsibilities shape individuals' perspectives on legal protection. The significant differences based on participation frequency in virtual property activities suggest that engagement in virtual property transactions and experiences with online threats play a crucial role in shaping awareness and concerns about legal protection. Respondents with higher participation may have encountered virtual property-related incidents more frequently, leading to a more nuanced understanding of legal protections and risks. The amount of virtual currency traded in online games significantly influenced responses to legal protection issues, indicating that the value and volume of virtual assets are important considerations in shaping individuals' awareness and concerns. Respondents with higher virtual currency transactions may be more concerned about the security of their assets, leading them to seek a stronger legal framework for virtual property protection.

Table 10 Relationship Between the Extend of Awareness on Online Virtual Property Crimes and Observations regarding Issues in the Legal Protection of Online Virtual Property

Type	r-value	p-value	Interpretation
Observations as to Issues in the Legal Protection of Online virtual Property	-.132*	0.021	Significant
Source Types of Online Virtual Property			
Observations as to Issues in the Legal Protection of Online virtual Property	-.235**	0.000	Highly Significant
Source of Information			
Observations as to Issues in the Legal Protection of Online virtual Property	-.171**	0.003	Significant
Providing Protection			
Observations as to Issues in the Legal Protection of Online virtual Property	-.164**	0.004	Significant

Legend: Significant at p-value < 0.01

Table 10 presents the association between the extent of awareness of online virtual property crimes and observations regarding issues in the legal protection of online virtual property.

The moderate negative correlation between the extent of awareness of online virtual property crimes and observations as to issues in the legal protection of online virtual property implies an inverse relationship between these two variables. This suggests that individuals who are more aware of the intricacies of virtual property crimes and the legal frameworks governing them are better equipped to identify and address potential issues related to legal protection. One possible explanation for this observed relationship is that individuals with greater awareness are more likely to be proactive in safeguarding their virtual assets and seeking appropriate legal recourse when necessary. Furthermore, individuals with higher awareness may be more cautious and discerning when engaging in virtual property transactions, especially when it comes to the sources of virtual property. They are more likely to be aware of potential risks associated with certain sources, such as unauthorized third-party sellers or platforms with questionable reputations. Consequently, they may avoid transactions from such sources or seek additional protection measures to minimize potential risks. Moreover, the significant relationship between awareness and observations regarding issues in the legal protection of online virtual property highlights the potential role of education and awareness campaigns in improving

virtual property protection. By promoting greater awareness of virtual property crimes and the legal protections available, individuals can be empowered to take proactive measures to safeguard their assets and rights. Additionally, this observed relationship has implications for policymakers and industry stakeholders involved in virtual property regulation and enforcement. It emphasizes the importance of designing effective awareness campaigns and educational programs to enhance individuals' understanding of virtual property crimes and their legal rights and responsibilities.

Table 11 Proposed Enhanced Protection Strategies on Online Virtual Property

<p>Virtual Property Types</p>	<p>a) Enhance public awareness and understanding of different types of virtual property and their significance in the online environment. b) Educate the public about various virtual property types' legal rights and protections. c) Develop guidelines and educational materials to promote responsible and ethical behavior concerning virtual property.</p>	<p>a) Collaborate with media outlets and social media platforms to disseminate information about virtual property types (Persons involved: Government agencies, media representatives). b) Organize workshops, seminars, and webinars to educate the public about the value and protection of virtual property</p>	<p>Government agencies, media representatives, educators, experts</p>	<p>a) Reach and engagement metrics of public awareness campaigns. b) Number of educational events conducted and respondents. c) Number of educational materials developed and distributed. d) Website traffic and user engagement. e) Number of collaborations established with online platforms. f) Adoption and implementation rate of educational guides on virtual property management.</p>
<p>Source Types of Online Virtual Property</p>	<p>a) Raise awareness among users about the different sources from which virtual property can be obtained. b) Inform users about the legality and risks of acquiring virtual property from different sources. c) Encourage</p>	<p>a) Launch information campaigns through social media, websites, and gaming platforms to educate users about the various sources of virtual property (Persons involved: Government agencies, media representatives).</p>	<p>Legal experts content creators</p>	<p>a) Reach and engagement metrics of information campaigns. b) User feedback and awareness level of virtual property sources. c) Number of virtual property providers displaying information on sources.</p>

	responsible and lawful practices in obtaining virtual property.	b) Highlight the legal consequences of obtaining virtual property through illegal sources		d) Adoption rate of user authentication mechanisms. e) Number of legal guidance materials distributed. f) User feedback on the effectiveness of legal support.
Source of Information	a) Inform users about the different sources of information related to virtual property. b) Raise awareness about the credibility and reliability of information from various sources. c) Promote responsible and informed decision-making regarding virtual property based on reliable information	a) Conduct campaigns to educate users on the importance of verifying information related to virtual property b) Collaborate with fact-checking organizations and experts to ensure the accuracy of virtual property-related information	Government agencies, media representatives, fact-checkers, and law experts	a) Reach and engagement metrics of information verification campaigns. b) User feedback on the credibility of virtual property information. c) Number of credibility assessment guidelines developed and distributed. d) User adherence to reliable information sources.
	a) Increase awareness among users about the legal protection available for virtual property. b) Inform users about their rights and avenues for seeking recourse in case of virtual property infringement. c) Strengthen mechanisms for the effective protection of virtual property rights.	a) Conduct educational campaigns to inform users about their legal rights concerning virtual property b) Provide user-friendly guides on how to protect virtual property rights and respond to infringement		Government agencies, legal experts, and content creators
In terms of Providing Protection				

