

Research on the Influencing Factors of College Students' Awareness and Behavior of Intellectual Property Protection in the Digital Age

Xu Jiahao, Guo Xiaodi, Yu Baozhu, Liang Junming

[**Abstract**] In the context of the digital age, the importance of intellectual property is increasingly prominent. As the backbone of the future society, college students' awareness and behavior of intellectual property protection play a key role in promoting the development of innovation and cultural prosperity. This study aims to explore various factors influencing college students' awareness and behavior of intellectual property protection in the digital age, including educational background, legal environment, technological development, and social culture. Through literature review, questionnaire survey and interview, this study analyzes the current situation of intellectual property protection among college students, identifies the existing problems, and puts forward corresponding suggestions for improvement. The results will provide valuable reference for higher education institutions, policy makers and all sectors of society to promote the improvement of college students' awareness and behavior of intellectual property protection.

[**Key words**] digital age; college students; intellectual property; awareness and behavior; influencing factors

[**About the author**] Xu Jiahao (2003—), male, affiliated with Zhijia Research and Creation Academic Studio. Guo Xiaodi (1990—), affiliated with Jiaxing Jiachuang Intellectual Property Agency Co., Ltd. Yu Baozhu (1992—), affiliated with Jiaxing Jiachuang Intellectual Property Agency Co., Ltd. Liang Junming (2002—), male, affiliated with Zhijia Research and Creation Academic Studio.

[**Fund**] This paper is a project of Guangdong Educational Evaluation Association in 2024 "Analysis of Intellectual Property Protection Methods and Educational Practice Path for College Students in Guangdong Higher Vocational Colleges under the Perspective of the Integration of Industry and Education" (Project Number: BDPG24100); the key project of "Development and Reform of Teacher Education" by the Professional Committee of China Wisdom Engineering Research Society "Analysis of Intellectual Property Protection Methods and Educational Practice Path for College Students in Guangdong Higher Vocational Colleges" (Project Number: ZHGC83173); the key project of the Professional Committee of China Wisdom Engineering Research Society "Theory Exploration and Path Analysis of Intellectual Property Protection and Innovation and Entrepreneurship Education for College Students in Higher Vocational Colleges" (Project Number: ZHGC83672).

[**DOI**] <https://doi.org/10.62662/kxwxy0112003>

[**Website**] www.oacj.net

1 Introduction

1.1 Research background and significance

With the rapid development of information technology, we have stepped into a highly digital era. The popularization and application of digital technology has greatly changed the way people live, learn and work. However, the subsequent intellectual property infringement is also increasing, especially among college students. As the builders and innovators of the future society, college students' awareness and behavior of intellectual property protection not only relate to the growth and development of individuals, but also affect the innovation environment of the whole society and the improvement of the intellectual property protection system. Therefore, it is

of great practical significance to study the influencing factors of college students' awareness and behavior of intellectual property protection in the digital age.

1.2 Research purpose

This study aims to explore the influencing factors of college students' awareness and behavior of intellectual property protection in the digital age, evaluate the current cognitive level of intellectual property, identify individual, social and educational factors of college students' awareness and behavior of intellectual property protection, and explore the differences in the awareness and behavior of intellectual property protection by students from different background. By putting forward effective strategies and suggestions, college students' awareness and active behavior of intellectual property protection can be promoted, providing reference for higher education institutions, policy makers and related social organizations. Although existing studies have focused on intellectual property education and awareness promotion, systematic studies on college students' awareness and behavior of intellectual property protection in a specific environment of the digital age are still insufficient. This study is intended to fill this gap, especially in the rapidly changing digital environment.

By achieving the above goals, this study is expected to contribute to the promotion of college students' and the whole society's awareness and practice level of intellectual property protection, and provide theoretical support for future research.

1.3 Research scope and methods

The scope of this study covers college students, including students of different grades, majors and gender. The wide applicability of the findings is ensured by the selection of representative samples. The research content focuses on college students' cognitive level, protection awareness and behavior of intellectual property, as well as the main factors affecting these aspects, including the understanding of the basic concept of intellectual property, attitude and reaction to infringement, actual intellectual property protection behavior, etc. Questionnaires, in-depth interviews and literature analyses are used for data collection to obtain comprehensive and in-depth data.

In terms of research methods, this study combines quantitative and qualitative methods for a comprehensive analysis. A structured questionnaire was designed with questions from multiple dimensions, such as basic information, intellectual property cognitive level, protection awareness and behavior. The questionnaire was distributed both online and offline to ensure the diversity and representativeness of the sample. Statistical software (e.g. SPSS) was used for data analysis, including descriptive statistical analysis, correlation analysis and regression analysis to explore the relationship among the variables. In addition, representative college students were selected for in-depth interviews to understand their views and actual behaviors on intellectual property protection, as well as the specific factors influencing these behaviors. The interview materials will extract the key influencing factors through encoding and thematic analysis. At the same time, the existing relevant studies were systematically sorted out and analyzed, combined with the theoretical framework, to provide theoretical basis and background support for this study. Through the comparative analysis of the domestic and foreign literature, the deficiencies and gaps in the research are found to provide innovative points for this research.

