

IMPACT OF AWARENESS OF IPR, ENTREPRENEURSHIP SUPPORT PROGRAMMES AND GOVERNMENT SUPPORT ON IPR PROTECTION INTENTION (WITH SPECIAL REFERENCE TO START-UP ENTHUSIASTS)

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ABSTRACT

Innovation is the development of new ideas, products, services, and technology. All over the world, start-ups have become a

major contributor to innovative economies, through the use of IPR. IPR enables companies to protect their innovations and also earn revenue through IP commercialization. This factor affects the survival and growth of start-ups in the marketplace. So, in a globalized and liberalized economy, it is extremely important to legally secure innovation. This paper aims to check the level of awareness about IPR among start-up aspirants and entrepreneurs. To provide a brief detail about various schemes that the Indian government and global entrepreneurial support programs offer for spreading IPR awareness. Using statistical study, the research will measure whether awareness about IPR and various government initiatives and entrepreneurial support programs can create IPR protection intentions among start-ups. Primary Data is collected from undergraduate, graduate, post-graduate, and professionals. Self-Constructed Research tool was employed in the study. Constructs were found reliable and valid for assessing the intended concepts in the study. Data is analysed using the partial least squares structural equation modelling (PLS-SEM) method. The finding indicates that awareness of IPR indeed exerts a positive influence on the intention to protect intellectual property. However, being cognizant of government initiatives and entrepreneur support programs does not exhibit a discernible impact on this protection intention.

Keywords: Startup aspirants, IPR intention, Promote innovations, IPR commercialization, Entrepreneur development, Infringement.

INTRODUCTION

Startups are established businesses characterized by innovation, agility, and a focus on growth. They introduce unique

products or services in the market, aiming for rapid expansion, scalability, and sustainability.

Thus, innovations allow startups to survive in the marketplace. Innovation has emerged through the use of high-end technology and resulting in enterprise success leading to national as well as world economic development. to the growth of the country as well as the world economy. Startups all over the world have opted for IPR protection, to safeguard these innovations.

Intellectual property is concerned with authentic developments of human intellect like- artistic, scientific, technical, and more. IPR provides a legal right to the creator to safeguard their idea for a specified period. Allowing startups to fully utilize these ideas. Various types of IPs are:

- Copyright safeguards the expression of ideas instead of safeguarding the idea itself; like the literary work, drama, music, and even computer software. Startups obtain the copyright to freely use and distribute their original work to build intellectual capital, usually for a limited time.
- Patent protects startup exclusive rights to any invention. Startup companies often apply for patents to prevent their unique products, processes, or technologies from being copied or used by others without permission.
- Trademark is a unique sign, symbol, logo, name, or combination used by startups to distinguish their goods or services. Trademarks are a form of intellectual property protection that helps entrepreneurs build recognition and trust among consumers.

· Design means features of shape, pattern, configuration, ornament, or composition of colors or lines which are applied in three-dimensional or two-dimensional or in both forms using any of the processes whether manual, chemical, mechanical, separate, or combined which in the finished article appeal to or judged wholly by the eye. An entrepreneur uses design patents to protect their unique product designs.

· Geographical indication is an IPR that helps to recognize the product originating from a specific geographic location; also, the quality and features of the product are traceable to that particular geographic location. Some of the famous startups using GIs as their key promotion tool are Bagh Prints of Madhya Pradesh, Kashmiri Hand Knotted Carpet, and Blue Pottery of Jaipur.

IPR is individualized, and related to the specific goals of the company, its size, and business profile, which influence the necessity to increase the focus on a specific type of protection of individual intangible assets.

