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THE USAGE OF ICT BY BUSSINESS SECTOR IN INDONESIA

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I. INTRODUCTION

ICT development in Indonesia continues to grow rapidly in all sectors of life. ICT infrastructure development that accompanied the mastery of technology will support economic growth and improve the nation's competitiveness in the international world. Provision of infrastructure including connectivity infrastructure is needed to encourage economic activity throughout Indonesia. Information and Communication Technology (ICT) is one of the connectivity infrastructures that need to be built. ICT development in Indonesia implemented by national ICT development roadmap that focuses on the development of ICT infrastructure with an alignment aspects of Human Resources (HR), improvement of ICT services and ICT development that has added value to the nation's economic growth by strengthening the local ICT sector (ICT White Paper Indonesia, 2012).

With the integration of technology in the business sector will encourage innovation and increase competitiveness that has a direct impact on economic growth. The business sector is a vital sector of the economy that sustains the state, and therefore knows the use of ICT in the business sector is essential to describe the conditions of the use of ICT in the business sector in Indonesia. To describe the conditions of use of the business sector in Indonesia, the Ministry of Communications and Information Technology has conducted a business survey in 2013. The survey was described on the use of computers and the Internet and ICT human resources available within the company. The result is expected to describe the current condition of the access and use of ICT in the business sector, and the result could be an input for policy makers in formulating policies related to the business sector .

The measurement of business survey refers to the use of ICT standards developed by the ITU (International Telecommunication Union) which has also been adopted by other countries. Indicators of the business sector consist of 12 indicators (Core ICT Indicators, ITU, 2010). Information identified in this survey is about (1) Proportion of businesses using computers, (2) Proportion of persons employed routinely using computers, (3) Proportion of businesses using the Internet, (4) Proportion of persons employed routinely using the Internet; (5) Proportion of businesses with a web presence, (6) Proportion of

businesses with an intranet; (7) Proportion of businesses receiving orders over the Internet, (8) Proportion of businesses placing orders over the Internet, (9) Proportion of businesses using the Internet by type of access, (10) Proportion of businesses with a local area network (LAN); (11) Proportion of businesses with an extranet, and (12) Proportion of businesses using the Internet by type of activity.

The number of companies throughout Indonesia is 1,326,465. Companies in the survey sample as much as 1,110 companies with a sampling error of 3%. The selection of respondents was conducted using cluster random sampling with the province as the basic representation of clustering with a large island in Indonesia, namely Sumatra, Java, Bali – South East Nusa, Borneo, Celebes, and Papua - Moluccas. Selected provinces are provinces that have the highest number of companies, with a number of companies in selected provinces more than 50 % of the total number of companies on the island. The number of samples in each province elected by proportional quota determined. Selected 11 provinces, namely Jakarta, Bali , West Java, East Borneo, South Borneo, Papua, South Celebes, North Celebes, North Sumatra, Riau, and NAD. Based on the results of the survey found that 92 % of companies using computer in Indonesian business sector.

Populations of this survey are all businessmen or entrepreneurs in the business sector in Indonesia. According Core ICT Indicators 2010 with reference to the classification of the International Standard Industrial Classification of All Economic Activities (ISIC) revision 3.1, the total of the population of the entire company's business sector is that of the ISIC 10-67 and 71-74 were categorized in seven sectors: Mining and Quarrying, Manufacturing, Electricity, Gas, and Water Supply, Construction; Trading, Hotels and Restaurants, Transportation and Communications, Finance and Business Services .

Representativeness of the respondents in the population can be seen as in Figure 1.1. The picture showed an overview of uniformity between population and sample distribution. Distribution of companies sample in each province is as much as 30% of companies are in DKI Jakarta, 11 % in West Java, as much as 6% in Bali , Papua, Aceh, South Borneo; 9 % in North Sumatra, 7% in Riau, East Borneo, South Celebes, and 5 % in North Celebs. The highest percentage on the island of Java, in DKI Jakarta and West Java, this is in accordance with the conditions that exist in the Indonesian island of Java where the center of economy and government as well as the largest population.

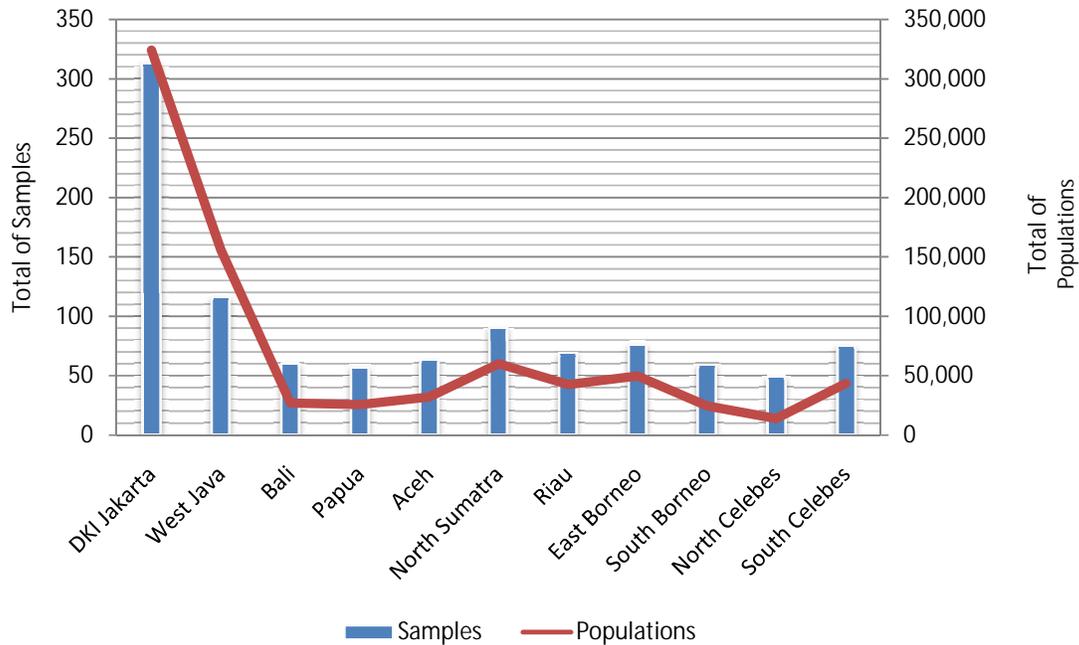


Figure 1.1. Populations and Samples Distribution by Province

Based on line of business, the population distribution of the companies sample are shown in Figure 1.2, the trading, hotel and restaurant companies is the most drawn (39% of total company). Next, financial and business services companies (15%) and construction (18%). Electric companies, gas and water that is at least as much as 5%.

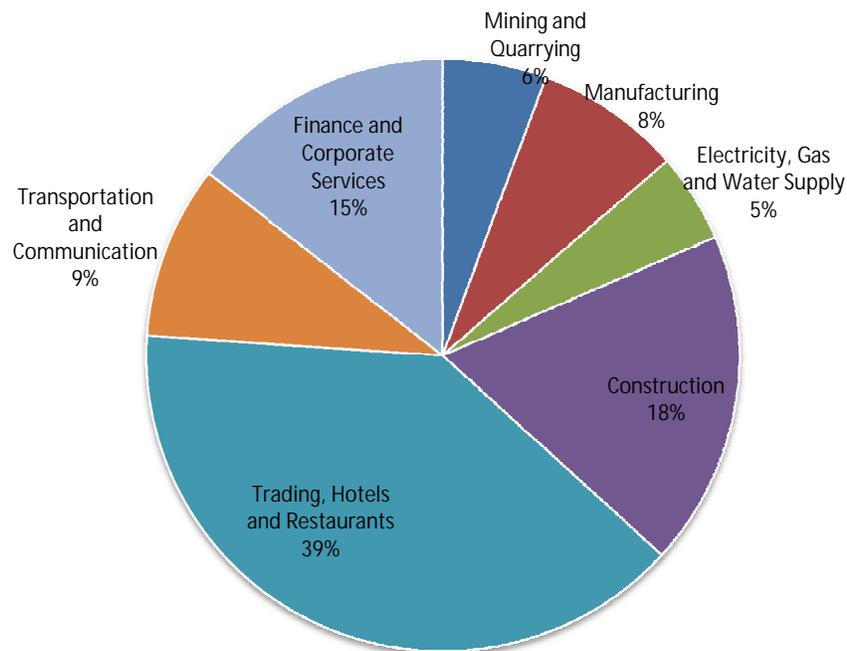


Figure 1.2. Sample Distribution Business Sector Based on Line of Business

There are three capital ownership statuses in this survey, which is the company with the status of domestic investment (domestic), foreign direct investment (FDI) and joint venture companies (joint venture). Most companies in the sample were domestic (93%). Only 4 % and 3% a PMA is a joint venture (Figure 1.3).

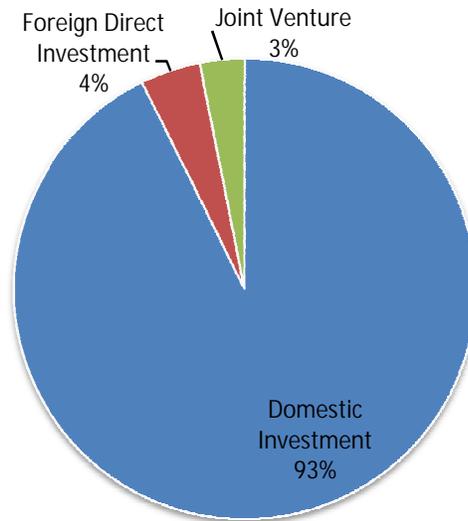


Figure 1.3. Sample Distribution Business Sector Based on Capital Ownership Status

In this survey, business sizes described based on the revenue and employee. Business size based on the revenue is divided into four categories. The first category is a company with revenue (in Rupiah) less than 100 million, and in this survey as much as 24%. The second category is a company with revenue between Rp. 100 million and Rp. 1 billion, as much as 43%. The second category is a company with a small scale. The third category is a medium scale company with revenue of more than Rp. 1.1 billion to 50 billion, as much as 28 % and the fourth category is a large-scale company with revenue of more than 50 billion by 5%, as shown in Figure 1.4.

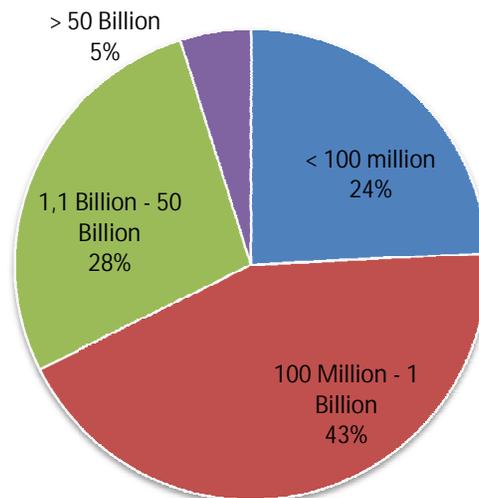


Figure 1.4. Distribution Business Size Based on Revenue

Business scale based on employee divided into three parts, as shown in Figure 1.5. Company with employee more than 100 is a large -scale, and in this survey as much as 10%. Company with employee between 20 to 100 people is a medium scale company with as much as 33 % and the percentage of companies with employee between 5 to 19 people is a small scale as much as 57%.

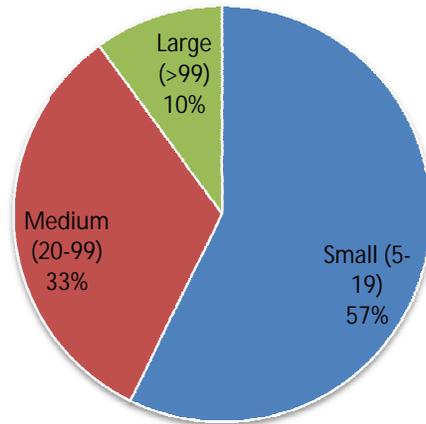


Figure 1.5. Distribution Business Size Based on the Person Employed

II. SURVEY RESULTS

2.1. Proportion of businesses using computers

The proportion of businesses using computers are shown in Figure 2.1.1, the results of the survey showed that 92% of companies surveyed have been using computers to support their business activities. This percentage shows that the computer has become a necessary requirement to support the operational of business by the company.

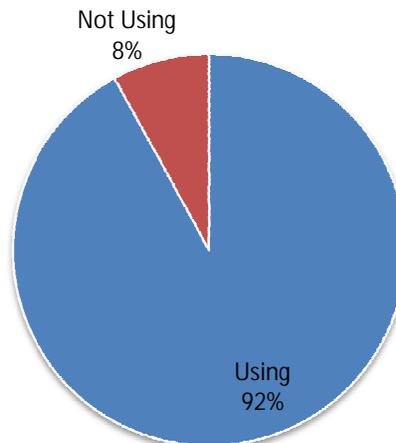


Figure 2.1.1. Percentage Use of Computers In The Business Sector

The use of computers by the company based on the location shown in Figure 2.1.2. The figure show that the use of computers in Indonesia is quite high and distribute evenly, it is seen from the high percentage of companies that use computers in all regions. The percentage of 77% which is the lowest value in the province of Papua, while the highest percentage reaches 100%, there are in the province of North Sulawesi and Jakarta.

