Understanding the Use of Industrial Designs in ASEAN Countries

National report for the Philippines

WIPO Development Studies

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

Understanding the Use of Industrial Designs in ASEAN Countries

National report for the Philippines

WIPO Development Studies

Prepared by WIPO Secretariat
Economics and Statistics Division

in collaboration with

Dr. George Manzano, University of Asia and the Pacific (UA&P)
Philippines

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

World Intellectual Property Organization
34, chemin des Colombettes, P.O. Box 18
CH-1211 Geneva 20, Switzerland

Suggested citation: WIPO (2018). Understanding the Use of Industrial Design in ASEAN Countries: National Report for the Philippines. *Development Studies Series.* Geneva: World Intellectual Property Organization

Photo credit: Getty Images / wigglestick – MicrovOne

Printed in Switzerland

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

This report presents the results of an industrial design (ID) survey study carried out in three Southeast Asian countries, namely Indonesia, the Philippines and Thailand. It was prepared for the Project on Intellectual Property (IP) and Socio-Economic Development – Phase II, which addresses Development Agenda Recommendations 35 and 37. This second phase of the project was approved by the Committee on Development and Intellectual Property (CDIP) at its Fourteenth Session held in November 10-14, 2014 (CDIP/14/7). The result of the study was presented at the Twenty-Second session of the CDIP meeting held in November 19 to 23, 2018 (CDIP/22/INF/2).

The survey study was prepared and coordinated by a team led by Carsten Fink (Chief Economist) and comprising Intan Hamdan-Livramento (Economist) and Maryam Zehtabchi (Economist).

The study was carried out by the following research teams in the three countries: Yose Rizal, Dandy Rafitrandi and Ilma Fadli at the Centre of Strategic International Studies (CSIS) in Indonesia, George Manzano, Mary Grace Agner and Nikka Pesa from the University of Asia and the Pacific in the Philippines (UA&P), and Deunden Nikomborirak and Weerawan Paibunjitt-aree at the Thailand Development Research Institute (TDRI).

WIPO Secretariat appreciates and gratefully acknowledges the strong support provided by the national IP offices in carrying out this ambitious study, in particular the Director-General Freddy Harris as well as Erni Widhyastari, Andrieansjah, and Irni Yuslianti at the Indonesian Directorate General of Intellectual Property (DGIP); Director-General Josephine Santiago, as well as Lolibeth Medrano and Amelita Amon at the Intellectual Property Office of Philippines (IPOPHL); and the Director-General Chakra Yomani as well as Kitiyaporn Sathusen at the Thai Department of Intellectual Property (DIP).

This report benefitted greatly from external review of the draft chapters by Myriam Mariani from Bocconi University.

Additional input, comments and data management assistance were provided by Kyle Bergquist and Julio Raffo. Alex Cuntz, Alica Daly, and Giulia Valacchi kindly reviewed the survey questionnaire carried out in this study and commented on earlier drafts of this report.

WIPO colleagues from the Brands and Design Sector, in particular Marcus Höppenger and Grégoire Bisson, made important and relevant contributions in the design of the survey questionnaire. Andrew Ong and Ye Min Than of WIPO's Regional Bureau for Asia and Pacific (ASPAC) provided important support in liaising with the national IP offices.

EXECUTIVE SUMMARY

Studies have shown that industrial design (ID) protection often complements other forms of intellectual property (IP) rights to support the commercialization of new products, products that incorporate technological innovations or those that are non-technological. However, few insights are available on how IDs contribute to design innovation, business growth and economic development more broadly, let alone for firms in less developed economies.

In this context and under WIPO's Development Agenda Recommendations 35 and 37, the Economics and Statistics Division (ESD) undertook to study how IDs are being used in middle-income countries. The study was prepared for the second phase of the Project on Intellectual Property (IP) and Socio-Economic Development, approved by the Committee on Development and Intellectual Property (CDIP) at its Fourteenth Session held in November 10-14, 2014 (CDIP/14/7). It was reported to WIPO member states at the Twenty-Second session of the CDIP meeting held in November 19 to 23, 2018 (CDIP/22/INF/2).

The objectives of this study were to better understand the circumstances and process of design innovation in the countries concerned, what motivated design innovators to seek this form of protection, how ID rights contributed to the appropriation of investments in design innovation, and what challenges applicants faced when using the ID system.

This report presents the results of a study questionnaire on ID use that was carried out in three Southeast Asian countries, namely Indonesia, the Philippines and Thailand. The survey instrument targeted resident ID applicants residing in the three different countries on the ID applications that they had submitted to the national IP offices in the years 2012-2013.[1] It was tailored to the applicant type. Firms who had applied for ID applications were given a separate but similar questionnaire to individual applicants.

An accompanying manual, the *WIPO-ASEAN Design Survey Manual*, documents how the survey questionnaire was designed, and describes the implementation of the survey instrument in the three different countries.[2]

In total, 268 applicants submitted a partially or fully completed survey questionnaire, accounting for 512 ID applications. The ID survey questionnaire was sent to both individual and company applicants. The Philippines had the highest response rate of 12 percent, compared to eight percent for Indonesia and nine percent for Thailand. However, reflecting a larger applicant population, Indonesia accounted for the largest number of responses, followed by Thailand and the Philippines.

The descriptive analysis of the survey results offers a wide range of insights that can be summarized as follows:

- Most ID users are private and locally-owned companies, with state-owned companies and subsidiaries of foreign companies playing a relatively minor role. Most companies were 21 or more years old. Small firms account for most users, followed by medium-sized firms and large firms.

- Around 22 percent of ID users indicated that they engaged in exporting, with a relatively wide distribution of export revenues. This share exceeds the typical export shares in the general population of firms. It suggests that design innovation may be a

[1] An additional year of survey was used for the Philippines applicants. Thus, Filipino applicants who had applied for ID applications in the years 2011-2013 were sent the survey questionnaires.
[2] *WIPO-ASEAN Design Manual* is available for download from WIPO website at https://www.wipo.int/econ_stat/en/economics/studies/.

way of breaking into foreign markets. Other ASEAN economies were the most frequent export destination, followed by other Asian economies.

- Design innovation is predominantly an in-house process. However, for some designs, companies draw on a mix of internal and external capability and/or inspiration.

- Except in the Philippines, the majority of the designers were between 35 and 50 years old. In the Philippines, the majority were even older, above 50. This finding suggests that accumulated professional experience seems to matter for design innovation.

- Inspiration for new designs comes from a variety of sources. Customer feedback emerges as the most important one. Within companies, there were two principal origins giving rise to the ideas behind new designs. One origin is the department responsible for design innovation or R&D more broadly. The other is senior management, including the CEO's office. Beyond those two principal origins, sales and marketing departments were a source of ideas for a considerable number of designs surveyed.

- ID holders assign considerable value to their ID rights, with the median value lying in the 30,000 to 100,000 USD range. The distribution of ID values is skewed to the right. However, compared to technological innovation, design innovation seems less risky.

- The main motivation for seeking ID protection follows the classic rationales of preventing imitation and ensuring freedom to operate. Licensing and selling of ID rights is rare but it does sometimes occur.

- An imitation rate of around one-fifth suggests that the risk of imitation is real. In addition, the ID holders perceive a high financial loss associated with imitation.

- High legal costs of ID enforcement discourage many applicants from trying to stop infringement of their designs. Where they do pursue infringers, enforcement actions have a mixed success rate.

- Most ID applications are filed without relying on external agents. Applicants then face challenges in navigating through what they perceive to be a long and difficult-to-understand application process.

These descriptive findings will need to be validated and further explored in more in-depth research. In particular, WIPO-ESD plans to analyze the survey responses in an econometric setting, where the statistical significance of different hypotheses can be test more formally.

Several lessons learned in the course of carrying out this study could be used for future studies.

Firstly, the unit-record data used to identify the survey respondents had varying levels of completeness. This was particularly the case in regards to the applicants' contact details.

Secondly, WIPO-ESD and the local research teams were concerned with the length of the survey questionnaire. Two pilot tests were carried out before the surveys were launched. In

both instances, the survey respondents were able to fill out the questionnaire despite its length.

Third, many respondents were hesitant to fill out the questionnaire. The strong backing from the three IP offices proved crucial in helping elicit additional survey responses.

Turning to policy implications, the survey responses reveal that design innovators are using ID rights as a means of recovering their returns to investment in creating new designs. Overall, the ID system thus plays a supporting role in stimulating a form of innovation that firms in middle-income countries – including small and medium-sized firms – undertake. In contrast to patents, firms do not have to be at the cutting edge of technology to be successful at creating new designs. They mainly require human talent, for which there is ample supply even in more resource-constrained environments. Finally, the study offers some preliminary evidence that design innovation may be a way of breaking into foreign markets and increasing exports.

Finally, the study offers some preliminary evidence that design innovation may be a way of breaking into foreign markets and increasing exports. This is in line with research in the field of international trade that emphasizes the special capabilities of firms in explaining exporting success.[3] At the same, the design innovation-exporting link is bound to be automatic. Asking what barriers successful domestic design innovators face in entering international markets could yield further policy-relevant insights.

[3] For an overview, see Bernard *et al* (2007).

1 INTRODUCTION: BACKGROUND AND OBJECTIVES

Studies exploring the role of IP protection in business strategies have been mainly conducted in high-income countries. This is not surprising given that the use of IP protection worldwide is skewed towards this group. High-income countries, and more recently China, account for the majority of global IP filings across all measurable forms of IP – patents, trademarks and industrial designs (IDs) (WIPO, 2014).

Nonetheless, applicants in low- and other middle-income countries use IP rights as well, filing for patents, trademarks, IDs, and utility models when applicable. However, little documented evidence exists on how these IP instruments are being used in these countries, and whether their use differs compared to high-income countries.

WIPO Secretariat (2012) took a closer look at the global ID filing trend and found that high-income countries and China accounted for over 80 percent of the world demand for ID rights in 2010. But more importantly, it found that unlike in the case of patents, resident applicants in the upper middle- and lower middle-income countries accounted for a majority of design counts.

Table 1 presents the number of designs in applications by income levels in 2005 versus 2015, which updates the 2012 study.[4] China and high-income countries continue to represent a significant share of the total design counts worldwide. However residents' share of design counts have increased across all income levels when comparing the ten-year time span.[5] With the exception of countries in the low-income group, more than half of the design counts were filed by residents, especially in recent years.

Table 1: Residents account for majority of ID applications, except in low-income countries

Income group	Number of design in applications		Resident share (%)		Share of world total (%)		Average growth (%)
	2005	2015	2005	2015	2005	2015	2005-2015
High-income	372'500	430'800	71.7	73.8	57.8	37.6	1.5
Upper middle-income	230'600	665'700	85.7	92.9	35.8	58.1	11.2
…Upper middle-income without China	*67'200*	*96'600*	*68.7*	*69.2*	*10.4*	*8.4*	*3.7*
Lower middle-income	39'100	46'500	45.8	59.2	6.1	4.1	1.7
Low-income	2'600	1'800	20.1	40.3	0.4	0.2	-3.6
World	644'800	1'144'800	74.9	84.3	100	100	5.9

Note: Totals by income group are WIPO estimates using data covering 151 IP offices. Each category includes the following number of offices: high-income (57), upper middle-income (43), lower middle-income (37) and low-income (14). Data for the European Union Intellectual Property Office are allocated to the high-income group because most EU member states are high-income countries. For similar reasons, data for the African Regional Intellectual Property Organization and the African Intellectual Property Organization are allocated to the low-income group. Income levels are based on World Bank classification.
Source: WIPO (2016).

The statistical evidence collected raise important questions on what factors explain this significant share of resident ID filing in the middle-income countries. Furthermore, how does it reflect on the economic activities in those countries?

WIPO attempted to address these important questions by trying to understand how IDs are being used in middle-income countries as part of its Development Agenda mandate on the Project on IP and Socio-Economic Development.

[4] Some IP offices allow for multiple designs in an ID application while others adhere to the one design-one application rule. To allow for cross-country comparability and to account for the different ID filing procedures across countries, design counts are reported as opposed to the number of ID application counts.
[5] A resident application is an application made by an individual or organization residing in the country/region for which the IP office has jurisdiction. A non-resident filing, likewise, is an industrial design application filed by an applicant of a given country/region at an IP office of another country or region.

The objective of the study is to understand how users of the ID system are exploiting their design rights. It looks at who are the users of the system: their characteristics, their processes of creating the designs, if other IP instruments were also used to protect the designs, and their commercialization efforts related to the designs. It also tries to assess if there were barriers in applying for the ID and enforcing the ID, whether at home or abroad.

As a first step, the study examined unit-record ID filing data to identify the users of the system. This step was important in helping researchers identify the general characteristics of the users, including the economic sectors that relied on this IP instrument.

Then as a second step, a survey questionnaire was sent to the users of the system. The survey instrument used in this study drew on the seminal work done by economic researchers in identifying the value of patents in Europe, with significant changes to adapt the questionnaire to ID.

Three Southeast Asian countries kindly agreed to participate in the study, namely Indonesia, the Philippines and Thailand. ID applicants who had applied for ID rights in the years 2011-2013 and reside in the respective countries were surveyed for this study.[6]

This report presents the result of this study for the Philippines.

The outline of the report is as follows. The next section highlights the importance of studying design to firms' productivity by linking it to the innovation literature. The third section outlines the procedures and processes to apply for IDs in the Indonesia. The fourth section describes the ID users in the country. The fifth section presents the survey results from the three countries to highlight their similarities and differences. The penultimate section discusses the results and the particular issues encountered in the country. The final section concludes with a summary of the results and direction for future research.

The results of this study help advance the understanding on the role ID plays in these countries by shedding light on an understudied IP right and its role in middle-income countries.

2 WHY IS DESIGN IMPORTANT?

Firm-level studies show that design plays an important role in building a firm's competitive advantage (D'Ippolito, 2014). Design innovation – considered a non-technological innovation by the Oslo Manual – can have significant impact on the firms' productivity levels and revenues, like technological innovation.[7]

First, an appealing product design allows firms to differentiate their products from those of competitors by enhancing the emotional experience of the customers (Creusen & Schoormans, 2005; Rothwell & Gardiner, 1983; Veryzer & Borja de Mozota, 2005). Second, a firm that is able to establish the dominant design in the marketplace, or even build its brand through unique designs, can extend its product's shelf-life (Sanderson & Uzumeri, 1990; Suarez & Utterback, 1995; Utterback & Abernathy, 1975; WIPO, 2013). In each of these scenarios, the designing firm would be able to translate its investment of creating new designs into commercial success through sales and other related financial performance

[6] In Indonesia and Thailand, applicants who filed for ID in 2012-2013 were sent the survey questionnaires. An additional survey year was included for the Philippines to account for the fewer number of ID applicants in the country in comparison to the former two countries.

[7] The Oslo Manual is a widely used manual to help measure innovation levels at the national level. It characterizes innovation into four categories: product-, process-, design and marketing-, and organizational innovations (OECD & Eurostat, 2005). Design innovation is considered a non-technological innovation.

measures (Bornemann, Schöler, & Homburg, 2015; Galindo-Rueda & Millot, 2015; Hertenstein, Platt, & Veryzer, 2005).

Other related studies shed light on the role of design in innovative activities and how they relate to economic growth (Awano, Franklin, Haskel, & Kastrinaki, 2010; BOP Consulting, 2011; Galindo-Rueda & Millot, 2015; Gil & Haskell, 2008). These studies tend to focus on measuring intangible assets, and how these assets should be taken into consideration when assessing economic growth performance. However they use a broad definition of design, which includes designs that relate to products as well processes.[8]

Two of the biggest hurdles in studying design are how to define design activities/innovation, and how to measure it. First, design activities in firms may be intertwined with another related activity. For example, firms tend to introduce new designs when they introduce new products, which may or may not embed new technological products or processes. This makes it difficult to isolate the expenditures related to design from the firms' specific research and development (R&D) investments on technologies, which in turn may result in a bigger challenge in measuring the design activities' impact.

Second, where the design activity takes place within firms – in the marketing department, in the R&D department, or elsewhere – may change according to the needs of the business. Moreover, some firms may not have a self-standing design department. This difference in how firms may prioritize their design activities, which may be reflected in the existence of a design department and self-standing budget, make it difficult to pinpoint where design take places in the firms' structure and how much is invested in the endeavor.

Progress has been made to help define design-related activities at the international level. Recent changes in the industrial classification systems, such as the International Standard Industrial Classification (ISIC Revision 4) and the European Industrial Classification (NACE Revision 2) have identified firms that engage in design-related activities as their main line of business. These classification systems have defined the design sector to include activities of graphic designers, fashion design, industrial design and interior decorators. However, architectural design, design and programming of webpages, engineering design, among related activities were excluded, even if these lines of businesses involve significant design-related activities (Galindo-Rueda and Millot, 2015).

