



**AWARENESS OF INTELLECTUAL PROPERTY RIGHTS AMONG DIFFERENT
UNIVERSITIES OF INDIA**

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ABSTRACT

The phrase "intellectual property" has been used to refer to a wide range of legal rights, including copyright, patents, designs, and trademarks, for approximately 150 years. IP must be protected if its commercial worth is to be maximized. The goal of this study is to assess and comprehend the academic community in India's knowledge of intellectual property rights (IPR). All academic disciplines are currently studying intellectual property rights extensively. It is essential for everyone, not just lawyers, judges, and law students but also engineers, scientists, artists, technicians, farmers, and researchers. The nation's wealth is represented by intellectual property, which has the potential to boost the economy. However, a nation's intellectual property system will either succeed or fail largely based on how well-informed the populace is. Descriptive research was carried out to determine how familiar students were with the idea of IPR Law and to offer potential solutions for its avoidance. The study's goals were to assess the researcher's level of familiarity with the idea of intellectual property rights, laws defending them, knowledge of particular IPRs, and the impact of those laws, as well as to propose potential measures to stop the unauthorized use of IPRs. The study focuses on three main issues: the degree of IP awareness among Indian academics, whether existing IP knowledge is helpful for commercialization, and whether present IP knowledge is sufficient for Indian academics to maintain their careers and earn money from their discoveries.

Keywords: IPR, commercialization, Survey, Patents, Students, Universities

Introduction

The intangible assets that comprise works of human invention are collectively referred to as intellectual property, or IP for short. A wide variety of types of intellectual property are afforded varying degrees of legal protection in many different jurisdictions. Some of the most common types of intellectual property include trade secrets, patents, copyrights, and trademarks. The origins of the modern idea of intellectual property can be found in England throughout the 17th and 18th centuries. Despite the fact that the concept of "intellectual property" was originally presented in the 19th century, it was not widely accepted in the majority of the legal systems around the world until the latter half of the 20th century ^[1]. The "intellectual property rights" (IPR) that an author or creator is granted for the duration of their work are the legal protections that give their work its value. The legal safeguards offered by these rules make it possible for the work's creator, inventor, or the person to whom he has assigned his rights to enjoy exclusive use of the creation for a predetermined amount of time. The importance of intellectual property to the successful operation of today's economy cannot be overstated. The governance of intellectual property should have as its primary goal the promotion of the development of a wide variety of intellectual commodities ^[2]. In order to accomplish this, the law will frequently bestow provisional ownership rights upon organizations and individuals for the information and creative works that they produce. This not only makes it possible for people to protect their ideas and put a stop to piracy, but it also makes it possible for them to earn from the information and intellectual products that they develop. This serves as a potent economic incentive for people to advance their efforts. Although it is anticipated that these monetary incentives will stimulate innovation and help in the development of the country's technical infrastructure, it is important to note that the level of protection granted to inventors will determine the extent to which these incentives will be effective. Because it has been proven to have a good impact on society, the intellectual labor that went into the invention merits acknowledgment as well because of the positive impact it has had and will continue to have on society. The costs associated with research and development (R&D) and the investments required to break into new markets have both exploded in recent years ^[3]. It is currently important to safeguard information against unauthorized use, at least for the time being, in order to produce sufficient cash for further expenditures in research and development. This requires the information to be protected against

unauthorized use. This is because technical pioneers are now expected to take on extremely risky endeavors with extremely high risks. IPR is a potent tool for protecting the investment of time, money, and effort that went into producing anything; it does this by granting the person who created the IP the exclusive right to use it for a predetermined period of time. The protection of intellectual property rights is beneficial to an economy because it fosters competitiveness, industrial advancement, and economic growth^[4]. This article presents a summary of intellectual property rights with a focus on medicines. Patents provide pharmaceutical corporations with monopoly distribution rights for a period of twenty years; during this time, no one else is able to produce, sell, or invent the patented drug. IPR is necessary for pharmaceutical firms because it assists them in locating, developing, marketing, and protecting their discoveries^[5]. It encourages healthy competition, which is beneficial to the growth of enterprises as well as the economy, and it is a key tool for preserving financial responsibilities, human resources, and labour. The safeguarding of intellectual property is another factor that drives pharmaceutical companies to



put money into research and development^[6].

Fig 1: Intellectual Property Rights

(Source: <https://www.corpstore.in/blog/top-intellectual-property-rights-coimbatore/>)

The root of all IPR-related laws and administrative processes can be found in Europe. The British patent system served as the foundation for the first Indian legislation relating to IPR, which were published in 1856. The most recent modification to these was done in 2019, while the revisions from 2000, 2003, and 2005 came before it. Industrial property and copyright are the two basic categories into which IP is split. While copyright covers literary and artistic works like books, poetry, and plays, as well as films, musical compositions, and aesthetic works, industrial property encompasses innovations (patents), trademarks, trade secrets, industrial designs, and geographic indications ^[7]. The "Patent" is one of the most crucial aspects of IP that members of the medical profession should be aware of. A standard patent has a 20-year term from the date of filing in China, India, the United States of America, and Europe. The Patents Act, 1970 governs the granting of patents in India. If an invention is beneficial, novel, and nonobvious, it may be patented. One of the primary developing sectors that significantly contribute to innovation and research is the health care industry. In order to manage and preserve research results and prevent intellectual property theft or infringement, it is crucial to be aware of IPR laws and regulations. In order to compare and evaluate the knowledge, understanding, and practices of health care professionals and other populations regarding "Intellectual Property Rights," this study was designed ^[8].

Brief History

Originating in Europe are the administrative procedures and rules that serve to protect intellectual property rights (IPR). Patents were issued at a steadily increasing rate all through the 14th century. The United Kingdom was able to capitalize on its technological edge over the rest of Europe by extending more favorable terms to performers who came from outside of Europe ^[9]. The first country to acknowledge the validity of copyrights was Italy. Venice is sometimes referred to as the "cradle" of the intellectual property (IP) system since it was the first place in the world to adopt laws and bodies safeguarding intellectual property. Rapidly, similar actions were taken by other governments. Almost 150 years have passed since the Indian Patent Act was signed into law. The earliest of these was the 1856 Act, which set the present standard of a 14-year protection period for patents and was fashioned after the British patent system. Then, following a few more iterations and adjustments, we arrived at the number ^[10].