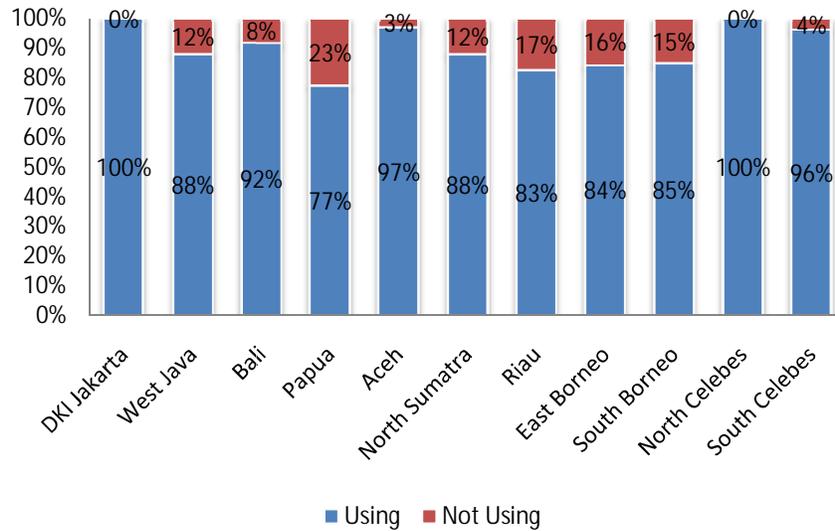


Figure 2.1.2. Percentage Use of Computers by Location

The percentage of computer use by line of business is shown in Figure 2.1.3. The survey results showed differences in the level of computer use. Highest level of computer use for financial and business services sector which amounted to 99%, followed by transportation and communications sector, while the lowest percentage was in the mining and quarrying sector with a percentage of 79%.

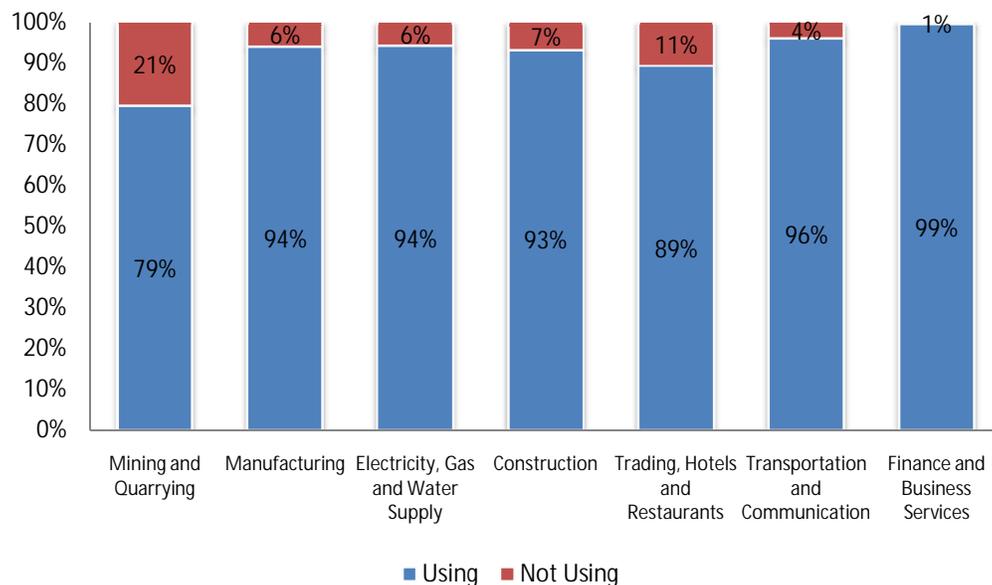


Figure 2.1.3. Percentage Use of Computers by Line of Business

Based on capital ownership status, there is also differences in the use of computers. Figure 2.1.4 shows that all the status of the joint venture company has been using the computer while the computer usage rates for FDI companies reached 98%. Domestic company status has the lowest rate of computer usage compared to the other two forms of companies, the percentage value is 91%.

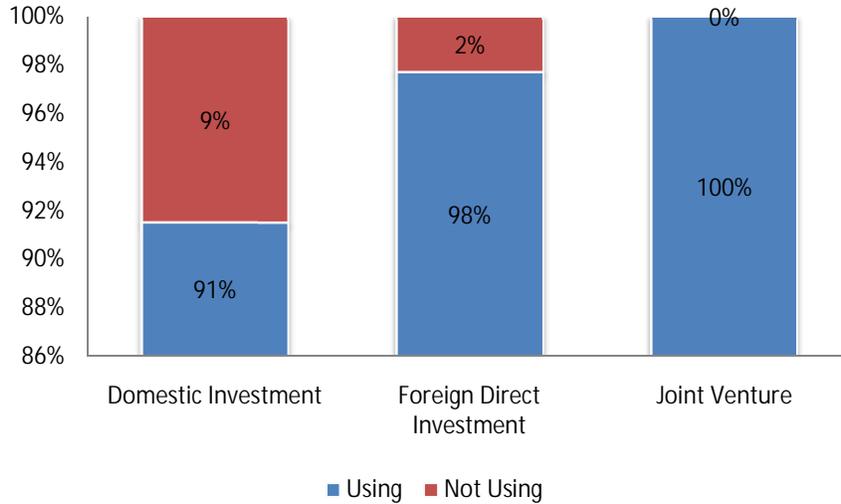


Figure 2.1.4. Percentage Use of Computers by Capital Ownership Status

Level of computer use in the company show the influenced by revenue and number of employees. The greater revenue and scale, it will also the greater level of computer use. Figure 2.1.5 shows the percentage of the value of revenue of the computer usage, shows that companies with revenue less than 100 million has the lowest rate of computer usage by 85%. While companies with revenue category more than 50 billion have high levels of computer usage reaches 100%.

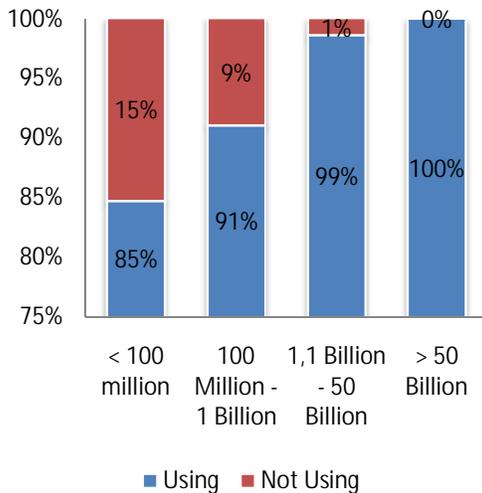


Figure 2.1.5. Percentage Use of Computers by Revenue

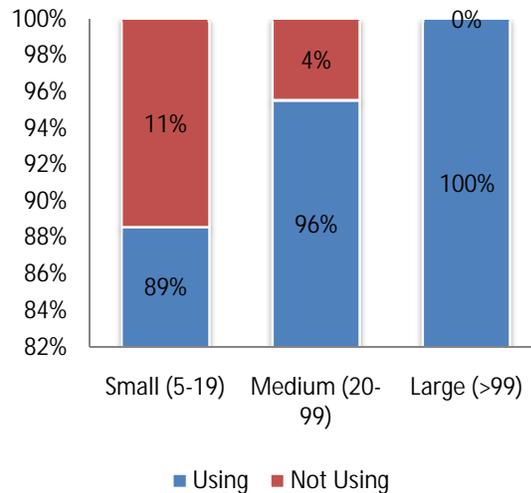


Figure 2.1.6. Percentage Use of Computer based Business Size

The percentage of business scale with the number of employee shown in Figure 2.1.6, it seen that all large-scale company with an employee that is more than 99 peoples have been using computers. While small scale companies with total employment of between 5 to 10 peoples have the lowest rate of computer use, with a percentage of 89%.

2.2. Proportion of persons employed routinely using computers

The survey results showed that the ratio of persons employed routinely using computer to do their work reach 0.34. Based on business location, there is a difference in the value of the ratio of employee using computer. Company located in Aceh has an employed using computer with the highest ratio of 0.65 while the lowest is in South Borneo province with a value of 0.27, as shown in Figure 2.2.1.

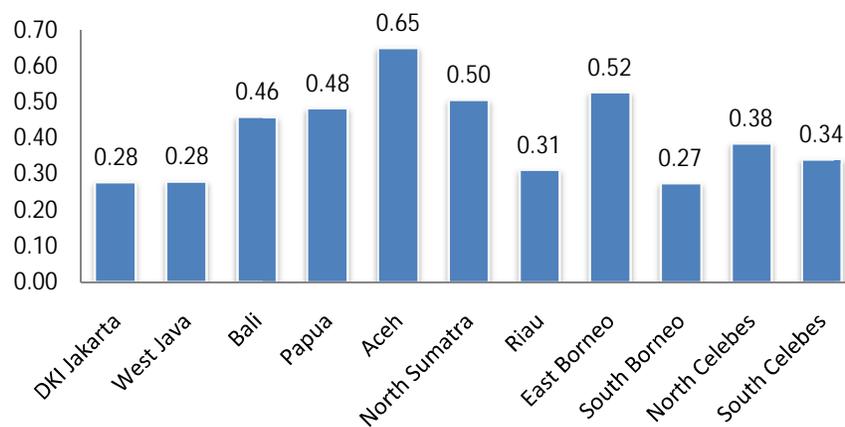


Figure 2.2.1. Ratio of Employee Using Computer by Location

The difference value of ratio of employee using computer by line of business are shown in Figure 2.2.2. Electricity, gas, and water supply business have the highest ratio of 0.76 while the smallest ratio is the financial and business services sector, with a ratio of 0.21.

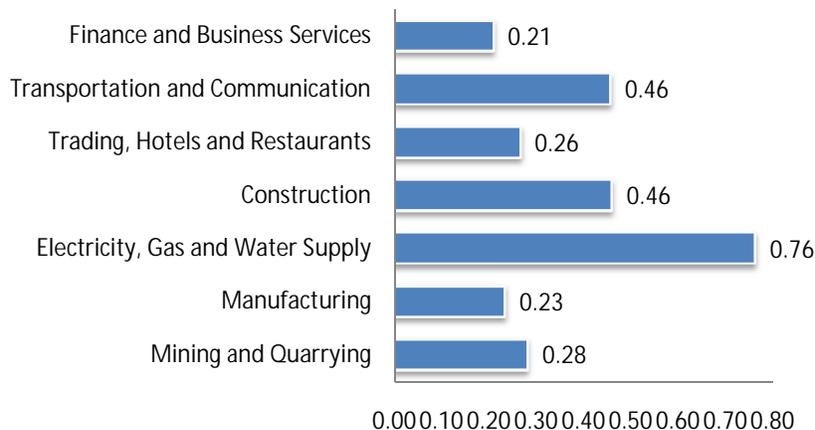


Figure 2.2.2. Ratio of Employee Using Computer by Line of Business

Based on the capital ownership status, shown in Figure 2.2.3 that the category of Foreign Direct Investment has the highest ratio of 0.52 followed by a joint venture company with a ratio of 0.44. Domestic companies have the lowest ratio value of 0.32.

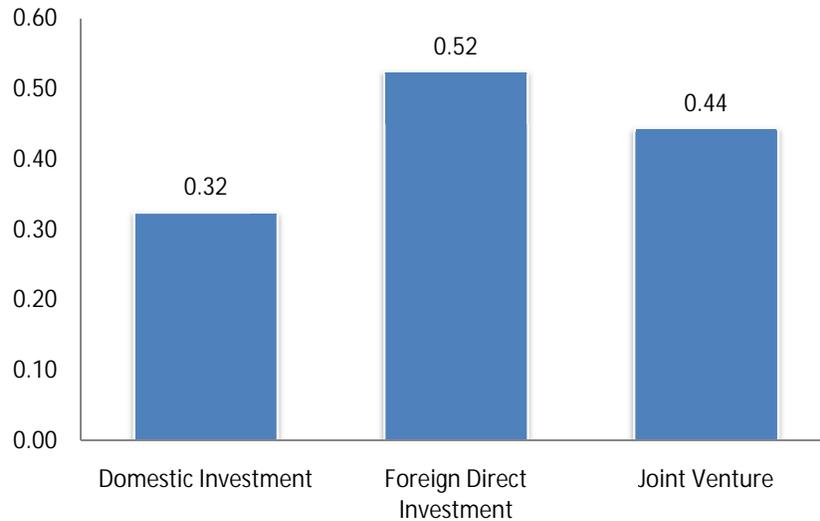


Figure 2.2.3. Ratio of Employee Using Computer by Capital Ownership Status

Based on revenue, the ratios of employee using computer tend to rise with an increase on revenue value except for the category with revenue range of 100 million to 1 billion. The highest ratio of employee using computer is on company with revenue over 50 billion. The smallest ratio with revenue in the range of 100 million to 1 billion, as shown in Figure 2.2.4.

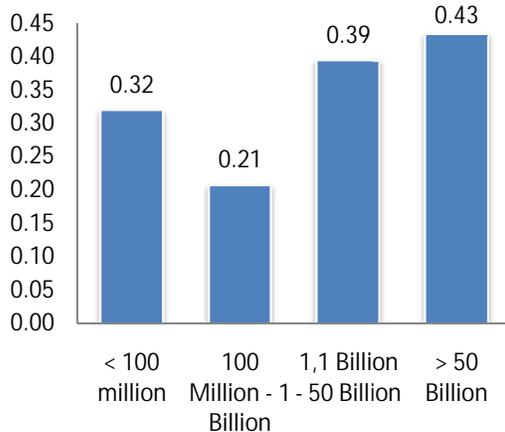


Figure 2.2.4. Ratio of Employee Using Computer by Revenue

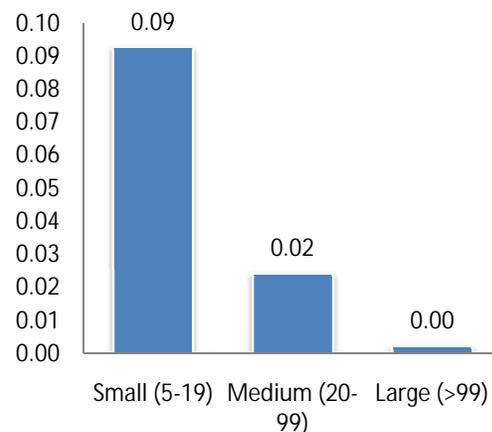


Figure 2.2.5. Ratio of Employee Using Computer based Business Size

Ratio of employee using computer tend to decrease with the increasing of business scale as seen in Figure 2.2.5. From the survey results, it appears that the value of the ratio of employee using computer on a small scale have the highest value of 0.09 while the ratio for large companies is worth very small.

