A Review of the Research on Patent Quality in China

LAN DING and ZHAOHUI CHEN

ABSTRACT

China has become the largest patent application country in the world. With the rapid increase in the number of patent applications in China, the issue of patent quality has become a hot topic in recent years. At present, the construction of intellectual property power has been listed as an important goal of China's intellectual property strategy, and enhance the quality of patents, to achieve the leading capacity to create a strong intellectual property rights are one of the basic requirements. This paper summarizes the research on the quality of the patent, the current situation, the influencing factors and the evaluation indexes, and finally discusses the prospect of the patent quality in our country and makes a prospect for the future research.

KEYWORDS

Patent quality, intellectual property, patent surge.

INTRODUCTION

Since the promulgation of our patent law, the number of patents in our country has been increasing continuously. In order to encourage independent innovation, the state has promulgated a number of incentive policies to encourage people to actively engage in research and development, and enterprises have constantly adjusted the internal incentive system to ensure that the government policy implementation, which makes our invention and creation level and international status has been greatly improved. However, while the number of patent applications in China has achieved great success, the quality of patent is opposite (Xiaoning Long et al., 2015). This has brought a series of problems to our country's patent-related fields, which has caused some obstacles to the advancement of our country's intellectual property strategy. Based on the previous studies, this paper analyzes the patent quality from the three aspects of the definition of patent quality, the influencing factors and the evaluation indexes, and puts forward the corresponding improvement opinions, and hopes to provide a more comprehensive theoretical basis for the future research.

LITERATURE REVIEW

Definition of Patent Quality.

At present, the concept of patent quality is frequently used, but its definition is still lack of authoritative definition. Foreign scholars from the 20th century, 80 years began to study the quality of patents, based on different values of the main, the definition of
patent quality can be broadly divided into two categories: First, based on the quality of the patent examiner, the second is based on the user's patent quality. Allison et al. (2006) argue that patent quality is essentially a patent that has new, non-obvious progress over existing technology and can be effective in litigation. Graf (2007) argues that patent quality is the degree to which a patent is granted to meet statutory mandates, namely, object conditions, novelty, creativity, practicality, achievability, and disclosure of information. Although the above definition is different, but in general tend to use the patent law requirements, conditions or standards to define the quality of the patent. Domestic scholars on the definition of patent quality tend to from different perspectives on the definition of patent quality. Xuezhong Zhu, Xiaoli Wan (2009) based on the competitive perspective, argue that patent quality refers to the patent technology to the user to become the degree of competitiveness of the importance. The more advanced the technology of a (group) patent, the more important it is for the user to become competitive, and the higher the quality of the patent. Beibei Liu (2013) based on the purpose of the patent system, the patent is defined as the patent to meet the standards set by the patent law and meet the requirements of the patent law. Yuhua Liu (2015) defines the quality of the patent as the degree of exclusivity of the patent right of the patentee who is authorized by the patent administrative department to comply with the statutory authorization. Li GU Et Al. (2017) define the connotation of patent quality from the technical, legal and commercial aspects of the patent.

To sum up, the definition of patent quality can be divided into two categories: one is based on the characteristics of the patent itself to define the quality of the patent, the other is based on different perspectives and the main body to define the quality of the patent. With the continuous improvement of patent status, more and more scholars tend to improve the connotation of patent quality from the characteristics of patent itself, the change of patent policy and the successful commercialization of patent.

**Research Status at Home and Abroad.**

Foreign scholars have earlier studied the issue of patent quality. Ronald et al. (2012) used the patented "quality" as the legal validity of the relationship between the Federal Circuit's decision on patent validity and patent data. Dumont (2015) conducted an empirical analysis of the link between patent damages and patent quality. Philipp Boeing (2016) has conducted a transnational comparative study of patent quality, he believes that the expansion of China's PCT is not conducive to its patent quality. Jheng (2016) according to the patent quality indicators and characteristics, developed an automatic patent quality analysis and classification system, namely SOM-KPCA-SVM, and by means of data mining (DM) technology to identify and classify the quality of new patents in time.