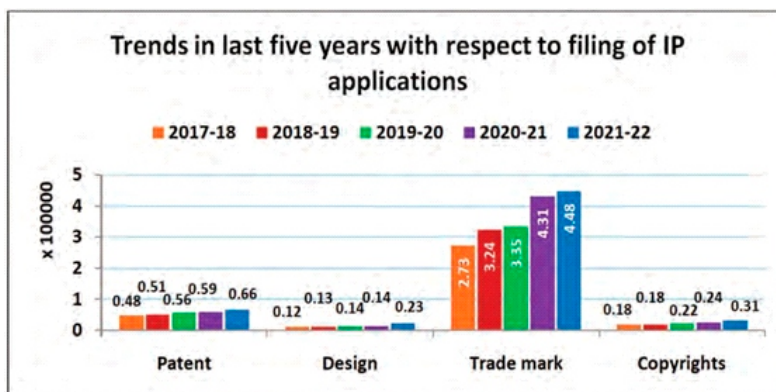
Thus, it is imperative to understand the link between innovation, IPR, and entrepreneurship and, the importance of Intellectual Property Rights (IPR).

Table 01. Trends in last five years with respect to filing of IP applications

Application	2017-18	2018-19	2019-20	2020-21	2021-22
Patent	47854	50659	56267	58503	66440
Design	11837	12585	14290	14241	22699
Trade mark	272974	323798	334805	431213	447805
Geographical Indication	38	32	42	58	116
Copyrights	17841	18250	21905	24451	30988
Total	350544	405324	427309	528466	568048

Source: Intellectual Property India Annual Report 2021-22

Figure 01. Trends in last five years with respect to filing of IP applications per lakh



Source: Intellectual Property India Annual Report 2021-22

Startup India Initiative

Startup India was launched on January 16, 2016, with various ideas and schemes to encourage entrepreneurs, create a strong ecosystem, and transform India into a nation of people creating more jobs than job seekers. The program is managed by the Startup India team under the Department of Entrepreneurship and Promotion (DPIIT). The schemes launched under this initiative are:-

The Startups Intellectual Property Protection (SIPP) Scheme, 2016

Foster innovation by promoting intellectual property ownership in new businesses. Help startups protect their ideas and also promote their ideas by providing quality intellectual resources and jobs. Offer 80% and 50% fee concessions on patent and trademark applications respectively. Initiate expedited review process to reduce the number of trademark applications from 74 to 8. Offer a 10% return on electronic applications. Introduce video conferences and other initiatives.

Atal Innovation Missions

The aim of the Atal Innovation Mission (AIM) is to formulate new plans and policies to promote innovation in various sectors, provide platforms and collaborations for different stakeholders, and create a cap to oversee the innovation and business ecosystem of the country. AIM has set up a global incubation center called Atal Incubation Centers (AICs) in universities, colleges, and cooperatives to support young innovators in the country. The centers are designed to create and support international innovation and strong

entrepreneurs who want to create a large and sustainable business. AIM Completed 72 AIC in India. These AICs support entrepreneurship by providing infrastructure, support, training, financial support, collaboration and networks, co-working space, and laboratories.

These AICs have incubated more than 3,500 startups and created more than 32,000 jobs in the ecosystem. Nearly 1,000+ startups have female leaders and founders. AIC supports initiatives in health education, finance, education technology, space and drone technology, AR/VR, food processing, tourism, and other fields.

Cell for IPR Promotion and Management (CIPAM)

Help improve intellectual property processes and take steps to increase intellectual property awareness, marketing and management. To organize training on law and intellectual property rights in schools and to organize legal training for police officers. Release IP management tools to address IP infringement, spoofing and copyright infringement.

National Intellectual Property Rights Awareness Mission (NIPAM)

It was launched on the initiative of the government 'Azadi ka Amrit Mahotsav' by Shri Anurag Jain, Secretary, DPIIT, on 12 August 2021. The mission of Pan-India is to create awareness about intellectual property rights among 1 million students. It aims to encourage creativity and innovation in high school students (ages 8 to 12) and to encourage and motivate college/university students to innovate and preserve their creations.

Other initiatives started by the government

Bio-NEST

This initiative was launched by BIRAC with the vision of supporting the biotechnology innovation ecosystem in the country. BIRAC's Bio-NEST supported 65 bio-incubators to create an area of 863,382 square meters for budding entrepreneurs

BEM (Bio-incubator, Supporting Entrepreneurship to Scale Technologies in Bioresearch and Environmental Management) is a biotechnology incubator designed to help startup companies accelerate the development and commercialization of new technologies. The initiative is funded by the Biotechnology Industry Research Assistance Council, Department of Biotechnology, to provide infrastructure and support services to researchers, investors, and entrepreneurs who want to turn innovations in medical technology and environmental sciences into profitable and successful businesses.