2.3. Proportion of businesses using the Internet

The high usage of the internet in the business sector is shown by the high percentage of companies using the internet to support their business activities. The survey result showed the majority of businesses have been using the internet to support their activities by 85%, and 15% of businesses that do not use the internet.

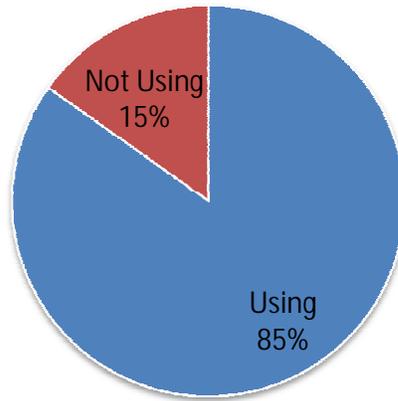


Figure 2.3.1. Internet Usage by Business Sector

The level of Internet usage between regions in Indonesia varies by location (Figure 2.3.2). The variations ranged from 70% to 100%, with the highest level of internet usage is on the North Sulawesi region which has reached 100%. Other area included in the category of internet usage rate was highest in Jakarta (98%) and South Sulawesi (93%). While the region with the lowest level of internet usage are in Papua (70%).

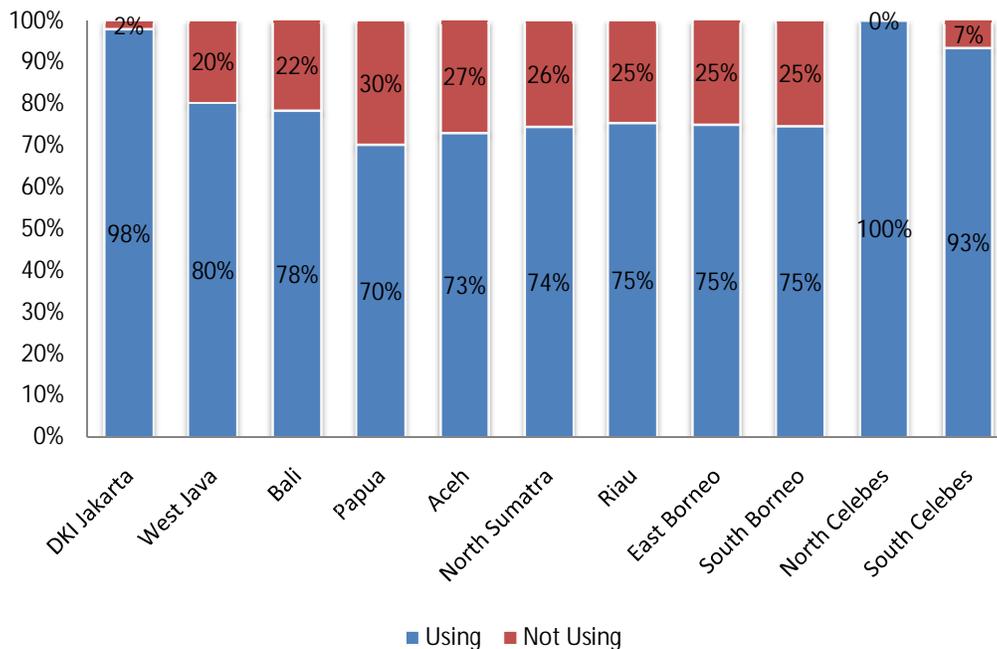


Figure 2.3.2. Internet Usage by Location

The level of internet usage based on capital ownership status also varied, as shown in Figure 2.3.3. Highest level of internet usage was on joint venture company with percentage 91% of companies using the Internet to support their business activities. Then the level followed by FDI company (93%), while the lowest are in companies with domestic capital status (84%).

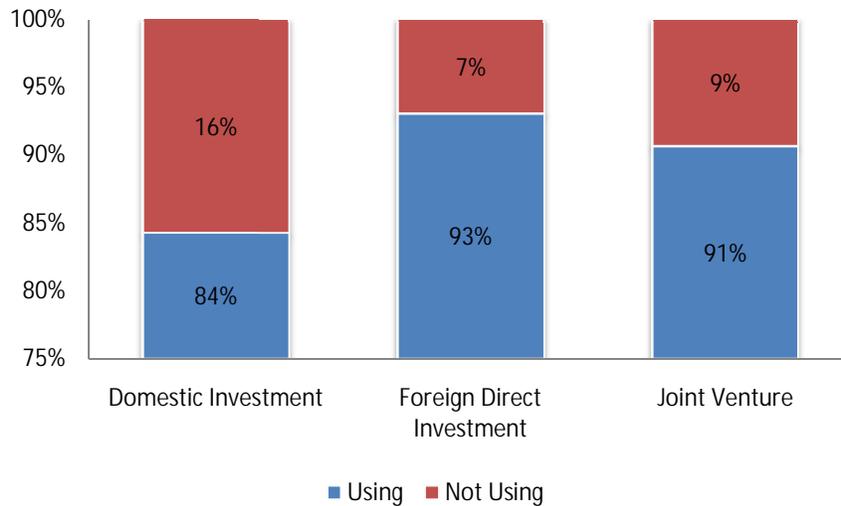


Figure 2.3.3. Internet Usage by Capital Ownership Status

Based on the line of business, the level of internet usage also varies as shown in Figure 2.3.4 . Variations in the level of internet usage ranged from 72% to 95% . The highest usage occur in areas of finance and business services company, where 95% of businesses in this line of business has been using the Internet to support their business activities. Then followed by transportation and communications businesses (92%), and electricity, gas and water supply (90%). While the lowest level of internet usage occurred in the field of mining and quarrying (72%).

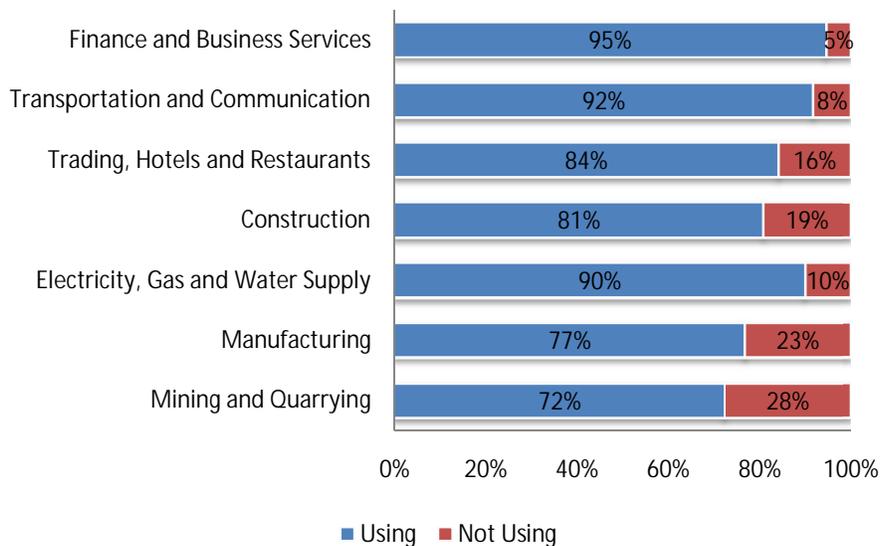


Figure 2.3.4. Internet Usage by Line of Business

In Figure 2.3.4, 70% of companies with total revenue less than 100 million have been using the internet to support their business activities. With a larger number of revenue, this is 100 million - 1 billion rupiah, number of companies that have used the internet increase to 84% and 96% companies with total revenue of over 50 billion.

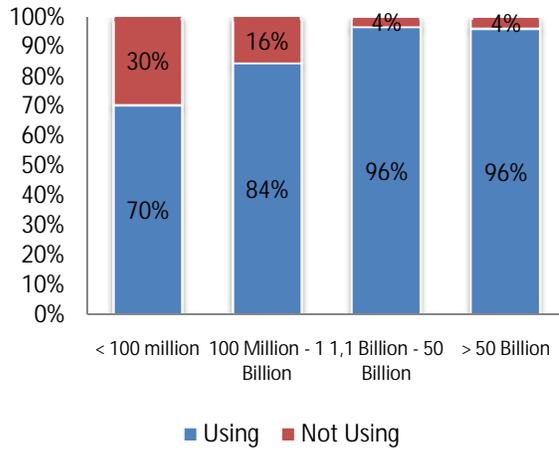


Figure 2.3.5. Internet Usage by Revenue

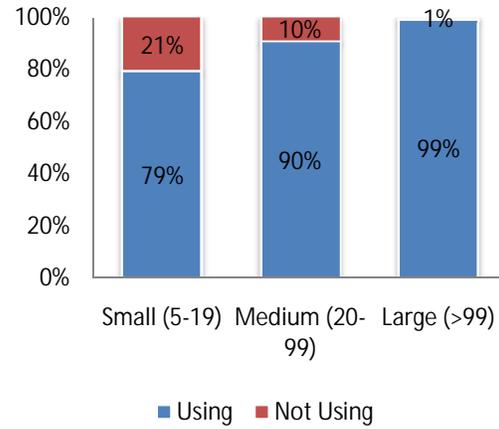


Figure 2.3.6. Internet Usage by Business Size

Business scale also has a positive effect on the level of internet usage in the company. The larger scale of business, the greater percentage of companies that use internet (Figure 2.3.6). Companies that used the internet on a group of small-scale (with the number of employee with 5 to 19 peoples) amounted to 79%. Meanwhile, internet users to medium-scale (with employee of 20 to 99 peoples) reached 90% and almost all large-scale (with employee 100 and above) have been using the internet (99%).

2.4. Proportion of persons employed routinely using the Internet

Survey result show the ratio of employee using internet in the business sector in Indonesia is 0.28. This means that 28% of employees at companies using the Internet to support the business activities of the company.

The ratio value varies according to the location of work ranging from 0.18 to 0.53 (Figure 2.4.1). The highest ratio value in Aceh which is 0.53, then followed by East Borneo (0,49). Group value ratio below the first is North Sumatra (0.33), Bali (0.32), South Celebes (0.31) and North Celebes (0.30). The next group is Riau (0.26), Papua (0.26), Jakarta (0.25) and West Java (0.22). While the smallest value of the ratio in South Borneo (0.18).

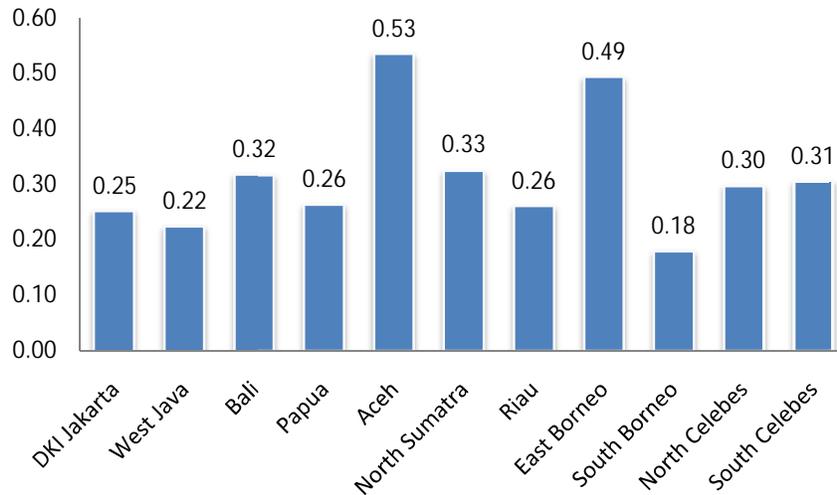


Figure 2.4.1. Ratio of Employee Using Internet by Location

Ratio of employee using internet also varied according to the capital ownership status (Figure 2.4.2.). The highest ratio is in the FDI company status with a value of 0.55, followed by the joint venture company (0,40). While domestic companies has the smallest ratio equal to 0.26.

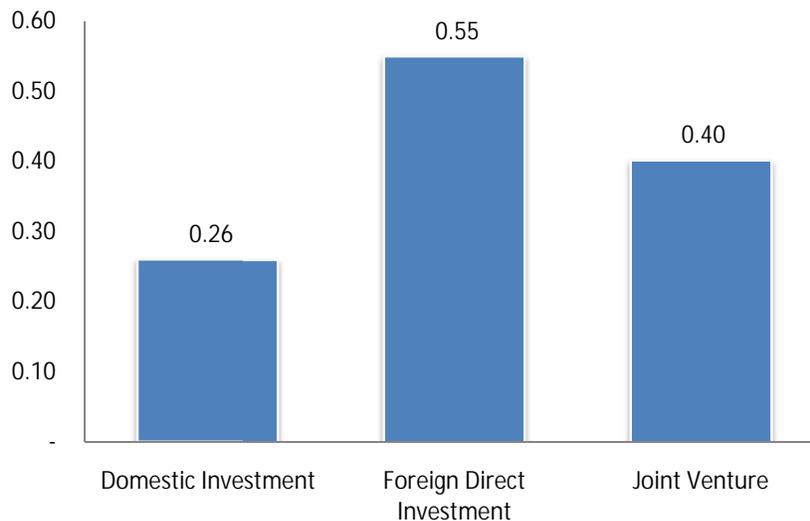


Figure 2.4.2. Ratio of Employee Using Internet by Capital Ownership Status

Variation in the ratio of employee using internet also occurs based on line of business. The highest ratio values are in the business of electricity, gas, and water supply, which is at 0.50, followed by transportation and communications businesses (0.48) and construction effort (0.40). While the value of the smallest ratios are in the field of finance and business services (0.16).

