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Recent Patenting Trends in India-A Critical Study

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Abstract: The Science, Technology and Innovation are considered to be the key drivers of the economic development of nations. Research publications and patent generation are two critical indicators for assessing the quality of scientific endeavours of a nation. There is direct relation between the economy and the patent regime of a nation. Patent is an exclusive and territorial right granted to inventor by regional or national government to a limited period of years. The amendments in the Indian Patent Act, 1970, amendments in Patent Rules, National IPR policy, Make in India and Startup India which were brought the tremendous influence on the patenting activities. The study has been undertaken to investigate the recent trends in patenting activity in India between the years 2008-2019. The study revealed that the patent grants have increased significantly in all fields due to patent reforms and IPR policies but need much more intensely it should be implemented and awareness to be created to attain the grater successes in the field of science and technology so as to consider with the Indian population and country as a whole.
Keywords: *Patent; Patenting trends*; *Indian Patent Act.*

Introduction

The patent is the one of the Intellectual Properties which fuels the engine of prosperity, fosters invention and innovation, and is an intangible asset that plays a vital role in the socio-economic ecosystem. Its creation and protection is essential for the sustainable growth of nation. The patenting activity is a mechanism to reward the innovators and therefore attracts more investment in research and development. In India, the Patent Act, 1970 came into force on April 20, 1972 and aimed to encourage and protect the inventions that are new, non-obvious, and commercially applicable and thus enabling the innovators to appropriate the returns on their innovative activities. The act on one hand protects the patents and on other hand ensures the technology transfer, public interest and specific needs of the country. Actually efforts to strengthen patents and other forms of Intellectual Property Rights (IPR) were started with the TRIPS agreement in 1995 and these have led to increased patenting activity in the all member nations of the World Trade Organization (WTO). The several amendments in the Indian Patent Act, 1970, amendments in Patent Rules and government policies like National IPR policy, Make in India and Startup India which were brought the tremendous influence on the patenting activities.

Patents are the primary source of unique and state-of-the-art technical information. The technological performance of a country is indicated by the number of patents originating from a country. Hence, patents can be used as indicators to measure the technological competitiveness of a country [1]. The information and knowledge of trends in patents can also be used for technology forecasting and policy formulation.

Here, the main objective is, to study the recent trends in patenting in India. To attain the objective of the study, here the analysis of the patents filed by inventors/innovators from the years 2008 to 2019 is made.

Patent Reforms

The Patent Act in India is more than 160 years old. In 1856, British enacted and implemented the first patent statute in India "On Protections of Inventions", provided certain exclusive privileges to inventors for a 14 year term and has been amended several times since then. However, a comprehensive legislation, the Patents and Designs Act, 1911 was a major development and it provided protection to all process inventions, except those relating to atomic energy, for a period of 16 years. The Patent Act 1970 (39 of 1970)provided protection of process innovations for pharmaceuticals and agro-chemical products for a short period, viz. seven years, for pharmaceuticals, agrochemicals and food products and 16 years for other categories. The methods of agriculture were not patentable. A major step towards the promotion of patenting activity was the TRIPS agreement of 1995, after which the Patent Act in India was amended in 1999, 2002 and 2005. In 1999, a mail box approach was provided for filing product patents in

pharmaceuticals and agricultural sectors, under which any person having a product invention can file an application for a patent and the patent will be granted when product patenting will be enforced. Besides the mail box provision, it also provides exclusive marketing rights to the inventor and thus can invite foreign patent and investment. The second amendment to the 1970 Act was made through the Patents (Amendment) Act, 2002 (Act 38 of 2002). This Act came into force on 20th May 2003 with increasing the term of patents from 16 years to 20 years and the introduction of the new Patent Rules, 2003 by replacing the earlier Patents Rules, 1972 which were further amended in 2005, 2006, 2012, 2013, 2014, 2016, 2017 and 2019. The third amendment to the Patents Act 1970 was introduced through the Patents (Amendment) Ordinance, 2004 w.e.f. 1st January, 2005. This Ordinance was later replaced by the Patents (Amendment) Act 2005 (Act 15 of 2005) on 4th April, 2005 which was brought into force from 1st January, 2005. In 2005, the amendment allowed product and process patents in all fields of science. However, methods of agriculture, essentially biological processes, plants and animals in whole or any part thereof, cannot be patented, but genes, micro-organisms, etc. with significant human interventions can be patented.