MeitY

The Ministry of Electronics and Information Technology (MeitY), Government of India, recently announced the Technology Incubation and Development of Entrepreneurs (TIDE 2.0) program. The program aims to support technology start-ups, using ICT-enabled technologies, in selected areas. Health, education, agriculture, financial inclusion (including digital payments), infrastructure and transportation, environment and clean technology, clean energy, and others.

Department of Science and Technology (DST)

The DST works across all major projects that require scientific and technological intervention. Technology Interventions can provide solutions to overcome challenges and improve the standard of living of Indian citizens with the help of science and technology. The ASEAN-India Science, Technology and Innovation Cooperation encourages collaborative research with scientists and researchers from ASEAN member states through cooperation in science, and technology, for developing research skills and expertise.

Centre for Entrepreneurship Development Madhya Pradesh

The Centre for Entrepreneurship Development, Madhya Pradesh globally acclaimed as CEDMAP has been functioning progressively and incredibly for over three decades. The organization has set a benchmark in skill development and entrepreneurship evolution as a diligent and significant hand holder.

CEDMAP has been prominently fostered by the State Government of Madhya Pradesh and Central Financial Institution. Although it has a staunch endorsement of a leading bank of the state too it still stands apart as an autonomous body and not-for-profit institution. It was established in the year 1988 and registered under the Firms & Societies Act 1973. The organization has accomplished gigantic success in the field of entrepreneurship development activities for the upliftment of society in the States of Madhya Pradesh (MP) and Chhattisgarh (CG).

Entrepreneurial Support Programs

Incubators

Their goal is to enhance business growth by providing business services, referrals, communications, business support, and shared resources. Depending on many factors such as the services the institution uses, types of usage, teachers, support, and use of the organization's intellectual property, the organization will initially receive between 2% and 9.5% equity capital/equity./company.

6 There are significant differences between traditional incubators in industrialized countries and incubators in developing countries.

Traditional incubators in industrialized countries act as intermediaries that complement other factors in many of the already strong innovation systems and strong organizations to stimulate and grow private sector-driven technological innovation. The country's economy has capital for entrepreneurs pursuing specific goals by encouraging high-risk innovation they still operate in a place of great potential and value.

In developing countries, on the contrary, incubators have become the key resource of science, technology, and innovation (STI) policies, and their responsibilities have been far more extended. Incubators have been working for decades to achieve the social, environmental, and economic goals contained in the Sustainable Development Goals (SDGs).

Hackathon

Events where participants work hard over a while, such as a day or weekend, to create and commercialize a service, product, or solution.

Hackathons are traditionally public events, but more and more businesses are hosting internal hackathons to inspire employees and find solutions.

Example –

MSME Idea Hackathon 3.0 -Each approved idea will receive funding of Rs. 15 Lakhs to develop the idea and turn it into a model.