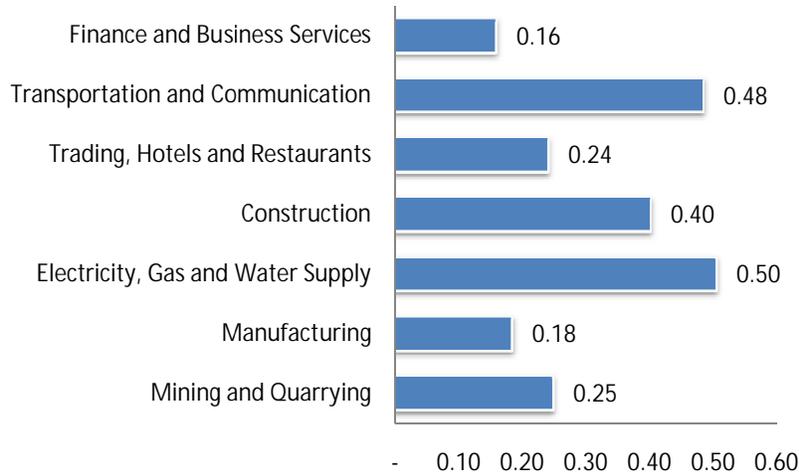


Figure 2.4.3. Ratio of Employee Using Internet by Line of Business

Figure 2.4.4 shows a large or small value of the ratio is not determined by the size of the company's revenue. The figure shows the value of the company with revenue of 50 billion has the highest ratio of value, which is equal to 0.35. Meanwhile, companies with revenue below 100 million has the highest ratio than company with revenue of 1.1 to 50 billion, which is 0.33 compared to 0.32. While the smallest value of the ratio found in the group of companies with revenue value 100 million - 1 billion.

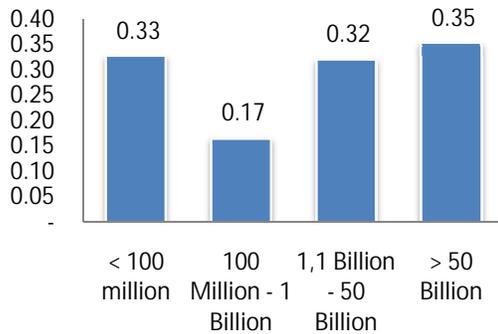


Figure 2.4.4. Ratio of Employee Using Internet by Revenue

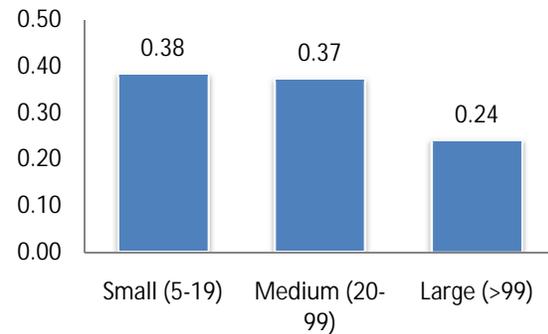


Figure 2.4.5. Ratio of Employee Using Internet based Business Size

Meanwhile, the larger business scale indicates the smaller ratio value of employee using internet. Shown in Figure 2.4.5, ratio of employee using internet in small-scale is 0.38, and then decreased to 0.37 in medium scale, and decreased again to 0.24 on a large scale.

2.5. Proportion of businesses with a web presence

Web-presence enables the company to provide information to consumers or business partners. In this case, the web-presence is one tool that is expected to bring convenience to business entities in promoting the product and grow the business. The term web-presence is

more used than “website”, based on the presumption that a presence of company information on the World Wide Web (WWW) is more important than a website (ITU, 2010). Nevertheless, the survey results showed that more than half of the companies in the business sectors in Indonesia (56%) do not have a web-presence (Figure 2.5.1).

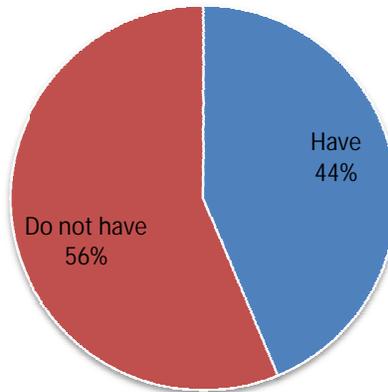


Figure 2.5.1. Proportion of Businesses with a Web Presence

The survey results showed differences on percentage of web-presence ownership by companies. Figure 2.5.2 shows that there are four provinces where the percentage of web-presence ownership by the company is 50% or more. The four provinces with a percentage ownership of the web-presence is – the highest – Bali (68%), Jakarta (61%), North Sulawesi (51%), and West Java (50%). Meanwhile, there are two provinces that percentage web-presence ownership by companies below 20%, namely Papua (19%) and Riau (14%).

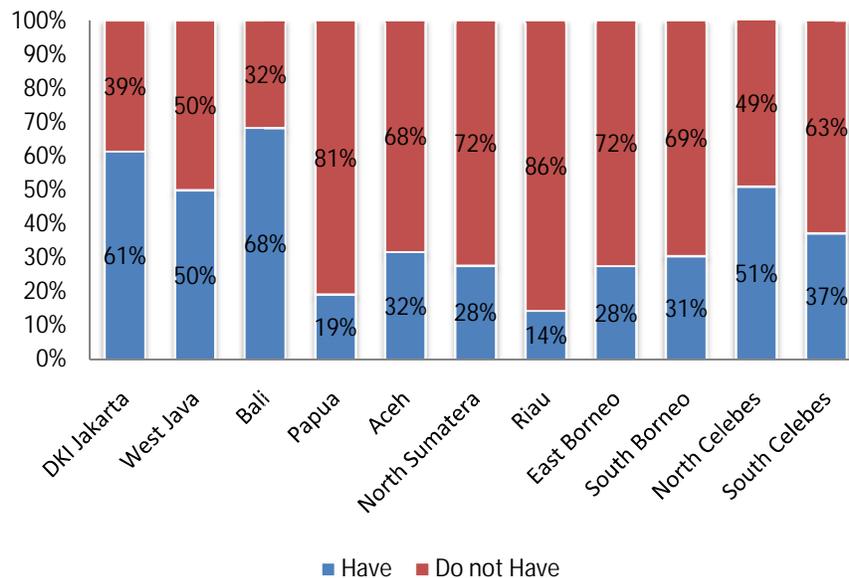


Figure 2.5.2. Proportion of Businesses with a Web Presence Based on Location

Figure 2.5.3 shows that the percentage of web-presence ownership on the transport and communications and the electricity, gas, and water supply field are on 56%. More than half of

companies in the financial and business services field (53%) also have a web-presence. Meanwhile, the smallest percentage of web-presence ownership is on the manufacturing sector (28%) and construction (27%).

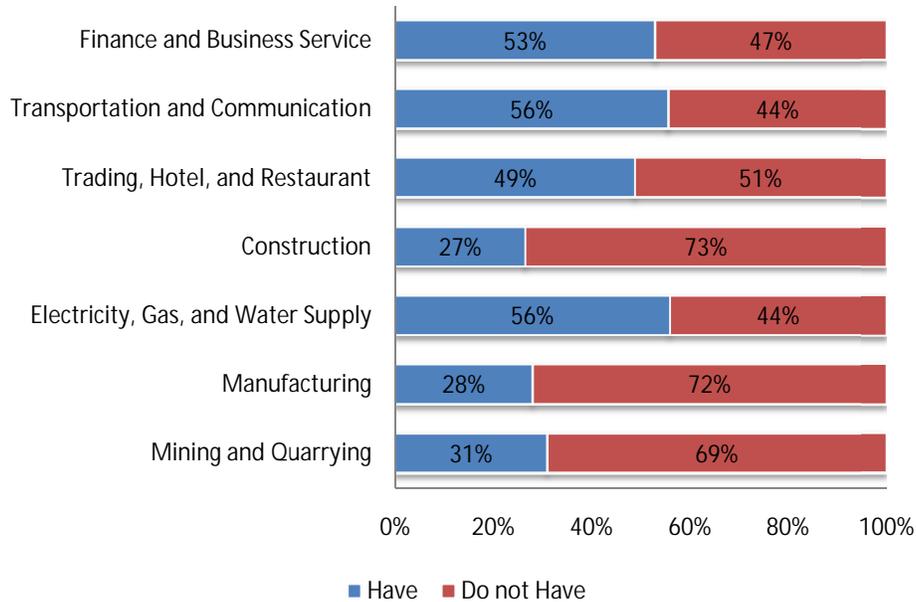


Figure 2.5.3. Proportion of Businesses with a Web Presence based on Line of Business

According to the capital ownership status, the survey results showed on Figure 5.4 that more than 60% of Foreign Direct Investment and Joint Venture company already have a web-presence (65% and 66%). Meanwhile, domestic companies that already have a web-presence just as much as 42%.

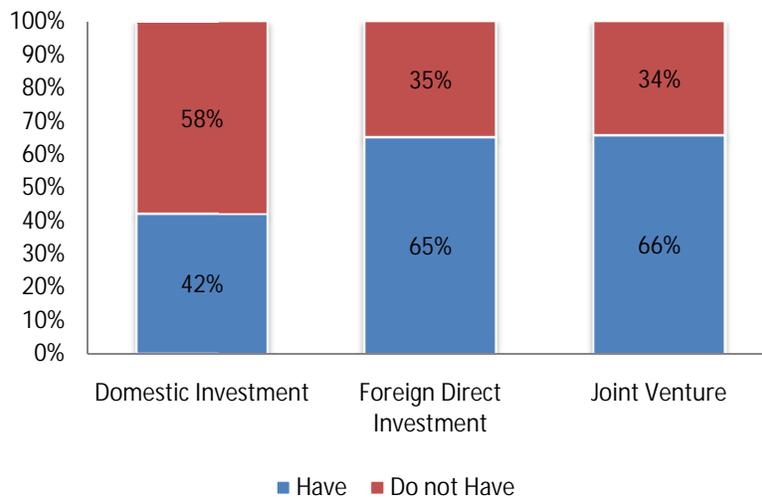


Figure 2.5.4. Proportion of Businesses with a Web Presence based on Capital Ownership Status

The survey results also showed that ownership of web-presence is influenced by the amount of the company's revenue and business size. Figure 2.5.5 shows that the higher the revenue, the greater the percentage of web-presence ownership. The figure shows that the percentage of companies who have a web-presence with revenue less than Rp 100 million is only 29%. Meanwhile, a group of companies with revenue Rp 1.1 billion - Rp 50 billion and Rp 50 billion above, the larger percentage of companies that have a web-presence is respectively 57% and 70%.

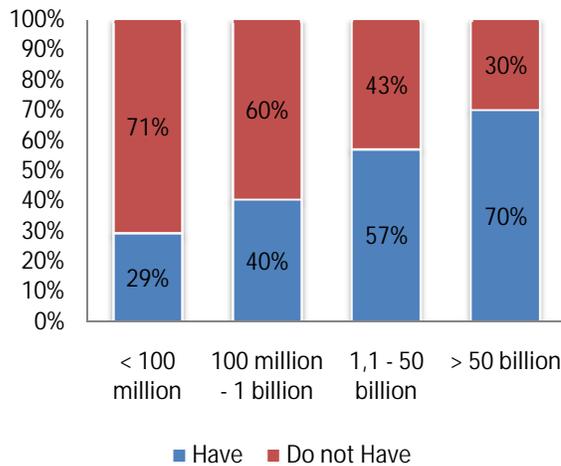


Figure 2.5.5. Proportion of Businesses with a Web Presence based on Revenue

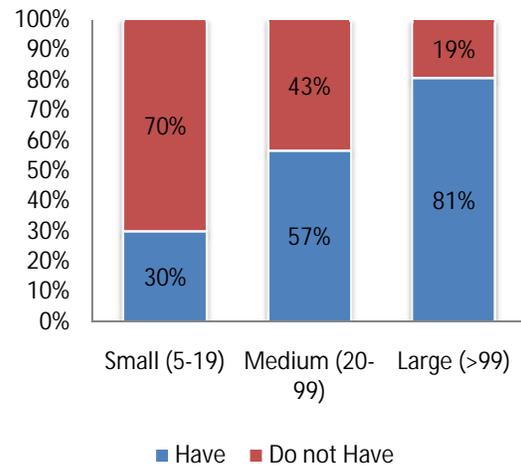


Figure 2.5.6. Proportion of Businesses with a Web Presence based on Business Size

Similarly happens when the survey seen from the business size. Figure 2.5.6 show that the larger the size, the percentage of companies who have a web-presence is also growing. The figure shows that only 30% of small companies that already have a web-presence. While in the medium and large business have more than half which have a web-presence with the percentage of each by 57% and 81%.

2.6. Proportion of Businesses with an Intranet

Figure 6.1 shows the high use of intranets for companies in Indonesia. A total of 50% or half of the companies operating in Indonesia have been using the intranet.

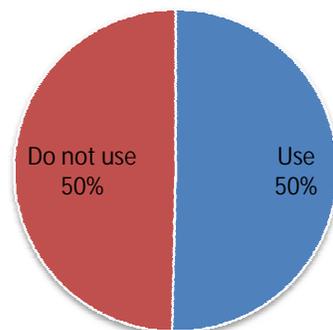


Figure 2.6.1. Proportion of Businesses with an Intranet

Figure 2.6.2. shows variations in the level of use of intranet in Indonesia based on location. The variations ranged from 25% to 68% with the highest rate of use of intranet contained in Jakarta. As many as 68% of companies in the Jakarta area using the intranet, followed by Bali in 57%. Intranet users in other regions ranged from 40% - 49% of the company. While the region with the lowest usage rates intranet contained in South Borneo (25%).