The Act VI of 1856 was the country of India's first patent-related law. The objective was to publicize ideas and persuade inventors to reveal their inventions' trade secrets. Later, a new law known as Act XV of 1859 was adopted to grant exclusive privilege. The measure was renamed The Patterns and Designs Protection Act in 1872, nevertheless. The 1883 amendment was the only change made to the law during its 30-year lifespan^[11]. All prior laws in India were repealed by the Indian Patents and Design Act. This act created provisions for the granting of secret patents, patents for additions, and extending the duration of a patent from 14 to 16 years. Following independence, several committees were established to look at the changes to the law, and as a result, a bill was tabled in the Lok Sabha in 1965 but failed to pass. Although it expired in 1965, a revised measure was filed in 1967, and on the committee's final suggestion, the Patents Act, 1970, which is currently in use in India, was enacted^[12].

Background

The academic and scientific worlds have undergone significant transformations in this era of information technology thanks to the Internet. Information generation, organization, access, and dissemination have all been significantly impacted by the Internet. For pre-written answers and short cuts for writing assignments, research papers, and theses, more and more students and scholars are turning to the Internet^[13]. Ethics and integrity are the cornerstones of the academic and scholarly world, where new theories and ideas are developed, tested, and confirmed, experiments are conducted, and research is published for the benefit of humanity with a sincere desire for recognition. Everyone is vigilant about safeguarding their brand and invention, from Pharmaceutical, medicinal and genomic sectors to tech and software companies like Microsoft and Google. Knowledge of intellectual property rights (IPRs) is crucial in this situation. IPRs are "the rights granted to people over the invention of their thoughts," according to the definition^[14]. It is "a general phrase used in law to refer to patents, copyrights, and trademarks that grant legal protection to ideas, the expression of ideas, and the inventors and creators who came up with the ideas in question. Intellectual property is sometimes referred to as intellectual achievement ownership (IP). Therefore, it is important to promote and defend these inventions and creations under the guise of intellectual property and intellectual rights in order to manage them as priceless knowledge assets as well as to protect them from unfair exploitation. As a result, the

goal of this study was to assess participants' familiarity with, and use of, intellectual property rights in India ^[15].

Types of IPR

Patents, trademarks, and industrial designs were the only things considered to be "industrial property" in the past; however, the definition of "intellectual property" has since expanded significantly. Technology is advanced by IPR in the following ways:

- a. It provides a process for handling unauthorized use, piracy, and infringement.
- b. With the exception of trade secrets, all forms of IP are released, providing the public with access to a wealth of knowledge.
- i. The Copyrights Act, 1957 ("Copyright Act")

Copyright preserves the manner in which an idea is expressed rather than the idea itself. In accordance with Section 13 of the Copyright Act, "original literary, dramatic, musical, and artistic works; cinematograph films; and sound recordings" are protected by copyright. It's intriguing to notice that computer programmes can also be copyright protected ^[16]. An "exclusive right" to use or allow to be used in connection with a work that is protected by a copyright is known as a copyright. For example, the owner (or any person the owner designates) is authorized to perform the work, translate the work, amend the work, etc.

- ii. The Trade Marks Act, 1999 ("Trademarks Act")

Section 2(zb) of the Trade Marks Act states that a "trade mark" is "a mark that can be represented graphically and that may be used to distinguish the goods or services of one person from those of others, and may include the shape of the items, their packaging, and combination of colors... "Simply said, a trademark protects any symbols, including phrases, images, colours, and shapes, that identify and are associated with a good or service ^[17].

- iii. The Patents Act, 1970 ("Patents Act")

Any new invention is protected by an intellectual property right known as a "patent." It is an exclusive privilege that safeguards the inventor's rights and prevents unlawful use and theft of the registered patent by third parties ^[18].

After the application filing date, a patent is valid for 20 (twenty) years. It is crucial to keep in mind that an invention is only eligible for a patent if it is "novel" and "original," which means that it has not previously been published in the public domain in India or anywhere else; "capable of industrial application," which refers to the invention's ability to be used in an industry; and "inventive steps," which are defined as "a feature of an invention that involves technical knowledge."

The Patents Act grants the following rights to each inventor whose invention has been registered:

- a. the power to prohibit anyone from making, importing, using, or marketing a patent-protected goods without authorization; and
- b. the ability to prevent others from using, offering, or selling a product made possible by a method for which a patent has been granted without the creator's consent ^[19].

A requester may make a request for the registration of an international patent because India is a party to the Patent Cooperation Treaty (PCT). After submitting such an application, an inventor may simultaneously seek patent protection in numerous countries (PCT members).

iv. The Design Act, 2000 ("Design Act")

A "design" is defined as "only the features of shape, configuration, pattern, ornaments, or composition of lines or colors, applied to any article whether in two-dimensional or three-dimensional form, or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, and which in the finished article appeal to and are judged solely by the eye" under the Designs Act [section 2(d)]^[20].

Aim and Objectives

AIM: To spread awareness among different universities about Intellectual property rights.

OBJECTIVES

- To investigate the degree of IPR awareness.

- To investigate the IPR awareness behavioral pattern.
- To assess how IPR is perceived in their research and curriculum.
- To investigate the institutional knowledge of IPR.
- To investigate the moral, academic, and extra-academic uses of IPR

Methodology

In order to gather the most accurate data, the current study will be an empirical investigation that is finished in a very short amount of time. Among U.G., P.G., and Ph.D. students from several universities in India, a survey was conducted to increase understanding of intellectual property rights. Surveys based on Google Forms-distributed questions were used to gather the data. For this, replies from respondents were gathered via a questionnaire. This study's main objective is to find out how much information undergraduate, graduate, and doctoral students know about intellectual property rights. For clear and logical understanding, the replies from the respondents have been organized and formatted in the form of a questionnaire. An analysis of each question was made along with the question. A decision has finally been made. This descriptive cross-sectional study involved 120 students from different colleges in India who were majoring in a range of disciplines, including pharmacy, dentistry, medicine, engineering, and law.