Another known related measure of design is through measuring ID filings, the IP instrument. In 2013, a joint institutional project by the European Patent Office (EPO) and the Office for the Harmonization of the Internal Market (OHIM), identified design-intensive industries by analyzing the number of registered Community designs (RCDs) applied at the OHIM, and allocated them to the industrial sectors in the EU common market (EPO-OHIM, 2013).[9]

Table 2 shows the top ten most-design intensive industries as identified by the joint report, which was updated in 2016. They found that most of the design-intensive industries are in the manufacturing sector of the economy.

[8] See WIPO (2013) for a broad definition of design.
[9] OHIM is now known as the European Office of Intellectual Property (EUIPO).

Table 2: The top 10 most design-intensive industries are in the manufacturing sector

NACE code	NACE Description	Designs/ 1,000 employees
26.52	Manufacture of watches and clocks	90.68
77.40	Leasing of intellectual property and similar products, except copyrighted works	78.59
25.71	Manufacture of cutlery	70.23
23.41	Manufacture of ceramic household and ornamental articles	66.24
46.48	Wholesale of watches and jewelry	39.80
27.40	Manufacture of electric lighting equipment	39.18
28.24	Manufacture of power‑driven hand tools	36.98
14.11	Manufacture of leather clothes	35.52
32.30	Manufacture of sports goods	30.79
27.51	Manufacture of electric domestic appliances	29.08

Source: EPO-EUIPO (2016), updating EPO-OHIM (2013).

A similar methodology for assigning industrial sectors where most of the ID applications were sought is used for this study. [10] Figure 5 and Table 6 in the following Section 4 shows the sectors where most of ID fillings in the Philippines were applied for in for period of 2000-2015, as well as for the survey years of 2011-2013 respectively.

2.1 WHAT DOES ID PROTECT?

ID right is an IP instrument that protects the aesthetic appearance of a product.[11] It does so by conferring the ID owner an exclusive right to prevent others from profiting from the commercial use of her protected design (WIPO, 2012).

Functional characteristics of designs are expressly excluded from ID protection, and instead may be protected by either patents or utility models. In addition, designs that can distinctively identify products or companies may qualify for trademark protection. And finally, to the extent that designs constitute artistic expressions, they may qualify for copyright protection.

A design must be novel or original to qualify for ID protection, although the criteria for registration vary across jurisdictions. Moreover, some jurisdictions allow for "unregistered designs", while others allow for these designs to qualify for protection under copyright law.

ID rights have a limited duration of protection. Depending on the jurisdiction, the maximum term of protection for ID rights may be between ten (10) and twenty-five (25) years. Many countries set the term of protection to a minimum of five (5) years with the possibility of renewals.

The most common products associated with ID protection are automobiles, watches and, more recently, smartphones, tablet computers and graphical user interfaces. Moreover, the most common filings occur in the electronics and information and communications technology (ICT), automotive, clothing and fashion, interior design and decoration, as well as consumer product industries.

2.2 WHAT DO WE KNOW ABOUT ID?

Studies on ID protection in economic and management literature have been relatively sparse, unlike in the legal journals. However recently, a few studies have emerged on ID use in

[10] Figure 5 and Table 7 were calculated by assigning the ID applications' Locarno classification to industrial sectors as done in Annex D of WIPO's Intellectual Property Indicators (2017).
[11] In some jurisdictions, industrial designs may be referred to as "design patents". See also the World Trade Organization's agreement on *Trade-related Aspects on Intellectual Property Rights (TRIPS)*.

selected high-income countries (Ahmetoglu & Chamorro-Premuzic, 2012; Alcaide-Marzal & Tortajada-Esparza, 2007; Bascavusoglu-Moreau & Tether, 2011; BOP Consulting, 2011; Filitz, Henkel, & Tether, 2015; Galindo-Rueda & Millot, 2015; Moultrie & Livesey, 2011, 2014).

Conceptually, a product design can affect a firm's financial performance and growth in two ways. First, a new design could be associated with the launch of a new product based on a new technology. In this regard, a new ID filing would signal the near-to-commercialization phase of a firm's product or process invention, and could thus be used in conjunction with patent and trademark information to provide the whole innovation picture. In this category, firms that file for IDs are also more likely to file for patent and trademark rights.[12] Indeed, they may be highly innovative firms.

A second way to employ a new design is through the new appearance of an existing product. Here, the creative activity would be more subjective, and relates to the consumer experience. Technically, the product remains the same except that its outward appearance has changed. Firms that compete in product appearances tend to operate more in the low-technology sectors of the economy.[13]

In both instances, the new design signifies a particular firm's investment into its product. However in the former case there is a new technology brought to market, whereas this is not necessarily so in the latter case.

Filitz *et al* (2015) provide useful insights into the use of industrial designs in the European Union (EU). Using firm-level RCD data, they find that five large western EU countries – Germany, Italy, France, United Kingdom and Spain – account for 60 percent of all ID filings in the region. They attribute this pattern to these countries' propensity to export, their industrial structure, the design of the RCD (fee structure, examination requirement), and the criteria to enforce ID rights (namely if the threshold for the similarity of designs is low or high). When looking at the propensity to file IDs in comparison to patents, they find that countries with industries concentrated in the "low tech" sector, such as Spain, seem to use the instrument more intensively than patents.

In addition to the EU-wide study, the authors conducted an exploratory qualitative study on the use of the RCD in three German industries that use IDs more intensively than others do, namely footwear, car-manufacturing and tool-making sectors. They find important differences on how firms use this IP instrument across these sectors.[14]

First, there are differences across sectors in their approach to using ID. The automotive and tool-making sectors tend to rely on IDs in combination with other IP instruments, such as patents and trademarks. The footwear sector, meanwhile, relies more exclusively on IDs. However, there are important differences within these sectors. In the footwear sector, for example, some of the applicants apply for IDs without discriminating between the different values of their product designs, while others are more selective in their application filing strategy, and rely on the unregistered community design as a backup option.

[12] See discussion in Fernando Galindo-Rueda and Millot (2015) and Filitz *et al* (2015).
[13] Low technology sectors of the economy are those that are arguably not R&D-intensive (Robertson, Smith, & von Tunzelmann, 2009), and may be dominated by supplier-dominated firms (Pavitt, 1984). For other definitions of sectors that are considered low-tech see Hirsch-Kreinsen *et al* (2006).
[14] The industries considered were footwear, car manufacturing and tool-making. German firms were selected because of the strong enforcement perception for design rights in the country. In contrast, firms in the UK reported that they were less likely to use ID protection as the instrument was considered weak and ineffective as protection for their product design (Moultrie & Livesey, 2014).

Second, the reliance on ID rights and the ID filing strategies of these firms depend on the innovation landscape and the intensity of competition in different sectors. In the case of the footwear industry – characterized by a crowded design space as well as difficulty and high costs in conducting prior art searches – firms tend to register IDs indiscriminately. Moreover, some firms consider that filing for IDs is important, especially to prevent imitation.

2.3 HOW ID FILINGS ARE TRENDING IN MIDDLE-INCOME COUNTRIES

Table 3 provides a ten-year comparison of design count filings for countries in the Association of Southeast Asian Nations (ASEAN) as well as other middle-income countries for the years 2005 and 2015. In several middle-income countries, such as India, Indonesia, Thailand and Viet Nam, residents account for more than 60 percent of total design counts in 2015.

Table 3: Resident share of design counts remain relatively unchanged at country levels, 2005 vs. 2015

Countries	Number of designs in applications		Resident share (%)		Average growth (%)
	2005	2015	2005	2015	2005-2015
ASEAN countries					
Brunei Darussalam	3	…	0.0	…	…
Cambodia	…	69	…	13.0	…
Indonesia	…	3'972	…	66.7	…
Malaysia	1'607	1'762	50.0	35.6	1.0
Philippines	1'265	1'103	51.1	48.9	-1.3
Singapore	2'704	4'262	22.0	18.6	5.8
Thailand	4'545	4'461	74.1	75.8	-0.2
Viet Nam	…	2'885	…	63.7	…
Other middle-income countries					
Brazil	5'232	6'039	73.3	54.5	1.5
Chile	335	402	20.9	10.7	2.0
India	4'949	10'290	68.8	66.4	10.8
Mexico	2'777	3'999	35.5	43.2	4.4
Russian Federation	…	6'002	…	43.6	…
South Africa	1'725	1'960	53.5	36.9	1.4

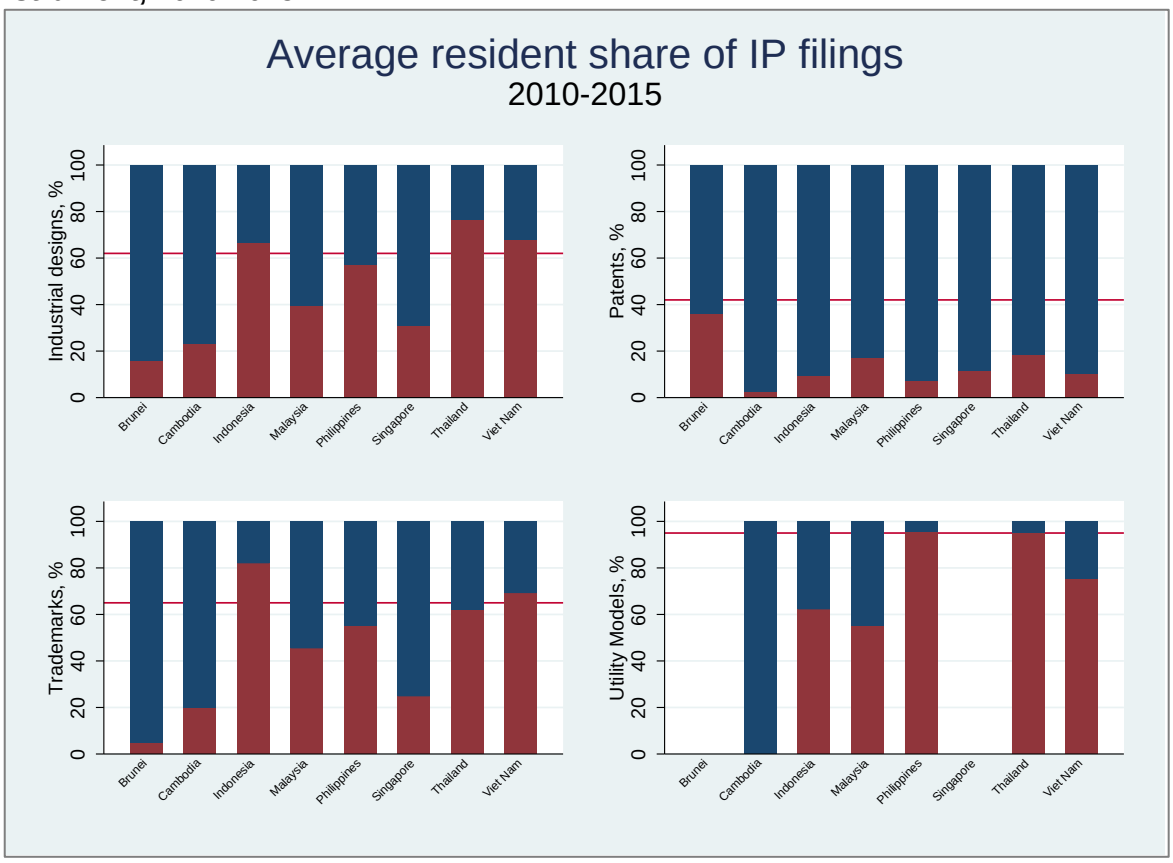
Source: WIPO Statistical Database, May 2017.

This is in stark contrast with patent applications, where non-resident applicants file a larger share of applications especially in the lower middle- and low-income countries.[15]

Figure 1 display the average share of resident to non-resident filings in ASEAN countries across the four different IP instruments: industrial designs, patents, trademark and utility models. On average, residents account for 42 percent of patent filings (red line) in Upper-middle income countries – excluding China.[16] This is in sharp contrast to the average share of 61 percent of resident filings in IDs, 62 percent for trademark and 94 percent for utility models.

[15] See WIPO (2012).
[16] China has been excluded from the Upper-middle income countries' mean as it tends to have an upward bias on this category's average.

Figure 1: Share of resident IP filings across ASEAN countries varies according to IP instrument, 2010-2015.



Note: Share of resident filings is illustrated in red while non-residents in blue. The red lines represent the average IP filings for the specific IP instrument for countries categorized as Upper-middle income countries, excluding China. Brunei Darussalam and Singapore do not provide for utility model protection in their respective territories.
Source: WIPO Statistical Database, May 2017.

These figures raise two economic-related questions: do the high levels of resident share of ID filings translate to significant design activities in the countries? To what extent do the insights gathered in developed economies apply to their less developed counterparts?

While the different industrial structures and institutional contexts in these two different income levels could lead to different economic analysis, the studies conducted in developed economies offer some guidance in framing the questions for this study.

3 HOW TO APPLY FOR ID

Before turning to what data in the Philippines show about the users of the system, a general summary of how to apply for the IP right is needed.

The overview of the ID legislation – including application, examination (if any) and enforcement – allows for a better understanding of how to interpret the ID statistics. It may also be useful when analyzing the survey instrument results later on.

The protection of industrial design in the Philippines was implemented in the year 1947 by virtue of Republic Act No. 165 otherwise known as “An Act Creating a Patent Office, Prescribing its Powers and Duties, Regulating the Issuance of Patents and Appropriating Funds Therefor”.

Republic Act No.8293 otherwise known as the Intellectual Property Code of the Philippines was signed into law on June 6, 1997 and took effect on January 1, 1998, repealed inconsistent provisions of Republic Act 165. The IP Code consolidates all the laws on intellectual property as well as incorporates the provisions of the Agreement on the Trade Related Aspects of Intellectual Property (TRIPS Agreement). Further, the IP Code created the Intellectual Property Office of the Philippines (IPOPHL) which was mandated to administer the IP system in the country.

The IP Code covers patents, utility models, IDs, trademarks and copyright and was later amended by Republic Act 9150 to include the protection of Lay-out Designs (Topographies) of Integrated Circuits.

3.1 ABOUT THE FILIPINO IP OFFICE

The IPOPHL is mandated to "administer and implement the State policies" on intellectual property.[17] It performs numerous functions namely: regulation, developmental, enforcement and adjudication.

IPOPHL performs regulatory functions related to IP rights, which includes the examination of applications for patents, trademarks, geographical indications, integrated circuits; as well as the registrability of utility models and IDs. The office also registers technology transfer arrangements.

As to enforcement, IPOPHL settles disputes involving technology transfer payments, and administratively adjudicates cases affecting IP rights.

In addition, the IPOPHL can undertake enforcement functions supported by concerned law enforcement agencies and coordinate with government agencies and the private sector to formulate and implement plans and policies to strengthen the protection of IP rights in the country.

The Filipino IP office also has a development function through developing and implementing strategies that promote and facilitate technology transfer, and encouraging the use of patent information as a tool for technology development. [18]

3.2 ID PROTECTION

An ID as defined in the IP Code is "any composition of lines or colors or any three-dimensional form, whether or not associated with lines or colors: *Provided,* that such composition of form gives a special appearance to and can serve as pattern for an industrial product or handicraft." [19]

Under the IP Code, "only industrial designs that are new or ornamental shall benefit from protection." However, industrial designs "dictated by essentially by technical or functional considerations to obtain a technical result or those that are contrary to public order, health or morals shall not be protected."[20]

The filing fee for an industrial design application is PhP 1,720 or approximately CHF 36 for small entities (whose assets do not exceed PhP100M or CHF 2.130M) or PhP 3,600 or approximately CHF 76 for big entities (whose assets exceed PhP100M or CHF 2.130M).[21]

[17] Section 5, Republic Act No. 8293.
[18] Section 5, Republic Act No. 8293.
[19] Sec. 112 Republic Act 8293
[20] Sec. 113, Republic Act 8293
[21] See http://ipophil.gov.ph/AdministrativeIssuances/MemorandumCircularNo17-002s2017.pdf

3.2.1 Application process

Under the IP Code, the registration process of industrial design application is based on a first-to-file system. Thus, if a single industrial design is the subject of two (2) separate applications, priority will be given to the applicant who first filed the application. [22]

An ID application may be filed electronically or manually using the prescribed form with relevant documents. Once the application is received, an IPOPHL ID examiner undertakes a formality examination where the completeness and compliance to the requirements is reviewed. If the application is incomplete or does not comply with the requisites, the examiner will issue an Office Action requiring submission of documents or compliance to the formal requirements. On the other hand if the application is complete and compliant with the requisites, then the application is published in the electronic gazette at the IPOPHL website.

Within thirty (30) days from the publication date, any person may present written adverse information concerning the registrability of the application including matters pertaining to novelty and industrial applicability. All adverse information shall be communicated to the applicant who may comment on them within thirty (30) days from the mailing date of the communication. The Director of the Bureau of Patents decides on the adverse information and the parties are notified accordingly. [23]

Industrial design applications which meet the formal requirements and are not subject of any adverse information or community review proceeding within the prescribed period are registered. An industrial design registration is valid for 5 years from the filing date. However, the registration may be renewed for two (2) consecutive periods of five (5) years each upon payment of renewal fee. [24]

If the applicant wishes to showcase her products before filing for an industrial design, she is entitled to a grace period of 6 months.[25]

In 2012, the IPOPHL implemented the ID in Five (5) Days process which sought to facilitate the registration process from the filing date until the recommendation for publication of ID applications in 5 days. All ID applications which are complete and comply with the formality requirements are processed within the time limit under this track.