Under the provisions of section 159 of the Patents Act, 1970 the Central Government is empowered to make rules for implementing the Act and regulating patent administration. Accordingly, the Patents Rules, 1972 were notified and brought into force w.e.f. 20th April, 1972. These Rules were amended from time to time till 20 May 2003 when new Patents Rules, 2003 were brought into force by replacing the 1972 rules. These rules were further amended by the Patents (Amendment) Rules, 2005 and the Patents (Amendment) Rules, 2006. The amendments are made effective from 5th May 2006. Patents (Amendment) Rules 2016, enacted on 16th May 2016, provides fee concession to startups in respect of their patent applications. Startups have to pay all patent fees including filing fee at par with a natural person only, thereby providing 80% fee concession in patent fees as compared to other legal entities. Further, expedited examination is also allowed for startup patent applications.

Startups Intellectual Property Protection (SIPP) for benefit to Facilitators of startup applications in Patents, Designs and trade Marks has been extended for 3 years. As on 31st March 2019, 208 facilitators in Patents and Designs and 240 facilitators in Trademarks have been registered. Till 31st March 2019, 450 Startups have submitted request for expedited examination under Rule 24 (C) of Patent (Amendment) Rules 2016. First examination report has been issued in case of 410 applications and 120 patents have been granted [2].

As India became signatory to Patent Cooperation Treaty (PCT) in 1998, consequently the patent filing in India, including National Phase applications under PCT, has increased exponentially. Indian Patent Office is a major PCT filing country and also functions as ISA/IPEA under PCT.

Make in India

The 'Make in India' initiative was launched on 25th September, 2014 with the objective of facilitating investment, fostering innovation, building best in class manufacturing infrastructure, making it easy to do business and enhancing skill development. Make in India initiative along with action plans prepared for 25 sectors has been reviewed and is now focused on 27 sectors. Department for Promotion of Industry and Internal Trade coordinates action plans for 15 manufacturing sectors while Department of Commerce coordinates 12 service sectors [2].

Invest India

Invest India has been set up as a Joint Venture (Not for Profit) Company between Department for Promotion of Industry and Internal Trade, Federation of Indian Chambers of Commerce & Industry (FICCI), CII, NASSCOM and various State Governments. Invest India is the National Investment Promotion and Facilitation Agency of India and acts as the first point of reference for investors in India [2]. Invest India is transforming the country's investment climate by simplifying the business environment for investors. Its experts, specializing across different countries, Indian states and sectors, handhold investors through their investment lifecycle - from pre investment to after-care. Invest India provides multiple forms of support such as market entry strategies, deep dive industry analysis, partner search and location assessment policy advocacy with decision makers.

Start up India

Startup India is a flagship initiative of the Government of India, intended to catalyze startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship in India. From the launched on 16th January, 2016, Startup India has rolled out several programs with the objective of supporting entrepreneurs, building up a robust start up ecosystem and transforming India into a country of job creators instead of job seekers. These programs are managed by a dedicated Startup India team, which reports to DPIIT. Under the Startup India Scheme, eligible companies can get recognized as startups by DPIIT in order to access a host of tax benefits, easier compliance, IPR fast tracking and other benefits.

National IPR Policy

The National IPR Policy, approved on 12th May, 2016 which lays the future roadmap for intellectual property in India. The Policy recognizes the abundance of creative and innovative energies that flow in India, and the need to tap into and channelize these energies towards a better and brighter future for all. The National IPR Policy is a vision document that aims to create and exploit synergies between all forms of intellectual property (IP), concerned statutes

and agencies. It sets in place an institutional mechanism for implementation, monitoring and review. It aims to incorporate and adapt global best practices to the Indian scenario. This policy shall weave in the strengths of the government, research and development organizations, educational institutions, corporate entities including MSMEs, start-ups and other stakeholders in creation of an innovation-conducive environment, which stimulates creativity and innovation across sectors, as also facilitates a stable, transparent and service-oriented IPR administration in the country [2] .