Survey Questionnaire

<p>1. What does IPR stand for? *</p> <p><input type="radio"/> Intellectual Production Rights</p> <p><input type="radio"/> Intellectual Property Rights</p> <p><input type="radio"/> Intellectual Protection Rights</p> <p><input type="radio"/> None of the above</p>	<p>3. Why are intellectual property rights important? *</p> <p><input type="radio"/> They promote innovation and creativity</p> <p><input type="radio"/> They provide a means for protecting the value of intangible assets</p> <p><input type="radio"/> They foster economic growth and competitiveness</p> <p><input type="radio"/> All of the above</p>	<p>5. What is the duration of a patent? *</p> <p><input type="radio"/> 10 years</p> <p><input type="radio"/> 20 years from the date of filing</p> <p><input type="radio"/> 50 years</p> <p><input type="radio"/> None of the above</p>
<p>2. What are the different types of intellectual property rights? *</p> <p><input type="radio"/> Patents, trademarks, and copyrights</p> <p><input type="radio"/> Patents, trademarks, and trade secrets</p> <p><input type="radio"/> Copyrights, trade secrets, and industrial designs</p> <p><input type="radio"/> All of the above</p>	<p>4. How can intellectual property be protected? *</p> <p><input type="radio"/> By obtaining patents, trademarks, and copyrights</p> <p><input type="radio"/> By keeping trade secrets confidential</p> <p><input type="radio"/> By using contractual agreements</p> <p><input type="radio"/> All of the above</p>	<p>6. How can trademarks be protected? *</p> <p><input type="radio"/> By registering them with the government</p> <p><input type="radio"/> By using them consistently in commerce</p> <p><input type="radio"/> By monitoring for infringement</p> <p><input type="radio"/> All of the above</p>

7. What is the role of trademarks in protecting intellectual property? *

- They protect brand names and logos
- They prevent others from making, using, or selling the invention without permission
- They provide legal protection for artistic works
- None of the above

8. What is a copyright? *

- A legal right granted to an inventor for a new invention
- A legal right granted to the creator of an artistic work
- A legal right to prevent others from using confidential business information
- None of the above

9. How long does a copyright last? *

- 10 years
- 50 years
- The lifetime of the creator plus a certain number of years
- None of the above

10. What is the difference between a trademark and a copyright? *

- A trademark protects artistic works, while a copyright protects brand names and logos
- A trademark protects brand names and logos, while a copyright protects artistic works
- They are the same thing
- None of the above

11. What is a trade secret? *

- A confidential business practice or formula
- A legal right granted to the creator of an artistic work
- A legal right to prevent others from using confidential business information
- None of the above

12. How can trade secrets be protected? *

- By keeping them confidential
- By using contractual agreements
- By monitoring for unauthorized disclosure or use
- All of the above

13. What are the benefits of protecting intellectual property? *

- Encourages innovation and creativity
- Creates economic incentives
- Protects the value of intangible assets
- All of the above

15. What is a patent? *

- A legal right to prevent others from using confidential business information
- A legal right granted to an inventor for a new invention
- A legal right granted to the creator of an artistic work
- None of the above

17. What is the difference between a utility patent and a design patent? *

- A utility patent protects the way something works, while a design patent protects the way something looks.
- A utility patent protects the way something works, while a design patent protects the way something looks.
- They are the same thing.
- None of the above.

14. What is the purpose of intellectual property rights? *

- To protect the rights of inventors and creators
- To prevent unauthorized use of intellectual property
- To encourage innovation and creativity
- All of the above

16. What is the process for obtaining a patent? *

- Filing a patent application with the government
- Meeting the requirements for patentability
- Paying the required fees
- All of the above

18. What is a trademark? *

- A legal right granted to an inventor for a new invention
- A legal right to prevent others from using confidential business information
- A legal right granted to the owner of a brand name or logo
- None of the above