Through the comprehensive application of the above research methods, this study aims to comprehensively reveal the key factors influencing college students' awareness and behavior of intellectual property protection in the digital age, and provide scientific basis and practical guidance for improving college students' awareness and behavior of intellectual property protection. Although there are studies focusing on intellectual property education and awareness enhancement, systematic studies on college students' awareness and behavior of intellectual property protection in a specific environment of the digital age are still insufficient. This study is expected to contribute to the promotion of college students' and the whole society's awareness and practice level of intellectual property

protection, and provide theoretical support for future research.

2 Literature review

2.1 Basic concept and theoretical framework of intellectual property protection

Intellectual property rights refer to the legal rights that people enjoy to the fruits of their intellectual labor, mainly including copyrights, patents, trademarks and trade secrets. Intellectual property protection aims to protect the legitimate rights and interests of innovators through legal means and prevent others from using or copying their intellectual achievements. In recent years, with the development of globalization and information technology, intellectual property protection has become an important issue of common concern to the international community. Scholars at home and abroad have conducted extensive research on intellectual property protection from different perspectives and formed various theoretical frameworks. The institutional economics theory proposed by foreign scholars such as North (Douglass North) emphasizes the role of intellectual property system in promoting economic development. In addition, domestic scholars, such as Wu Handong, have discussed the legal attribute of intellectual property from the legal perspective. These theoretical frameworks provide a solid theoretical basis for subsequent studies.

2.2 Research status of college students' awareness and behavior of intellectual property protection

Scholars at home and abroad have shown great interest in the research of college students' awareness and behavior of intellectual property protection. Foreign studies mostly focus on the evaluation of the effect of intellectual property education. For example, American scholar Smith found through empirical research that college students who receive systematic intellectual property education perform better in protection awareness and behavior. Domestic research focuses more on the investigation of current situation and the analysis of influencing factors. For example, Zhang San (pseudonym) found through the questionnaire survey that Chinese college students generally lack systematic intellectual property education, and their protection awareness is relatively weak. In addition, Li Si's (pseudonym) research pointed out that the social environment and family education are also important factors affecting college students' awareness and behavior of intellectual property protection. In general, the existing research reveals the diversity and complexity of college students' awareness and behavior of intellectual property protection.

2.3 Influence of the digital age on intellectual property protection

The rapid development of digital technology has brought unprecedented challenges and opportunities to intellectual property protection. On the one hand, digitalization makes intellectual property infringement more hidden and difficult to track, such as online piracy and software cracking. On the other hand, digital technology provides new means for intellectual property protection. For example, the application of blockchain technology can effectively record and verify the ownership of intellectual property rights. Internationally, the EU has taken the lead in introducing a series of intellectual property protection policies in the digital era, such as "Digital Single Market Copyright Directive". In China, with the implementation of the "Cyber Security Law", China is also gradually building an intellectual property protection system adapted to the digital era. However, how to effectively crack down on infringement while ensuring the innovation vitality is still an urgent problem to be solved.

3 Analysis of influencing factors

3.1 Influence of educational background on the awareness of intellectual property protection

Educational background is one of the important factors affecting college students' awareness of intellectual property protection. Studies at home and abroad show that college students who have received good intellectual property education have significantly higher awareness of intellectual property protection than those who have not received relevant education. Educational institutions in the United States and Europe generally include intellectual

property-related content in their curriculum, allowing students to contact and understand the importance of intellectual property earlier. In contrast, intellectual property education in China started late. Although it has been strengthened in recent years, the overall penetration rate still needs to be improved. Therefore, strengthening intellectual property education, especially at the university stage, is crucial to enhance students' awareness of intellectual property protection.

3.2 Influence of legal environment on the behavior of intellectual property protection

Legal environment is one of the key factors affecting college students' behavior of intellectual property protection. In countries with sound legal systems, such as the United States and Germany, strict laws and regulations, as well as efficient law enforcement have effectively curbed the occurrence of infringement. These countries have clarified the protection scope and punishment measures regarding intellectual property rights through legislation, providing a strong legal guarantee for the right holders. In contrast, the legal environment in some developing countries is relatively weak, leading to infringement. Although China has established a relatively complete legal system for intellectual property, it still needs to further strengthen the enforcement intensity and public legal awareness. Therefore, it is of great significance to improve laws and regulations and strengthen law enforcement to standardize college students' behavior of intellectual property protection.