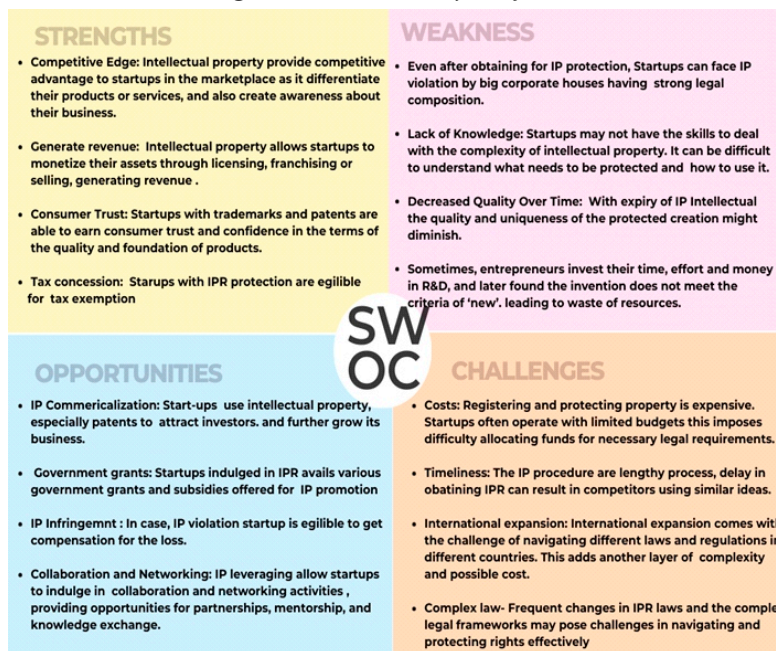
The 'Hackathon EngSUI Startup Innovation Quest program offers entrepreneurs a valuable opportunity to turn new ideas into reality. Hackathon has three different types of funding: 'Innovation Challenge' (up to Rs 20 Lakh), 'Seed Fund' (up to Rs 1 Crore), and 'Direct Capital Fund' (up to Rs 5 Crore).

Startup Social Groups

Start-up social groups range from small groups of entrepreneurs who hold "meetings" to large organizations that hold regular events. Some groups have access rights, but most do not. For example: - Indian Startups, a community of over 100,000 members, is an initiative that brings aid to support, encourage, and support entrepreneurs, investors, partners, and providers from India and around the world to help them grow and grow. Startups Network is committed to establishing partnerships with organizations that have a significant role in building the Indian startup ecosystem.

SWOC of IPR

Figure 02. SWOC Analysis of IPR



REVIEW OF LITERATURE

These are some research papers and reports that we have reviewed in our study.

Table 02. Literature review

S.No	Year of Study	Topic of study	Author	Objectives	Results
National Reviews					
1	2020	Strengthening science, technology, and innovation-	Kavita Surana et al	To evaluate how publicly-funded incubators could help in	For STI-based incubators to be effective, the government

		based incubators to help achieve Sustainable Development Goals: Lessons from India		the development of STI-based entrepreneurs. We evaluate the reason behind the priorities of STI-based incubators under the different policies before 2015, the actions taken by public agencies to implement these policies, and in what ways incubators were considered effective in eliminating the societal challenges that now lead to SDGs.	needs to build –up the incubation system. This involves making SDGs a priority in incubator goals, encouraging coordination among incubator programs, creating a performance monitoring system, and expanding capacity building at multiple levels for incubator and boarding STI in the country.
2	2019	Linkages between IP Protection and Start-ups in India	Garima Sodhi et al	It examines where Indian tech startups are aware of various intellectual properties and their efforts to protect them. Also, discover how tech companies are	The results show that the Indian technology industry has limited knowledge of intellectual property rights such as patents and designs. It has been observed

				leveraging Indian government initiatives like Startup India and other similar initiatives.	that most technology businesses use trademarks and trademarks, while other types of copyright are mostly ignored
3	2019	Entrepreneurship in India and Its Promotion under the 'STARTUP INDIA' Scheme	DR. R. Jayanthi	To highlight the entrepreneurship environment in India, under: Global perspective, feature, functions, significance, and more.	Over the past few years, the entrepreneurship culture of India has significantly grown. Focusing on social entrepreneurship. The government has launched various schemes for the promotion of entrepreneurship. Despite all this, the contribution of entrepreneurship to the country's growth remains a mystery.
4	2018	Low IPR Awareness in India	Neetu Chandra Sharma	To study IPR awareness.	Institutions need to include IP in

					their core topics of discussion to promote the significance of IPR.
International Reviews					
1	2018	Intellectual property management in startups — problematic issues	Agnieszka Baran and Asel Zhumabaeva	This article's objective was to detect, interpret, and evaluate the major issues related to IP management in startups.	In the 21st century, the business environment is highly competitive due to this reason IPR protection for startups is of high importance. To survive in the market, new startups must focus on effective IP management.
2	2018	Intellectual property issues for startups participating in entrepreneurship support programs in Wisconsin	Nathaniel S. Hammons	To study the challenges faced by startups in terms of IPR, while participating in Wisconsin sponsorship events and the reason behind the success of such events.	The ecosystem in Wisconsin has enlarged in terms of startups and the programs that support them. Accelerators, incubators, hackathons, and other programs and organizations assist them in various capacities.

