The Effect of Evaluating Graduate Thesis Topics as Invention Notification Form on Industrial and Intellectual Property Applications: The Case of Karadeniz Technical University

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ABSTRACT

Industrial and intellectual property is an important structure that is popular all over the world. Each country has legal regulations in the field of intellectual and industrial property in order to protect one's invention. The 6769 Industrial and Intellectual Property Law, which entered into force in 2017, paved the way for universities in Türkiye to have rights in applications for inventions such as patents, utility models and designs. Thesis studies that young researchers start during their postgraduate period are focused solely on publication. The commercialization and patenting potential of theses determined without analyzing the needs of the industrial sector is low, and this makes the thesis work of many engineers inefficient. It is necessary for KTU that is the application authority, to develop new strategies to increase industrial property assets. This study aims to reveal the effect on the number of patent applications by Karadeniz Technical University (KTU) as a result of the evaluation of graduate thesis topics without request. Within the scope of the new strategy, a methodology was applied for the evaluation of patent and utility model application data in the KTÜ patent portfolio, the distribution of data by year, and patent registration documents. In this study, direct patent and utility model application data were evaluated. When the application data was examined, it was seen that the new strategy implemented increased the industrial property assets.

KEYWORDS

Industrial rights, Intellectual rights, patent, utility model, 6769 law, KTU

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1 INTRODUCTION

The concept of intellectual property refers to all rights that are the product of the human mind and have economic value even

if they do not have a tangible equivalent. In other words, it includes ideas that arise as a result of the creative efforts of a person or organization, inventions, literary and artistic works, symbols, names, shapes and designs used for commercial purposes. With the application of an intellectual product, the absolute right provided to the inventor in material and spiritual terms is recognized for a certain period of time [1]. If these rights are defined in a different term, intellectual property rights (IPRs) can be defined as the rights that enable sanctions to be imposed on the products created by the human mind [2]. It is necessary to analyze the concept of intellectual property in two separate sections. The first of these concepts includes industrial property rights including inventions (patents and utility models), trademarks, industrial designs, integrated circuit topographies and geographical indications. The second concept includes all intellectual and artistic works, including works of art, works of science, works of literature, music and musical works, fine art and cinematographic works, depending on copyright [3]. Intellectual and industrial property rights give the inventor the ability to manage all commercial activities thanks to the absolute rights it gives to the inventor. Both the desire of the inventor to protect his/her invention and the desire to prevent imitation in commercial activities increase the number of applications of Intellectual and Industrial Rights in legal protection processes. Patent, utility model, trademark, etc. industrial assets and copyrights are subject to very serious court-based sanctions in case of infringement of the intellectual assets in question. [4]. Violations or infringements of rights by third parties have legal and criminal sanctions to protect the rights of right holders [5].

The purpose of patents is to provide protection that facilitates technological development. A patent not only gives the inventor exclusive rights to create an invention, but also provides incentives for the technological development and commercialization of that invention. Instead of obtaining a patent, the inventor publishes the technical specifications of the invention, enabling others to make different new inventions based on the invention. An increase in the number of patents in a country indicates a high level of technological development in the country. The transformation of industrial and intellectual assets into the economy through the sale of inventions, the production of inventions and the sale of products positively affects the welfare of the country.

This research aimed to determine if recognizing master's and doctoral theses as invention disclosure forms, without requiring additional notifications, would lead to an increase in the number of granted patents. Since Karadeniz Technical University is a research university, the number of industrial property assets is significant. It is necessary to develop new strategies to increase industrial property assets. When the application data was examined, it was seen that the new strategy implemented increased the industrial property assets.

2 METHODOLOGY

The application change status was revealed by using the patent and utility model application data of Karadeniz Technical University. In addition, the registration numbers were evaluated with a similar method. Among the patent applications in the KTU patent portfolio, applications between the years 2017-2023 were evaluated. In the relevant years, student applications (Master and PhD) were filtered from patent applications for each year and the effect of the developed strategy on the applications was revealed. When the application data were examined, it was seen that the new strategy applied increased the industrial property assets.

3 HISTORICAL DEVELOPMENT OF PATENT RIGHTS IN TÜRKİYE

The first important legal arrangement regarding patent rights in Türkiye was made in 1879 during the Ottoman Empire. The French Patent Law of that time was amended and translated into the Ottoman Patent Law enacted in 1879. In parallel with the developments in the world, valid patent laws could not be enacted in Türkiye until 1995, except for the international agreements signed, and the patent laws of the Ottoman Empire continued to be applied with some changes until 1995. Subsequently, Türkiye became a party to the Paris Convention in 1925 and signed the WIPO founding treaty in 1976. Furthermore, Türkiye acceded to the London amendment in 1956, Articles 13 through 30 of the Stockholm amendment in 1976 and Articles 1 through 12 of the Stockholm amendment in 1995 [6]. Türkiye signed the Customs Union Agreement in 1994. With this agreement, the "TRIPS" agreement, the "Strasbourg Agreement on the classification of patents" (IPC) and the "Patent Cooperation Agreement" (PCT) and the "Agreement Establishing the World Trade Organization" entered into force. Later on, the "Budapest Agreement" on the international protection of microorganisms entered into force, as well as the "Patent Law Treaty" (PLT) and the "European Patent Convention" (Munich Convention) [6].