Based on different research objects, domestic scholars have carried on many aspects and multi-dimensional research. Yudong He (2011) taked patent policy as the object of study, discussed the goal of the patent policy, and put forward the unified goal of incentive innovation. Xuezhong Zhu et al. (2013) qualitatively analyzed the possible impact of various patent-related policies on patent applications, maintenance and implementation. Die Hu (2015) taking the GEM listed companies as an example, and studied the comprehensive index of enterprise patent quality. Li GU Et Al. (2016) have experimentally studied the hypothesis of patent agent's competency on the
quality of patented technology and the quality of patent applications. Yingqi He (2017) studied the policy studies to improve the patent quality of our country from the market demand.

**Influencing Factors of Patent Quality.**

Most of the foreign research from the perspective of different participants, put forward a number of factors that affecting the patents quality. Wagner (2009) argues that there are three main categories of factors that affect patent quality: patent owners, patent offices, and innovative companies. Ronald et al. (2012) argue that patent quality is formed by the combination of factors such as invention, application, review, and so on, and that review is one of the most important aspects. Domestic research initially looked-for reasons from patent policy, and later began to pay attention to the patent application process, patent agents and the impact of the main body of the application. Yunzhi Li et al. (2009) argue that patent policy orientation is the main reason for influencing patent quality. Ke Wen et al. (2012) analyzed the influencing factors of patent quality in China from the perspective of process management and explained the relationship between the quality of patent applications, the quality of patent examination, the quality of patents and the value of patents. Xiaoning Long, Jun Wang (2015) believe that the implementation of incentive patent incentive policy is an important reason for the decline of patent quality in China. Yucheng Jin, Long Chen (2017) found that the conditional life period, the number of claims and whether the applicant have an enterprise have a significant impact on the quality of patent applications. In general, the current research on the influential factors of patent quality in China focuses on two aspects, one is the government patent incentive policy, the other is the patent application and commercialization. The impact of these two factors on the quality of patents is particularly prominent.

**Measurement of Patent quality.**

At present, the research on patent quality measurement can be divided into two categories. One is to build a comprehensive evaluation index system of patent quality measurement from the theoretical level. Such as Reitzig (2006) examined the quality of patents from the aspects of patent novelty, patent width, difficulty of peripheral inventions, location of portfolios, bargaining chips. Suli Zheng, Minghe Song (2012) discussed the theoretical framework of patent value from four aspects: patent characteristics, patentee characteristics, characteristics of R&D activities and other factors. Schakerman et al. (1986) proposed the use of patent maintenance time to measure patent quality. Jingyi Ye et al (2012) measured the patent quality of the application phase by two indexes: withdrawal rate and power of authorization. Song Hefa et al. (2014) constructed the index system of patent quality measurement from four aspects: invention quality, document writing quality, quality of examination and economic quality. Xiaoqing Long, Jun Wang (2015) constructed the index system of patent quality measure from four aspects, including the quality of the invention, the quality of document writing, the quality of review, and the economic quality. In general, the existing research on the index of patent quality is mainly based on theoretical discussion, and the empirical research on patent quality measure in specific organization or technology field is less, which greatly reduces the credibility and feasibility of the index system.
DISCUSSION AND PROSPECT

Patent quality is the embodiment of innovation ability and core competitiveness of enterprises and countries. Through the Systematic and Authoritative definition and summarize to definition, influence factor and indicator of patent quality, we can promote the transformation of patent results, enhance our international status. The current research framework of patent quality tends to improve gradually, but there are still some shortcomings: the definition of patent quality is lack of accurate, authoritative definition; the impact of patent quality research lack of deep excavation, less from the level of motivation to consider the problem; Lack of a complete, scientific and standardized index system for the evaluation of patent quality. In view of the above shortcomings, this paper proposes the following prospects: First of all, in the definition of patent quality, we should focus on the technical characteristics of the patent, from the technical level to define it; secondly, the patent quality is decided by the R&D personnel to a great extent, from the perspective of motivation factors influencing the quality of patent is a very good research direction. Finally, combined with the technical characteristics of patent quality, the construction of scientific patent quality evaluation index system can better enhance the integrity of the patent quality evaluation index system, the patent quality evaluation index system and applicability.

ACKNOWLEDGEMENTS

Project of GuangXi philosophy and social science (13BJY015), Key projects of GuangXi universities of Science: legitimacy of start-ups patent integration performance and the influence of mechanism (ZD2014079), Innovation Project of GuangXi university of Science and Technology Graduate Education (GKYC201716).

REFERENCES