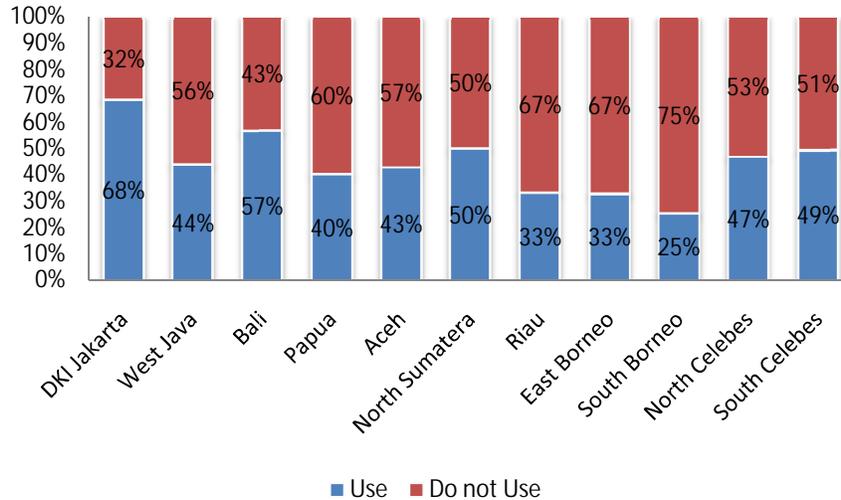


Figure 2.6.2. Proportion of Businesses with an Intranet based on Location

The usage rate of intranet based on line of business shown in Figure 6.4, which ranged between 35% - 65%. The highest usage rates occurred in finance and business services company field, with 65% of companies in this line of business using the Internet to support their business activities. Then followed by the electricity, gas and water supply (90%), and transport and communications field (60%). Meanwhile, the lowest usage rate of intranet occurred in the processing field (35%).

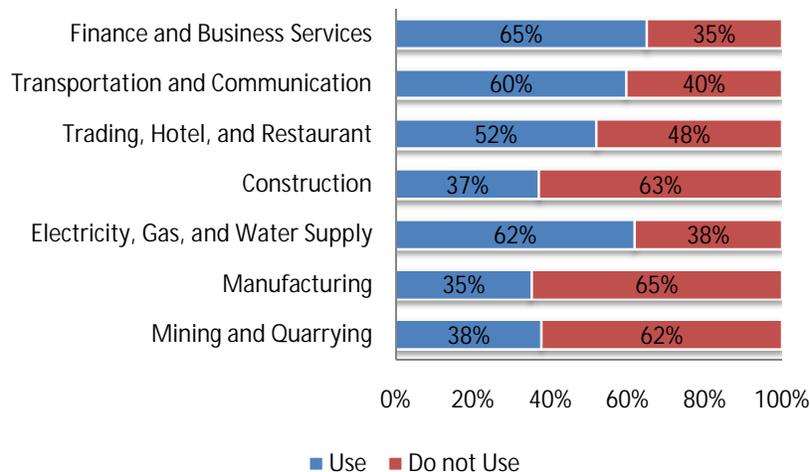


Figure 2.6.3. Proportion of of Businesses with an Intranet based on Line of Business

The usage rate of intranet based on line of business shown in Figure 6.3, which ranged between 35% - 65%. The highest usage rates occurred in finance and business services company field, with 65% of companies in this line of business using the Internet to support their business activities. Then followed by the electricity, gas and water supply (90%), and transport and communications field (60%). Meanwhile, the lowest usage rate of intranet occurred in the processing field (35%).

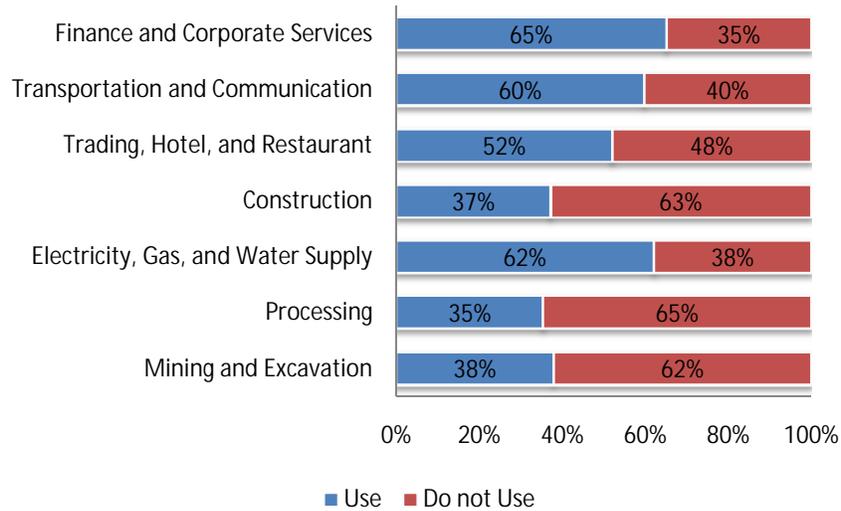


Figure 2.6.4. Proportion Businesses with an Intranet based on Capital Ownership Status

The survey shows that total revenue have a positive effect on the level of usage on corporate intranets. Intranet usage rate will be higher with increased revenue of the acquired company as shown in Figure 2.6.5. It is shown, as much as 39% of firms with revenue less than 100 million rupiah using the intranet to support its business activities. With a larger number of revenue, 100 million – 1 billion rupiah, the number of companies that use the intranet increased to 47%, then rising to 61% by total revenue from 1.1 to 50 billion rupiah and, being 82% of companies with total revenue of more of 50 billion rupiah.

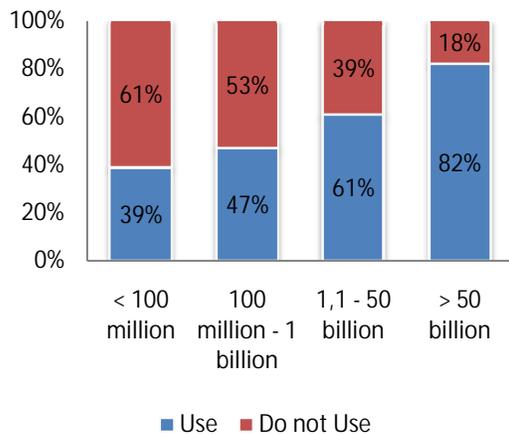


Figure 2.6.5. Proportion of Businesses with an Intranet based on Revenue

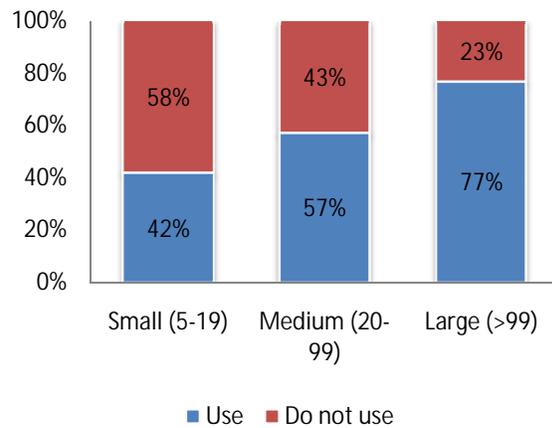


Figure 2.5.6. Proportion of Businesses with a Web Presence based on Business Size

Business size also has a positive effect on the level of intranets usage on corporate. The larger the size, the greater the percentage of companies that use the intranet (Figure 6.6). Companies that use the intranet on a small-scale enterprise group amounted to 42%. The number of companies that use the intranet to increase in medium-scale enterprises, which is as much as 57%, and on a large scale enterprise increased to 77%.

2.7. Proportion of Business Receiving Order over the Internet

Figure 2.7.1 presents information regarding the internet usage for activities of ordering goods or services by the company. This means that consumers can order goods or services offered by the company through the internet. From this figure shows that there are still many companies (53%) who do not use the Internet for ordering goods or services activity, while 47% have used the Internet in order for the goods and services offered.

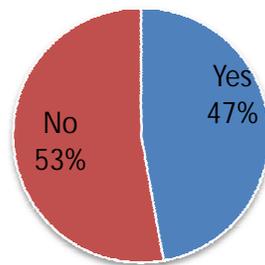


Figure 2.7.1 Proportion of Business Receiving Order over the Internet

Based on the survey location, the percentage of companies that use the internet to order goods or services activities in 11 areas were in the range of 27% to 64% (see Figure 2.7.2). This figure shows that companies in Bali are the highest usage of Internet for ordering goods and services activities than firms that exist in 10 other areas. While the lowest Internet usage for ordering goods or services was at the companies in Papua (27%).

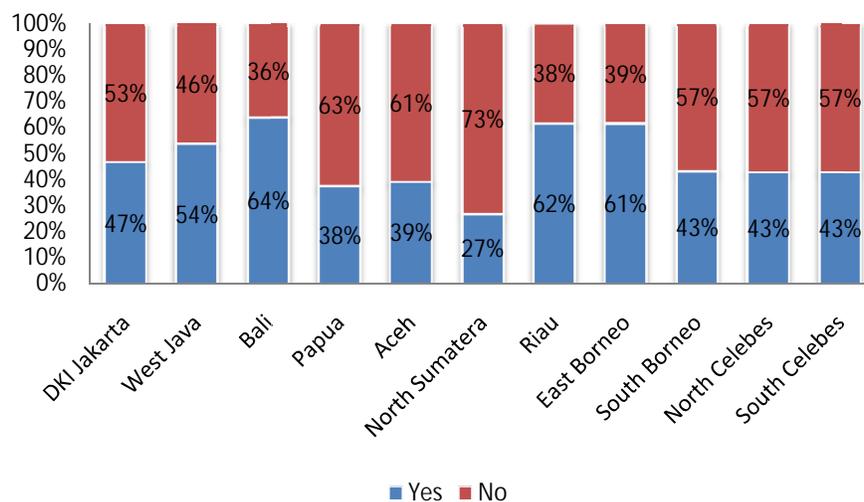


Figure 2.7.2 Proportion of Business Receiving Order over the Internet based on Location

Percentage of companies who place an order goods or services over the Internet based on business sectors is presented in Figure 2.7.3. From the figure it is shown that the transportation and communications businesses sector have been using the internet for the majority of the activities of ordering goods and services it offers (62%), whereas in the field of finance and business services company stated only 33% have used the internet to order goods and services it offers .

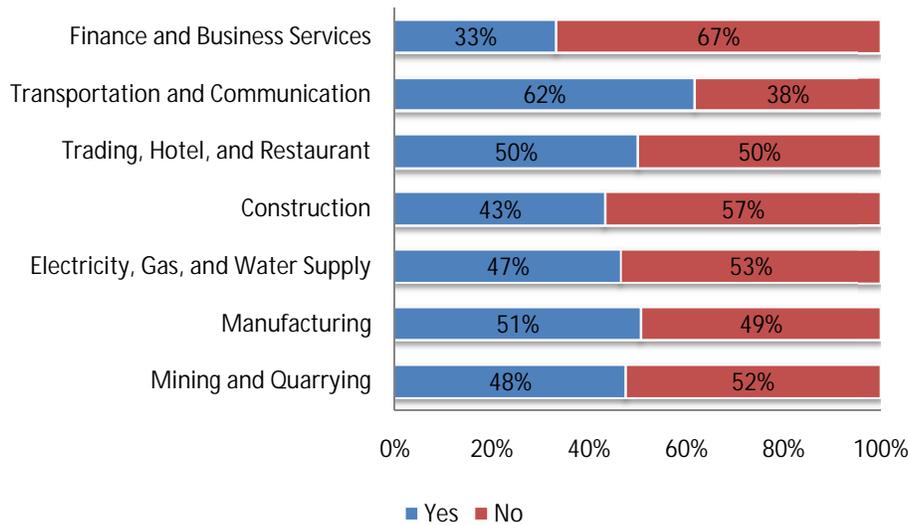


Figure 2.7.3 Proportion of Business Receiving Order over the Internet based on Line of Business

The internet usage based on the capital status ownership for the activity of ordering goods or services, there is no difference in general, between domestic investment, foreign investment, and joint ventures. From Figure 2.7.3 below shows that the status of the joint venture company is the most usage (52%), and have been able to receive ordering goods or services over the Internet, while domestic and foreign investments are relatively in the same amounts, respectively 47% and 48%.

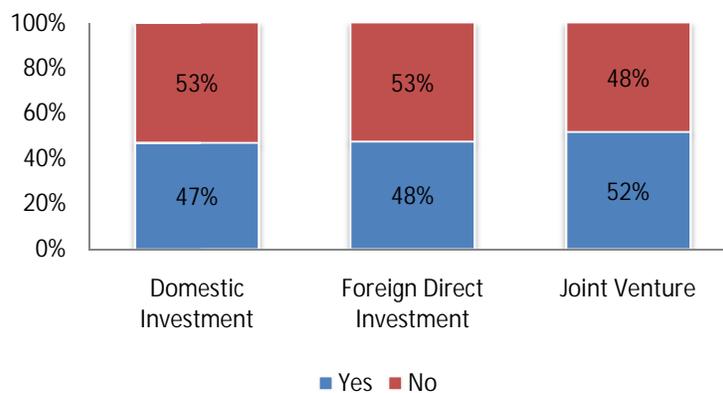


Figure 2.7.4 Proportion of Business Receiving Order over the Internet based on Capital Ownership Status

In Figure 2.7.5 shows that the greater the company's revenue, the trend was an increasing of percentage of companies that can receive order of goods or services using the internet. At companies with revenue less than 100 million rupiah, there are 43% may receiving order goods or services over the Internet, while in companies with a revenue of over 50 billion rupiah are 58%.

