

Impact of Trademark Rights on a Company's Financial Performance: Focusing on Pharmaceutical Industry in South Korea

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Abstract

Background/Objectives: In recent years, there has been a growing awareness that intangible assets, especially intellectual property, can affect a company's value and competitiveness. To this end, companies are striving to secure intellectual property around patents, and many studies have verified the relationship between patent information and corporate performance from a variety of angles. However, in the field of intellectual property, the focus was mainly on patent information-driven research, and further research on the relationship between trademark and design authority is necessary to clarify the relationship between intellectual property rights and corporate management performance..

Method/Statistical Analysis: The purpose of this study is to verify whether a company's trademark application/registration activity and the persistence of a company's trademark rights affect the company's financial performance through SPSS.

Findings: The amount of trademark application/registration activity of a company and the persistence of trademark rights held by a company both affect the financial performance of the company.

Improvements/Applications: This study verified the relationship between trademark rights and corporate performance, which had been expected only by conjecture, through statistical method. However, the value of a trademark is determined by the market value accumulated by the use of the trademark rather than by the trademark itself. Therefore, follow-up studies are needed to verify statistically through various trademark information for various industries as to whether the acquisition of trademark assets has a positive effect on the company's management performance.

Keywords: *Trademark, Trademark Rights, Trademark Data, Company Performance, Financial Performance.*

Introduction

Due to the continuous development of science and technology and the emergence of new technologies due to the Fourth Industrial Revolution, the importance

of intellectual property is increasing day by day, and securing the intellectual property has become a barometer for measuring the company's management performance and competitiveness. Smith and Parr view Intellectual property as a representative intangible asset that contributes to the company's profit generation^[1], while Edvinsson and Malone refer to intangible assets such as patents and copyrights as innovative capital^[2] ^[3]. Researches that explore the relationship between existing intellectual property rights and corporate management performance have focused on research based on patents. As a result, it is confirmed that sales

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of patent applications and registrations are affecting sales^[4], and that R & D expenditures and patents affect corporate value^[5] and that R & D intensity and patents have a positive effect on economic value-added value per share(EVA)^[6]. Trademarks can be used as a tool to distinguish a company's product from other companies' products, and can be used as a guarantee of quality, identity, etc., which can increase the consumer's preference for the product. Brands already positively recognized by consumers have the effect of reducing marketing costs such as promotions, and can increase the efficiency of communication between companies and consumers^[7]. Furthermore, the company's brand equity increases its influence on growth footing and distribution through brand expansion, and is an additional source of revenue for the company through its actual assets and licensing^[8]. In the situation where the quality and function of products are being leveled due to the steady development of technology, the importance of trademarks and brands as a criterion for differentiation of a company's products or services or a selection of consumers' products is increasing day by day. Companies are aware of this and are making efforts to secure trademark rights. In particular, the Korean pharmaceutical industry corresponds to an industry where the trademark application volume is higher than the cosmetics, electrical and electronic products, clothing, and food industries. And instead of developing new drugs, they are growing by copying and selling expired drugs. Therefore, the ratio of sales by developing new drugs is small compared to that of developed countries, and the ratio of sales by duplicate drugs that rely on sales and marketing rather than technical skills is high. Therefore, although the acquisition and utilization of patents are an important factor in corporate management performance, in the Korean pharmaceutical industry, which focuses on the sales of generic drugs with little quality discrimination, securing the trademark or brand itself will affect corporate performance. The purpose of this study is to statistically verify the trademark information of the pharmaceutical industry, which is expected to have a greater impact on the company's business performance than the acquisition of patent assets.

Method

Existing trademark researches were mainly qualitative researches, such as literature research and survey-based hypothesis testing, in the methodological aspect. In terms of contents, researches on measuring

economic value in the field of marketing and improving its utilization and researches on institutional improvement in the field of law have been conducted^[9]. There were also studies dealing with economic value and business strategy. First, there was a study on the effect of profitability and operating cash flow on brand value through comparison between industries^[10], and studies on product sales strategies based on the theory of brand extension^[11-14]. In addition, trademark rights have enormous rights in their utility and economic feasibility, including profits and publicity effects as property rights due to civil and criminal sanctions on monopoly, property rights, and infringement. If you do not register your trademark as a trademark, you cannot sanction appropriate for unauthorized use by others. Moreover, if someone else applies first, the brand may be taken away and the brand reputation that has been accumulated may be damaged. Furthermore, this study found that trademark rights affect brand value because the act of displaying trademark application number or registration number helps brand marketing^[15]. In terms of indicators to measure the economic profit direction of firms, there was an in-depth study of new application trademarks of Benelux SMEs^[16] and a study to analyze the purpose of trademark application of SMEs through a survey^[17]. In addition, there was a study on the development of a trademark valuation model of a company for the purpose of evaluating trademark value^[18-19].