Table 1 presents data on Türkiye's status as a party to the conventions on intellectual property rights to which Türkiye is a party [7].

Tablo 1: International Agreements to which Türkiye is a Party [7]

Agreements	First Signature Date	Türkiye's Membership	Participation Date
World Intellectual Property Organization WIPO Articles of Association	1967	YES	12.05.1976
Treaty Establishing the World Intellectual Property Organization (WIPO)	1995	YES	26.03.1995
European Patent Convention (EPC)	1973	YES	01.11.2000
Paris Convention for the Protection of Industrial Property	1883	YES (10.10.1925)	Stockholm (Articles 1-12) 01.02.1995 (Articles 13-30 16.05.1976)
Patent Law (PLT)	2000	Signed 02.06.200	
Trademark Law (TLT)	1994	YES	01.01.2005

Singapore Agreement on Trademark Law	2006	Signed 28.03.2006	The agreement has not yet entered into force
BUDAPESTE Agreement on the International Storage of Microorganisms	1977	YES	30.11.1998
LAHEY Agreement on the International Registration of Designs (Geneva Text!	1999	YES	1.01.2005
Protocol to the MADRID Agreement	1989	YES	01.01.1999
Patent Cooperation Treaty (PCT)	1970	YES	01.01.1996
LOCARNO Agreement on the Restriction of Designs	1968	YES	30.11.1998
NIS Agreement on the International Classification of Goods and Services in Trademark Registration	1957	YES	01.01.1996
STRASBORG Agreement on the International Classification of Patents (IPC)	1971	YES	01.10.1996
VIENNA Agreement on the Classification of Figurative Elements of Marks	1973	YES	01.01.1996

2.1 INDUSTRIAL PROPERTY LAW NO. 6769

In Turkish law, industrial property rights were first regulated by the Decree Law No. 551 on the Protection of Patent Rights, No. 554 on the Protection of Industrial Designs, No. 555 on the Protection of Geographical Indications and No. 556 on the Protection of Trademarks, which entered into force in 1995. These Decree Laws were repealed by the Industrial Property Law No. 6769 ("IPL"), which entered into force in 2017.

According to the IPL No. 6769, Articles 113-122 include the provisions on "Employee Inventions". Especially with Article 121, universities and public institutions are entitled to have rights in patent applications [10].

ARTICLE 121

(1) Without prejudice to the provisions of special laws and regulations under this article, the provisions regarding the inventions of employees shall apply to the inventions made as a result of scientific studies or research conducted in higher education institutions defined in subparagraph (c) of the first paragraph of Article 3 of Law No. 2547 and higher education institutions affiliated to the Ministry of National Defense and the Ministry of Interior.

(2) When an invention is realized as a result of scientific studies or research conducted in higher education institutions, the inventor is obliged to notify the higher education institution in writing and without delay. If a patent application has been made, the higher education institution shall be notified of the application.

(3) The higher education institution is obliged to file a patent application if it claims right ownership over the invention. Otherwise, the invention becomes a free invention

On this occasion, studies for the protection of the knowledge accumulation in universities with intellectual and industrial rights have been carried out as of 2017.

4 KARADENİZ TECHNICAL UNIVERSITY INDUSTRIAL PROPERTY NUMBERS

Founded in 1954, Karadeniz Technical University is the first technical university established in Anatolia in Türkiye. In addition, as of 2021, it continues to produce science in the Research University category. New generation universities are universities that transform the knowledge they produce into added value while producing knowledge, coordinate these processes, and involve every individual from students to faculty members in innovation-based commercialization activities. Karadeniz Technical University has assumed an important role in serving this basic mission with the Technology Transfer Application and Research Center (TTC).

With the Industrial Property Law No. 6769, which entered into force in 2017, Karadeniz Technical University has made a total of 262 industrial property applications with 166 national patents, 28 national utility models, 16 national designs and 52 international patent applications with access to more than 300 inventors and more than 3000 students. With these applications, 39 national patents, 20 national utility models, 16 national designs and 5 international patents were registered. In addition, 6 copyright registrations and 24 trademark applications were also carried out by Karadeniz Technical University [8].