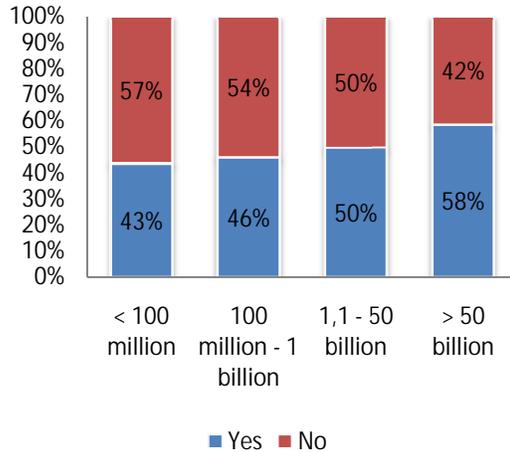


Figure 2.7.5 Proportion of Business Receiving Order over the Internet based on Revenue

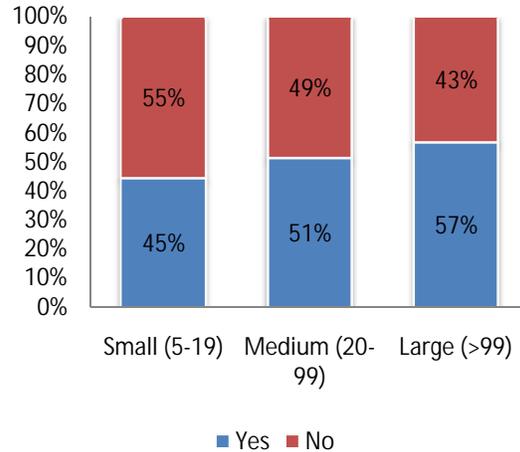


Figure 2.7.6. Proportion of Business Receiving Order over the Internet based on Business Size

The trend of the Internet usage to order goods or services by the company broken down by business scale shows the same trend as if by company's revenue. In Figure 7.6 shows that the larger the business scale, the greater the number of companies that can receive orders goods or services over the Internet. On small-scale enterprises, 45% of companies have been able to receive the order for the goods or services over the Internet, while in companies with large scale number of companies that have been able to receive orders through internet was 57%.

2.8. . Proportion of Business Placing Order over the Internet

From the questions asked to determine the level of Internet usage in placing order of goods and services, it is seen that 56% of companies in the 11 areas surveyed use the Internet as a medium to offer goods and services which is their product (Figure 2.8.1), while 44% do not use it. From the results of this survey, the use of the Internet to offer goods or services is higher compared to receiving goods or services.

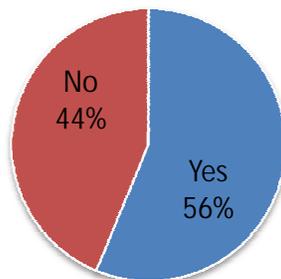


Figure 2.8.1 Proportion of Business Placing Order over the Internet

The Internet usage for placing order of goods or services based on the location that had been surveyed, showed in Figure 2.8.2. The figure shows that North Celebes is a region with Internet usage of placing order of goods or services by the companies was in the lowest percentage (43%), while companies in Riau and Bali were the highest of the Internet usage level to offer goods or services, respectively 67% and 68%.

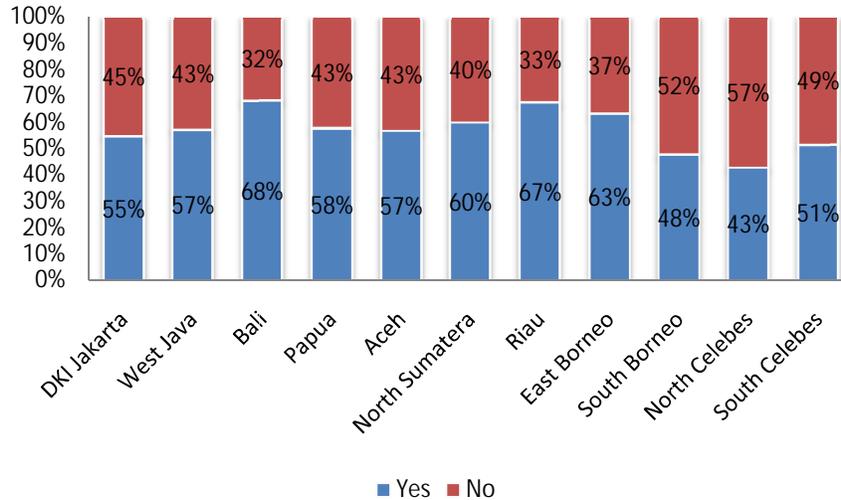


Figure 2.8.2 Proportion of Business Placing Order over the Internet based on Location

The use of the Internet for offering goods or services based on businesses sectors have a similar pattern with the use of the Internet for ordering goods or services. From Figure 2.8.3, firms in the field of transport and communications enterprises use internet the most to offer services (75%) than other business sectors. On finance and business services sectors, only 48% of companies use the internet to offer goods or services.

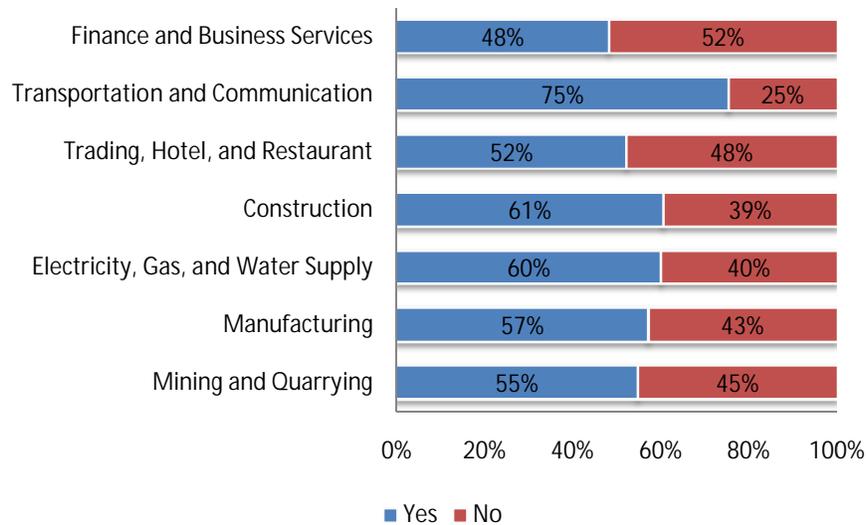


Figure 2.8.3 Proportion of Business Placing Order over the Internet based on Line of Business

Figure 2.8.4 presents information about the companies that use the internet in placing order of goods or services, which the surveyed companies classified based on the status of capital ownership. The Image shows that the percentage of companies using the Internet to supply of goods and services between foreign and domestic investment have the same percentage (48%), while there is only 45% of the joint venture company use the internet to offer goods or services.

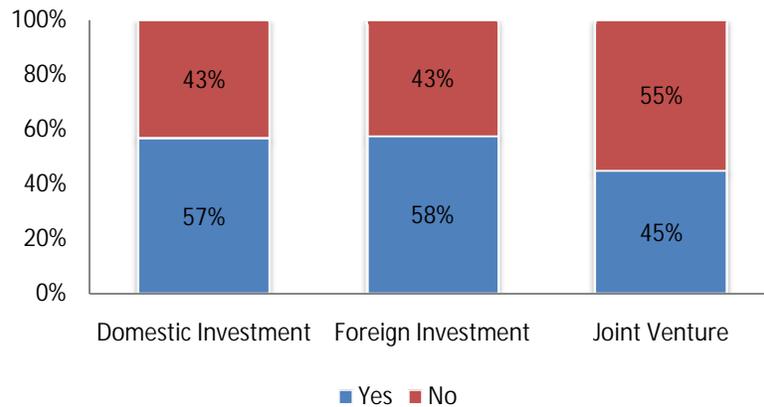


Figure 2.8.4 Proportion of Business Placing Order over the Internet based on Capital Ownership Status

If the companies are grouped based on the company's revenue, Figure 2.8.5 shows that there is a tendency the greater revenue of the company, the percentage of companies that use the internet offering goods or services will be increased. Nevertheless, the picture presented that 60% of companies with more than 50 billion revenue using the internet to offer goods or services, lower than the number of the group of companies with a revenue of 1.1 to 50 billion (63%).

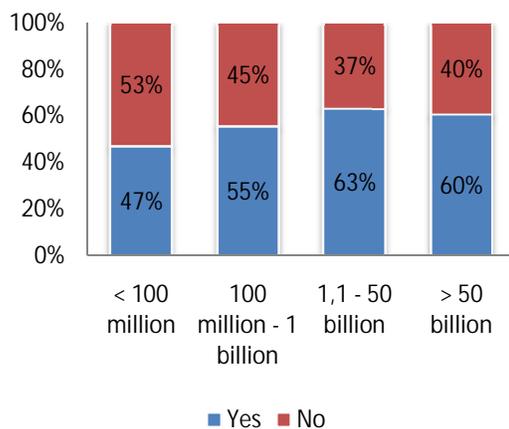


Figure 2.8.5 Proportion of Business Placing Order over the Internet based on Revenue

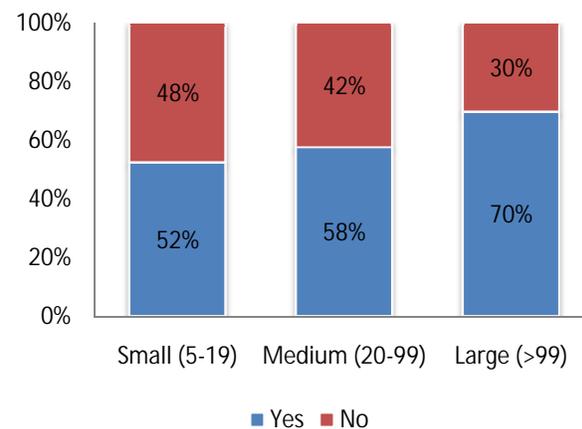


Figure 2.8.6 Proportion of Business Placing Order over the Internet based on Business Size

Figure 2.8.6 shows that the larger the business scale, the more the number of companies using the internet to offer goods or services. Percentage of companies that use the Internet in placing orders of goods or services on a small scale enterprises, medium, and large are 52%, 58% and 70%.

2.9. Proportion of Business Using the Internet by the Type of Access

Figure 2.9.1 shows the information of Internet access type used by the company. From this figure shows that the majority of companies (84%) using a fixed broadband to access the internet. Mobile broadband is used by 21% of companies, while the type of internet access narrowband is only used by 3% of the company. Some companies use a mixture of the three internet access type, so that the total percentage of the three types of internet access in the figure below is more than 100%.

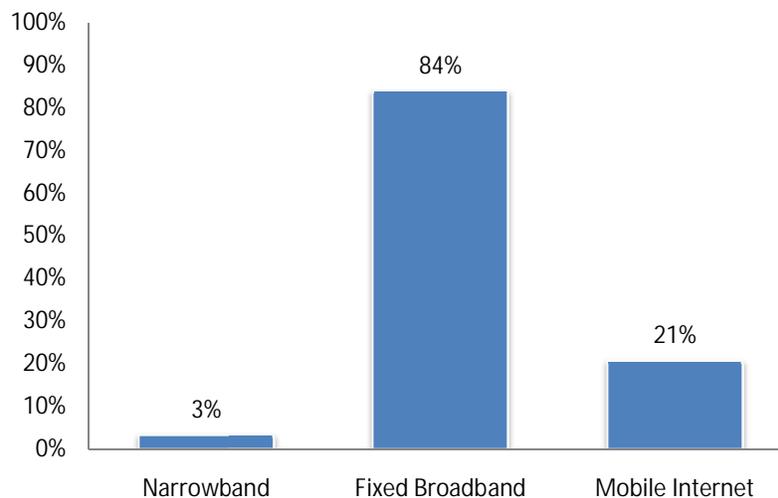


Figure 2.9.1 Proportion of Business Using the Internet by the Type of Access

When the use of internet access types by the company specified based on the location of the company, then the pattern comparison of 11 locations as shown in Figure 2.9.2. From the figure it is seen that type of access to the Internet most widely used in all locations in number percentage of fixed broadband users between the range of 69 % (Riau) up to 92 % (North Celebes). Percentage of companies with this type of internet access mobile broadband in the range of 9 % (North Sumatera) to 42 % (Riau and East Borneo). While the highest number of types of access narrowband's user is 7 % (Aceh), and at several locations (Riau , South Borneo , North Celebes, South Celebes) there was no company that use type of internet access narrowband.

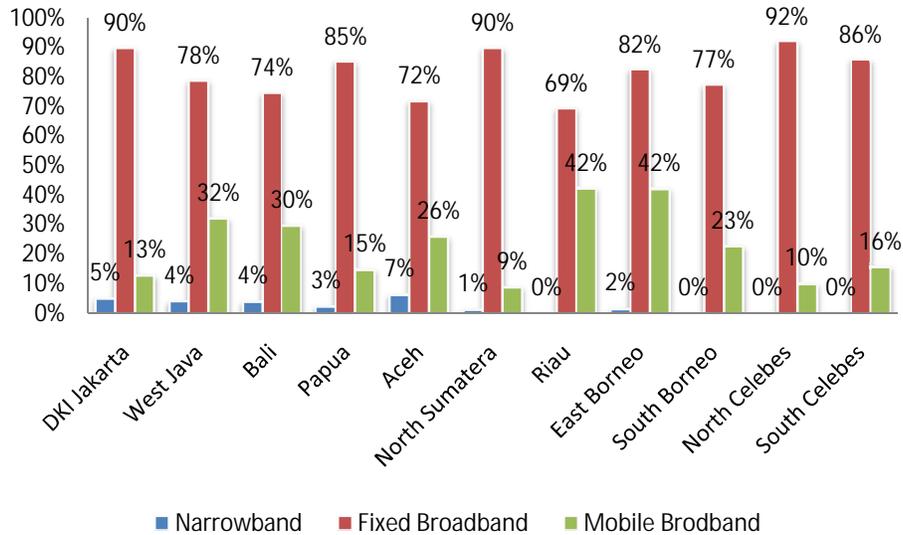


Figure 2.9.2 Proportion of Business Using the Internet by the Type of Access based on Location

Figure 2.9.3 shows the proportion of businesses grouped by line of business. In general, it is shown that fixed broadband access types are the dominant used by all businesses in the range of 69 % (mining and quarrying) to 90% (trade, hotels, and restaurants). Mobile broadband is the most widely used by companies in mining and quarrying (33 %), while the highest usage of narrowband is found in the finance and business services company (8 %).