19. What is the purpose of a trademark? *

To protect the brand identity of a company or product

To prevent others from using a similar brand name or logo

To provide legal protection for the owner of the trademark

All of the above

20. What is a copyright infringement? *

The unauthorized use of someone else's copyrighted work

The unauthorized use of someone else's trade secret

The unauthorized use of someone else's patent

None of the above

21. What are the consequences of copyright infringement? *

Fines and legal penalties

Damage to reputation

Loss of revenue

All of the above

22. What is a trade name? *

A name used to identify a particular product or service

A name used to identify a particular company or business

A name used to identify a particular trade secret

None of the above

23. How can a trade name be protected? *

By registering it with the government

By using it consistently in commerce

By monitoring for infringement

All of the above

24. What is the term of a patent? *

10 years

20 years from the date of filing

20 years from the date of grant

It varies depending on the type of patent

Fig 2: Survey Questionnaire

RESULT AND DISCUSSION

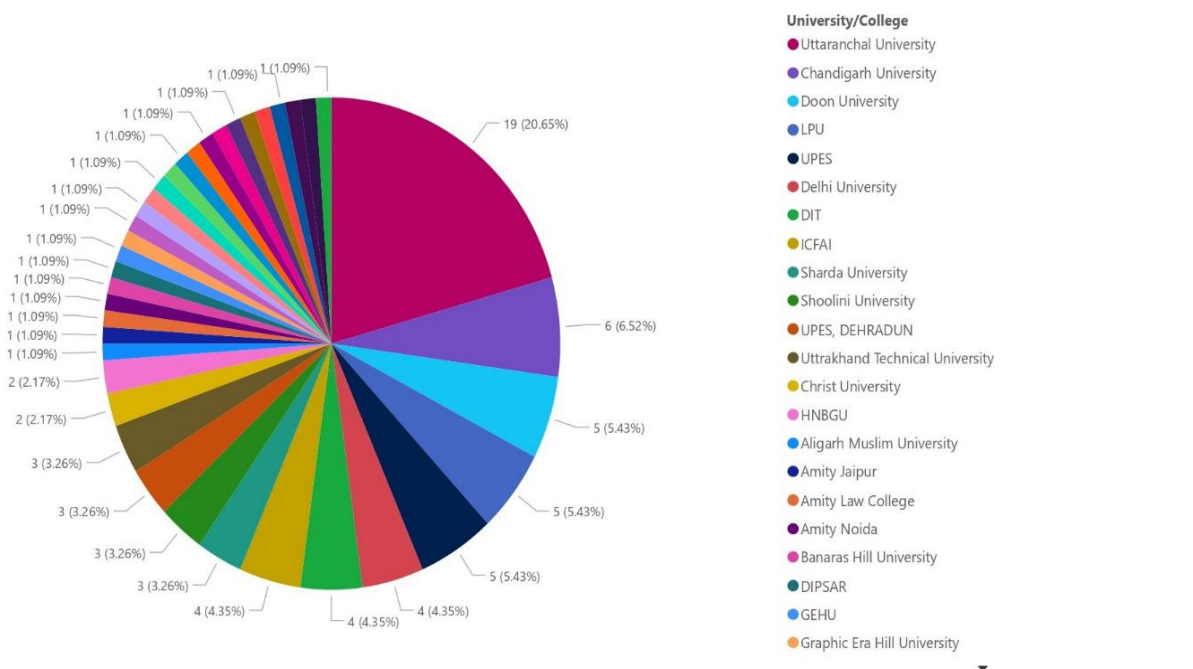


Fig 3: Data collection from various universities throughout India

The above figure shows the different universities from where data has been collected for this survey and based upon that data the following results has been made.

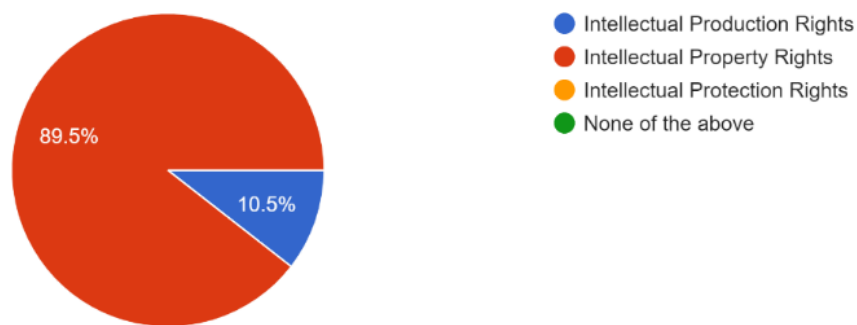


Fig 4: Shows full form of IPR

According to the aforementioned statistic, 90% of students are aware of IPR in its entirety, while only 10% are not.

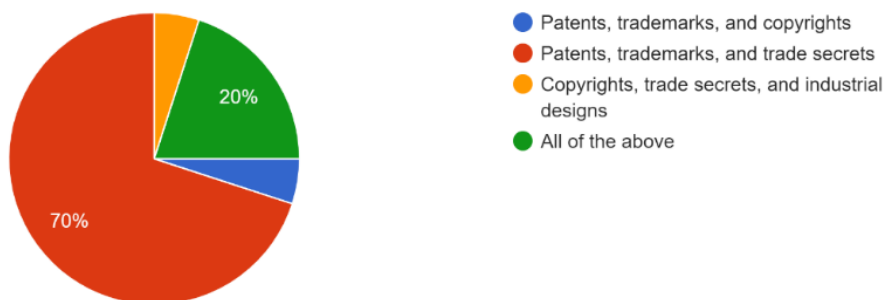


Fig 5: Shows different types of intellectual property rights

The above figure shows that 70% students are unaware about different types of IPR while 20% of students are aware about every form of an Intellectual Property.

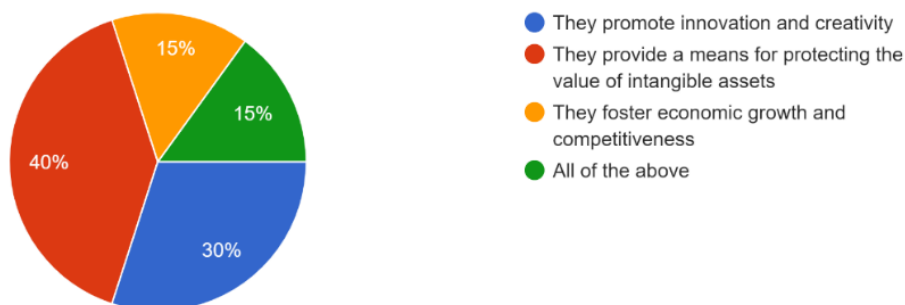


Fig 6: Shows importance of intellectual property rights

The above figure shows that 40% students consider IPR a form of protecting their innovative assets only while only 15% are aware about all the importance and advantages of having an IPR.

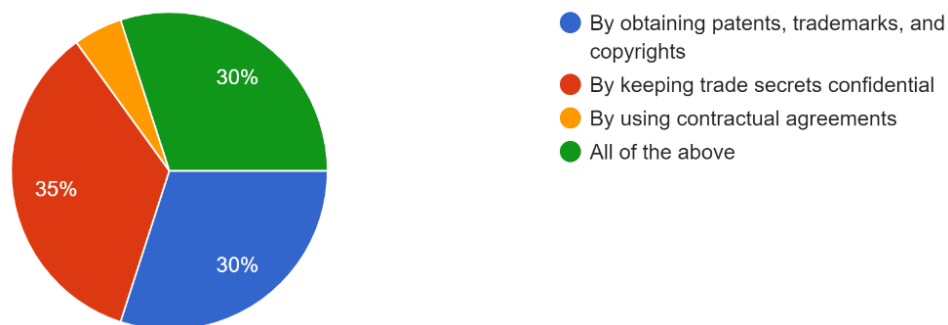


Fig 7: Shows ways of keeping intellectual property protected

The above figure shows that only 30% of students know how Intellectual property can be protected while more than 60% don't know how exactly a IPR works.

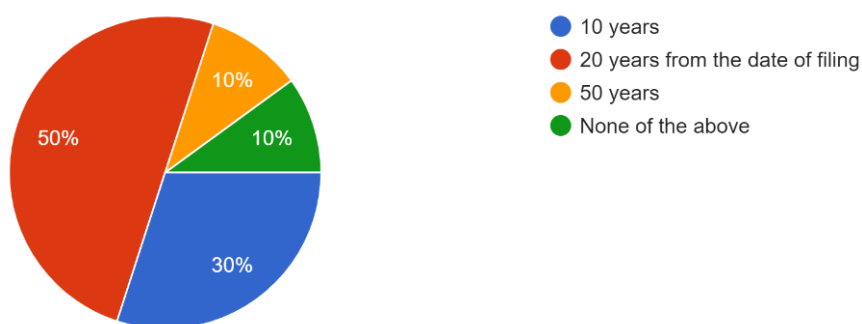


Fig 8: Shows duration of a patent

The above figure shows that approx. 50% of students know the exact duration of patent protection rest 50% were unaware about it.