3.2.2 Deferred publication

An applicant may request for deferred publication for a maximum period of 30 months from the filing date, or priority date of the industrial design application.

A request for the deferred publication of the industrial design application may be filed simultaneous with the filing of the application, or at any time prior to its publication.

Memorandum Circular No. 14-004 provides that in case the request for the deferred publication is made after the filing of the application, the allowable period for the deferred publication shall be the remaining time from the allowed thirty (30) months deferred publication period.

3.2.3 Adverse information and examination

While there is no opposition system for ID registration, the Adverse Information procedure operates as a similar mechanism to subject published applications to public scrutiny.

[22]Sec. 29, Republic Act 8293
[23]Rule 1701, Revised IRR
[24]Rule 1703, Revised IRR
[25]Rule 1519, Revised IRR

In addition to this, the IPOPHL implemented the Community Review Process (CRP) to promote transparency and enhance the quality of industrial design registrations.[26] Under the CRP system, IPOPHL informs the relevant design industries of published applications to ensure that only new industrial designs are registered. Thus, it is not only interested parties that may submit adverse information on an application but also relevant industries that may be affected by an industrial design application. The CRP solicits any adverse comments on industrial designs published and would involve relevant sectors in the registration process. If there is any adverse comment, the Director of the Bureau of Patents would request for a prior art search in the form of a "registrability report" which will serve as a basis for a decision whether to allow or deny the registration of the application.

As a general rule, ID applications are subjected to formality examination. However, there are three instances when substantive examination is conducted: 1) if the applicant requests for a Registrability Report; 2) if a third party requests for the issuance of a Registrability Report after the publication of the application; and, 3) when the application is subject of an Adverse Information. A Registrability Report contains the result of a prior art search indicating the relevant prior arts.[27] During this substantive examination, an ID examiner conducts a global novelty search based on all known available databases, including non-patent literature. The result of the substantive examination contained in the Registrability Report is sent to the applicant or third party who requested for such. If the application is the subject of an adverse information and the Report indicates lack of novelty, then the Director of Patents will issue a decision denying the registration.

Since the IP Code was implemented in the Philippines, the time for registration of industrial design from filing date has been significantly reduced from 5 years to 6 months.[28]
Registered industrial designs are valid unless cancelled in an administrative or judicial proceeding. In the Philippines, there are very few cases involving infringement or cancellations of industrial design registrations.

3.2.4 Cancellation of ID registration

The IP Code provides for the procedure and grounds for cancellation of a registered industrial design.[29] The Bureau of Legal Affairs of the IPOPHL has jurisdiction over cancellation of industrial designs as well as administrative complaints for violations of laws involving intellectual property rights including industrial designs where the total damages claimed are not less than PhP200,000.00 (3800 CHF).[30]

3.3 ENFORCING ID RIGHTS

Registered IDs can be protected and enforced through criminal, civil and administrative proceedings. The IP Code, Special Rules of Procedure for Intellectual Property Rights[31] and the Rules and Regulations on Administrative Complaints for Violations of Laws Involving Intellectual Property Rights provide the judicial and administrative remedies for the enforcement of intellectual property rights including industrial designs.[32]

Apart from these remedies, the IPOPHL spearheads the National Committee on Intellectual Property Rights (NCIPR) created under Executive Order No. 706 which is tasked to intensify enforcement against intellectual property rights violations and coordinate inter-agency efforts

[26] Rule 1700, Revised IRR
[27] Rules 1902, Revised IRR
[28] WTO TPR on Philippines (1999) paragraph 141: Based on a government study conducted in 1993, the average approval times for industrial design applications were 12 months.
[29] Sec. 120, Republic Act 8293
[30] Sec. 10, Republic Act 8293
[31] A.M. No. 10-3-10-SC
[32] Rules and Regulations on Administrative Complaints for Violations of Laws Involving Intellectual Property Rights as Amended.

against piracy and counterfeiting.[33] The NCIPR which is chaired by the Department of Trade and Industry and co-chaired by IPOPHL is composed of law enforcement agencies such as the Department of Justice, Department of the Interior and Local Government (DILG), Bureau of Customs (BOC), Philippine National Police (PNP), Optical Media Board (OMB), Food and Drug Administration and other relevant agencies.

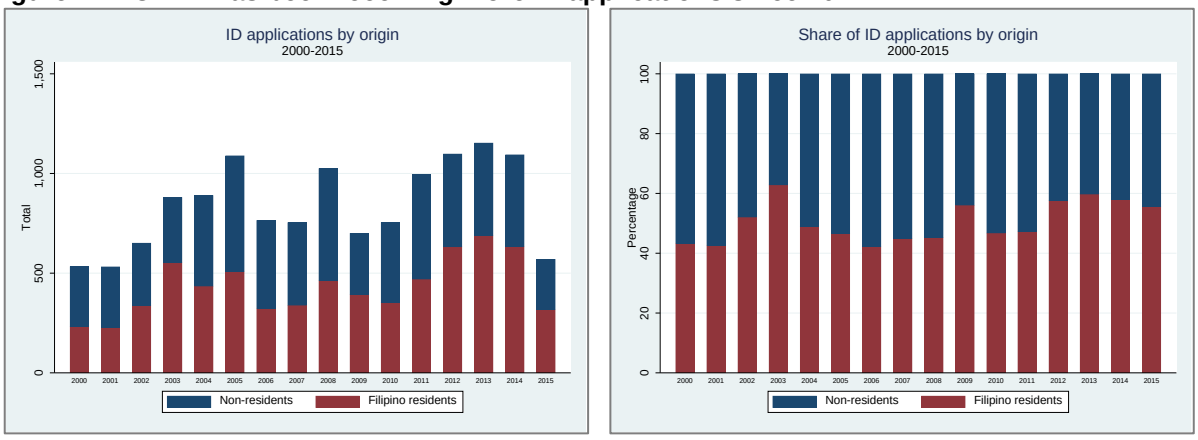
For administrative complaints involving infringement cases filed with the Bureau of Legal Affairs may ask for a substantive examination of the industrial design under consideration from the IPOPHL.

4 WHAT THE ID POPULATION LOOKS LIKE

Over the past 15 years, 2000-2015, the IPOPHL has received a total of 13,558 ID applications.[34] The highest number of ID filings was recorded in 2013 with 1,153 applications received. Over the same period records showed that Filipino residents accounted for most of the ID filings. However, in 2006, 2007, 2011 and 2015, the filings of foreign applicants exceeded those residing in the country.

Figure 2 plots the ID filing at the IPOPHL for the years 2000-2015. The figure on the left shows the number of total ID applications in the Philippines by the applicants' origin. The figure on the right displays the share of resident to non-resident filing.

Figure 2: IPOPHL has been receiving more ID applications since 2012.



Note: Observations from the year 2016 were dropped due to possible incompleteness of data captured for the year.
Source: WIPO based on IPOPHL (2016).

In an interview, the IPOPHL stated that the implementation of ID dissemination program may have played a role in the ID filing trend in the country. First, the office has organized programs to raise IP awareness and used their satellite offices in various regions of the country to reach a wider audience. The Intellectual Property Satellite Offices (IPSO), and Innovation and Technology Support Office (ITSO) regional offices in the regions have conducted IP awareness seminars, some focusing on ID. The "Leap IP Program" is a series of free seminars conducted by the IPOPHL to educate the importance of protecting creative and innovative works through IP use. A session is scheduled every second and fourth Wednesday of each month.[35]

Second, the office has introduced various incentives to encourage ID filings. For example, small entities such as small and medium enterprises, universities, students and youth pay reduced filing fees when filing for ID.

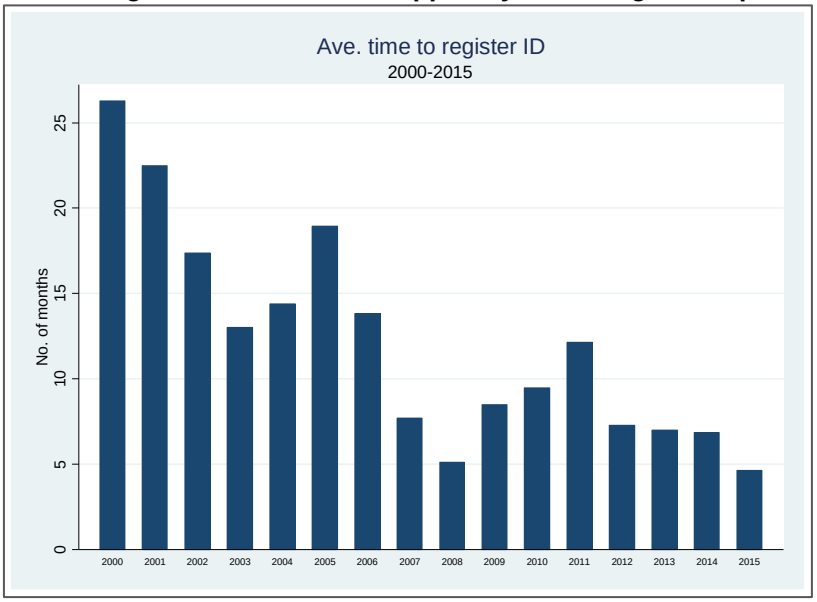
[33] Executive Order No. 736.
[34] The year 2016 is excluded due to the possibility of missing observations.
[35] "Leap IP," Intellectual Property Office of the Philippines, http://www.ipophil.gov.ph/releases/2014-09-22-06-26-56/442-l-e-a-p-ip-2016.

At the same time, universities and research institutions have also begun filing for ID rights.

Third, other reforms and programs have been implemented to increase efficiency and access to IP filing services such as automation, reduction of turn-around-time, and work process re-engineering. The processing period for an ID application in the Philippines has been reduced significantly between 2000 and 2015, decreasing at an average of 16 percent per year. In 2000, an ID applicant would wait an average of 26 months to have her ID registered. By contrast in 2015, she would have her ID registered in less than five months on average.

Figure 3 plots the average pendency time to register an ID application in the Philippines. It shows the decrease in how long applicants have to wait between the time they file for an ID right to when their rights are registered.

Figure 3: Since 2000 ID registration time has dropped by an average of 16 percent per year



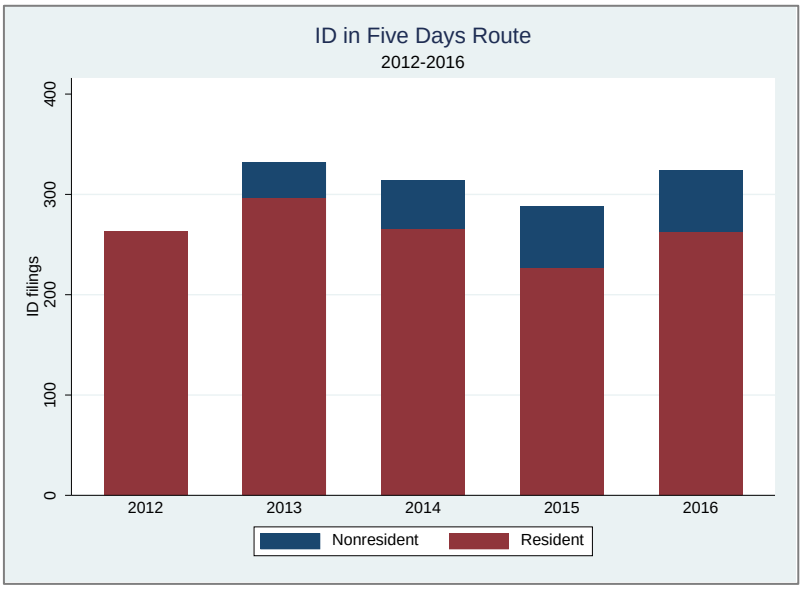
Note: Observation for the latest year, 2016, has been omitted due to missing registration dates.
Source: WIPO based on IPOPHL (2016).

In addition, IPOPHL put in place an expedited ID registration process in May 2012 as mentioned in Subsection 3.2.1. This new process was enacted to respond to the needs of designers and firms for fast registration of their designs.

This change implies that applicants now have two possible ID registration route. The regular route is for applications that have been acted upon and have not met specific formality requirements. The faster registration route, known as the “ID in five days” allows for ID registration within five days of the ID filing date.

In practice, the “ID in five days” applies to ID applications that meet the formality requirements. Within five days of the office receiving the application, and subject to no formal deficiencies, the application will be recommended for registration and publication. If the application does not receive any opposition or adverse information within one month of publication, the application will be registered. The date of registration is its publication date.

Figure 4: Since 2012, nearly 20 percent of resident filings use the "ID in five days" route



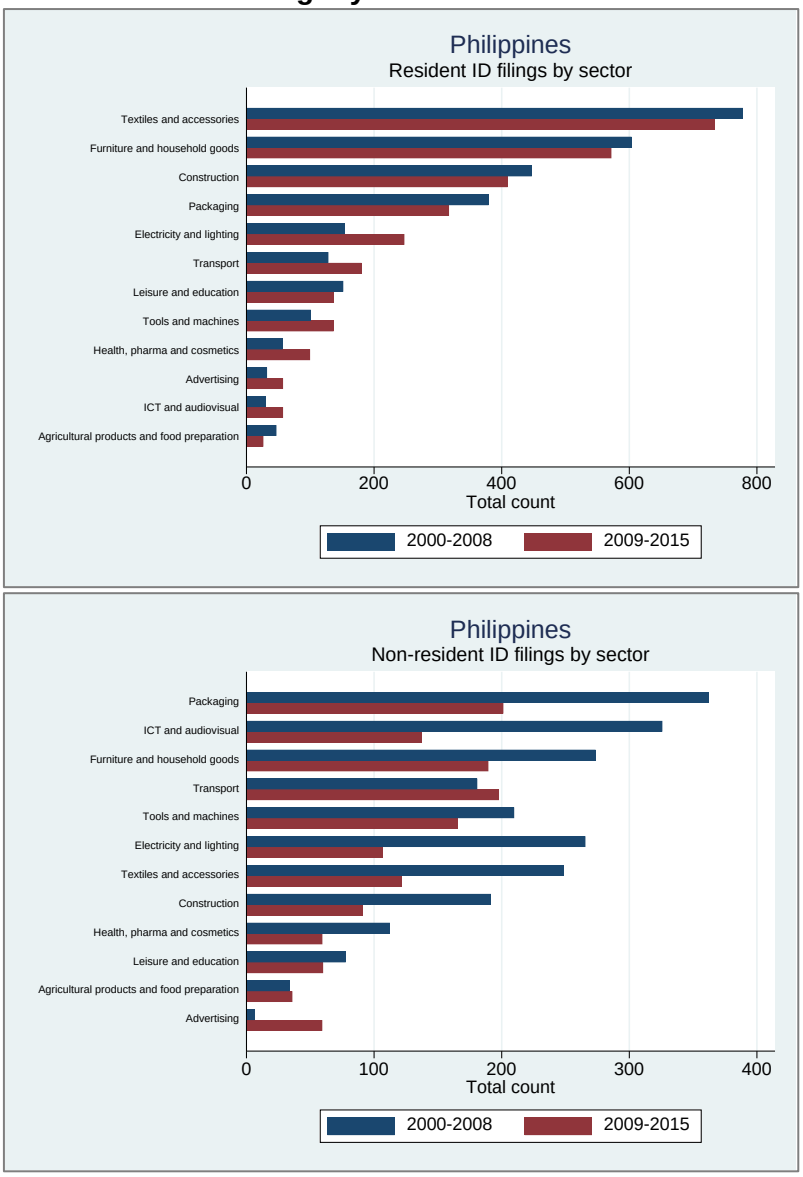
Source: IPOPHL (2017).

Figure 4 illustrates the total number of ID applications that have gone through the "ID in 5 days" route. On average 260 resident Filipino applications per year have been granted their registrations through this expedited registration route since 2012. This number corresponds to nearly 22% of total ID filings per year. By contrast approximately 50 non-resident ID applications have been registered through this expedited process per year on average, which corresponds to less than four percent of total ID filings per year.[36]

Figure 5 displays ID filings by sectors for Filipino residents (top) and non-residents (bottom). It maps the ID filings classified by Locarno classification into the 12 sectors into two time periods of 2000-2008 and 2009-2015.[37] The comparison of the two time periods allows a visual analysis of whether any particular specialization across the sectors emerged. Blue bar corresponds to the average ID filling for the years 2001-2008 while the red bar corresponds to those for 2009-2015.

[36] Non-resident ID applications have only started to use the expedited registration route in 2013.
[37] Locarno classification is an international classification method for the registration of IDs. See http://www.wipo.int/classifications/locarno/en/ for more information. See Annex D of WIPO (2017) on how the Locarno classifications have been allocated to the different industrial sectors.