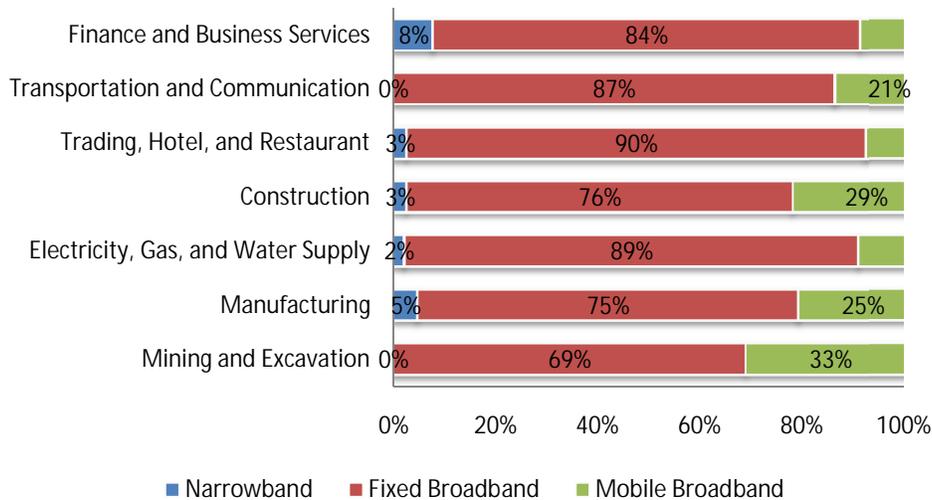


Figure 2.9.3 Proportion of Business Using the Internet by the Type of Access based on Line of Business

The patterns of 3 types of internet access usage when corporations disaggregated with capital ownership status is presented in Figure 2.9.4. Based on the picture, the three dominant groups of companies using this type of fixed broadband internet access with the number of users for domestic investment, FDI, and the joint venture respectively 83%, 98%, and 83%.

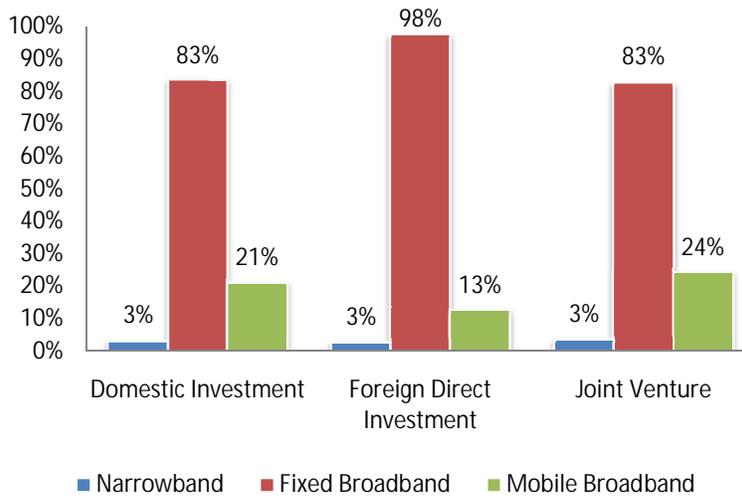


Figure 2.9.4 Proportion of Business Using the Internet by the Type of Access based on Capital Ownership Status

Figure 2.9.5 shows the pattern of internet access type's usage is broken down by company's revenue. From this image, the greater the company's revenue, the preference of type of internet access usage is fixed broadband in a range of percentage between 79 % (revenue less than 100 million) to 98 % (revenue of more than 50 billion).

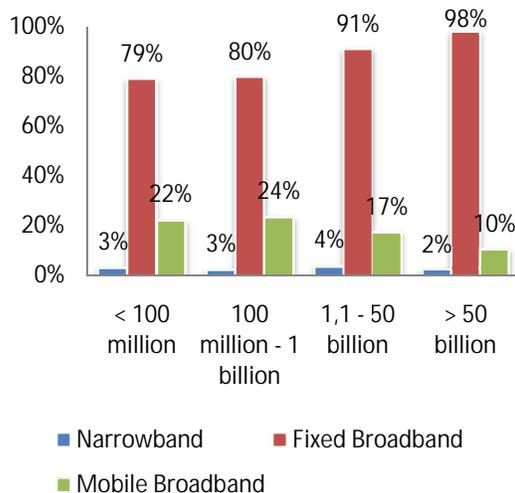


Figure 2.9.5 Proportion of Business Using the Internet by the Type of Access based on Revenue

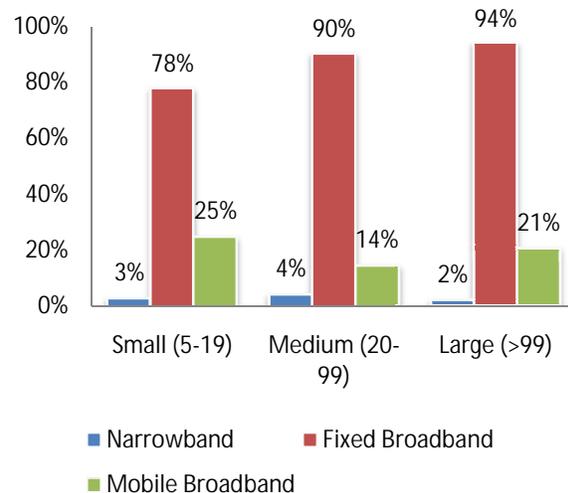


Figure 2.9.6 Proportion of Business Using the Internet by the Type of Access based on Business Size

The trend is similar to the company's revenue; the number of companies that use this type of fixed broadband Internet access also tends to increase with the increasing scale of business company. This can be seen in Figure 2.9.6 display.

2.10. Proportion of Business with a Local Area Network (LAN)

LAN or Local Area Network is a computer network that has such small area coverage on a computer network and office buildings. The survey results showed that more than half (60 %) in the Indonesian business sector companies have been using LAN (Figure 10.1).

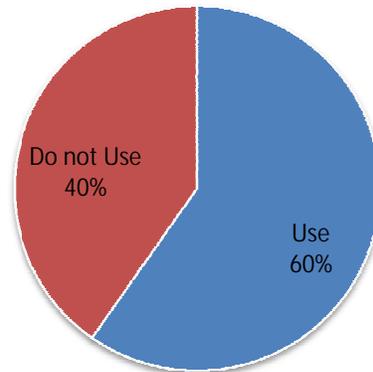


Figure 2.10.1 Proportion of Business with a local area network (LAN)

Based on location, Figure 2.10.2 shows that the percentages of companies LAN users vary depending on location. The figure shows that the highest percentages of LAN users by enterprise are in Jakarta that is equal to 74 %. The next highest percentage of corporate LAN users is in North Celebes (69 %) and Bali (67 %). While the lowest percentage of companies LAN users are in Papua is only 37%.

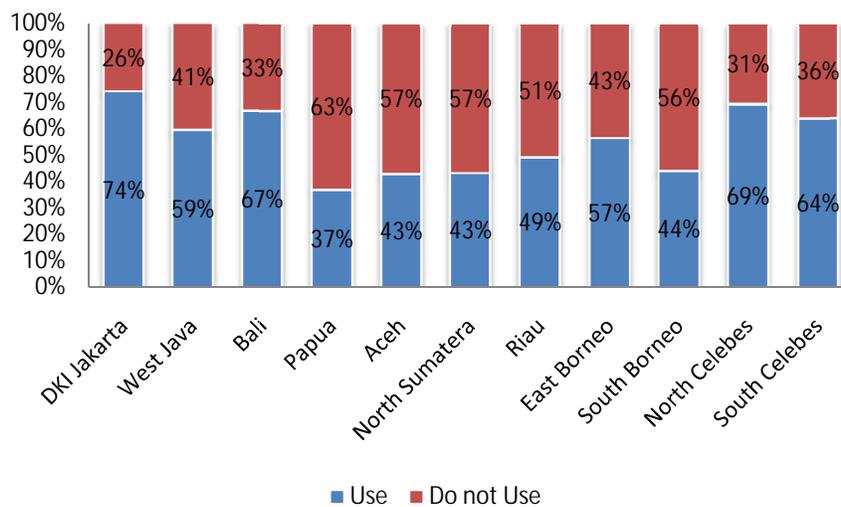


Figure 2.10.2 Proportion of Business with a local area network (LAN) based on Location

The survey results also showed that the percentage of LAN users vary by line of business. Figure 2.10.3 shows that the highest percentage of enterprise LAN users exist in the financial and business services sector, and the sectors of electricity, gas, and water. In both the business sector more than 70 % of companies already using LAN. Meanwhile, the lowest

percentage of LAN users are in mining and quarrying, construction, and manufacturing industries by percentage of respectively 48%, 44% , and 39% .

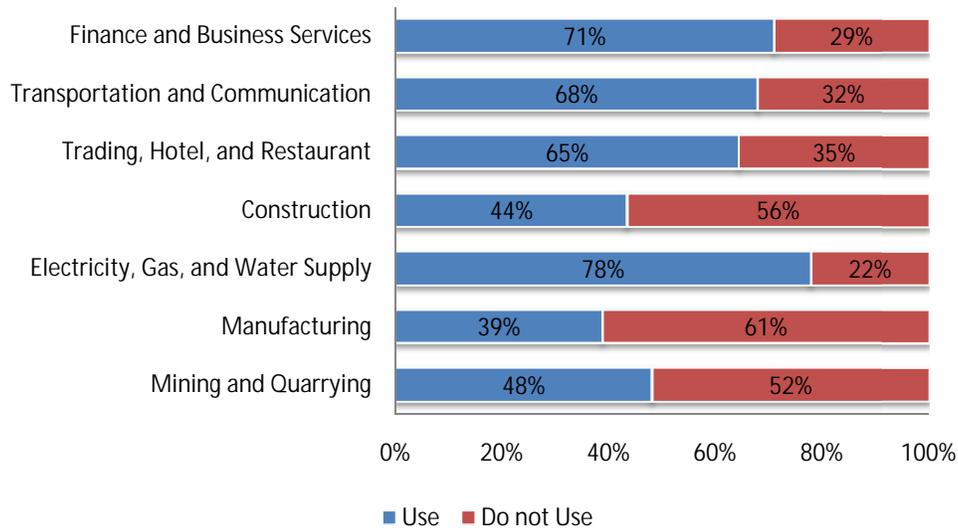


Figure 2.10.3 Proportion of Business with a local area network (LAN) based on Line of Business

When viewed from the ownership of capital, the results of the survey showed that the percentage of companies LAN users vary depending on the status of the ownership of capital. Figure 2.10.4 shows that the majority of FDI and joint venture companies have been using the LAN with a percentage of 81 % and 75 % . While domestic companies who have been using the LAN only 58% .

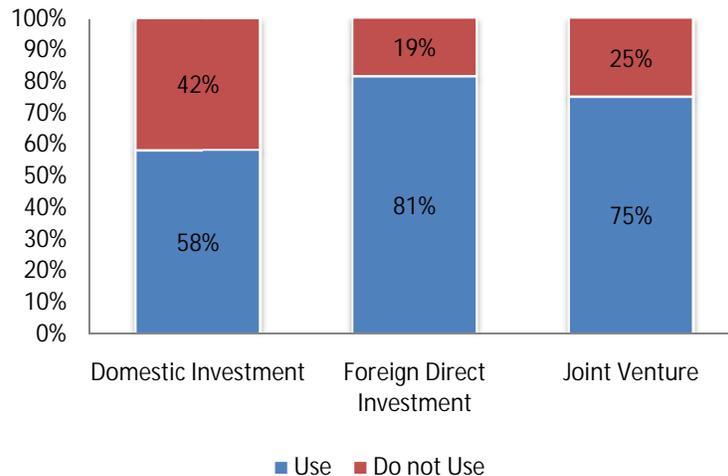


Figure 2.10.4 Proportion of Business with a local area network (LAN) based on Capital Ownership Status

The survey results also showed that the use of LAN influenced by revenue and scale. Figure 2.10.5 shows that the higher the revenue of the company, the percentage of enterprise LAN users is also getting bigger. In the group of companies with less than Rp 100 million of

revenue, is only 41 % had been using LAN. Subsequently the group of companies with a revenue of 100 million - 1 billion and 1.1 billion - 50 billion the percentage of LAN users respectively 55 % and 78 % . Meanwhile, more than 90 % of companies with a revenue of over 50 billion has been using LAN.

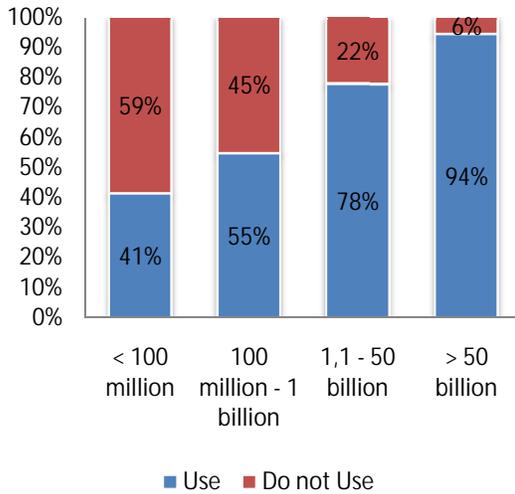


Figure 2.10.5 Proportion of Business with a local area network (LAN) based on Revenue

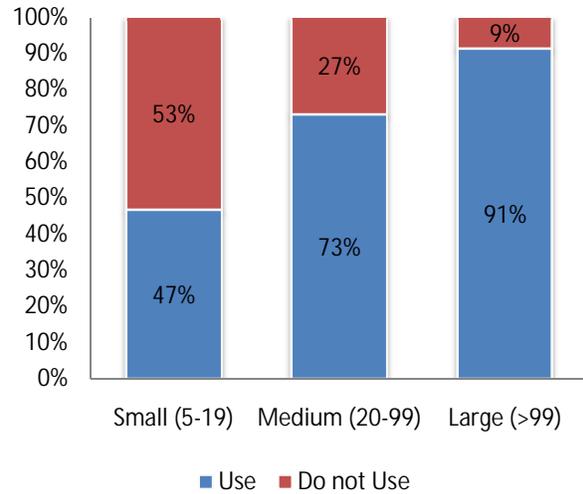


Figure 2.10.6 Proportion of Business with a local area network (LAN) based on Business Size

Similar pattern is also indicated based on scale of the business, the larger the scale, the more company is using the LAN. Figure 2.10.6 shows that only 47% of small companies that have been using the LAN, while the medium-sized companies are 73% of companies are already using LAN. Meanwhile, for large companies more than 90 % of companies already using LAN.