The Policy recognizes that India has a well-established TRIPS-compliant legislative, administrative and judicial framework to safeguard IPR, which meets its international obligations while utilizing the flexibilities provided in the international regime to address its developmental concerns. It reiterates India's commitment to the Doha Development Agenda and the TRIPS agreement.

The Policy lays down the following seven objectives:

1. IPR Awareness: Outreach and Promotion - To create public awareness about the economic, social and cultural benefits of IPRs among all sections of society.
2. Generation of IPRs - To stimulate the generation of IPRs.
3. Legal and Legislative Framework - To have strong and effective IPR laws, which balance the interests of rights owners with larger public interest.
4. Administration and Management - To modernize and strengthen service oriented IPR administration.
5. Commercialization of IPRs - Get value for IPRs through commercialization.
6. Enforcement and Adjudication - To strengthen the enforcement and adjudicatory mechanism for combating IPR infringements.
7. Human Capital Development - To strengthen and expand human resources, institutions and capacities for teaching, training, research and skill building in IPR.

These objectives are sought to be achieved through detailed action points. The action by different Ministries/ Departments shall be monitored by DPIIT which shall be the nodal department to coordinate, guide and oversee implementation and future development of IPR in India. The National Intellectual Property Rights (IPR) Policy will endeavor for a "Creative India and Innovative India".

Rajiv Gandhi National Institute of Intellectual Property Management (RGNIPM) and Patent Information System (PIS), Nagpur

RGNIIPM is institute for catering to training, education, research and think-tank functions in the field of Intellectual Property. The institute provides training to Examiners of Patents and Designs, Examiners of Trade Marks and GI and other officials of IPO. It also organizes awareness programmes for users such as patent attorneys, scientists, researchers, industries, universities etc.

International Search Authority and International Preliminary Examining Authority

On the 15th October, 2013, India operationalized the International Search Authority/International Preliminary Examining Authority (ISA/IPEA) status. As on 31st March 2019, the Indian Patent Office as ISA, has received 5255 international applications choosing India as ISA, requesting for international search reports and 175 applications choosing India as IPEA for international preliminary examination [2].

Indian Patent office has successfully improved the timeliness of establishing International Search reports (ISR) over the years. During the year 2015-16, about 41% search reports were issued within time i.e. 3 months from search copy received by ISA, whereas during 2016-17, about 68% reports were issued in time. During 2017-18, the percentage of timeliness in issuing ISRs has increased to about 97 %., which further increased to 99.3% by end of 2018-19 [2].

Data and Sources of Data

For the present study primary data have been collected from annual reports published by the office of the Controller general of Patents, Design, Trademarks and Geographical Indications, India. Information covering entries such as patent applications filed, number of patents granted, total counts by filing office, patents grant by fields of technologies, etc., were taken from the IP database of Indian Patent Office (IPO) for the period 2008-2018 [3].