Figure 5: Filipino residents file in slightly different sectors than the non-residents



Note: Locarno codes were transformed into sectors based on WIPO (2017).
Source: IPOPHL (2016).

Majority of the ID applications in the Philippines come from five sectors: textiles and accessories, furniture and household goods, packaging, construction, and transport. These five sectors together account for nearly 68 percent of all ID filings in 2000-2015.

When considering the ID filings according to applicants' origin, the top three sectors for Filipino residents are in textiles and accessories, furniture and household goods, and packaging. In contrast, non-residents mostly filed applications in the packaging, transport and ICT and audiovisual sectors. The decrease in ID filings in the ICT and audiovisual and packaging sectors between the two time periods could signify a shift in the local demand for the goods associated with these sectors.

4.1 ABOUT THE APPLICANTS

Filipino residents account for the majority share of the ID filings in the Philippines.

The top five countries with the most number of applicant filings for IDs at the IPOPHIL are Japan, the United States, Netherlands, Switzerland, and South Korea. Malaysia, Singapore

and Thailand, fellow members of the ASEAN countries, are among the top 20 countries of origin with the highest number of applicant filings for IDs in the Philippines.

Table A. 1 in the appendix provides the full list of countries as determined by the applicants' addresses.

Firms make up a significant share of the ID applicants at 68 percent. On the other hand, individuals represent 31 percent while universities and government-related agencies account for less than one percent of total filings. Among residents, majority of the applicants are individuals (52 percent), while firms account for 47 percent and the rest are universities and government-related agencies (0.7 percent).

From the total number of ID filings numbering 13,558, there are 2,323 unique applicants and 6,041 unique designers. The top 50 applicants filed an average of 115 ID applications over the 16 year period. For these prolific applicants, there are two designers, on average in each application. Tables A2-A5 in the appendix lists the top ten unique applicants and designers.

For Filipino resident applicants, there is only one applicant per application on average. In addition, Resident applications also tend to have only one designer per application. In contrast, for the non-resident applicants there is an average of one applicant per application but there are two designers, on average, per application.

Table A. 6 and Table A. 7 provide the breakdown of the number of applications and designers per application for 2001-2016.

4.2 FOCUSING ON THE SURVEY YEARS: 2011-2013

For the survey years of 2011-2013, Filipino residents filed a total of 1,791 ID applications. From these applications, there are 402 unique applicants and 314 unique designers identified. On average, there is one applicant per application and one designer per application. Of course, there are outliers. In 2011 and 2012, there are two applications which list four applicants per application. One application in 2013 lists five designers in the same application.

Table 4 provides the number of applicants per application, while Table 5 shows the number of unique designers per application for the survey years of 2011-2013.

Table 4: Number of unique applicants per application for survey years, 2011-2013

Survey years	1	2	3	4	Total
2011	467	2	0	1	470
2012	619	6	6	1	632
2013	681	7	1	0	689
Total	1,767	15	7	2	1,791

Source: WIPO based on IPOPHL (2017).

Table 5: Number of unique designers per application for survey years, 2011-2013

Survey years	1	2	3	4	5	Total
2011	409	39	21	1	0	470
2012	586	22	20	4	0	632
2013	651	23	13	1	1	689
Total	1,646	84	54	6	1	1,791

Source: WIPO based on IPOPHL (2017).

As regards to the sectors in which ID applications were filed by Filipinos during the survey years, close to 80 percent of the applications were in the following five sectors: textiles and accessories, furniture and household goods, construction, packaging, and electricity and lighting.

Table 6 lists the ID applications with their corresponding sectors for the years surveyed. [38]

Table 6: Textiles and accessories account for nearly 31 percent of ID filings

Sector	Frequency	Percentage	Cumulative
Textiles and accessories	545	30.95	30.95
Furniture and household goods	278	15.79	46.73
Construction	232	13.17	59.91
Packaging	190	10.79	70.7
Electricity and lighting	150	8.52	79.22
Transport	121	6.87	89.09
Leisure & Education	71	4.03	90.12
Tools and machines	68	3.86	93.98
Health, pharma and cosmetics	42	2.39	96.37
ICT and audiovisual	37	2.1	98.47
Advertising	15	0.85	99.32
Agricultural products and food preparation	12	0.68	100.00
Total	1,761	100.00	

5 WHAT THE SURVEY TELLS US

The survey carried out in Indonesia, the Philippines and Thailand sought to better understand the process of design innovation and the contribution of the system for the protection of IDs in the respective countries. It was divided into two parts:

- Part I focused on the characteristics of the ID applicant
- Part II focused on a wide range of characteristics of up to four IDs filed by the applicant in question

This section summarizes the survey results for all three economies. It first provides an overview of who responded to the survey (subsection 5.1). It then focuses on the key applicant characteristics (subsection 5.2) before turning to the responses specific to individual ID applications (subsection 5.3). The final section summarizes the study's main findings and outlines possible directions for more in-depth research that would link the different survey responses to one another.

Section 3 of the accompanying WIPO-ASEAN Design Survey Manual describes how the survey was designed and implemented. [39]

5.1 WHO RESPONDED TO THE SURVEY?

The survey questionnaire was sent to all applicants who applied for ID protection during the years 2012-2013 in Indonesia and Thailand, and 2011-2013 in the Philippines. On average, six percent of applicants responded to the questionnaire. The Philippines had the highest response rate of 12 percent, compared to seven percent for Indonesia and nine percent for Thailand. However, reflecting a larger applicant population, Thailand accounted for the largest number of responses, followed by Indonesia and the Philippines.

Table 7 provides a summary of the responses received. In total, 268 applicants submitted a partially or fully completed survey questionnaire. Those 268 applicants accounted for 512 ID applications in total. The ID survey was sent to both individual and company applicants. While more companies than individuals responded, the distribution is relatively close to even when looking at the overall number of applications.

[38] The total number of ID applications in Table 4 and Table 5 do not match those in Table 6 due to missing observations for the Locarno classification for those 120 applications.
[39] The WIPO-ASEAN Design Survey Manual is available for download at http://www.wipo.int/econ_stat/en/economics/studies/.

Table 7: Breakdown of survey respondents by number of applications per country

Application sequence no.	Indonesia			Philippines			Thailand			Sum
	Firm	Person	Total	Firm	Person	Total	Firm	Person	Total	
1	57	55	112	23	28	51	45	60	105	268
2	31	20	51	15	10	25	26	23	49	125
3	20	7	27	11	6	17	13	10	23	67
4	16	4	20	9	6	15	9	8	17	52
Sum	124	86	210	58	50	108	93	101	194	512

At the outset, the questionnaire asked about the position of the person responding to the survey. As shown in Table 8, the position most frequently selected was "Chief Executive Officer or professional in senior management" followed by "Designer or professional in R&D team". However, more than half of the responses were either missing or fell into the "other" category, suggesting that the profiles of respondents were relatively diverse. A few examples of the "Other" category are the business owners, freelancers, hobbyists, university instructors, researchers, head of production, admin staff, etc.

It is important to mention that the shares and statistics calculated for the remainder of the tables in this report exclude the missing observations but include the "I don't know" option, unless stated otherwise.

Table 8: Professional position of survey respondents

Position	Indonesia			Philippines			Thailand			Sum
	Firm	Person	Total	Firm	Person	Total	Firm	Person	Total	
Missing	7	8	15	4	7	11	6	15	21	47
Designer/ R&D	3	3	6	2	2	4	5	13	18	28
Legal/IP	7	0	7	1	0	1	7	1	8	16
Manufacturing	1	4	5	0	1	1	3	7	10	16
CEO/Senior Management	11	6	17	8	11	18	14	10	24	60
Other	16	33	49	8	4	12	8	13	21	82

5.2 WHAT ARE THE CHARACTERISTICS OF ID APPLICANTS?

Part I of the survey sought to gain insights into who uses the ID system in the three economies. The first set of questions targeted individual applicants only. In most cases, individual applicants were owners or co-owners of a company (Figure 6), though some were in employed positions or self-employed.

Figure 6: The majority of individual applicants were company owners
Share of respondents

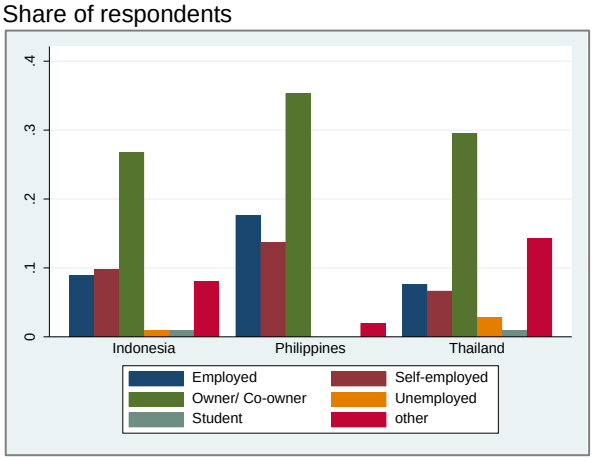
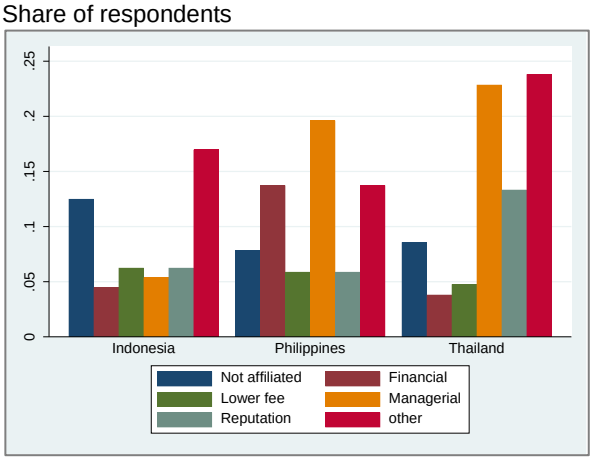


Figure 7: Reasons why applicants decided to file as individuals
Share of respondents



When asked why they had filed their application as an individual rather than in the name of a company, managerial reasons was the most frequent response among the options listed, especially in the Philippines and Thailand (Figure 7). However, the "other" category received an even greater number of responses, leaving the motivation for individual filing strategies somewhat unresolved.

The survey questionnaire then went on to ask individual applicants whether they worked for and/or owned the main commercializing entity for their designs and, if so, what their position was in that entity. The responses – summarized in Table A. 8 and Table A. 9 in the appendix – suggest that individual applicants were indeed affiliated with the commercializing entity and, in most cases, they were either the CEO or a professional in senior management or they were a design professional.

The remaining questions of Part I of the questionnaire then focused on the company commercializing the ID. In the case of individual applicants, respondents were asked to answer all questions in relation to the company that was in charge of commercializing the majority of their IDs. In the case of company applicants, responses relate directly to the applicant, with the implicit assumption that the applicant is also the entity commercializing the ID.

The survey responses suggest that companies using the ID system in the three economies have the following general attributes:

- Most ID users are private and locally-owned companies, with state-owned companies and subsidiaries of foreign companies playing a relatively minor role (Figure 8). The great majority of companies are locally headquartered (Table A. 10). Around 19 percent of respondents indicated that they have subsidiaries or branch offices abroad, mostly in other ASEAN economies (Table A. 11).

- Small firms with less than 50 employees account for most users, followed by medium-sized firms with more than 49 but less than 500 employees and large firms with more than 499 employees (Figure 9). When only looking at company applicants, there are more medium-sized firms than small firms. Individual filing strategies are more common among smaller entities, although they also occur for some medium-sized and large firms. The distribution of annual sales revenues corroborates the size distribution as measured by employees (Table A. 12).

- Most companies were 21 or more years old (Figure 10). The average age was higher when companies rather than individuals applied for IDs.

- As one might expect, the majority of ID users indicated that "manufacturing" was their main line of business. More interestingly, seven users indicated "design services" and 22 users indicated "other services" as their main line of business; four users from Thailand associated themselves with "agriculture, forestry and fishing" (Table A. 13).

- Around 22 percent of ID users indicated that they engaged in exporting, with a relatively wide distribution of export revenues. The most frequent export revenue category was 30,000 to 100,000 USD (Table A. 14). Other ASEAN economies were the most frequent export destination, followed by other Asian economies. One Indonesian user indicated exporting to the United States and two Thai users indicated exporting to Western Europe (Table A. 15).

Figure 8: Ownership types of commercializing firm
Share of respondents

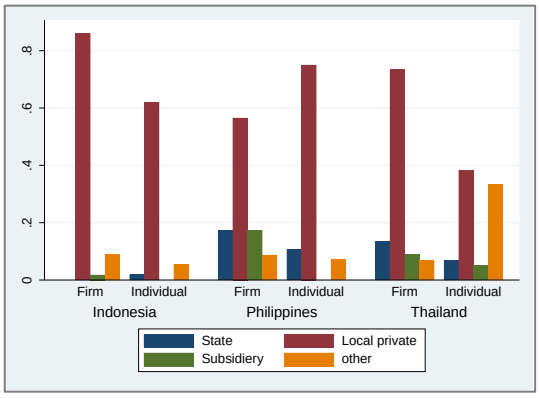


Figure 9: Size of commercializing firm

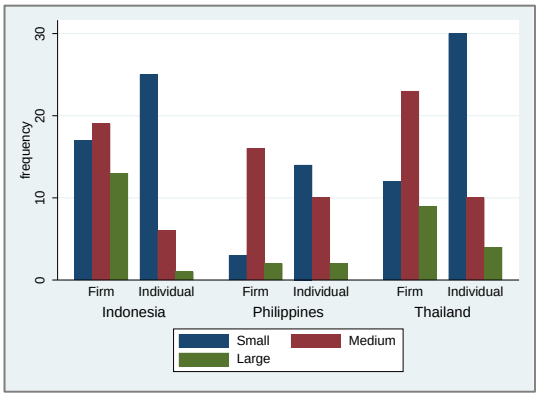
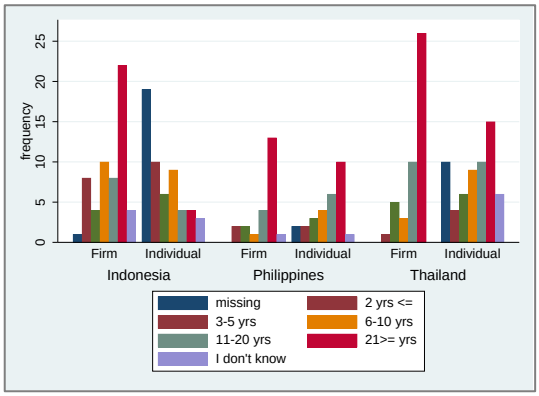


Figure 10: Age of commercializing firm



In light of the study's focus on design innovation, the survey asked ID users several questions on how they innovate. These questions revealed the following picture:

- More than half (56 percent) of ID users formally invest in research and development (R&D) (Table A. 16). However, the majority that do so only spend moderate amounts – less than USD 30,000 – on R&D (Figure 11). Only 12 companies indicated R&D spending of USD 300,000 or more.

- Most users do not have a self-standing department devoted to design innovation (Figure 12). An important exception here is the Philippines, where more users – regardless of applicant types – have a design innovation department than those that do not.

- When asked how they finance design innovation, no single mechanism dominated. Financing through the manufacturing budget was the most frequent response, but it was followed closely by financing through a self-standing design innovation budget, R&D budget and the advertising budget (Figure 13).

- Turning to the use of the ID system, management of ID rights was performed – in almost equal shares – by "the designers or the design department", "the CEO" or "the legal/intellectual property (IP) department" (Table A. 17). Where individuals file ID applications, management responsibility was more likely to rest with the designers or the design department. Where companies filed those applications, it more likely rested with the CEO.

- Only around 15 percent of ID users surveyed were familiar with the Hague System for the International Registration of Industrial Designs (Table A. 18). Given that around a quarter of users engaged in export activity, this share seems relatively low and suggests some scope for awareness raising should the countries accede to the Hague System in the future. An additional question was included in the Thai survey questionnaire with regards to the Hague System. The Thai respondents were asked to explain briefly how the Hague System would help their businesses. Slightly more than half (55 percent) of the 11 applicants who had responded to the question either did not know about the system or were not familiar with how it operated. Those who were aware (45 percent) indicated that the Hague System's one-stop-shop feature, convenience and cost reasons - especially with regard to the protections in foreign markets were beneficial to their businesses.

- Finally, in the Philippines respondents were asked to explain why they opted for ID rather than copyright protection. More than one third indicated that ID rights provide a stronger protection for their designs and they therefore preferred this form of IP. The second most frequent reason for opting for ID rights is a lack of awareness that designs may be protectable by copyright (Table A. 19).