OBJECTIVES

1. To study the effect of awareness about IPR on the IPR protection intention of Youth
2. To study the effect of awareness about entrepreneurial support programs on the IPR protection intention of Youth
3. To study the effect of awareness about government support on the IPR protection intention of Youth.

HYPOTHESIS

H01: Awareness about IPR would positively influence start-ups' IPR protection intentions

H02: Awareness about entrepreneurial support programs would positively influence start-ups' IPR protection intentions.

H03: Awareness about Government support would positively influence start-ups' IPR protection intentions

RESEARCH METHODOLOGY

This research uses a quantitative approach and data are analyzed using the partial least squares structural equation modelling (PLS-SEM) method for testing the hypotheses. The questionnaire was subjected to content validity by startup aspirants and entrepreneurs about their awareness of IPR, various government initiatives, and entrepreneurial support programs that started to create the IPR ecosystem. This study is based on primary data.

The questionnaire consists of a total of 22 questions measured on a 5-point Likert-type scale.

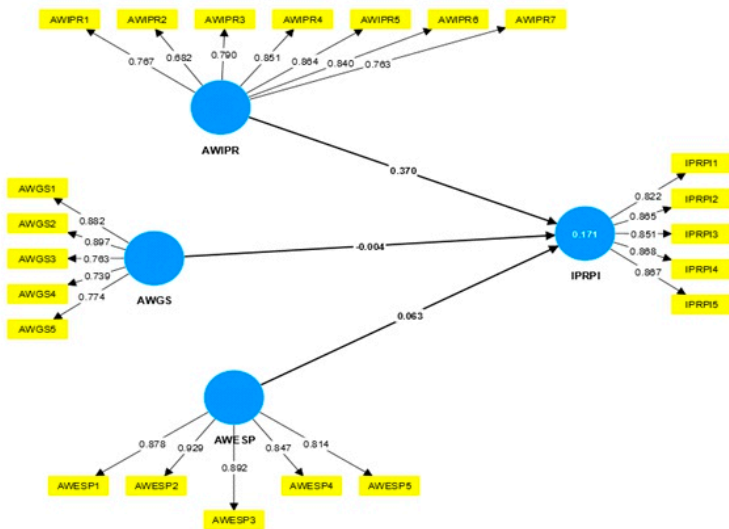
Sample size and technique selected for study: We collected the data from 100 respondents.

Data was collected from undergraduate, graduate, post-graduate, and professionals through Google form.

Area of the study: The study has been carried out among the startup aspirants, and entrepreneurs in Bhopal.

Research Tool: Self-Constructed Research tool was employed in the study.

Figure 03 Structural model of the study



Source: Developed for the purpose of the study

Table 03. Construct Reliability and Validity

Constructs	Cronbach's Alpha	Average Variance Extracted (AVE)
Awareness of Entrepreneurship support programs	0.922	0.762
Awareness of Government support	0.891	0.662
Awareness of IPR	0.904	0.634
IPR Protection Intention	0.908	0.731

Source: Developed for the purpose of the study

Table 03 presents the construct reliability and validity measures for different constructs in the study. The Cronbach's Alpha values are indicators of internal consistency. For the construct "Awareness of Entrepreneurship support programs," Cronbach's Alpha is 0.922, suggesting high internal reliability. The Average Variance Extracted (AVE) for this construct is 0.762, indicating good convergent validity.

Similarly, for the construct "Awareness of Government support," Cronbach's Alpha is 0.891, demonstrating a high level of internal consistency. The AVE is 0.662, indicating acceptable convergent validity.

The construct "Awareness of IPR" also exhibits strong internal reliability with a Cronbach's Alpha of 0.904. The AVE for this construct is 0.634, suggesting good convergent validity.