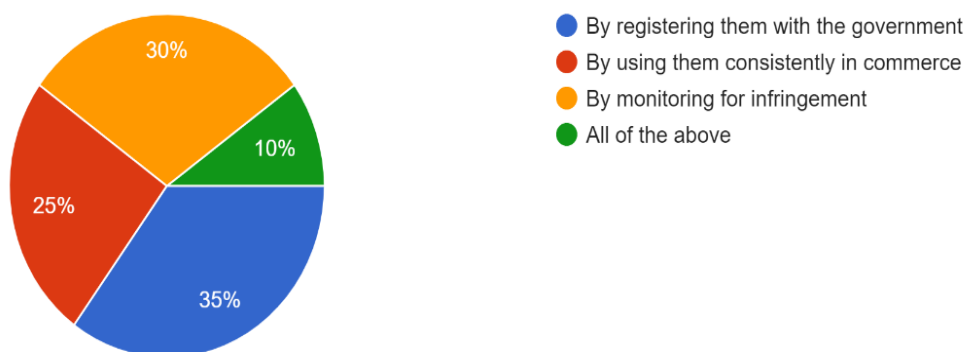


Fig 9: Shows ways of keeping trademarks protected

The above figure shows that only 10% students know how can a trademark be protected while 90% of students don't know the how exactly IPR can be protected.

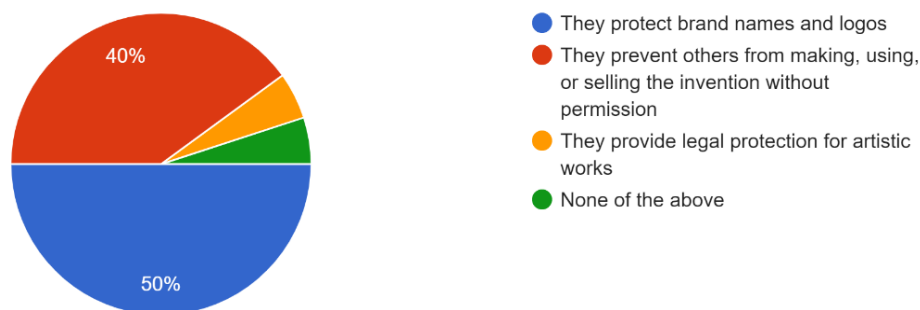


Fig 10: shows awareness about role of trademarks in protecting intellectual property

The above figure shows that approx. 50% of students know the role of trademarks in protecting intellectual property while 50% students are unaware about it.

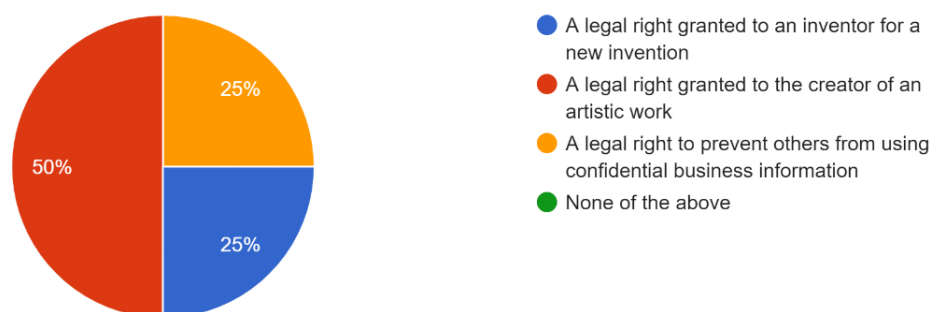


Fig 11: Shows number of individuals aware about copyright

The above figure shows that approx. 50% of students know the exact meaning of copyright while other 50% don't know the meaning of copyright.

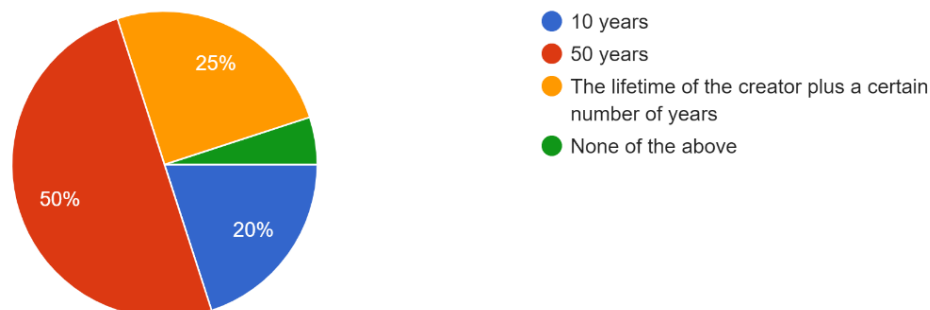
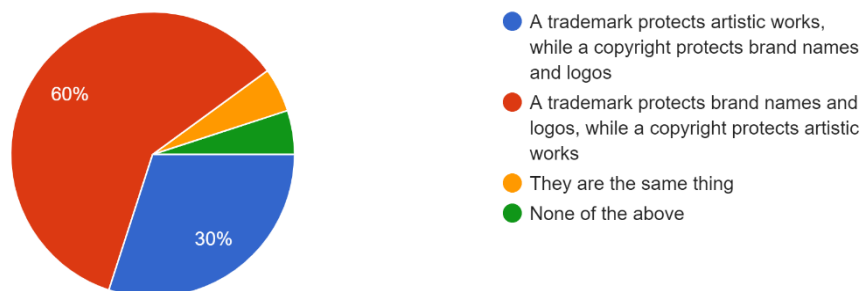


Fig 12: Shows number of individuals aware about duration of copyright



The above figure shows that approx. 25% students know how a long a copyright lasts while other 75% don't know that.

Fig 13: Shows the difference between a trademark and a copyright

The above figure shows that approx. 60% of students know the exact difference between copyright and trademark while other 40% were unaware about it.

