

Intellectual property rights and firm performance in the European Union

Firm-level analysis report, January 2025

Executive summary



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This study aims to provide insights into how European companies utilise intellectual property rights (IPRs) and how to identify the distinguishing features of IPR-owning firms compared to those that do not register such rights. It builds upon previous company-specific research carried out by the EUIPO¹ in 2015 (OHIM, 2015) and collaboratively by the EPO and EUIPO in 2021 (EPO/EUIPO, 2021). These firm-level analyses have served as a basis for further research in this field. The comprehensive datasets developed for these projects have enabled further investigations into various aspects of how IPR ownership relates to business performance. These additional studies examined the link between IPR ownership and subsequent company growth (EPO/EUIPO, 2019), as well as its impact on accessing financial resources for start-ups (EUIPO/EPO, 2023). Consequently, general firm-level analyses can be viewed as fundamental to understanding the broader implications of IPR ownership.

This report presents the results of the analysis of a large representative panel of over 119 000 European firms from all 27 Member States of the European Union over a 10-year period (2013-2022). The analysis covers patents, trade marks and designs registered at the EPO, EUIPO and at the national and regional IP offices in the EU.

The final dataset contains information extracted from the IPR registers and matched with data contained in the commercial database ORBIS. ORBIS draws upon the obligatory accounting information provided by millions of European firms to the commercial registers specific to their country of origin. As there are differences in accounting practices between countries, revenue per employee (rather than profitability measures such as EBIT) was chosen as the main indicator of firm performance.

The dataset was constructed in such a way that the sample accurately reflects the characteristics of the EU firms' population and permits inferences about this population. The research presented here encompasses a larger and more comprehensive dataset than similar investigations, offering a robust basis for comprehending the characteristics of IPR owners. These insights can be valuable for guiding policy decisions and improving the general public's understanding of IPRs throughout the EU.

Since this study is based on data for the 27 EU Member States and employs an improved matching and sampling algorithm, the results reflect significant changes in data stratification and dataset construction. Consequently, they are not directly comparable to those presented in previous firm-level analysis reports (OHIM, 2015; EPO/EUIPO, 2021).

¹ The EUIPO was called Office for Harmonisation in the Internal Market (OHIM) at the time of the publication of the study.

Key findings

In the EU, IPR ownership is significantly lower among SMEs compared to large firms. In the sample analysed, fewer than 10% of SMEs hold any of the three types of IPR (patents, trade marks, or designs), whereas nearly 50% of large firms own at least one type of IPR or a combination thereof.

The disparity is evident across individual IPR categories as well (see Table E1). Around 1.1% of SMEs own patents, compared to 12.3% of large firms. For trade marks, the ownership rates are 9.2% for SMEs and 46.1% for large firms. Similarly, design ownership stands at 1.1% among SMEs and 10.7% for large firms.

Table E1:
IPR ownership by firm size

	Large (%)	SME (%)	Overall (%)
IPR non-owners	50.99	90.26	90.19
IPR owners	49.01	9.74	9.81
	100	100	100
Patent non-owners	87.28	98.91	98.89
Patent owners	12.72	1.09	1.11
	100	100	100
Trade mark non-owners	53.88	90.79	90.73
Trade mark owners	46.12	9.21	9.27
	100	100	100
Design non-owners	89.29	98.89	98.87
Design owners	10.71	1.11	1.13
	100	100	100

Table E2 presents the differences between owners of IPRs and those that do not register IPRs in several different categories such as size, revenue per employee and wages per employee for the 4 most recent years in the sample.

Table E2:

Average values of selected variables by IPR ownership, 2019-2022

		Number of employees	Revenue per employee (EUR '000/year)	Wages per employee (EUR '000/year)
Non-IPR owners		4.17	147.23	25.43
IPR owners	Any IPRs	9.08	182.27	31.04
	% difference compared with non-owners	117.75%	23.79%	22.07%
	Patent owners	13	189.49	36.42
	% difference compared with non-owners	211.69%	28.7%	43.26%
	Trade mark owners	9.06	181.56	30.74
	% difference compared with non-owners	117.19%	23.32%	20.9%
	Design owners	11.67	190.44	31.73
	% difference compared with non-owners	179.91%	29.34%	24.79%

Note: Employment and performance indicators (revenue per employee and wages per employee) are calculated as the weighted mean value of the per-firm averages of variables over the period 2019-2022. The 'Non-IPR owners' group is defined as firms with no stock of any registered IPR (patent, trade mark or design). The 'IPR owners' group is defined as firms that owned at least one patent, trade mark or design, or any combination thereof. The 'Patent owners', 'Trade mark owners' and 'Design owners' groups are defined as firms that owned at least one of these particular IPRs. Since many firms own bundles of IPRs, the various groups of IPR owners overlap. 'Any' refers to ownership of either national or European-level IP rights of the respective IPR type.