Results and Discussion

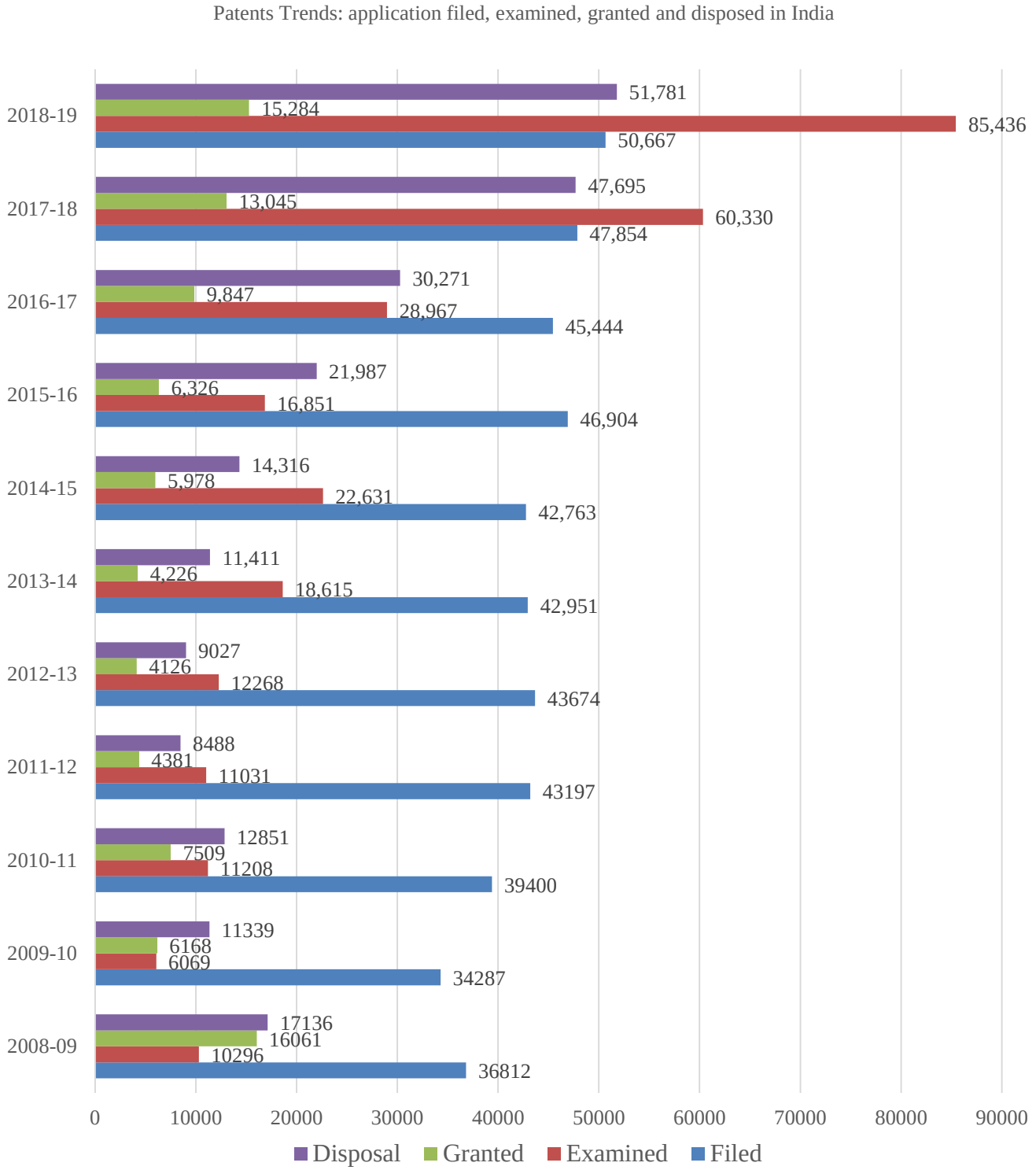

Figure 1: Patent trends in India for the period 2008-2019

Figure 1 shows the trends of recent years from 2008 to 2019 in respect to application filed, examined, granted and disposed in India. In total 473953, 283702, 92951 and 236302 patent application filed, examined, granted and disposed respectively from year 2008 -2009 to 2018- 2019. It is observed a substantial increase in the number of patent application filed, examined and patents granted during the period 2008-2019, with minor fluctuation but the growth picking up from year 2017.

In 2015-16, the number of applications for patents filed was 46,904 while during 2014-15 the corresponding number was 42,763, which shows an increase of 9.74%. The Patent Rules 2003 have been amended with effect from 16th May, 2016 to simplify patent procedures and complete IT enablement in functioning. Also, the Startup India program was launched by on January 16, 2016. Complementing the startup initiative of Government of India, the Department of Industrial Policy and Promotion which is a nodal agency for the purpose, launched the "Scheme for Facilitating Startups Intellectual Property Protection (SIPP)" to encourage IPR protection amongst Startups. Due to its all combine effect, during 2016-17, the number of patent applications examined increased by 71.9%, number of grant of patents increased by 55.7% and final disposal of applications increased by 37.7% as compared to 2015-16. The Patent Rules 2003 have been further amended on 1st December 2017 to incorporate the revised definition of Startup.