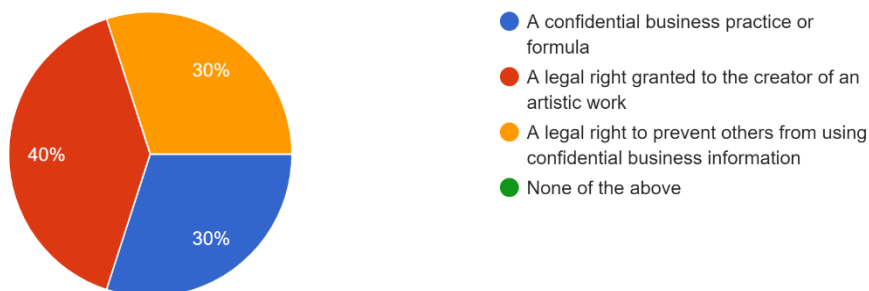


Fig 14: Reflects the number of individual aware of trade secret

The above figure shows that approx. 30% students know the exact definition of trade secret while other students i.e., the majority of students don't know about it.

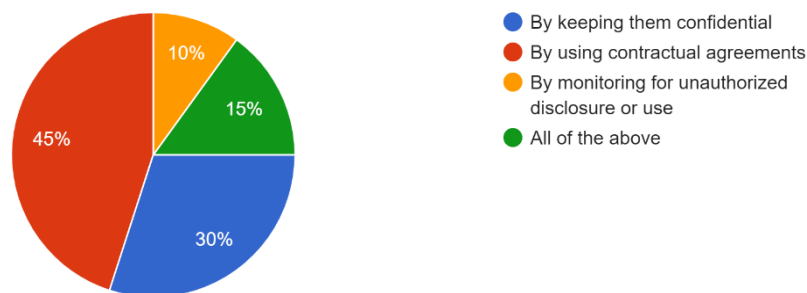
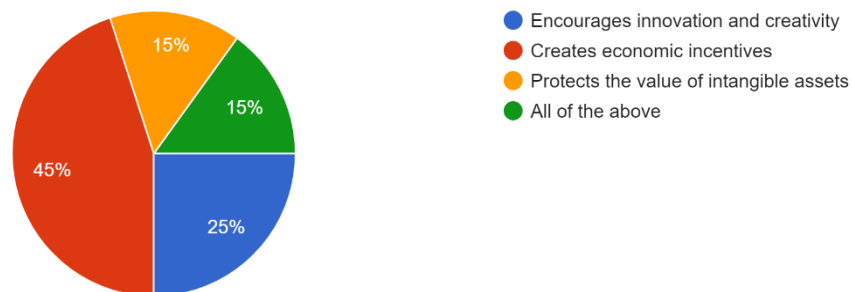


Fig 15: Shows the % awareness of trade secret protection

The above figure shows that only 15% students know each and every way by a trade secret can



be protected while other 85% of students were unaware about it.

Fig 16: Showing the awareness of benefits of protecting intellectual property

The above figure shows that only 15% were aware about the benefits which comes with IPR while other 85% students were unaware about it.

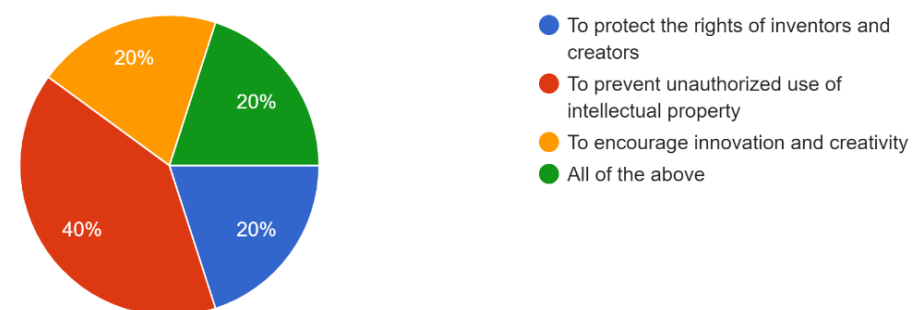


Fig 17: Shows the awareness of purpose of intellectual property rights

The above figure shows that approx. 20% students know the exact purpose and the advantages which come with an IPR while 80% students were unaware about it.

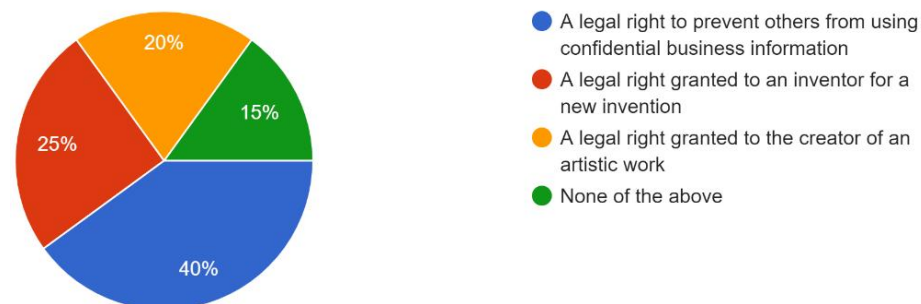
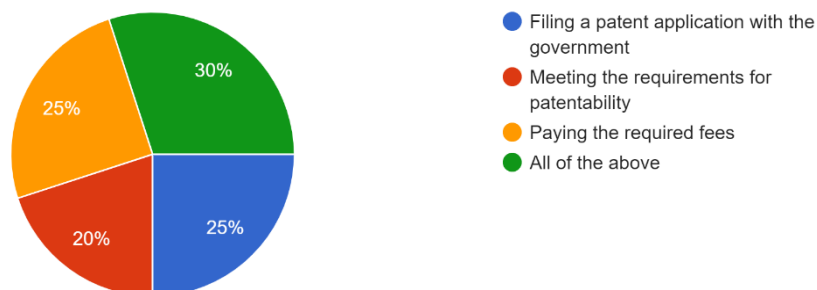


Fig 18: Shows % of awareness of patent

The above figure shows that approx. 25% students the exact meaning of a patent while other 75%



students were unaware about it.