Figure 11: R&D spending

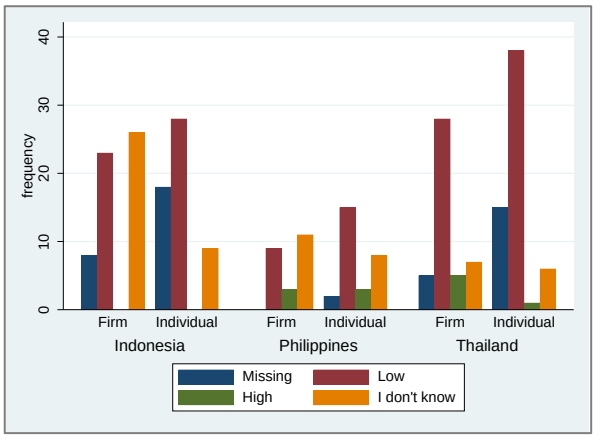


Figure 12: Self-standing department for design innovation

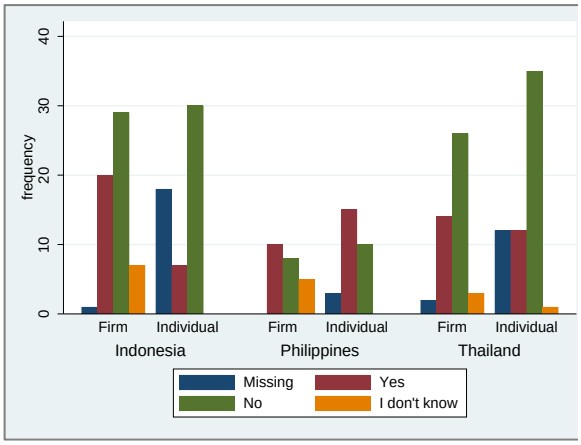
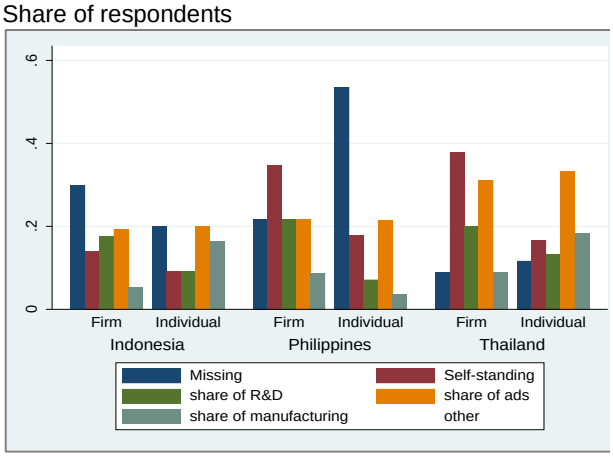


Figure 13: How design innovation is financed
Share of respondents



5.3 WHAT ARE THE CHARACTERISTICS OF THE PROTECTED DESIGNS?

As explained above, Part II of the survey sought to gain insights into a wide range of characteristics of the ID applications filed by the 268 individual and company applicants. In

particular, the survey aimed at getting a better understanding of the designers behind IDs, the design innovation process, the strategy behind ID filings, the value of IDs, the products associated with IDs, ID enforcement strategies and the ID application process. The discussion of the survey results is organized along these six dimensions.

5.3.1 The designers behind IDs

By law, applicants are required to list all the designers who contributed to the design for which ID protection is sought. The survey asked respondents several questions about the designers. Where the ID application listed more than one designer, respondents were asked to answer each question separately for each designer. In total, full or partial responses for 612 designers were received.[40] These responses offer the following insights:[41]

- Across all three countries, designers were mostly between 35 and 50 years of age (Figure 14). The Philippines has a somewhat older age profile, with the 51 to 65 years age bracket being the most prolific. Interestingly, only seven designers were younger than 25 years, suggesting that designers require a certain level of education and/or experience before they contribute to design innovation.

- Despite the relatively high average age, many designers joined the ID using company only 3 years or less before contributing to an ID filing (Table A. 20). This points to some mobility in the job market for designers or, alternatively, a fluid start-up scene. The Philippines again stands out, with most designers having been with the ID using company for 20 years or more. In Indonesia, by contrast, most designers listed in ID applications had a relatively recent affiliation with the ID using company.

- There is a pronounced gender gap in design innovation, with more than 3 times as many men as women listed as designers (Table A. 21). The Philippines has the narrowest gender gap and Indonesia the widest one, with Thailand lying somewhere in the middle.

- Most designers held a bachelor's degree, with some going on to obtain a Master's degree and a few gaining a doctoral degree (Table A. 22). This confirms that design innovation relies on skills gained through formal education. Interestingly, only one designer in Indonesia seemed to have a specialized degree in design, which may reflect the lack of availability of such degrees in the three countries under study. However, when asked about designers' professional background, 18 percent of the designers specialized in industrial design or design engineering (Table A. 23). Leaving aside the "other" category, the most frequent professional backgrounds were "business and economics" (22 percent) and "other engineering" (19 percent).

- Most designers worked in self-standing design innovation or R&D departments of companies (Figure 15). At the same time, there were also many designers who were part of senior management or, in fact, the company's CEO. This suggests two different profiles of design innovation: on the one hand, there are larger companies with formal innovation and R&D functions that employ design professionals; on the

[40] Since the same designer may appear in several IDs for different applicants, the total number of absolutely unique designers may be lower. Subsection 3.2.2 of the ASEAN Design Survey Manual explains how the survey treated repeat designers.

[41] A relatively high share of responses to the designer-specific questions were missing, introducing some uncertainty to the findings presented here. However, there is no a priori reason to believe that the missing observations create any statistical bias.

other hand, there are smaller companies where the owner or senior managers engage in design innovation in a somewhat more informal setting. Finally, there were also designers that were employed in manufacturing and, less so, in marketing activities. This latter finding suggests that there are certain synergies between those company functions and innovation activities.

- In the majority of cases, designers did not receive any special benefit from contributing to an industrial design application (Table A. 24). However, they did so in the case of 84 industrial designs. In about half of those cases, the benefit took the form of a payment conditional on the actual commercial application of the design. This was followed by special bonus payments and promotions.

Figure 14: Age of designer

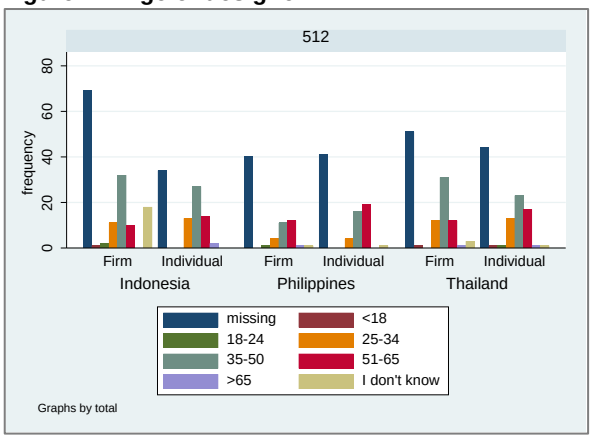
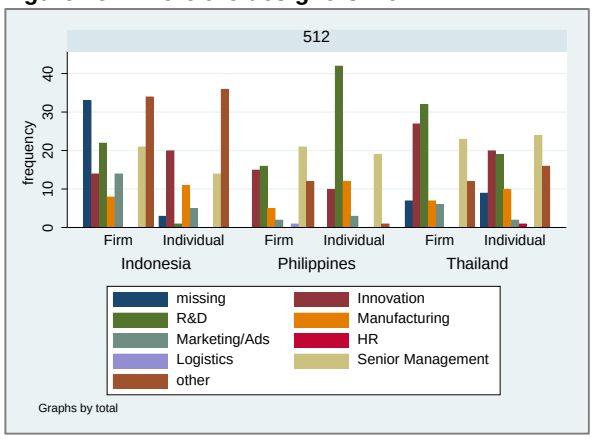


Figure 15: Where the designers work



5.3.2 The process of design innovation

The next category of questions sought to shed light on the process by which the design underlying an ID application was created. As described in Section 2, little is known about the context in which innovation in firms in middle-income countries takes place. The present survey provided a unique opportunity to study this context in the concrete case of design innovation. The picture that emerges is the following:

- Most of the designs underlying an ID application are created internally within companies (Figure 16). Outsourcing design innovation to an external company occurs rarely. However, there are a considerable number of cases that relied on a mix of internal and external contributions. This suggests that external inspiration and/or capabilities play an important role in the design innovation process.[42]

- For the great majority of IDs, companies relied on internal funds to finance design innovation (Table A. 25). For less than 20 percent of IDs, respondents indicated external financing sources. External loans and government subsidies played some role in those cases, but most respondents selected the residual "other external sources" category.

- In line with the above findings on the location of designers, there were two principal company origins giving rise to the ideas behind new designs (Figure 17). One origin is the department responsible for design innovation or R&D more broadly. The other is senior management, including the CEO's office. Manufacturing accounts for some ideas as well, though interestingly the "marketing, advertising and sales" function

[42] External to the firm.

features more prominently compared to the designer location pattern. This may suggest that customer feedback picked up by the sales function may feed into design innovation executed elsewhere within the company.

- To further explore the origin of the ideas for new designs, the survey asked respondents to rank different sources of inspiration on a 1 to 5 scale ranging from “not important” to “very important” (Table A. 26). Interestingly, customer feedback about designs sold in the marketplace emerged as the most important inspiration, giving some credence to the hypothesis of marketing departments playing some role in design innovation. Products sold in the market place, variation on previous own design, supplier feedback and trade, design or art fairs were other important sources of inspiration, whereas science fairs and design magazines were thought to be least important.

- Finally, the survey asked how long it took to develop the design underlying the ID filing (Figure 18, left). The responses reveal a bell-shaped distribution, with most designs requiring between 1 and 3 months of development. However, the distribution has a relatively long tail, with 53 designs having taken between 1 and 2 years to develop and 37 designs more than 2 years. There are some differences across countries, with Indonesian designs on average requiring less time compared to the other two countries. These differences may partly reflect different areas of specialization in design activity. Figure 18 (right) displays how long it took to the develop the designs by the responses from the three countries.

Figure 16: Internal versus external innovation

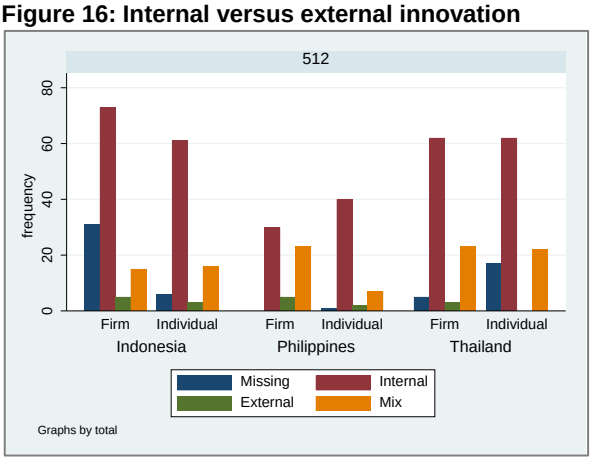


Figure 17: Where idea for innovation originates

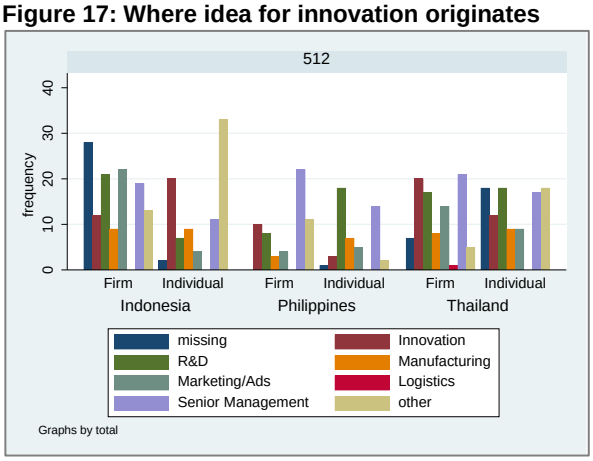
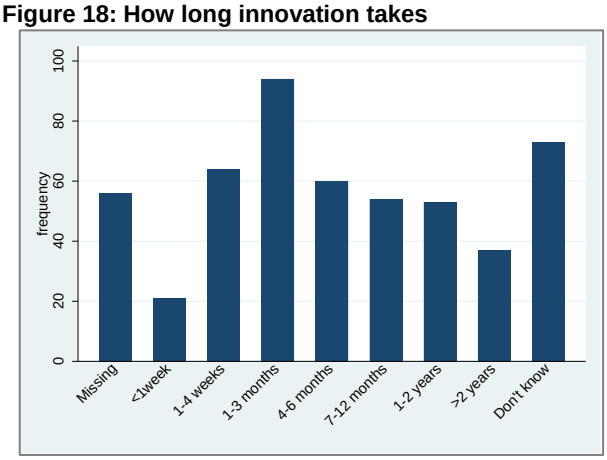
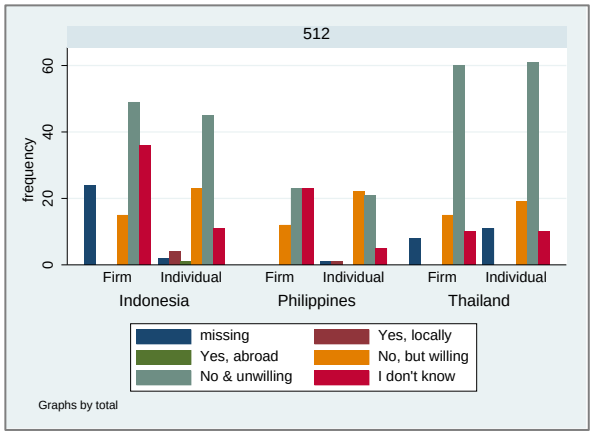


Figure 18: How long innovation takes





5.3.3 The strategy behind applying for ID rights

Numerous studies in high income countries have analyzed why firms file patents for their inventions (see, for example, Cohen *et al.* (2002), Cohen *et al.* (2000), Hall and Ziedonia (2001), Arora and Ceccagnoli (2006), Graham and Sichelman (2008), Schankerman (1998) to name a few). Exclusion of competitors is a central reason and the one most directly linked to the rights conferred by patents. However, evidence suggests that companies pursue other goals when seeking out patent rights, such as ensuring their freedom to operate in their technology space and building a base for cross-licensing technologies with other industry participants. The latter motivation is important in the semiconductor and other IT industries (WIPO, 2011).

Little evidence on IP filing strategies is available beyond patents and outside high-income countries. The ID survey sought to fill this gap by asking ID applicants why they filed for ID rights. In particular, it asked respondents to rank the importance of different reasons on a scale from 1 (not important) to 5 (very important). The reasons offered were (i) preventing imitation, (ii) ensuring freedom to operate, (iii) licensing the design to generate revenue, (iv) enhancing reputation as a design innovator and (v) other reasons.

The responses reveal that preventing imitation and freedom to operate were the two most important motivations, with around three quarters of surveyed applicants rating these reasons as either 4 or 5. The licensing and reputation reasons were seen as less important, with less than 50 percent of applicants assigning a 4 or 5 rating to them. Licensing motivations may arguably be less important for industrial designs than for patents, as product

design is often closely linked to a company's image and is thus less "transferable" than technology.

Nonetheless, licensing motivations play some role in ID filing strategies. To shed further light on this role, the survey asked applicants whether they actually sold or licensed their IDs to third parties (Figure 19 and Figure 20). The responses indicate that the great majority of IDs were neither sold nor licensed. In addition, applicants were outright unwilling to sell their IDs in the majority of cases, supporting the notion that product design is closely associated with a company's core identity. Interestingly, Filipino applicants seemed most willing to transfer their designs to third parties. In addition, applicants from Indonesia and the Philippines accounted for 24 of the 25 IDs for which respondents indicated a sale or a license. Only one ID license and one ID sale involved a foreign party.

Figure 19: Were the ID rights sold?