Accordingly, now as per the new definition, "Startup" means an entity in India recognized as a startup by the competent authority under Startup India initiative. During 2017-18, a total of 47854 patent applications were filed exhibiting an increase of 5.3% in the filing as compared to the previous year. Also the number of patent applications examined tremendously increased to more than double the applications examined in the previous year i.e., 108.3% increase in the examination was noticed whereas, number of grant of patents increased by 32.5% and disposal of applications increased by 57.6%, as compared to 2016-17. Also the patenting activities in improved in all fields as compared to 2016-17. During 2018-19, a total of 50667 patent applications were filed exhibiting an increase of 5.9% in the filing and number of grant of patents increased by 41.6% as compared to the previous year. As compared to 2015-16, in 2018-19, patent examination increased by 40.7 %, number of granted patents increased by 142 % and total disposal increased by 136 %.

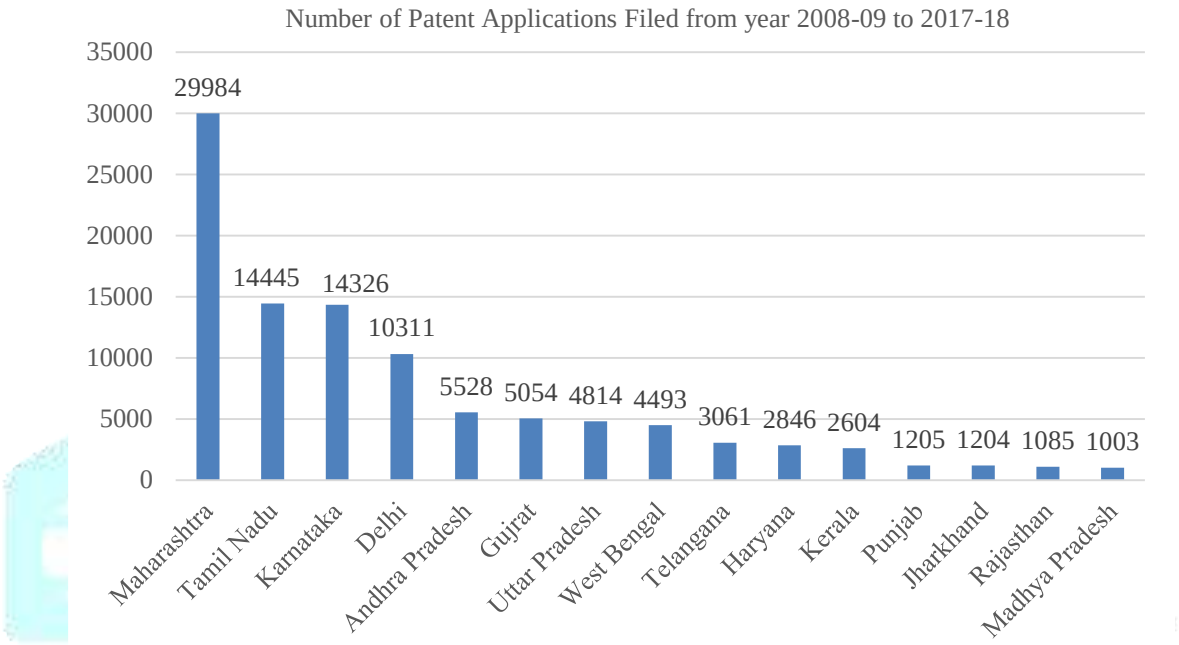

Figure 2: Patent trends in top fifteen states in India from year 2008-09 to 2017-18

The patent filing is purely territorial. In India the patent offices have been located at various region to administer all IPR activities. Patent filing is region wise and it provides a clear communication of research and development in the states and union territories in the respective regions. Figure 2 shows, Maharashtra has recorded highest number (29984) of patent filing, Tamil Nadu (14445) at second followed by Karnataka (14326), Delhi (10311), Andhra Pradesh (5528) and so on.

Figure 3 shows number of patent granted in various fields of innovations in India from year 2008-09 to 2017-18. Under the various other fields of inventions includes Bio-medical, Bio-chemistry, Communication, Physics, Civil, Textiles, Metallurgy/Material Sciences, Agricultural engineering, Polymer science/Technology, Agrochemical, Microbiology and Traditional Knowledge Biotech/Chem. The total number of patents granted in India from year 2008-09 to 2017-18 is 77667 out of which 17324 are granted to the other field of inventions and shows 22% of share with second position of patents granted. It shows the scientific and technological advances is leading to multi-disciplinary and collaborative. The inventions in chemical field produces 18453 patents and acquires first position with 24% share. While food, general engineering and biotechnology field shows low priority of innovations.