There are not many research cases that directly analyze and utilize various information of trademark right in relation to this study, but Lee and Lee presented an analysis method using product information of trademark right to analyze industrial convergence^[20]. Yoon et al. Presented a methodology for business intelligence by looking at and analyzing trademark rights as business data^[21]. Yoo and Lee presented a way to judge consumers' perception using trademark data^[22].

In order to extract the trademark index for use in this study, we referred to the indicators in the patent field where research to verify the relationship with management performance among intellectual property rights is active^[23-27].

The subjects of this study were mainly Korean pharmaceutical companies. Among them, more than 50 trademark applications were filed and 59 Korean listed pharmaceutical and bio companies as of 2018. The data was collected using the trademark search system Intomark (www.intomark.com) and patent information

search service (www.kipris.or.kr). The trademark data was extracted by searching each company name as the applicant for the trademark data from 1950 to 2018. The financial statements of each company collected data provided by the Financial Supervisory Service’s electronic disclosure system (dart.fss.or.kr).

Based on the theoretical background so far, the number of trademark application, trademark registration rate, trademark registration per employee, and renewal trademark ratio were selected as independent variables. In addition, as the dependent variable that indicates the company’s management performance, the average sales revenue over five years related to the growth performance was selected. Among the independent variables, the total number of applications, the number of trademark

registrations per employee, the rate of registration were used as a factor of the company’s trademark application/ registration activity, and the renewal trademark ratio was used as a factor of the persistence of trademark rights held by the company.

H1. The amount of trademark application/ registration activity of a company affects its financial performance.

H2. The persistence of the trademarks owned by the company affects the company’s financial performance.

The categories included in the research model are described by the variable and operational definitions shown in [Table 1].

Table 1: Definition of Variables

Variable	Factor	Conceptual Definition	Operational Definition
Independent variable	The amount of trademark application/ registration activity	Number of trademark applications	-
		Number of registered trademarks per employee	Number of registered trademarks/ Number of employees
		Trademark Registration Rate	Number of registered trademarks/ Number of trademark applications
	The persistence of the trademarks owned by the company	Trademark Renewal Rate	Number of renewed trademarks/ Number of registered trademarks
Dependent variable	Financial performance of the company	5-year average sales	Total sales for five years/5

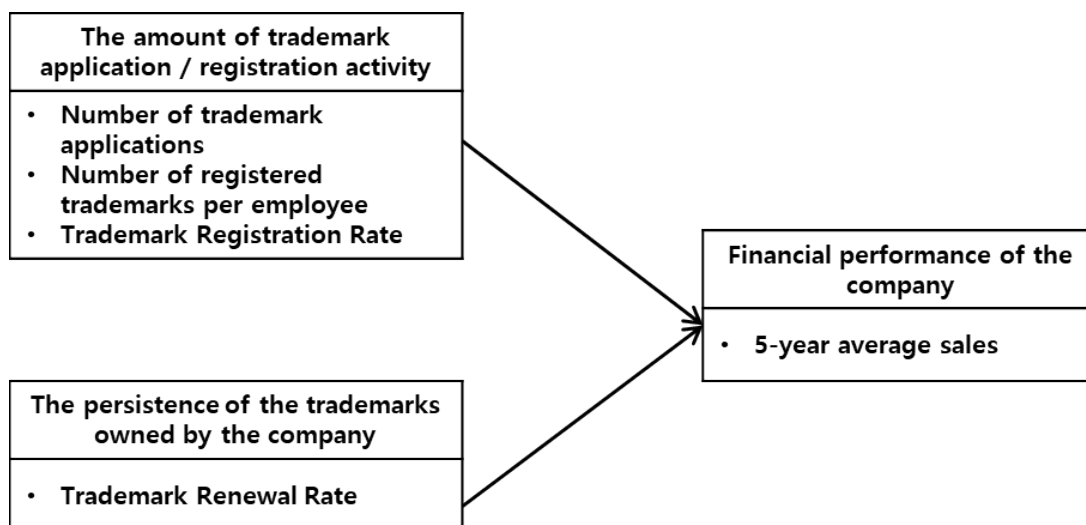


Figure 1. Research model

[Figure 1] shows the research model for empirically analyzing the hypotheses as shown above. In other words, this study used the number of trademark

applications, trademark registration rate, and trademark registration per employee in terms of the amount of trademark application/registration activity. In addition,

we measured the persistence of the trademarks owned by the company as the renewal trademark ratio. The average variable over the last five years, which represents the company’s growth potential, is the dependent variable. The amount of trademark application/registration activity and the persistence of the trademarks owned by the company will be examined through multiple regression analysis.