Finally, for the "IPR Protection Intention" construct, Cronbach's Alpha is 0.908, indicating high internal consistency. The AVE is

0.731, reflecting good convergent validity. Overall, these results suggest that the measurement items within each construct are reliable and valid for assessing the intended concepts in the study.

LIMITATIONS OF THE STUDY

- 1. Doing this research with a large sample size might have generated more accurate results.
- 2. This study has been carried out only in Bhopal. So, a limited geographical area is covered.
- 3. Only initiatives started by the Indian government for creating an IPR ecosystem have been included in the paper.

Descriptive Analysis & Hypothesis Testing

Table 04. Descriptive Statistics

	Gender	Age Group	Institute	Income group	Qualification
N	100	100	100	96	100
Missing	0	0	0	4	0
Mean	1.61	2.20	1.99	1.57	1.37
Median	2.00	2.00	2.00	1.00	1.00
Standard Deviation	0.510	0.651	0.362	0.736	0.774
Shapiro-Wilk W	0.663	0.469	0.496	0.719	0.539
Shapiro-Wilk p	< .001	< .001	< .001	< .001	< .001

Source: Developed for the purpose of the study

The data presents descriptive statistics for various variables, including Gender, Age Group, Institute, Income Group, and Qualification. The sample size (N) is consistent across all categories, except for Income Group where there are four missing values. The mean values for Gender, Age Group, and Institute are around 1.6, 2.2, and 2.0, respectively, while Income Group and Qualification have lower means of 1.57 and 1.37. Medians are generally lower than means, indicating potential skewness. Standard deviations vary, with Age Group having the highest at 0.651. The Shapiro-Wilk tests reveal all variables significantly deviate from normality ($p < .001$). Overall, the data highlights variations in central tendency, dispersion, and distribution shape across different demographic variables.

Table 05. Hypothesis Testing Mean, STDEV, T values, p values

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Awareness of Entrepreneurship support programs -> IPR Protection Intention	0.063	0.059	0.185	0.341	0.733
Awareness of Government support -> IPR Protection Intention	-0.004	0.031	0.211	0.021	0.983
Awareness of IPR -> IPR Protection Intention	0.370	0.364	0.163	2.275	0.023

In Table 05, the hypothesis testing results are presented, focusing on the mean (M), standard deviation (STDEV), t-statistics ($|O/STDEV|$), and p values for various relationships. For the association between Awareness of Entrepreneurship support programs and IPR Protection Intention, the sample mean is 0.063, with a standard deviation of 0.185. The t-statistic is 0.341, resulting in a p-value of 0.733, indicating no significant relationship.

In the case of Awareness of Government Support and IPR Protection Intention, the sample mean is -0.004, with a standard deviation of 0.211. The t-statistic is 0.021, yielding a p-value of 0.983, suggesting a lack of significant association.

In the relationship between Awareness of IPR and IPR Protection Intention, the sample mean is 0.370, with a standard deviation of 0.163. The t-statistic is 2.275, resulting in a p-value of 0.023, indicating a significant positive relationship. These findings suggest that awareness of Intellectual Property Rights (IPR) is associated with higher intentions for IPR protection.

CONCLUSION

Start-ups have become a worldwide trend but entrepreneurs face a major challenge in prolonging their business life cycle, wherein innovation comes in as a survival tool. However, innovation without IPR protection may lead to a waste of resources, money, time, and effort. Intellectual Property Rights (IPR) confer exclusive privileges to the originator of the idea for a designated duration. This entitlement offers benefits such as a competitive edge, consumer trust, networking, and potential IP commercialization. Entrepreneurs

well-versed in IPR concepts can leverage these benefits. The government of India, along with entrepreneurial support programs, has extended numerous initiatives, grants, subsidies, and concessions to foster IPR awareness across the nation. Despite all this, the findings suggest Awareness of Entrepreneurship support programs and IPR Protection Intention have no significant relation. Awareness of Government support and IPR Protection intention lack significant relation. Awareness of Intellectual Property Rights (IPR) is associated with higher intentions for IPR protection.

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