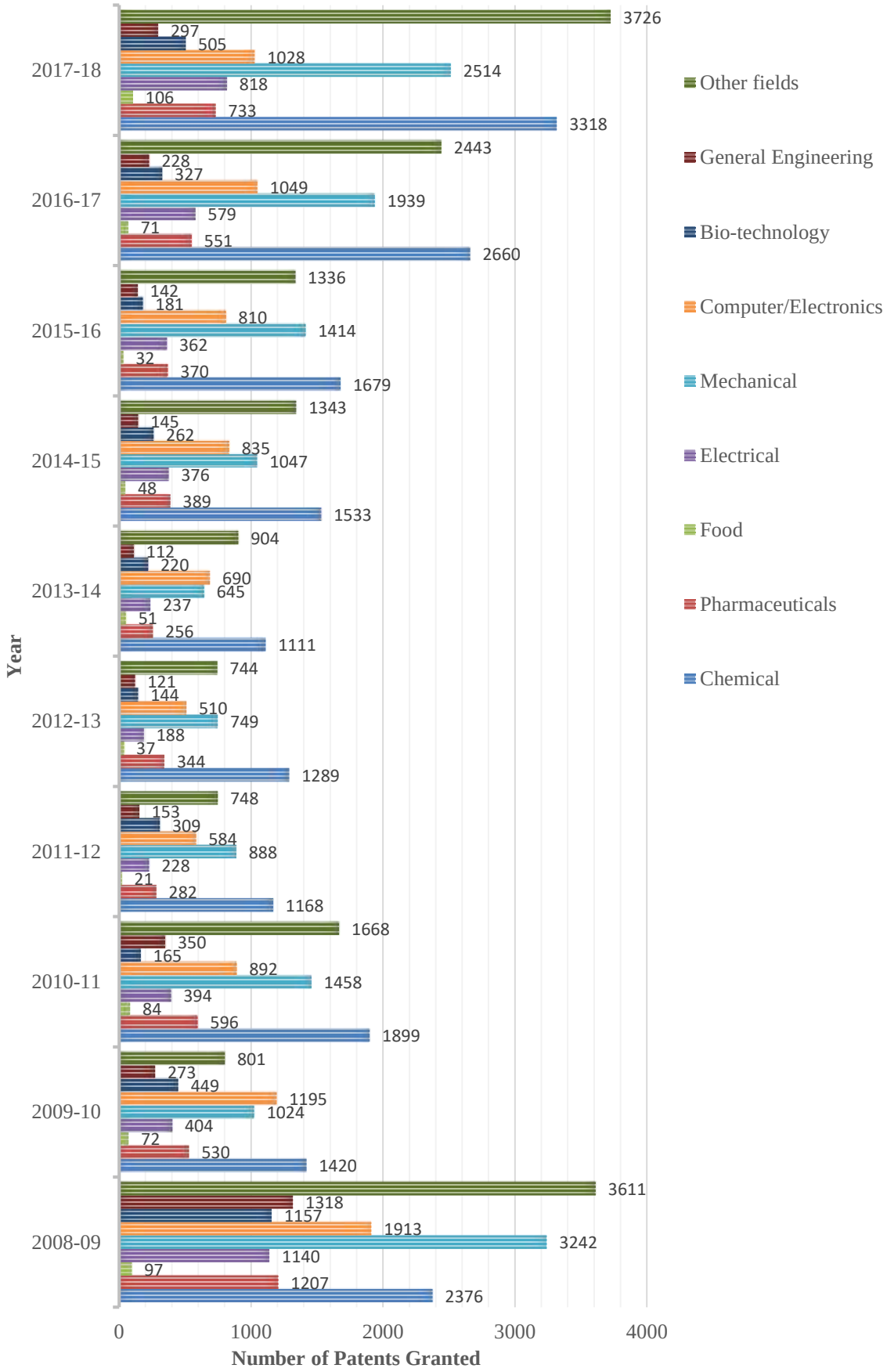

Figure 3: Patent granted trends in various fields in India from the period 2008-09 to 2017-18