As shown in Table E2, firms that own IPRs tend to be larger than firms that do not, as measured by the number of employees (9 versus 4 employees on average). For this reason, economic performance metrics are expressed on a per-employee basis.

Firms that own IPRs have on average 23.8% higher revenue per employee than firms that do not. In terms of types of IPR, owners of patents have 28.7% higher revenue per employee, trade mark owners 23.3% and designs owners 29.3%. The last column of Table E2 shows that firms that register IPRs pay on average 22% higher salaries than firms that do not. The highest salaries are paid by patent owners (43.3%), followed by design owners (24.8%) and trade mark owners (20.9%).

Table E3 shows the sectors with the highest share of IPR owners. Information and communication is on top, with 14.8% of firms in this sector registering at least one IPR. Other sectors with a relatively high percentage of IPR owners are manufacturing (14.2%), water supply, sewerage, waste management and remediation activities (12%) and then professional, scientific and technical activities (10.7%).

Table E3:
Top 10 NACE* categories for IPR ownership

NACE section	IPR ownership (%)
J: Information and communication	14.79
C: Manufacturing	14.21
E: Water supply, sewerage, waste management and remediation activities	11.98
M: Professional, scientific and technical activities	10.68
G: Wholesale and retail trade, repair of motor vehicles and motorcycles	10.63
N: Administrative and support service activities	9.55
I: Accommodation and food service activities	9.39
L: Real estate activities	8.61
S: Other service activities	7.63
D: Electricity, gas, steam and air conditioning supply	7.24
B: Mining	6.36
F: Construction	5.82
H: Transporting and storage	5.2

*Note: The table illustrates the share of IPR owners within the total number of firms in the sample representing each NACE section. NACE (Nomenclature statistique des activités économiques dans la Communauté européenne) is Eurostat's classification system for economic activity in the EU.

The econometric analysis allows for a more precise investigation of the relationship between revenue per employee and the IPR status of firms, controlling other variables that might be correlated with performance and the likelihood to register IPRs, such as company size, country of origin, or sector of activity. While this analysis does not prove a causal relationship between IPR ownership and firm performance, it strongly suggests that there is a systematic, positive relationship between ownership of IPRs and the economic performance of firms.

Table E4 summarises the main findings from the econometric analysis. With corrections for other relevant factors, revenue per employee is 41% higher for IPR owners than for firms that do not register IPRs. This relationship is particularly pronounced for SMEs. In this group of firms, the difference in revenue per employee between owners of IPRs and firms without registered IPRs is 44%. While the rate of ownership among SMEs is relatively low at just under 10%, it seems those SMEs that do register IPRs perform much better than their counterparts without.

IPR owners among the large firms also perform better than the large firms without IPR registrations, but in this group the difference is much smaller than among SMEs. Revenue per employee is 16% higher for large IPR-owning firms compared to non-owners.

Table E4:
Main results of the econometric analysis

	Difference in revenue per employee between IPR owners and non-IPR owners
Large companies	+16%
SMEs	+44%
Total	+41%

Note: Based on observations of a total of 10 988 firms. Differences are statistically significant at the 99% confidence level.

Section 5 also shows that firm performance is not only associated with IPR ownership, but to the type and combination of IPRs a company registers. For SMEs, the highest revenue per employee premium (47%) is related to the ownership of trade marks and the combined ownership of patents, trade marks and designs (51%) and for the large firms to the combination of patents and designs (38%) and that of patents, trade marks and designs (27%).

Discussion and conclusions

This research, based on the analysis of the very large and representative sample of European firms, demonstrates that companies that own intellectual property rights outperform firms without these rights, specifically as regards per-employee revenue and average employee compensation. This finding is consistent with the earlier studies carried out in 2015 and 2021.

The findings presented in this study should be approached with a degree of caution due to inherent constraints in data and methodology. The results of the econometric analysis do not definitively prove a causal relationship between registering IPRs and enhanced business performance. Other significant factors, which could not be accounted for in this analysis (for example, the company's strategy or the quality of its management), might influence both a company's performance and its propensity to register IPRs. Nevertheless, theoretical arguments support the crucial role of intangible assets and IPRs in fostering innovation, boosting productivity, and ultimately improving individual firm performance. The current study's empirical confirmation of a positive correlation between IPR ownership and economic performance lends support to these theoretical assumptions.

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