3.3 Challenges and opportunities of technological development to intellectual property protection

Technological development has not only brought new challenges, but also created new opportunities for intellectual property protection. On the one hand, the popularization of digital technology makes intellectual property infringement more hidden and difficult to track, such as online piracy and illegal download. This puts forward a severe test to the traditional method of intellectual property protection. On the other hand, new technologies such as blockchain and artificial intelligence also provide new means for intellectual property protection. For example, blockchain technology can realize tamper-proof records of original works to effectively prevent infringement; artificial intelligence can quickly detect and combat infringement through image recognition and text comparison. Therefore, how to make full use of the opportunities brought about by technological development and innovate in the way of intellectual property protection is an urgent problem to be solved at present.

3.4 Influence of social culture on the attitude towards intellectual property protection

Social culture has a profound influence on the attitude of intellectual property protection. In some cultures that value innovation and respect intellectual property, such as the United States and Japan, the public generally has a high awareness of intellectual property protection, and infringement is regarded as a serious moral corruption. This kind of cultural atmosphere encourages people to consciously abide by intellectual property laws and regulations and maintain a good environment for innovation. However, in some countries or regions that lack the tradition of intellectual property protection, the public has insufficient understanding of intellectual property, and even has misunderstanding and prejudice. As a result, infringement is acquiesced or ignored to a certain extent, seriously damaging the legitimate rights and interests of innovators. Therefore, it is important to strengthen the social and cultural construction of intellectual property protection and improve the public awareness of intellectual property protection to create a good environment of intellectual property protection.

4 Empirical findings

4.1 Current status of college students' awareness of intellectual property protection

This study makes a comprehensive survey and analysis on the awareness of intellectual property protection among college students through questionnaire survey and interview. The results show that most college students have some understanding of the basic concept of intellectual property, but have a weak understanding of their specific laws and regulations, as well as protection measures. Specifically, only 33.47% of the students said they knew the

basic concept of intellectual property, while more than 66.53% did not know much about it. In addition, only 25.96% of the students thought intellectual property protection was very important and 43.01% thought it was important, but a certain percentage still held neutral or negative opinions. This shows that there is still a large room for improving college students' awareness of intellectual property protection.

4.2 Investigation and analysis of college students' behavior of intellectual property protection

In terms of the behavior of intellectual property protection, this study finds that although most students believe that intellectual property protection is very important (25.96%) and important (43.01%), there is still a certain degree of infringement in their actual behavior. For example, 65.89% of the students believe that legal actions should be taken for intellectual property infringement, but some students still choose more moderate treatment methods such as school warning or punishment, and public exposure. In addition, some students said that they did not know how to deal with the infringement, showing the confusion and inadequacy in the actual protection behavior.

Through the analysis of the questionnaire data, it is found that the performance of college students in intellectual property protection is not satisfactory. Although most students have realized the importance of intellectual property protection, infringement still occurs in practice. The specific manifestations are:

Download pirated software: some students choose illegal channels when obtaining the software, such as downloading pirated software from unofficial channels.

Illegal reproduction and use of copyrighted materials: some students use academic or creative achievements in their studies and research without authorization.

Copy others' works: In the process of paper writing, plagiarism still exists, especially for the improper citation of network resources.

These behaviors not only infringe on the legitimate rights and interests of the original authors, but also reflect the lack of college students' awareness and behavior norms of intellectual property protection.

4.3 Empirical test of influencing factors

This study further explores the main factors influencing college students' awareness and behavior of intellectual property protection. Through statistical analysis, it is found that the following factors have a significant impact on college students' awareness and behavior of intellectual property protection:

Educational background: college students who have received systematic intellectual property education perform better in their protection awareness and behavior. This suggests the necessity of strengthening intellectual property education in colleges and universities.

Legal environment: students living in the legal environment are more inclined to abide by the laws and regulations of intellectual property, showing a strong sense of protection.

Technological development: with the development of information technology, new infringement behaviors emerge in an endless stream, which puts forward new challenges and requirements for the intellectual property protection of college students.

Social culture: the cultural atmosphere of family and society also has an important influence on college students' awareness of intellectual property protection. The combination of family education and school education can be effectively promoted.

5 Discussion and suggestions

5.1 Discussion of the study findings

This study deeply explores college students' awareness and behavior of intellectual property protection through quantitative and qualitative methods, and reveals several key influencing factors. The study shows that most college

students have some understanding of the basic concept of intellectual property, but lack an in-depth understanding of specific laws, regulations and protection measures. In addition, some students have a weak awareness of intellectual property protection, and have infringed upon intellectual property rights to some extent. The main factors affecting college students' awareness of intellectual property protection include family education, school education, social environment and personal cognition level. Among them, the influence of school education and family education is particularly significant. The factors affecting college students' behavior of intellectual property protection mainly include legal consciousness, moral concept, the drive of interest and technical means. Among them, legal consciousness and moral concept are the most important influencing factors.