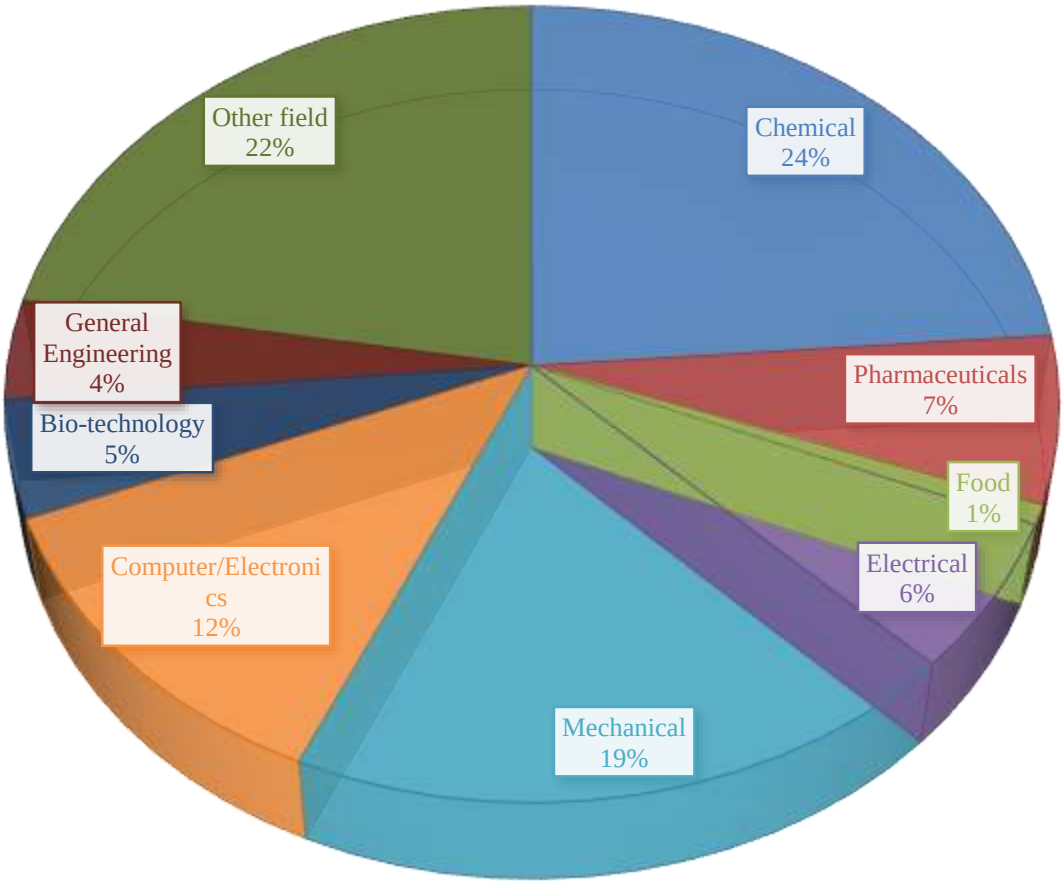

Figure 4: Share of patent granted in various fields in India from the period 2008-09 to 2017-18

Conclusion

Patents take time to go from research to filing to being granted, and to building momentum for success. In this study it is observed a substantial increase in the number of patent application filed, examined and patents granted during the period 2008-2019, with minor fluctuation but the growth picking up from year 2017. The number of grants has increased significantly after the introduction of patent reforms, patent policies and amendments in patent rule. It is also observed the patent grants has increased significantly in all fields. Maharashtra has recorded the highest number of patent filing. The functional improvement in Indian Patent Office such as E-Filing, Comprehensive Payment Gateway, Auto-allocation of Requests of Examination (RQ), Feedback Mechanism, SMS Alert, Mobile App Service, Video- conferencing etc. also significantly affecting in improving the patent filling in India. Although the culture of patenting is growing in India but still it needs to be speeded up. Encouragement of open innovation among the students, public awareness and outreach activities in IPR must be intensively increased in order to achieve industrial and economic goals of India.

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