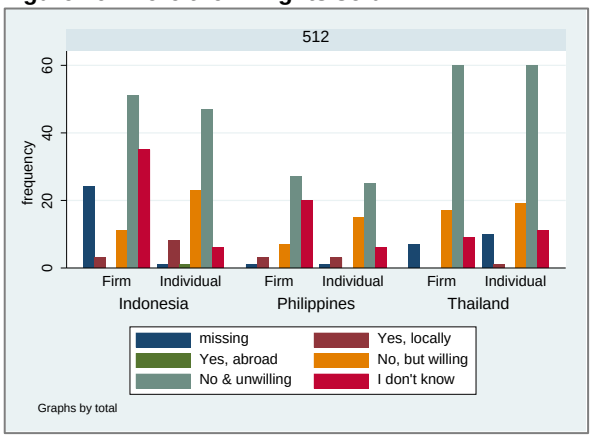
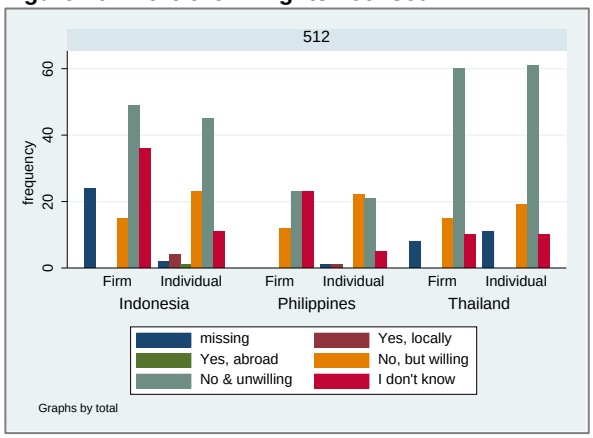
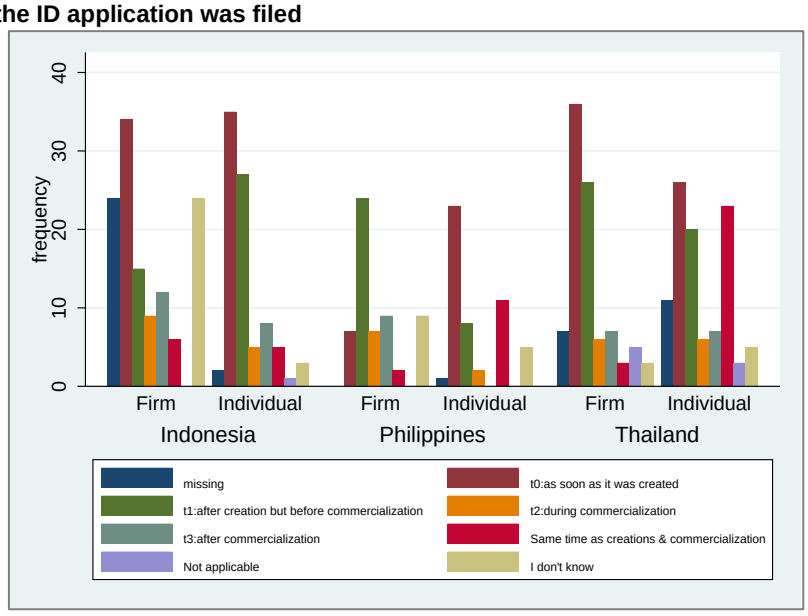


Figure 20: Were the ID rights licensed?



As a final element of the ID filing strategy, the survey asked when applicants filed their ID applications (Figure 21). As one might expect, most applicants filed their IDs at a relatively early stage in the design innovation process. In particular, 35 percent of applicants filed as soon as the design was created and only 9 percent filed after the design was commercialized. The existence of a grace period in the three countries may have enabled the filing of IDs after their commercialization and thus disclosure to the public.

Figure 21: When the ID application was filed



5.3.4 The value of IDs

Valuing IP is typically a difficult exercise, as there is much uncertainty about the potential of the underlying innovation and its reception by consumers. Inventor surveys – focusing on patents that were filed a long time ago – have provided one of few opportunities to obtain evidence on the level and distribution of patent values. For example, on the basis of the PatVal survey, Gambardella *et al.* (2008) estimated that the median European patent value lies around 300,000 euros, with a value distribution that is skewed to the right.

The present survey followed the PatVal approach and asked design applicants to value their IDs. In particular, they were asked about the minimum price for which they would have been willing to sell the industrial design. Applicants were given price ranges to choose from. Across the three economies, the results imply a median price range of 30,000 to 100,000 USD (Table A. 27). As one might have expected, the median value of an ID in the three ASEAN economies lies below that of a European patent. However, it still seems considerable given the lower development levels prevailing in these economies. Similar to European patent values, the distribution of ID values also seems skewed to the right, though the skewness seems less pronounced (Figure 22).[43] This could suggest comparatively less uncertainty in the design innovation process and more limited upside potential of successful designs. However, a surprisingly large number – 36 IDs – were valued at 100 million USD and more.[44]

The respondents were also asked to rate their IDs vis-à-vis their other IDs within their company and within the industry (see Table A. 29 and Table A. 30 respectively). For both cases the most frequent answer was that their ID belongs to the top 25-50 percent. While the distribution of ratings was relatively normal, only seven percent of IDs belonged to the top ten percent of most valuable in their industry.

As another way to look at the success distribution of IDs, the survey asked applicants to indicate whether the ID in question won any international award. Only 32 IDs did so (approximately seven percent) and in only six cases did the award entail a monetary prize (Figure 23).

Figure 22: Distribution of hypothetical ID values

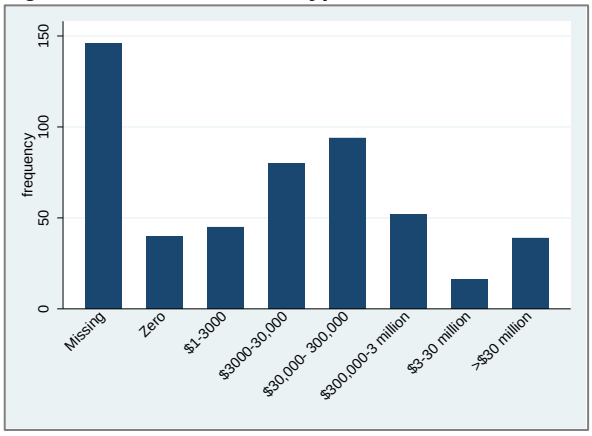
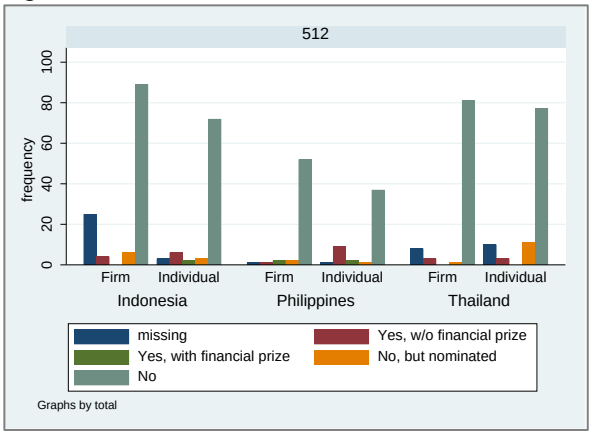


Figure 23: International awards



5.3.5 The products associated with IDs

The next set of questions focused on the products associated with IDs. In principle, the three countries operate a single design system, meaning that applicants cannot apply for ID

[43] Table A. 27 and Table A. 28 provide the detailed breakdown to the responses for the hypothetical ID value question.

[44] This large number may partly reflect the hypothetical nature of the question, with some respondents assigning the highest possible value to their designs to implicitly signal their unwillingness to sell.

protection for more than one design in a single application. However, the same design could well give rise to a range of products – for example, the same furniture design in different colors, materials and sizes.

The first question thus asked applicants how many products incorporate the ID in question (Figure 24). Around 21 percent of responses indicated "zero products", implicitly suggesting a commercialization rate of 79 percent.[45] In addition, a follow up question explicitly asked the respondents whether the main product associated with that particular ID has been commercialized. Around 45 percent indicated that it had already been commercialized and another 10 percent were in preparation for commercialization (Table A. 31). This rate appears high in comparison to commercialization rates for patents.[46] It may reflect the lower uncertainty of the design innovation process already mentioned above. Of those IDs that saw commercialization, around three quarters were associated with either a single product, or 2 to 5 products. The "2 to 5" product category featured more prominently for Indonesian IDs than Filipino IDs, with Thai IDs lying somewhere in the middle. These differences are, again, likely to reflect different areas of specialization in design activity. Interestingly, 44 IDs were associated with more than 10 products, suggesting that individual IDs can lead to a wide portfolio of products.

While IDs only protect the aesthetic dimension of designs, designers typically seek to combine aesthetic appeal with functionality. To better understand the link to functionality, the survey asked applicants to rate the degree to which the design underlying the ID filing contributed to different functional qualities. Similar to previous perception-based questions, respondents were asked to rate the contribution on a 1 (very low) to 5 (very high) scale. The responses reveal that "ease of use" was the most important functional quality of designs, with 62 percent of applicants rating this quality as either high or very high (4 or 5). The next three important functional qualities were durability, improved ergonomics and greater security, with around 50 percent of applicants selecting a 4 or 5 rating. Recyclability, portability and lighter weight emerged as relatively less important qualities (Table A. 32).

Finally, the survey asked applicants for the accumulated sales revenue of the main product associated with the ID in question. The results in Figure 25 are similar to the ones obtained for the hypothetical ID value question of Figure 22: median sales revenue lies between 30,000 and 100,000 USD. However, the "bell-shaped" curvature is flatter, which reflects the fewer number of respondents who had indicated the sales values for this question. Moreover, there are more "missing" and "I don't know" observations for this question than in Figure 22.

[45] These shares ignore "missing", but includes "I don't know" observations.
[46] Rivette and Kline (1999), Palomeras (2003), and Giuri (2007).

Figure 24: Number of products per ID

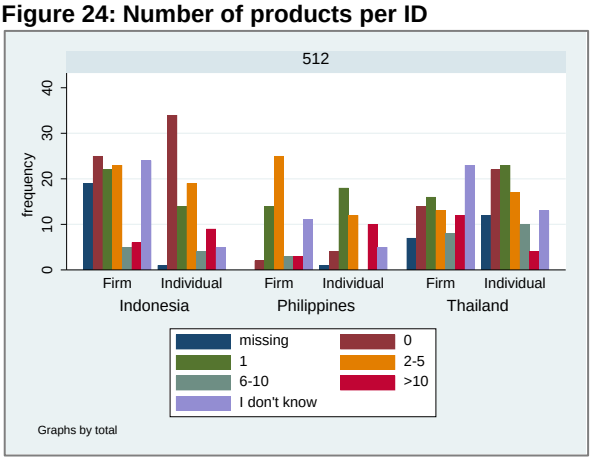
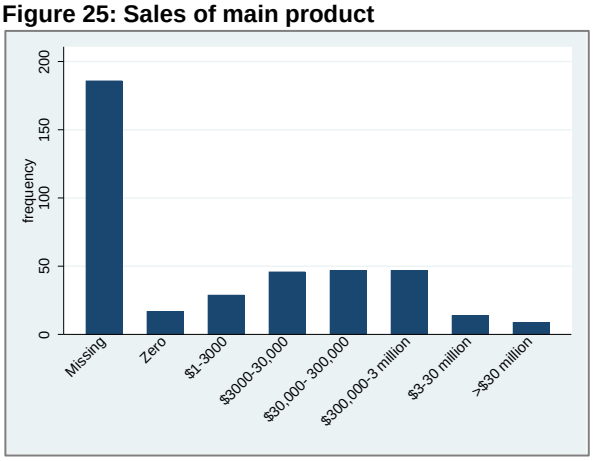


Figure 25: Sales of main product



5.3.6 ID enforcement strategies

The evidence summarized above pointed to imitation prevention as a key motivation for filing ID rights. The survey sought to explore this topic further by asking applicants whether the design underlying the ID in question was actually imitated. The responses reveal that ID holders felt that their design was imitated in 21 percent of all cases, overwhelmingly in their local market (Figure 26). This share seems considerable, not least because one would expect the publication of ID rights to preempt imitation in the first place. At the same time, an ID holder's perception of imitation taking place may not necessarily imply that an ID right was infringed. The line between illegitimately copying designs and legitimately taking inspiration from them may not be always clearly drawn.

Applicants who felt their designs were imitated were then asked several follow-up questions. The first one was how soon the design was imitated after it was revealed to the public. In approximation 62 percent of the cases, imitation took at least six months and in one third of them it took more than two years (Table A. 33). Intuitively, imitation may be prompted by a design's commercial success, which requires some time to be borne out.

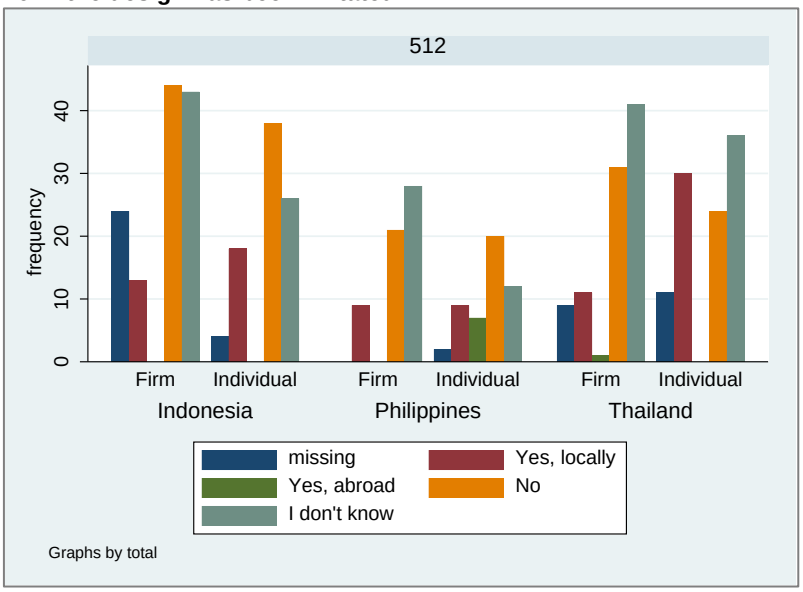
The second follow-up question was how ID holders were made aware that their design was imitated. Products sold to the public and customer feedback emerged as the most important channels, although the number of responses to this question was low (Table A. 34). ID applicants perceiving imitation were then asked to rate the financial loss due to the presence of imitates relative to the total sales for the product in question. In addition to the usual 1 (very low) to 5 (very high) scale, they were given a "no loss" option. Around 42 percent of ID holders rated their financial loss as high or very high (4 or 5) (Table A. 35).

Interestingly, 14 percent of respondents indicated that they did not incur any financial loss. Possible explanations for the latter outcome include successful ID rights enforcement, a negligible scale of imitative activity and imitative products stimulating demand for the ID holder's original.

Finally, the survey asked ID applicants whether they took any action to stop infringement of their IDs. The responses indicate that ID holders perceiving imitation did not legally pursue an alleged ID infringement in just under half of all cases (Table A. 36). Where they did so, cease and desist letters emerged as the most important legal strategy, followed by court orders authorizing raids of infringing producers and media exposure. Those ID applicants that took action to stop infringement were successful or partially successful in around one half of relevant cases, though such action seemed still ongoing in another one-third of cases (Table A. 37). Those ID applicants that did not take any action against infringement cited

high legal costs as the main reason for inaction, followed by the difficulty of legally proving infringement (Table A. 38).

Figure 26: If the design has been imitated



5.3.7 ID application process

The last part of the survey focused on the application process for ID rights. Registering an ID right takes time and resources and requires a certain level of understanding of the legal framework for ID protection. Managing the application process can pose a challenge for design innovators, especially small and medium-sized firms with limited in-house legal resources.

The survey first asked applicants whether they filed the ID application in question through an independent agent. The responses suggest that applicants engaged agents in slightly less than one-third of all IDs (Table A. 39). This low share suggests that many ID users are indeed resource constrained and manage ID filings on their own.

Applicants were then asked which aspect of the application process posed the main hurdle, again, relying on a 1 (least burdensome) to 5 (most burdensome) scale. The length of the process appeared to be the biggest hurdle, with 37 percent of respondents rating process length as either 4 or 5 (Table A. 40). Understanding how the application process works was the second most binding hurdle, with 25 percent of respondents assigning a 4 or 5 rating. Somewhat contradicting the above hypothesis, only 11 percent of applicants felt that lawyer and agent fees posed highly burdensome obstacle. However, this may well reflect the fact that applicants relied on external agents for a minority of their IDs.

Third party oppositions occur rarely, with only two percent of the surveyed IDs having faced such an action (Table A. 41).

Finally, Thailand offers applicants the option to delay publication of their IDs. This allows them to file an ID application early in the process without risking the design's disclosure to the public before its commercial launch. This option is not available in Indonesia and the Philippines. Interestingly, in only less than three percent of cases did Thai ID applicants opt for delayed publication. This either suggests fast product cycles whereby firms launch new designs in the marketplace before the (regular) publication of the underlying IDs, or some hurdle applicants face in effectively making use of this option.

6 CONCLUDING REMARKS

The survey of ID applicants in Indonesia, the Philippines and Thailand is the first attempt to generate systematic evidence on the design innovation process and the contribution of the ID system in a middle-income context. The descriptive analysis of the survey results offers a wide range of insights that can be summarized as follows:

- Design innovators seem to fall into two categories. On the one hand, there are small and medium-sized firms where design innovation is not a formal company function and where it is often performed by the company owners and senior managers. On the other hand, there are medium-sized and large firms with formal design and/or R&D departments that employ professional designers.

- Design innovation is predominantly an in-house process. However, for some designs, companies draw on external capability and/or inspiration.

- Around 22 percent of ID using firms in the survey sample export. This share exceeds the typical export shares in the general population of firms. It suggests that design innovation may be a way of breaking into foreign markets.

- Design creativity relies on skills gained through formal education. Most of the designers listed in our data are between 35 and 50 years old, suggesting that accumulated professional experience matters.