Result and Discussion

The independent variables in this study are the number of trademark applications, the number of registered trademark per employee, trademark registration rate, and trademark renewal rate in the

trademark quantitative data. The dependent variable is the average sales for five years. Multiple regression analysis showed statistically significant results.

Table 2. Model Summary

Model	R	R ²	Modified R ²	Standard Error of Estimates	Durbin-Watson
1	.698	.487	.449	223375.4681	1.199

As shown in [Table 2], R² = .487 shows 48.7% explanatory power. Durbin Watson is 1.199, which is close to 2 and not close to 0 or 4, so there is no correlation between the residuals, making it suitable for the regression model.

Table 3. ANOVA

Model	Sum of squares	Degreed of freedom	Mean squares	F	p-value
Regression	2557511622918.120	4	638937902729.530	12.805	.000
Error	2694416386353.230	54	49896599747.282		
Total	5250168009271.350	58			

As shown in [Table 3], the F value was 12.805 and the significance probability was .000 (p <.05), so the regression line was found to be suitable for the model.

Table 4. Coefficient

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.	Collinearity statistics	
	B	Standard Error	Beta			Tolerance	VIF
Constant	-437392.143	149751.755		-2.921	.005		
Number of trademark applications	177.405	26.191	.815	6.774	.000	.656	1.523
Number of registered trademarks per employee	-216740.155	49374.742	-.528	-4.390	.000	.657	1.523
Trademark Registration Rate	10023.397	2136.717	.525	4.691	.000	.759	1.317
Trademark Renewal Rate	3226.064	1482.022	.239	2.177	.034	.786	1.271

As shown in [Table 4], the effect of the number of trademark applications on the average sales over the five years was adopted because the t value was 6.774 and above ± 1.96, and the significance probability (p value) was 0.000 and p <.05. Second, the effect of the number of registered trademark per employee on sales was adopted because t value was -4.390 and above ± 1.96, and the significance probability (p value) was 0.000 (p <.05). Third, the relation between the trademark registration rate and the sales was selected as t value of 4.691 and significant probability (p value) of 0.000. Finally, the trademark renewal rate was chosen as t value was

2.177 and significant probability (p value) was 0.034. Tolerance limits are all above 0.1, so there is no problem with multicollinearity between independent variables.

According to [Table 4] above, the following regression model can be predicted.

$$5\text{-year average sales} = -437392.1431 + 177.405 \times \text{Number of trademark applications} - 216740.155 \times \text{Number of registered trademarks per employee} + 10023.397 \times \text{Trademark Registration Rate} + 3226.064 \times \text{Trademark Renewal Rate}.$$

Therefore, it can be predicted that the five-year average sales increase as the number of trademark applications, trademark registration rate, and renewal trademark ratio increases. However, the lower the number of registered trademark per employee, the higher the five-year average sales.

Discussion

This study analyzes the amount of trademark application/registration activity and whether the persistence of the trademarks owned by the company affects the firm's financial performance. The amount of trademark application/registration activity of a company was measured by the number of trademark applications, trademark registration rate, and registered trademark per employee. The persistence of the trademarks owned by the company was measured by renew trademarks ratio. In addition, the financial performance of the company was measured by sales, which is used as a key indicator of corporate growth. As a result, first, the hypothesis that the amount of trademark application/registration activity of a company affects its financial performance was adopted. However, in case of trademark application/registration activity, the higher the number of trademark applications and trademark registrations, the higher the average 5-year sales, but the lower the number of registered trademark per employee, the higher the 5-year average sales. This is contrary to the previous findings of the patent but is difficult to generalize because the sample is limited to the pharmaceutical industry. For this, follow-up verification through trademark data of various other industries will be required. Second, the hypothesis that the persistence of the trademarks owned by the company affects the financial performance of the company was also adopted. The high renewal brand ratio means that many products have been satisfying consumers for a long time, and there are many brands with high consumer awareness of the brand and the economic value of the brand is also great.

Conclusion

This study verified the relationship between trademark rights and corporate performance, which had been expected only by conjecture, through actual statistical method. In addition, it is expected to contribute to the development of follow-up research on the development of trademark indices using trademark data, which has not been fully studied yet. However, the limitation of this study is that the data covers only

a very small part of the various trademark data, and the sample is limited to the pharmaceutical industry only. Therefore, in future studies, it is necessary to confirm the meaning of trademark information by further verifying it to other industries by various data among the trademark information.

Ethical Clearance: Not required

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Conflict of Interest: Nil

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