Fig 19: Shows awareness of process for obtaining a patent

The above figure shows that approx. 30% students know the exact process for obtaining a patent while other 70% students know only half of the process for obtaining a patent.

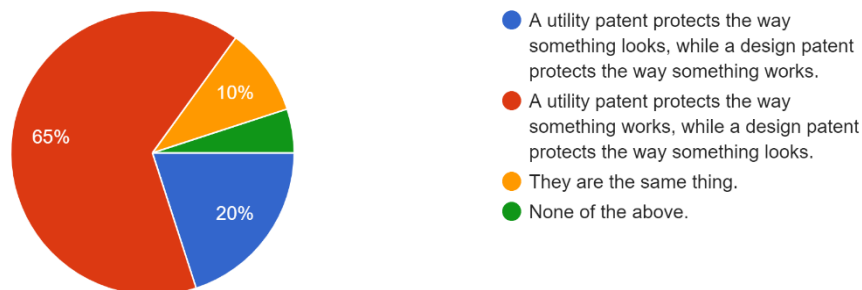


Fig 20: Shows the awareness % between a design patent and a utility patent

The above figure shows that more than 60% students know the difference between a utility patent and a design patent while other 40% students don't know that.

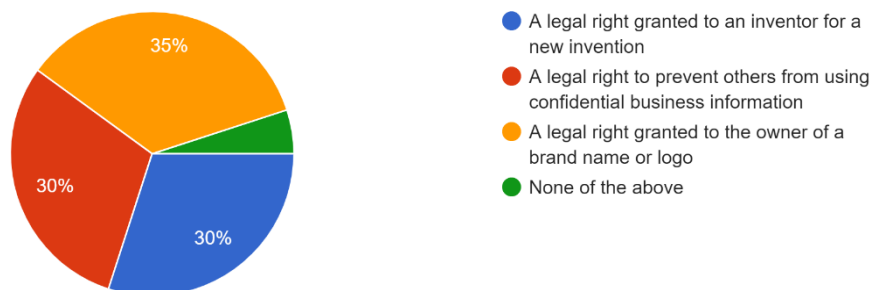
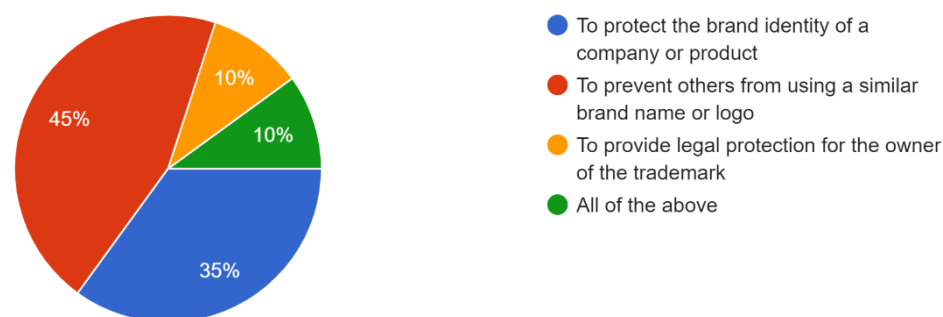


Fig 21: Shows the awareness % of trademark

The above figure shows that only 35% students know the true meaning of trademark while other



65% students were unaware with it.

Fig 22: Shows the % awareness of purpose of a trademark

The above figure shows that only 10% students know the purpose behind trademark while other 45% consider it as a protection for brand name and logo only.

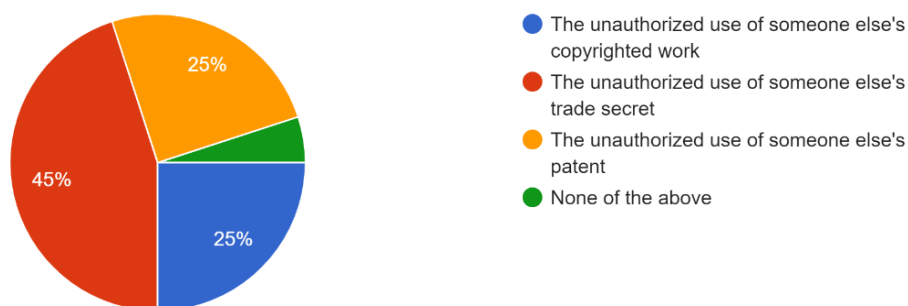


Fig 23: Shows the awareness % of copyright infringement

The above figure shows that only 25% students know the exact meaning of copyright infringement while other 75% were unaware about it.

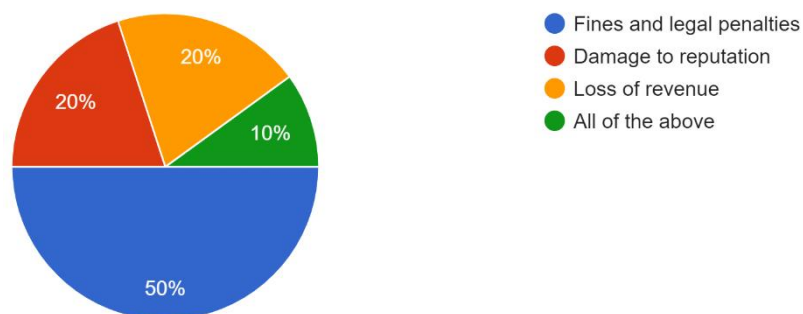
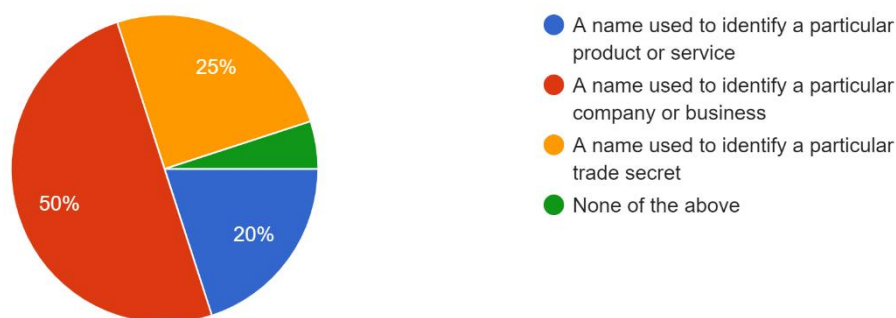


Fig 24: Shows the awareness of consequences of copyright infringement

The above figure shows that only 10% students know all the consequences of copyright infringement while 20% students only consider it as fine and legal penalties and other 20%



students consider it as damage to reputation.