5 A NEW STRATEGY for INVENTION DISCLUSURE

As stated in subparagraph c of Article 121 of the Industrial Property Law No. 6769, there is an obligation to notify the university of an invention made at the university before applying for industrial property. This notification is referred to as the invention disclosure form in the literature [9]. As of 2017, universities collect invention disclosure forms and make patent applications by evaluating these forms according to criteria such as patentability, commercialization, etc.

As of 2023, a new strategy was developed by Karadeniz Technical University Technology Transfer Application and Research Center and it was decided to consider the thesis subjects of graduate and doctoral students as invention disclosure

forms without notification. With this decision, the technology and/or information of the relevant invention was protected at an early stage. The number of invention notifications received by Karadeniz Technical University since 2017 is shown in following figure 1.

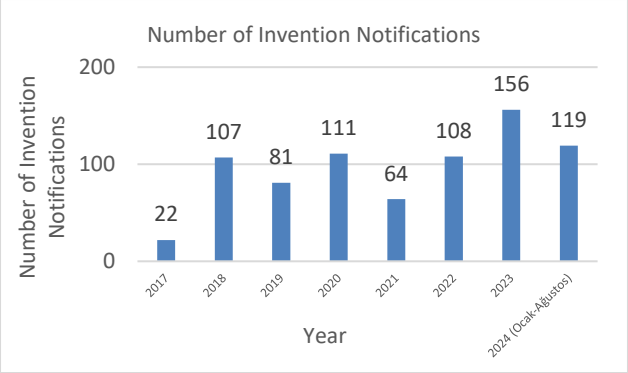


Figure 1 : Number of Invention Notifications Received at Karadeniz Technical University

The number of national patents, national utility model, national design and international patent applications applied as Karadeniz Technical University since 2017 is given in Figure 2.

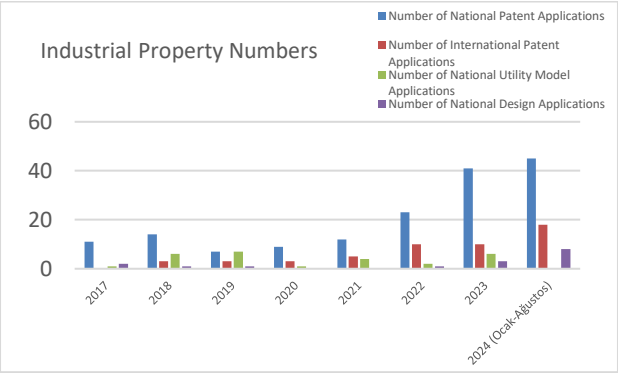


Figure 2: Karadeniz Technical University Industrial Property Numbers

Table 2 shows the comparative number of patent applications of Karadeniz Technical University compared to Trabzon province.

Table 2: Number of patents in Trabzon province - Karadeniz Technical University and the contribution of the university to the number of patents

		2017	2018	2019	2020	2021	2022	2023
Number of National Patent Applications	Trabzon (City)	48	28	29	24	28	51	51
	KTU	11	14	7	9	12	23	41
University Contribution		23%	50%	24,1 %	37,5 %	42,8 5%	45%	80,3 9%

6 CONCLUSION

Karadeniz Technical University continues its support in the field of Industrial Property with the 6769 IP Law published in 2017. Before 2017, the number of patents belonging to academicians at the university was 7, while 262 industrial property applications were realized under the university's ownership as of 2024.

In 2020, there was a global COVID-19 pandemic, the effects of which continued in 2021, and a national stagnation in industrial property applications in 2022-2021. However, even during these periods, the know-how at the university was transformed into industrial property assets. Figure 2 shows an increase in industrial assets with the normalization process after the pandemic.

The 25 national patent applications until 2022 increased to 31 national patent applications with the evaluation of the thesis subjects of master's and doctoral students in postgraduate education as invention disclosure forms without notification, which was put into effect in 2023. In the first 8 months of 2024, the number of national patent applications reached 45 applications, and 12 applications are based on given information from theses.

While international applications are examined, 18 international patent applications were submitted as of 2024.

In 2023, a new strategy was put into effect as a new strategy in which the thesis subjects of master's and doctoral students in postgraduate education were evaluated as invention disclosure forms without notification, and the knowledge accumulation at Karadeniz Technical University was protected at an early stage. It is thought that the use of this practice in all universities will produce positive results and increase the number of national and international patents.

The new strategy provides early awareness to young researchers and supports patent applications that adopt industrial needs and have high commercialization potential.

The strategy of evaluating theses as invention notifications was introduced to international partners (8 European Countries) as an example of good practice in the projects of strengthening technology transfer with innovative approaches, in which KTU is a partner, within the scope of the ERASMUS+ and INTERREG NEXT Programs.

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