- Inspiration for new designs comes from a variety of sources. Customer feedback emerges as the most important one. Within companies, sales and marketing departments of companies seem to have some role in the design innovation process.

- ID holders assign considerable value to their ID rights, with the median value lying in the 30,000 to 100,000 USD range. The distribution of ID values is skewed to the right. However, compared to technological innovation, design innovation seems less risky.

- The main motivation for seeking ID protection follows the classic rationales of preventing imitation and ensuring freedom to operate. Licensing of ID rights is rare but it does sometimes occur.

- An imitation rate of more than one-fifth suggests that the risk of imitation is real. In addition, the ID holders perceive a high financial loss associated with imitation.

- High legal costs of ID enforcement discourage many applicants from trying to stop infringement of their designs. Where they do pursue infringers, enforcement actions have a mixed success rate.

- Most ID applications are filed without relying on external agents. Applicants then face challenges in navigating through what they perceive to be a long and difficult-to-understand application process.

These descriptive findings will need to be validated and further explored in more in-depth research. In particular, WIPO plans to analyze the survey responses in an econometric setting, where the statistical significance of different hypotheses can be test more formally. In addition, through multivariate statistical analysis, one can relate different survey questions to one another. For example, do larger applicants with self-standing innovation departments

generate more valuable designs? Does the composition of the design team matter for successful design innovation? Does ID use vary by area of design activity? These and other questions will be the subject of future studies.

From a policy perspective, the survey results reveal that design innovators are using ID rights as a means of recovering their returns to investment in creating new designs; and they reveal a real risk of imitation. Overall, the ID system thus plays a supporting role in stimulating a form of innovation that middle-income country firms – including small and medium-sized firms – undertake. In contrast to patents, firms do not have to be at the cutting edge of technology to be successful at creating new designs. They mainly require human talent, for which there is ample supply even in more resource-constrained environments.

Finally, the study offers some preliminary evidence that design innovation may be a way of breaking into foreign markets and increasing exports. This is in line with research in the field of international trade that emphasizes the special capabilities of firms in explaining exporting success.[47] At the same, the design innovation-export link is bound to be automatic. Asking what barriers successful domestic design innovators face in entering international markets could yield further policy-relevant insights.

[47] For an overview, see Bernard *et al.* (2007).

REFERENCES

Ahmetoglu, G., & Chamorro-Premuzic, T. (2012). Design rights and innovation: a psychometric analysis *The Development of Design Law: Past and Future*. London: UK Intellectaul Property Office.

Alcaide-Marzal, J., & Tortajada-Esparza, E. (2007). Innovation assessment in traditional industries. A proposal of aesthetic innovation indicators. *Scientometrics, 72*(1), 33-57.

Arora, A., & Ceccagnoli, M. (2006). Patent protection, complementary assets, and firms' incentives for technology licensing. *Management Science, 52*(2), 293 - 308.

Awano, G., Franklin, M., Haskel, J., & Kastrinaki, Z. (2010). *Investing in innovation: Findings from the UK investment in intangible assets survey*. London: National Endowment for Science, Technogloy and the Arts.

Bascavusoglu-Moreau, E., & Tether, B. S. (2011). *Registered designs and business performance-exploring the link*. London: United Kingdom Intellectual Property Office.

Bernard, A. B., Jensen, J. B., Redding, S. J., & Schott, P. K. (2007). Firms in International Trade. *The Journal of Economic Perspectives, 21*(3), 105-130.

BOP Consulting. (2011). *Design Rights, an International Comparison*. London: United Kingdom Intellectual Property Office.

Bornemann, T., Schöler, L., & Homburg, C. (2015). In the Eye of the Beholder? The Effect of Product Appearance on Shareholder Value. *Journal of Product Innovation Management, 32*(5), 704-715.

Cohen, W. M., Goto, A., Nagata, A., Nelson, R. R., & Walsh, J. P. (2002). R&D spillovers, patents and the incentives to innovate in Japan and the United States. *Research Policy, 31*(8-9), 1349-1367.

Cohen, W. M., Nelson, R. R., & Walsh, J. P. (2000). Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not). *National Bureau of Economic Research Working Paper, No. 7552*.

Creusen, M. E., & Schoormans, J. P. (2005). The different roles of product appearance in consumer choice. *Journal of Product Innovation Management, 22*(1), 63-81.

D′Ippolito, B. (2014). The importance of design for firms′ competitiveness: A review of the literature. *Technovation, 34*(11), 716-730.

EPO-EUIPO. (2016). *Intellectual property rights intensive industries and economic performance in the European Union: Industry-level analysis report*: European Patent Office and the European Union Intellectual Property Office.

EPO-OHIM. (2013). *Intellectual property rights intensive industries: Contribution to the economic performance and employment in the European Union*: European Patent Office and the Office for Harmonization in the Internal Market.

Filitz, R., Henkel, J., & Tether, B. S. (2015). Protecting aesthetic innovations? An exploration of the use of registered community designs. *Research Policy, 44*(6), 1192-1206.

Galindo-Rueda, F., & Millot, V. (2015). Measuring Design and its Role in Innovation. *OECD Science, Technology and Industry Working Papers No. 2015/01*.

Gambardella, A., Harhoff, D., & Verspagen, B. (2008). The value of European patents. *European Management Review, 5*, 69-84.

Gil, V., & Haskell, J. (2008). *Industry Level Expenditure on Intangible Assets in the UK*.

Giuri, P., Mariani, M., Brusoni, S., Crespi, G., Francoz, D., Gambardella, A., et al. (2007). Inventors and invention processes in Europe: Results from the PatVal-EU survey. *Research Policy, 36*(8), 1107-1127.

Graham, S., & Sichelman, T. (2008). Why do start-ups patent? *Berkeley Technology Law Journal, 23*(1), 1071 - 1090.

Hall, B. H., & Ziedonis, R. H. (2001). The patent paradox revisited: An empirical study of patenting in the U.S. semiconductor industry, 1979-1995. *The RAND Journal of Economics, 32*(1), 101-128.

Hertenstein, J. H., Platt, M. B., & Veryzer, R. W. (2005). The Impact of Industrial Design Effectiveness on Corporate Financial Performance*. *Journal of Product Innovation Management, 22*(1), 3-21.

Hirsch-Kreinsen, H., Jacobson, D., & Robertson, P. L. (2006). 'Low-tech' Industries: Innovativeness and Development Perspectives—A Summary of a European Research Project. *Prometheus, 24*(1), 3-21.
Moultrie, J., & Livesey, F. (2011). Design Right Case Studies *Design Economics*. London: UK Intellectual Property Office.
Moultrie, J., & Livesey, F. (2014). Measuring design investment in firms: Conceptual foundations and exploratory UK survey. *Research Policy, 43*(3), 570-587.
OECD, & Eurostat. (2005). Oslo Manual: Guidelines for using and interpreting innovation data, 3rd Edition Paris: Organization for Economic Co-operation and Development.
Palomeras, N. (2003). Sleeping patents: Any reason to wake up? *IESE Research Papers D/506*.
Pavitt, K. (1984). Sectoral patterns of technical change: Towards a taxonomy and a theory. *Research Policy, 13*(6), 343-373.
Rivette, K. G., & Kline, D. (1999). *Rembrandts in the Attic: Unlocking the Hidden Value of Patents*: Harvard Business Press.
Robertson, P., Smith, K., & von Tunzelmann, N. (2009). Innovation in low-and medium-technology industries. *Research Policy, 38*(3), 441-446.
Rothwell, R., & Gardiner, P. (1983). The role of design in product and process change. *Design Studies, 4*(3), 161-169.
Sanderson, S. W., & Uzumeri, V. (1990). Strategies for new product development and renewal: design-based incrementalism. *Center Sci. Technol. Policy, Rensselaer Polytechnic Inst., Troy, NY*.
Schankerman, M. (1998). How Valuable is Patent Protection? Estimates by Technology Field. *The RAND Journal of Economics, 29*(1), 77-107.
Suarez, F. F., & Utterback, J. M. (1995). Dominant designs and the survival of firms. *Strategic Management Journal, 16*(6), 415-430.
Utterback, J. M., & Abernathy, W. J. (1975). A dynamic model of process and product innovation. *Omega, 3*(6), 639-656.
Veryzer, R. W., & Borja de Mozota, B. (2005). The impact of user-oriented design on new product development: An examination of fundamental relationships. *Journal of Product Innovation Management, 22*(2), 128-143.
WIPO. (2012). *Special Section: The Rise of Design in Innovation and Intellectual Property Issues - Definitional and Measurement Issues*. Geneva: World Intellectual Property Organization,.
WIPO. (2013). *World Intellectual Property Report 2013: Brands -- Reputation and Image in the Global Marketplace*. Geneva: World Intellectual Property Organization.
WIPO. (2014). Project on Intellectual Property (IP) and Socio-Economic Development - Phase II, *Document prepared for the Committee on Development and Intellectual Property (CDIP), Fourteenth Session, Geneva, November 10 to 14, 2014, CDIP/14/7*. Geneva.
WIPO. (2016). *World Intellectual Property Indicators*. Geneva: World Intellectual Property Organization.
WIPO. (2017). *World Intellectual Property Indicators 2017*. Geneva: World Intellectual Property Organization.

APPENDIX

DATA DESCRIPTION

Table A. 1: Countries of residence for the non-resident ID applicants at IPOPHL

Country of residence	Frequency
Japan	1,919
USA	1,901
Netherlands	537
Switzerland	337
South Korea	320
Germany	277
France	134
Italy	119
United Kingdom	122
Malaysia	102
China	99
Finland	89
Hong Kong, China	77
Sweden	76
Singapore	53
Taiwan	51
Australia	49
Brazil	48
India	43
China	39
Thailand	39
Canada	20
Israel	19
Belgium	18
South Korea	23
Spain	16
Indonesia	14
Cyprus	8
Austria	6
South Korea	6
Denmark	4
Luxumberg	4
Portugal	4
South Africa	4
Bermuda	2
Colombia	2
Ireland	2
Lithuania	2
Mexico	2
Norway	2
Turkey	2
Viet Nam	2
Barbados	1
Belize	1
Greece	1
Croatia	1
Cambodia	1
Cayman Island	1
Sri Lanka	1
New Zealand	1
Palau	1
Slovakia	1
unknown	9
	13,555

Table A. 2: Top 10 Filipino resident applicants

Filipino resident applicant	Total applications filed
DAVID TERENCE-I Y. TIU	334
EARTH TONES CORPORATION	304.5
DAVID BRIAN Y. TIU	201
CORAL STONE CORPORATION	196
SPORTSLAB, INC.	147
YANG HUA HUANG	88
PACIFIC CASUAL LLC, ASIA INC.	84
LOCSIN INTERNATIONAL / ROBERTO M. LOCSIN	81
BENISON REFORMA	66
LEBOURG, MARY GAY I.	63

Table A. 3: Top ten non-resident applicants at IPOPHL

Non-resident applicant	Total applications filed
HONDA MOTOR CO., LTD.	465
WOLVERINE WORLD WIDE, INC.	353.5
COLGATE-PALMOLIVE COMPANY	331
DART INDUSTRIES INC.	302.5
TOYOTA JIDOSHA KABUSHIKI KAISHA	262.5
UNILEVER NV	250
KONINKLIJKE PHILIPS ELECTRONICS N.V.	215
SAMSUNG ELECTRONICS CO., LTD.	169
SONY COMPUTER ENTERTAINMENT INC.	130
DEDON GMBH	121

Table A. 4: Top ten Filipino designers

Filipino designer	Total no. of applications
TIU DAVID BRIAN Y	303
KAPAHI ANIL	297.5
TIU DAVID TERENCE I Y	230
MARCELINO C CHUA	149
HONG YANG HUA	118
KAPAHI SURAJ	94
SURAJ KAPAHI	91.5
LEBOURG MARY GAY I	79.5
TIU CHRISTOPHER	71
CHONG KELVIN	70

Table A. 5: Top ten non-resident designers

Non-resident designer	Total no. of applications
TEIYU GOTO	76
BELLEY MANON	69.28333282
MATIS CLARK A	60.5
DEAN MARTIN W F	40.45000076
ULRICH BOHNACKER	38
CALVANI MARIA CRISTINA	37
FRINIER RICHARD	37
DAVID CERRATO	30
DE GROOTE JAN HENDRIK	28.5
TUAN NGUYEN LE	25.66666603

Table A. 6: Number of applicants per application by year of filing

Year	1	2	3	4	5	Total
2000	523	7	2	1	0	533
2001	512	15	3	2	0	532
2002	632	17	1	1	0	651
2003	853	26	1	0	0	880
2004	859	29	2	0	0	890
2005	1,079	10	0	0	0	1,089
2006	762	2	1	0	0	765
2007	747	3	3	0	1	754
2008	1,014	7	4	0	0	1,025
2009	683	17	0	0	0	700
2010	749	5	0	0	0	754
2011	987	5	2	1	0	995
2012	1,075	15	7	1	0	1,098
2013	1,142	10	1	0	0	1,153
2014	1,084	10	0	0	0	1,094
2015	566	4	0	0	0	570
2016	75	0	0	0	0	75
	13,342	182	27	6	1	13,558

Table A. 7: Number of designers per application by year of filing

No. of designers	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
1	353	372	516	806	732	764	528	537	732	519	521	649	820	849	706	376	67	9,847
2	113	87	87	39	116	228	148	139	188	118	113	188	106	149	243	87	2	2,151
3	25	54	28	13	21	55	60	42	56	39	37	88	109	78	68	49	0	822
3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4	30	14	18	14	10	26	14	21	25	13	25	35	28	23	33	26	3	358
5	5	0	1	5	8	11	10	5	8	5	18	19	25	23	20	15	2	180
5	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
6	4	3	0	1	3	3	2	4	9	3	27	1	4	6	16	7	1	94
7	2	2	0	1	0	1	2	3	5	1	9	8	1	8	2	0	0	45
8	0	0	0	0	0	1	0	2	0	0	0	2	1	4	0	0	0	10
9	0	0	1	0	0	0	1	1	0	0	1	1	0	0	2	0	0	7
10	1	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	5
12	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
15	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
16	0	0	0	1	0	0	0	0	0	0	1	2	3	7	0	0	0	14
17	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
	533	532	651	880	890	1,089	765	754	1,025	700	754	995	1,098	1,153	1,094	570	75	13,558

SURVEY RESULTS (CONT.)

Responses by the individual applicants

Table A. 8: Applicant's relation to the main commercializing entity

Country	Appln1			Appln2			Appln3			Appln4		
Work for main commercializing entity	***ID***	***PH***	***TH***	***ID***	***PH***	***TH***	***ID***	***PH***	***TH***	***ID***	***PH***	***TH***
missing	2	1	5	2	0	4	0	0	1	0	0	1
1: Yes	28	25	45	12	8	17	5	5	7	3	5	6
2: No	18	1	5	4	1	1	0	1	1	0	1	0
3: Not commercialized	7	1	5	2	1	1	2	0	1	1	0	1
4: Other												
***Total individual applications**	55	28	60	20	10	23	7	6	10	4	6	8

*Totals are from first table of applicants and sequence numbers applicant type =individual

Table A. 9: Applicant's position in the main commercializing entity

Country	ID	PH	TH	
Position at commercializing firm	**Indiv.**	**Indiv.**	**Indiv.**	**Overall**
Missing	1	5	17	23
1: Not applicable	16	2	3	21
2: Designer / R&D	3	4	11	18
3: Legal/IP				
4: Manufacturing	4	1	7	12
5: Marketing/ ads	0	3	0	3
6: CEO / Sgr. mgmt	7	10	11	28
7: Other	24	3	11	38

About the commercializing entity

Table A. 10: Location of headquarters

Country	ID			PH			TH			
Local HQ	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
Missing	1	18	19		2	2	2	12	14	35
1: Yes	56	32	88	22	26	48	40	43	83	219
2: No		4	4	1		1	3	3	6	11
3: I don't know		1	1					2	2	3

Table A. 11: Presence of subsidiaries in other countries

Country	ID			PH			TH			
Subsidiary	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
missing	9	19	28	2	2	4	15	23	38	70
1: Other ASEAN	6	3	9	1	2	3	7	2	9	21
2: Asia	1		1		1	1	1	2	3	5
3: North America					3	3	1		1	4
4: W. Europe								1	1	1
5: Other	2	1	3				2	3	5	8
6: Not Applicable	39	32	71	20	20	40	19	29	48	159

Table A. 12: Company's annual sales figures in 2013

Country		ID			PH			TH		
Sales	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
missing	3	19	22		2	2	6	11	17	41
1: Zero	4	1	5		1	1	1	3	4	10
2: $1-1500								7	7	7
3: $1500-3K		2	2	1		1		4	4	7
4: $3K-15K	3	2	5	1		1		2	2	8
5: $15K-30K	2	12	14	1	4	5	1	4	5	24
6: $30K-150K	7	1	8	1		1	3	3	6	15
7: $150K-300K	4	2	6	1	4	5	4	3	7	18
8: $300K-1500K	3	1	4		4	4	5	7	12	20
9: $1500K-3Mil	5		5	2	4	6	1	1	2	13
10: $3Mil-15Mil	1	2	3	1		1	10	3	13	17
11: $15Mil-30Mil	2		2	1	2	3	5		5	10
12: $30Mil-150Mil	4		4	2		2	1	2	3	9
13: $ >150Mil	1	1	2	2		2	2	1	3	7
14:I don't know	18	12	30	10	7	17	6	9	15	62