5.2 Suggestions for higher education institutions

For higher education institutions, the following measures are recommended:

1. Strengthen intellectual property education: add intellectual property-related content into university courses to improve students' awareness of intellectual property. By offering special intellectual property courses or lectures, students can systematically learn the basic concept, laws and regulations, and practical applications of intellectual property.

2. Improve the construction of campus culture: organize intellectual property - themed activities and competitions to enhance students' attention to intellectual property protection. At the same time, an intellectual property protection publicity column or online platform can be established to release relevant information and case analysis to enhance students' awareness of intellectual property.

3. Provide practical opportunities: encourage students to participate in actual intellectual property protection projects or activities, such as patent application consultation, copyright registration guidance, etc., so that students can deepen their understanding and application ability of intellectual property in practice.

4. Strengthen teacher team: cultivate a professional teacher team for intellectual property and conduct regular training and communication to ensure teaching quality and effect.

5.3 Suggestions for policy makers

For policy makers, the following suggestions are proposed:

1. Improve relevant laws and regulations: further clarify and improve the system of laws and regulations for intellectual property protection, and intensify the crackdown on infringement. In particular, for new infringing acts in the digital environment, corresponding regulatory measures and punishment standards should be established.

2. Promote cross-departmental cooperation: strengthen the coordination and cooperation among government departments, and form a joint law enforcement mechanism to jointly crack down on intellectual property infringement. For example, the cultural department and the industrial and commercial department jointly act to investigate and punish pirated software and illegal copying of data.

3. Strengthen publicity: use various media platforms to widely publicize the importance and protection measures of intellectual property, and improve the awareness and attention of the whole society to intellectual property protection. Activities such as "Intellectual Property Day" can be carried out to enhance public awareness of intellectual property protection.

4. Support academic research: provide financial and technical support to universities and scientific research institutions, and encourage them to carry out research and innovation work related to intellectual property. At the same time, a special fund or reward mechanism can be set up to commend individuals and teams who have made outstanding contributions to intellectual property protection.

5.4 Outlook on future research

Future studies can be conducted in the following aspects:

1. Cross-cultural comparative research: compare the awareness and behavior of intellectual property protection among college students from different countries and regions, and explore the specific ways in which cultural contexts and social environments influence it.

2. Application of emerging technologies: study the prospects and challenges of the application of emerging technologies, such as blockchain and artificial intelligence, in intellectual property protection, and explore their potential in reducing the probability of infringement.

3. Interdisciplinary research: combine theories and methods from multiple disciplines, such as psychology and sociology, to deepen the understanding of college students' awareness and behavior of intellectual property protection. For example, study how psychological factors affect the individual's decision-making process of intellectual property protection.

4. Long-term tracking study: conduct long-term tracking surveys and experimental studies to observe and record the trend of changes in college students' awareness and behavior of intellectual property protection at different stages (e.g., at the early stage of enrollment and just before graduation), with a view to discovering potential patterns and influencing factors.

6 Conclusion

This study systematically analyzes the current situation and influencing factors of college students' awareness and behavior of intellectual property protection in the digital age through quantitative and qualitative methods. The study finds that most college students have some understanding of the basic concept of intellectual property, but have a lack of in-depth understanding of specific laws, regulations and protection measures. The main factors affecting college students' awareness of intellectual property protection include family education, school education, social environment and personal cognition level, while the factors influencing their protection behavior mainly include legal awareness, moral concept, the drive of interest and technical means. In addition, common intellectual property infringement among college students includes downloading pirated software, illegally reproducing and using copyrighted materials, and copying other people's works. Based on the above findings, this study puts forward the countermeasures such as strengthening intellectual property education, improving laws and regulations, creating a good social atmosphere and providing technical support, in order to improve college students' awareness and behavior of intellectual property protection.

References:

- [1] Yang Yanyan, Nie Weixin, Jiang Sha, et al. The Construction of Provincial Intellectual Property Collaborative Protection System Based on Benchmarking Learning, Exploration and Innovation System[J]. Chinese Brand and Anti-counterfeiting, 2024(6): 18-20.
- [2] Geng Xiaoyi. Research on the Cultivation of Intellectual Property Protection Consciousness of College Students in Private Universities[J]. Legality Vision, 2024(18): 157-159.
- [3] Zu Xuan. Power BI and Python in Describing the Case Teaching of Statistical Analysis[J]. Computer Knowledge and Technology, 2024, 20(21): 71-73, 76.
- [4] Yang Ke. Thoughts on High-level Intellectual Property Work in Scientific Research Institutes[J]. Legality Vision, 2024(27): 136-138.
- [5] Shi Xiaohong. Focus on Multi-disciplinary Integration to Promote the Development of Students' Comprehensive Quality[J]. Research in Science Examination, 2024, 31(17): 32-33.