Fig 25: Shows the % awareness of definition of Trade name among students

The above figure shows that only 50% students know about know the literal meaning of trade name while other 50% are unaware about it.

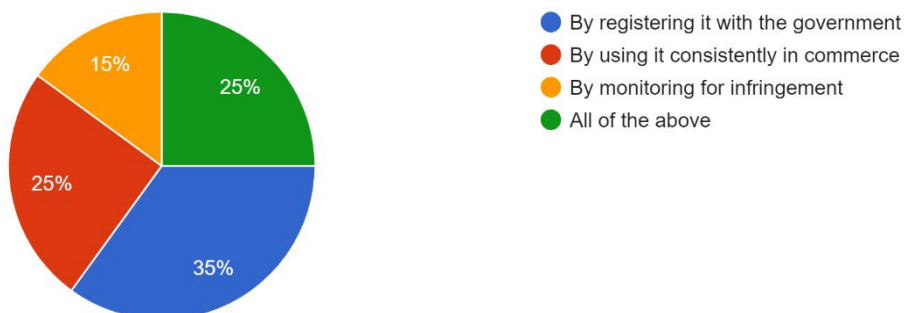


Fig 26: Shows the % awareness among students for protecting trade name.

The above figure shows that only 25% students know how a trade name can be protected while other 75% are unaware about it.

Conclusion

The preceding statistics on IPR awareness among undergraduates, graduate students, and doctoral candidates at a variety of universities in India demonstrate that university students and academics are familiar with intellectual property rights. They are aware with the forms of intellectual property (IPR) known as copyright and patents, but they know nothing about other types of IPR such as trademarks and designs. Fifty percent of those who participated in the survey are aware of legal protection, but the vast majority of them know very little to nothing about intellectual property rights (IPR) or the components of IPR. They are of the opinion that the practise of exploitation must be stopped before protection can be offered. The people who responded to the survey are aware of the significance of intellectual property rights in the areas of research and innovation. The majority of respondents have some knowledge of intellectual property rights being violated illegally. The statistics demonstrate that the respondents' awareness of how intellectual property rights are utilised in universities is poor. According to the findings of the survey, "respondents need some in-depth explanations about intellectual property rights, their use, and the relevance of intellectual property rights." Their awareness demonstrates that they are ignorant of the rights associated with intellectual property. The laws that are supposed to protect intellectual property are not well known among the respondents. They have a limited understanding of the application of IPR in academic research.

The results of the study indicate that most respondents were not aware of intellectual property rights. However, some of them were only brought up in connection with intellectual property rights. It was also found that the researcher knew very little about using patents and using copyrighted content in their research in a legal manner.

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REFERENCES

1. Rights, I. P. (2002). Integrating intellectual property rights and development policy. Londres, sèptanbr.
2. May, C., & Sell, S. K. (2006). Intellectual property rights: A critical history (p. 37). Boulder: Lynne Rienner Publishers.
3. Fisher, W. W. (1999). The growth of intellectual property: A history of the ownership of ideas in the United States. *EigentumskulturenimVergleich*, 265-91.
4. Dutfield, G. (2017). Intellectual property rights and the life science industries: A twentieth century history. Routledge.
5. Matthews, D. (2010). Intellectual property rights, human rights and the right to health. In *Intellectual Property and Human Rights*. Edward Elgar Publishing.
6. Sharma, D. K. (2014). Intellectual property and the need to protect it. *Indian J. Sci. Res*, 9(1), 084-087.
7. Resnik, D. B. (2003). A pluralistic account of intellectual property. *Journal of business ethics*, 46(4), 319-335.
8. Amado, R., & Gewertz, N. M. (2004). Intellectual property and the pharmaceutical industry: A moral crossroads between health and property. *Journal of business ethics*, 55(3), 295-308.
9. Liu, M., & La Croix, S. (2015). A cross-country index of intellectual property rights in pharmaceutical inventions. *Research Policy*, 44(1), 206-216.
10. Mahendiran, S., Chatterjee, C., Dukes, A. J., & Sokol, D. D. (2021). Fight or Surrender to Counterfeiters: Litigation as a Response to Trademark Infringement. USC Marshall School of Business Research Paper Sponsored by iORB, No. Forthcoming.
11. Huang, J., & Yang, A. (2015). Implementing dialogic communication: A survey of IPR, PRSA, and IABC members. *Public relations review*, 41(3), 376-377.
12. Hanel, P. (2006). Intellectual property rights business management practices: A survey of the literature. *Technovation*, 26(8), 895-931.
13. Candelin-Palmqvist, H., Sandberg, B., & Mylly, U. M. (2012). Intellectual property rights in innovation management research: A review. *Technovation*, 32(9-10), 502-512.
14. Verspagen, B. (2006). University research, intellectual property rights and European innovation systems. *Journal of Economic surveys*, 20(4), 607-632.

15. Hamza, R., & Pradana, H. (2022). A Survey of Intellectual Property Rights Protection in Big Data Applications. *Algorithms*, 15(11), 418.
16. Verspagen, B. (2006). University research, intellectual property rights and European innovation systems. *Journal of Economic surveys*, 20(4), 607-632.
17. Satyanarayana, K., & Srivastava, S. (2007). Poverty, health & intellectual property rights with special reference to India. *Indian Journal of Medical Research*, 126(4), 390-406.
18. Sattiraju, V. K., Pandey, R., Pallela, R., Sircar, A., Ligade, V. S., Muragundi, P. M., & Janodia, M. D. (2022). Intellectual property rights policies of higher education institutions (HEIs) in India: a cross-sectional study. *Journal of Science and Technology Policy Management*, 13(4), 837-848.
19. Geuna, A., & Rossi, F. (2011). Changes to university IPR regulations in Europe and the impact on academic patenting. *Research Policy*, 40(8), 1068-1076.
20. Holgersson, M., & Aaboen, L. (2019). A literature review of intellectual property management in technology transfer offices: From appropriation to utilization. *Technology in Society*, 59, 101132.