Table A. 13: Company's main line of business

Country		ID			PH			TH		
Business Line	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
Missing	2	19	21		2	2	1	10	11	34
1: Agri, etc							1	3	4	4
2: Mining										
3: Manufacturing	32	17	49	12	16	28	31	32	63	140
4: Design services				2		2	1	4	5	7
5: Other services	7	5	12	3	1	4	3	3	6	22
6: Other	16	14	30	6	9	15	8	8	16	61

Table A. 14: Company's export sales in 2013

Country		ID			PH			TH		
Export	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
Missing	5	20	25		2	2	7	14	21	48
1: Zero	28	21	49	8	14	22	7	21	28	99
2: $1-1500								3	3	3
3: $1500-3K		1	1		1	1				2
4: $3K-15K							1	1	2	2
5: $15K-30K								3	3	3
6: $30K-150K	2		2	3		3	4	2	6	11
7: $150K-300K	2		2	1		1	2	1	3	6
8: $300K-1500K		1	1		1	1	2		2	4
9: $1500K-3Mil	2		2		1	1				3
10: $3Mil-15Mil							6	3	9	9
11: $15Mil-30Mil							2		2	2
12: $30Mil-150Mil	1		1					1	1	2
13: $ >150Mil							2		2	2
14:I don't know	17	12	29	11	9	20	12	11	23	72

Table A. 15: Company's approximate export shares to the following regions (in 2013)

Country		ID			PH			TH		
Export region	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
Missing	7	19	26		2	2	15	26	41	69
1: Other ASEAN	3	1	4		2	2	8	7	15	21
2: Asia	2		2	1		1	2	1	3	6
3: North America		1	1							1
4: W. Europe							1	1	2	2
5: Other										
6: Not Applicable	45	34	79	22	24	46	19	25	44	169

Table A. 16: Company's R&D expenditure in 2013

Country		ID			PH			TH		
R&D	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
Missing	8	18	26		2	2	5	15	20	48
1: Zero	5	13	18		2	2	2	7	9	29
2: $1-1500	5	5	10				2	7	9	19
3: $1500-3K	1	2	3		1	1	2	5	7	11
4: $3K-15K	5	3	8	2	2	4	11	7	18	30
5: $15K-30K	3	1	4	1	1	2	4	5	9	15
6: $30K-150K		3	3	3	3	6	6	7	13	22
7: $150K-300K	4	1	5	3	6	9	1		1	15
8: $300K-1500K				1	2	3	4		4	7
9: $1500K-3Mil				1		1				1
10: $3Mil-15Mil					1	1	1	1	2	3
11: $15Mil-30Mil										
12: $30Mil-150Mil				1		1				1
13: $ >150Mil										
14:I don't know	26	9	35	11	8	19	7	6	13	67

Table A. 17: Who manages the company's IP portfolio (incl. application, registration and maintenance)

Country		ID			PH			TH		
appln management	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	3	19	22		2	2	1	10	11	35
1: Design dprt	8	11	19	6	10	16	6	14	20	55
2: CEO	14	6	20	6	8	14	14	9	23	57
3: Legal/IP drpt	15	5	20	5	6	11	10	11	21	52
4: Other	17	14	31	6	2	8	14	16	30	69

Table A. 18: Awareness of WIPO's Hague System for international ID registration

Country		ID			PH			TH		
Hague	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	1	17	18		2	2	1	12	13	33
1: Yes	8	5	13	4	6	10	7	6	13	36
2: No	48	33	81	19	20	39	37	42	79	199

Table A. 19: Reasons to opt for ID rather than copyright

Country	ID			PH			TH		
Designer benefits	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**
missing					2	2			
1: Not aware				5	7	12			
2: Copyright protects certain elements				1	1	2			
3: ID is stronger protection	Not	relevant		8	9	17	Not	relevant	
4: Document of proof for ID				4	4	8			
5: My lawyer said so				1		1			
6: Other				4	5	9			

About the designer

Table A. 20: When the designer joined the company

Country		ID			PH			TH		
Designer experience	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
missing	52	28	80	29	35	64	38	44	82	226
2011 - 2013	19	22	41	2	8	10	8	16	24	75
2008 - 2010	6	5	11	1	1	2	8	4	12	25
2005 - 2007	6	3	9	6	5	11	3	2	5	25
2002 - 2004	4	5	9	2	2	4	4	1	5	18
1999 - 2001	4		4	1	2	3	6	2	8	15
1996 - 1998	1	4	5	2	1	3	4	2	6	14
<1996	8	3	11	9	15	24	14	3	17	52
Other	17	3	20	5	4	9	11	6	17	46
I don't know	6	10	16	2	2	4	2	11	13	33

Table A. 21: Designer's gender

Country		ID			PH			TH		
Designer Gender	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
Missing	69	34	103	40	41	81	51	45	96	280
1: Female	14	9	23	12	13	25	13	9	22	70
2: Male	60	47	107	18	27	45	47	47	94	246

Table A. 22: Designer's highest level of education

Country		ID			PH			TH		
Designer Educ	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Firm**	**Indiv.**	**total**	**Overall**
missing	70	33	103	40	41	81	51	49	100	284
1: <secondary		3	3					8	8	11
2: high school	3	10	13		1	1	3	7	10	24
3: bachelor's	40	26	66	17	22	39	34	23	57	162
4: masters	3	14	17	7	14	21	11	10	21	59
5: doctoral	1	2	3	2		2	6	1	7	12
6: post doc							4		4	4
7: design-equival	1		1							1
8: other	21		21	3	3	6	2	1	3	30
9:I don't know	4	2	6	1		1		2	2	9

Table A. 23: Designer's professional background

Country		ID			PH			TH		
Designer background	Firm	Indiv.	Total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	80	43	123	44	51	95	64	60	124	342
1: Architecture	1		1		1	1	2	3	5	7
2: Biz & econ	16	16	32	5	12	17	9	3	12	61
3: Computer	5	3	8					4	4	12
4: art	2	2	4	4		4	2	3	5	13
5: Indstl. design	9	7	16	1	5	6	10	4	14	36
6: Design engine.	3	2	5	1	4	5	1	2	3	13
7: other engine.	4	5	9	9	8	17	18	8	26	52
8: other	28	12	40	8	6	14	8	14	22	76

Table A. 24: Benefits to designer as result of ID (more than one answer possible)

Country		ID			PH			TH		
Designer benefits	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	41	5	46	7	17	24	22	20	42	112
1: salary increase	5		5		2	2				7
2: Bonus	3	6	9		2	2	5	4	9	20
3: payment cond.	3	6	9	3	4	7	19	4	23	39
4: Promotion	7	2	9	1	1	2	1	6	7	18
5: No benefit	35	12	47	34	6	40	42	24	66	153
6: Not applicable	54	59	113	27	55	82	25	43	68	263

About the design process

Table A. 25: Financing the design

Country		ID			PH			TH		
Creation finance	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	30	9	39	5	7	12	10	15	25	76
1: Internal fund	73	62	135	45	42	87	73	54	127	349
2: Ext. loan	2		2	5		5	4	8	12	19
3: Ext. VC					1	1				1
4: Gov. Subsidies	3	3	6	1		1		4	4	11
5: Other ext.	16	12	28	2		2	6	20	26	56

Table A. 26: Sources of design inspiration

Inspirations	Missing	Not important		somewhat important		very important	not relevant
%	0	1	2	3	4	5	6
1: Own design	19.28	0.98	6.37	11.6	15.03	31.54	15.2
2: ID filings	18.14	4.08	6.54	13.56	13.24	21.57	22.88
3: Design magazines	19.44	4.74	7.68	18.14	13.73	12.42	23.86
4: Trade/ art fairs	18.95	2.29	4.08	13.24	17.32	23.04	21.08
5: Products sold	18.63	1.14	0.82	12.91	17.97	31.54	16.99
6: Customers	17.81	0.65	1.47	10.78	16.18	36.11	16.99
7: Suppliers	26.8	0.82	1.8	10.13	11.11	25.16	24.18
8: Publications	22.06	6.37	4.58	12.91	9.64	13.24	31.21
9: Science fairs	21.57	6.37	5.56	12.91	10.29	12.91	30.39
10: Design competitions	20.42	7.03	6.21	12.25	9.15	16.99	27.94
11: Others	21.41	9.48	10.13	10.13	7.03	8.33	33.5

About the design

Table A. 27: Minimum price to sell design (hypothetical question)

Country		ID			PH			TH		
Hypothetical price	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	59	13	72	6	2	8	36	30	66	146
1: Zero	9	20	29	1	3	4		7	7	40
2: $1-1500	4	3	7				4	2	6	13
3: $1500-3K	5	9	14	5	4	9	3	6	9	32
4: $3K-15K	12	8	20	1	1	2	9	11	20	42
5: $15K-30K	8	4	12	4	6	10	4	12	16	38
6: $30K-150K	6	8	14	5	2	7	6	8	14	35
7: $150K-300K	7	6	13	12	4	16	16	14	30	59
8: $300K-1500K	2	9	11	2	1	3	10	5	15	29
9: $1500K-3Mil	2	1	3	3	14	17	1	2	3	23
10: $3Mil-15Mil					2	2	3	4	7	9
11: $15Mil-30Mil	1	1	2	4		4	1		1	7
12: $30Mil-150Mil		1	1		2	2				3
13: $ >150Mil	9	3	12	15	9	24				36

Table A. 28: Minimum price to sell design (hypothetical question) – collapsed version

Country		ID			PH			TH		
Hypothetical price collapsed	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	59	13	72	6	2	8	36	30	66	146
1: Zero	9	20	29	1	3	4		7	7	40
2: $1-3,000	18	24	53	10	11	21	20	31	51	125
3: 3,000-30,000	17	24	41	22	21	43	33	29	62	146
4: 30,000-300,000	10	5	15	19	13	32	4	4	8	55
5: 300,000-3 Mil	4	10	14	5	15	20	11	7	18	52
6: 3-30 Mil	1	1	2	4	2	6	4	4	8	16
7: >30 Mil	9	4	13	15	11	26	0	0	0	39

Table A. 29: Economic value of ID vis-à-vis other IDs within the firm

Country		IND			PH			TH		
Value Company	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	29	2	31		1	1	21	19	40	72
1: Top 10%	11	10	21	5	12	17	9	10	19	57
2: Top 10-25%	6	10	16	19	17	36	8	4	12	64
3: Top 25-50%	14	11	25	13	13	26	4	11	15	66
4: Bottom 50%	6	5	11	1		1	5	3	8	20
5: I don't know	58	48	106	20	7	27	46	54	100	233

Table A. 30: Economic value of ID vis-à-vis other IDs within the industry

Country		IND			PH			TH		
Value Industry	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	29	4	33	2	5	7	19	21	40	80
1: Top 10%	7	7	14	3	7	10	6	2	8	32
2: Top 10-25%	5	9	14	14	14	28	8	5	13	55
3: Top 25-50%	10	15	25	17	13	30	3	8	11	66
4: Bottom 50%	6	3	9	1	1	2	6	3	9	20
5: I don't know	67	48	115	21	10	31	51	62	113	259

Table A. 31: Whether the main product associated with the ID has been commercialized

Country	IND			PH			TH			
commercialized	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	54	44	98	17	9	26	42	48	90	214
1: Yes	19	19	38	20	14	34	26	21	47	119
2: Yes, but stopped	5	4	9	3		3	1	3	4	16
3: Preparing	2	3	5	3	10	13	5	5	10	28
4: No, never	8	8	16	4	8	12	8	11	19	47
5: I don't know	22	6	28	8	8	16	7	9	16	60

Table A. 32: Improved functionality of the main product

	Missing	Very low		Somewhat high			Very high	Not improve at all
Percentage%	0	1	2	3	4	5	6	
1: Ease of use	32.23		0.78	8.98	16.21	38.67	3.13	
2: Durability	33.79	0.59	1.17	13.48	18.16	28.52	4.3	
3: Ergonomics	33.59	1.17	2.15	10.74	15.23	28.52	8.59	
4: Greater security	33.59	0.98	2.54	11.52	16.21	26.76	8.4	
5: Recyclability	35.55	5.08	4.49	13.87	11.91	18.36	10.74	
6: Portability	34.77	4.1	5.66	13.87	12.11	20.7	8.79	
7: Lighter weight	34.38	3.32	6.64	11.72	13.87	20.7	9.38	

Infringement issues

Table A. 33: How fast design was imitated (from when design was publicly revealed)

Country	ID			PH			TH			
Imitation time	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	111	68	179	49	34	83	82	71	153	415
1: < 1 week	2		2							2
2: 1-4 weeks		1	1	1	4	5				6
3: 1-3 months							6	3	9	9
4: 4-6 months	1	1	2							2
5: 7-12 months		2	2	6	5	11	1	4	5	18
6: 1-2 years	3	4	7		2	2		14	14	23
7: > 2 years	4	5	9	2	3	5	1	4	5	19
8:I don't know	3	5	8		2	2	3	5	8	18

Table A. 34: How the applicant found out about imitation

Country	ID			PH			TH			
Imitation aware	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	115	76	191	51	38	89	86	84	170	450
1: product sold	6	5	11	3	6	9	1	7	8	28
2: magazine/media	2		2				1	2	3	5
3: trade/design fair							1	1	2	2
4: customer/user	1	4	5	2	5	7	1	1	2	14
5: supplier				2		2		1	1	3
6: I don't know		1	1		1	1	3	5	8	10

Table A. 35: Level of financial loss due to imitation (vis-à-vis total sales of product)

Country	ID			PH			TH			
Infringement loss	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	111	69	180	50	34	84	81	72	153	417
1: very low	1	2	3	4	1	5	1		1	9
2:	3		3	1		1	2	6	8	12
3: somewhat high	3	4	7	2	1	3	4	6	10	20
4:	4	2	6	1	7	8	3	5	8	22
5: very high	2	4	6		5	5		7	7	18
6: No loss		5	5		2	2	2	5	7	14

Table A. 36: Actions taken against infringement

Country	ID			PH			TH			
Infringement stop	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	114	71	185	51	36	87	84	78	162	434
1: court order	3	1	4	4		4	1		1	9
2: media exposure		1	1		1	1		1	1	3
3: cease and desist	1	1	2	2	5	7	6	11	17	26
4: seizure										
5: other										
6: No	6	11	17	1	5	6	1	10	11	34
7: I don't know		1	1		3	3	1	1	2	6

Table A. 37: Effectiveness of the action to stop infringement

Country	ID			PH			TH			
Infringe effective	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	118	79	197	50	42	92	83	82	165	454
1: Yes	4	4	8	4	2	6	3	5	8	22
2: Not yet				2	6	8	4	5	9	17
3: Partially	2	1	3	2		2	2	7	9	14
4: No		2	2				1	2	3	5

Table A. 38: Reasons for no action taken against infringement (multiple responses possible)

Country	ID			PH			TH			
Infringe no action	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	120	76	196	54	39	93	86	85	171	460
1: Short life cycle		3	3					2	2	5
2: No geo market								1	1	1
3: Hard to prove					4	4	2	1	3	7
4: Legal cost	2	3	5	2	5	7	3	10	13	25
5: Other	2	4	6	2	2	4	2	2	4	14

About the application process

Table A. 39: If an agent was used to file ID application

Country	ID			PH			TH			
agent	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	26	4	30	1	1	2	8	13	21	53
1: Yes	34	28	62	20	12	32	23	22	45	139
2: No	44	52	96	35	32	67	60	61	121	284
3: I don't know	20	2	22	2	5	7	2	5	7	36

Table A. 40: Main hurdles for applying for ID application (multiple responses possible)

	missing	least burdensome		Somewhat burdensome		most burdensome	not relevant
%	0	1	2	3	4	5	6
1:Application fee	14.65	43.95	12.11	12.89	3.52	2.73	10.16
2:Agent fee	15.23	20.12	8.01	10.55	4.3	7.03	34.77
3: Drafting application	16.41	25.39	14.84	16.02	5.66	11.91	9.77
4:Length of process	16.02	11.13	7.81	19.53	10.55	26.76	8.2
5: Understanding the process	13.87	22.46	10.74	17.97	9.18	15.82	9.96

Table A. 41: If third party filed an opposition to the ID application

Country	ID			PH			TH			
opposition	Firm	Indiv.	total	Firm	Indiv.	total	Firm	Indiv.	total	Overall
missing	25	5	30		1	1	11	13	24	55
1: Yes	2		2	1		1	4	4	8	11
2: No	58	71	129	51	39	90	65	69	134	353
3: I don't know	39	10	49	6	10	16	13	15	28	93