IV. CONCLUSION

In conclusion, the research study on "Extent of Awareness and Legal Issues on Online Virtual Property Crime in China as Basis for Enhanced Protection" has yielded valuable insights into the awareness levels and legal challenges surrounding virtual property in China. The key findings and conclusions can be summarized as follows:

1. **High Awareness:** The study revealed a high level of awareness among respondents regarding various forms of virtual property, such as account passwords, information, reputation, virtual currency, bitcoin, and game equipment.
2. **Recognized Sources:** Respondents were well-acquainted with the sources of virtual property, with rewards from gaming and purchases being the most widely recognized acquisition methods.
3. **Information Sources:** Most respondents demonstrated a sound understanding of where to obtain information related to virtual property, citing sources such as books, gaming experiences, work-related knowledge, and advice from friends.
4. **Legal Protections:** Respondents displayed a good understanding of the available legal protections for virtual property, with civil law, criminal law, and commercial law being the most commonly recognized forms of protection.
5. **Legal Challenges:** China faces several legal challenges concerning virtual property protection, including ambiguity in the scope of virtual property within Chinese law, inconsistent penalties for similar crimes, and inefficiencies in handling virtual property infringement cases by law enforcement agencies.
6. **Demographic Variances:** The study revealed significant differences in responses based on demographic profiles. Males, older individuals, professionals, and those with lower virtual property engagement and higher expenditures encountered more issues related to the legal protection of virtual property.
7. **Awareness and Legal Issues Correlation:** A positive correlation was observed between the extent of awareness and the observed legal challenges. This suggests that increasing awareness may contribute to addressing some of the existing challenges.
8. **Enhancing Protection:** To bolster the protection of virtual property rights, it is imperative to develop public awareness campaigns and educational materials and collaborate with online platforms to promote responsible behavior among users.
9. **Legal Reforms and Communication:** Strengthening the legal framework, proposing legal reforms, and establishing effective communication channels between relevant judicial departments are crucial steps in addressing the identified legal challenges.

V. RECOMMENDATION

1. **Program Format:** We propose the following program to provide a more structured and actionable set of recommendations for addressing virtual property crimes. Each recommendation includes a time frame, the relevant person or agency responsible, and the resources needed.
2. **Time Frame:** The suggested time frame for implementation of each recommendation may vary, but a comprehensive plan spanning over five years should be established.
3. **Responsible Person/Agency:** The specific entities or agencies responsible for each recommendation should be designated, ensuring accountability.
4. **Required Resources:** Adequate resources, both financial and human, should be allocated to carry out the recommendations effectively.

References

- [1] Dwivedi, Y. K., Hughes, L., Wang, Y., Alalwan, A. A., Ahn, S. J., Balakrishnan, J., ... & Wirtz, J. (2023). Metaverse marketing: How the metaverse will shape the future of consumer research and practice. *Psychology & Marketing*, 40(4), 750-776.
- [2] Rakhmanova, M. S., & Schneider, V. V. (2018). Modern status of small enterprise development prospects and problems in Russia. *Amazonia Investiga*, 7(14), 61-72.
- [3] Kaplan, J., Weisberg, R., & Binder, G. (2021). *Criminal law: Cases and materials*. Aspen Publishing.
- [4] Seguin, D. P. F. (2019). *Deconstructing Decriminalization: A Genealogy of the Provincial Offences Administration, the Modern Fine, and Penalization in Ontario* (Doctoral dissertation, Carleton University).
- [5] Scholz, L. H. (2021). Private Rights of Action in Privacy Law. *Wm. & Mary L. Rev.*, 63, 1639.
- [6] Gao, C., Guo, Q., Jiang, D., Wang, Z., Fang, C., & Hao, M. (2019). Theoretical basis and technical methods of cyberspace geography. *Journal of Geographical Sciences*, 29, 1949-1964.

- [7] Anderson, R., Barton, C., Bölme, R., Clayton, R., Ganán, C., Grasso, T., ... & Vasek, M. (2019). Measuring the changing cost of cybercrime.
- [8] Feijóo, C., Kwon, Y., Bauer, J. M., Bohlin, E., Howell, B., Jain, R., ... & Xia, J. (2020). Harnessing artificial intelligence (AI) to increase wellbeing for all: The case for a new technology diplomacy. *Telecommunications Policy*, 44(6), 101988.
- [9] Hunter, R., Shannon, J., Lozada, H., & Rivolta, B. (2021). The dilemma of Basia's pendant: European community design and the protection of an artist's creations and intellectual property. *International Journal of Business and Social Science Research*, 2(1), 1-12.
- [10] Kshetri, N. (2023). Privacy violations, security breaches and other threats of Web3 and the metaverse.
- [11] Owens, E., & Ba, B. (2021). The economics of policing and public safety. *Journal of Economic Perspectives*, 35(4), 3-28.