2.11. Proportion of Businesses with an Extranet

The survey results of the use of extranets shown in Figure 11.1 represents that 87 % of companies do not use the extranet. This means that only 13 % of companies use extranets to support its business activities. This condition implies that most companies do not use the internet facility protocol is intended to securely share business information with suppliers, vendors, customers or other business partners.

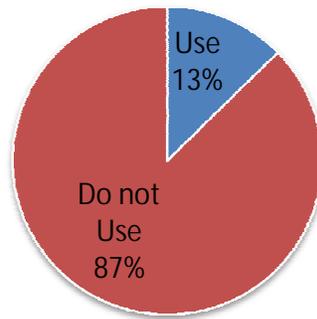


Figure 11.1 Proportion of Businesses with an Extranet

Based on the location, the company extranet most users are located in East Kalimantan, South Sulawesi and Jakarta, with a percentage of 20 %, respectively, 20 % and 17 %. Aceh (3 %), South Borneo (3 %) and Papua (4 %) is the province with the fewest number of companies using the extranet.

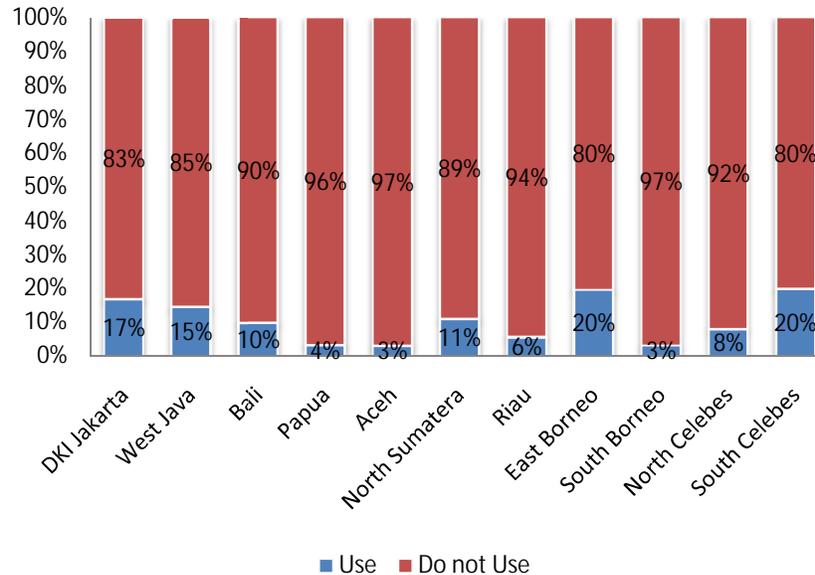


Figure 2.11.2 Proportion of Businesses with an Extranet based on Location

Further search for extranet users based on capital ownership, business, employee and revenue shows several things: the largest proportion of users extranet is a joint venture company that is 28 %, followed by the FDI company and, the least is the domestic company. Most business sectors utilizing this technology are electricity, gas and water supply field (26 %), followed by the services trade, hotels and restaurants (14 %).

Furthermore, in Figure 11.3 also shows that there is a relationship between revenue and the proportion of the workforce with corporate extranet users. The higher the revenue, and the more the amount of employee, the greater the proportion of corporate extranet users. This condition indicates that, compared to the small and medium scale enterprises, large -scale enterprises (seen from the revenue and employment) have a higher requirement for secure coordination with external parties. For these companies, the use of extranets can accelerate the sharing of information, more effective and safer.

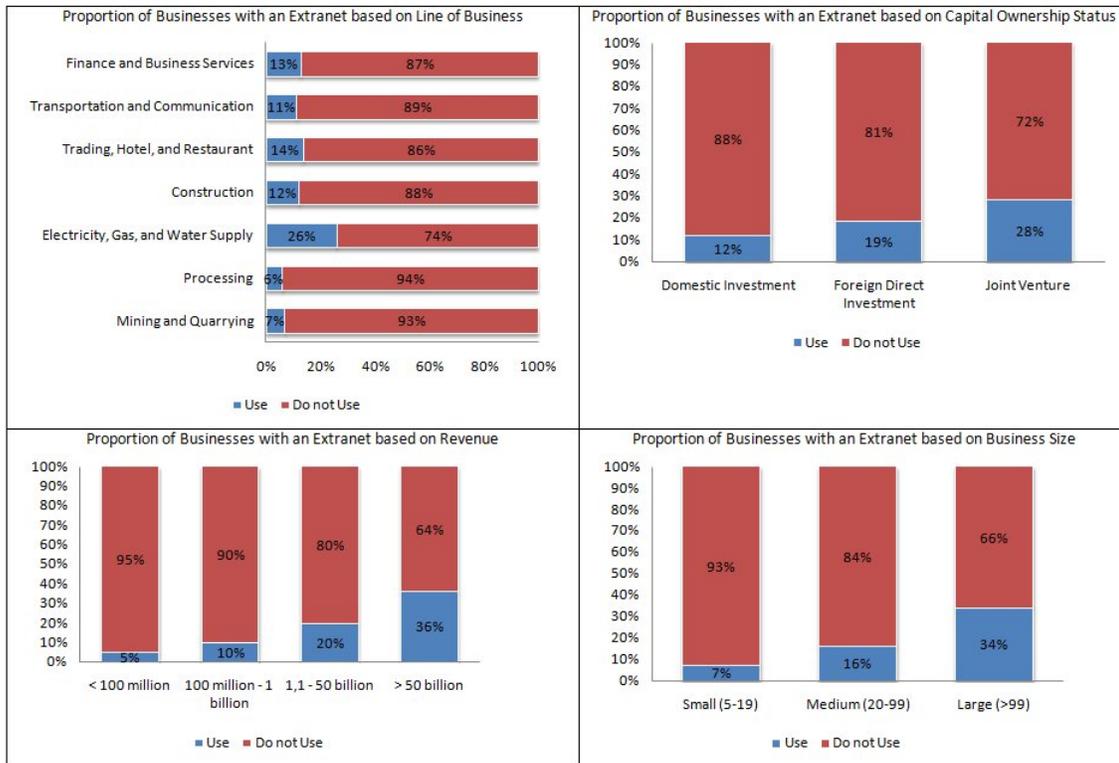


Figure 2.11.3 Proportion of Businesses with an Extranet based on Capital Status, Business Sector, Revenue, and Business Scale

2.12. Proportion of Businesses using the Internet by the Type of Activity

Overview of the activities of Internet users is shown in Figure 2.12.1. In the figure, there is 10 successive activities ranging from the most frequently performed by the company. The ten activities are: (1) sending and receiving email, (2) looking for information about goods or services, (3) seeking information about government organizations, (4) internet banking; (5) Posting messages/information through blogs, online discussion, (6) providing services to customers; (7) Teleconference via VoIP ; (8) communicating with government organizations; (9) recruiting and (10) provide training to the employees.

From the figure, it demonstrate the high percentage is on the activities of sending and receiving email with 96%, and followed by looking for information about goods and services with 83%. Other activities with high percentage is finding infomation about government organization and internet banking, and the other activities not more than 50% percentage example for activities recruiting new employee, offer/sell products online, etc.

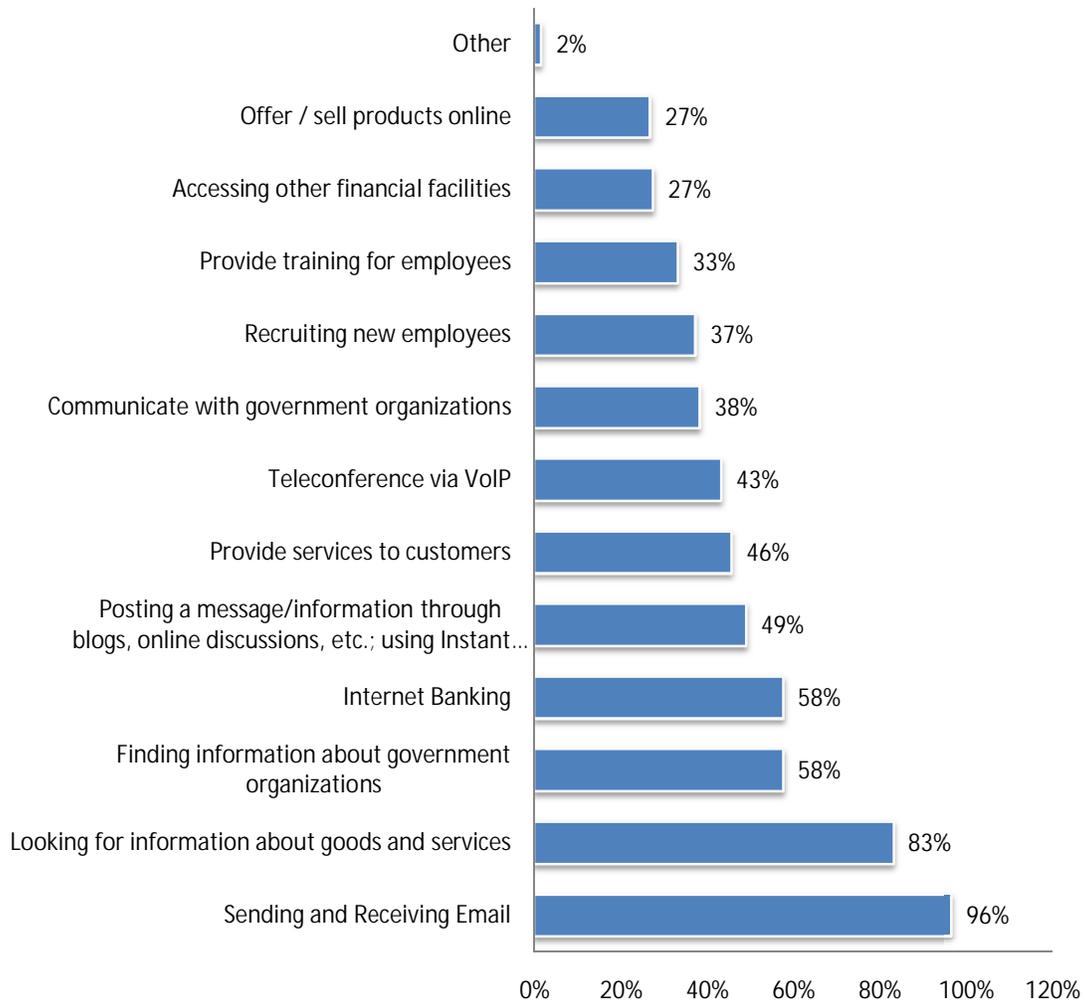


Figure 2.12.1. Proportion of Businesses using the Internet by the Type of Activity

III.DISCUSSION

1. At the time of the survey, there are adjustments in sampling methods to sample at each company in selected provinces with non - probabilistic sampling while maintaining the proportion of samples in each sector in each province.
2. Based on survey results, obtained some important points regarding the usage of Information and Communications Technology (ICT) in the business sector in Indonesia. The survey results showed a high percentage, 92% of business surveyed has use computer to support their company activities. This was also followed by the use of the Internet by companies with 85%. The use of ICT in the business sector in Indonesia provides an overview ICT infrastructure support that needed including fiber optic (FO) infrastructure development in Indonesia which is still ongoing, the support

on infrastructure could increase the usage of ICT in business sector because of the availability in the region.

3. The survey results showed that the ratio of persons employed routinely using computer to do their work reach 0.34. Ratio of employee using computer and using internet based on survey results demonstrate the variate value, to an area that has many more business sectors have ratio of employee more small if it is seen by the region, but when compared to the overall sample ratios for each region it demonstrate accordance with the conditions of the sample distribution. This can be justified by the purpose of this survey to see the condition of each representative of the region for the ict usage on business sector, so on data processing we compare it by the total of business sector per region.
4. Proportion of Businesses with an Intranet demonstrate the highest usage rates occurred in finance and business services company field, with 65% of companies in this line of business using the Internet to support their business activities. Then followed by the electricity, gas and water supply (90%), and transport and communications field (60%). Business size also has a positive effect on the level of intranets usage on corporate. The larger the size, the greater the percentage of companies that use the intranet. Companies that use the intranet on a small-scale enterprise group amounted to 42%. The number of companies that use the intranet to increase in medium-scale enterprises, which is as much as 57%, and on a large scale enterprise increased to 77%.
5. Web-presence enables the company to provide information to consumers or business partners. The percentage of web-presence ownership on the transportation and communications and the electricity, gas, and water supply field are on 56%. More than half of companies in the financial and business services field (53%) also have a web-presence. The survey results also showed that ownership of web-presence is influenced by the amount of the company's revenue and business size, it is support by the percentage of companies who have a web-presence with revenue less than Rp 100 million is only 29%. Meanwhile, a group of companies with revenue Rp 1.1 billion - Rp 50 billion and Rp 50 billion above, the larger percentage of companies that have a web-presence is respectively 57% and 70%.
6. Based from survey result, proportion of business receiving order over the Internet demonstrate that there are still many companies (53%) who do not use the Internet for ordering goods or services activity, while 47% have used the Internet in order for the goods and services offered. Meanwhile, from survey result demonstrate proportion of business placing order over the Internet has describe that 56% of companies in the 11 areas surveyed use the Internet as a medium to offer goods and services which is their product while 44% do not use it. From the results of this survey, the use of the Internet to offer goods or services is higher compared to receiving goods or services.

7. The use of the Internet by type of access to the business sector in Indonesia seemed dominated by Fixed Broadband, it is equal to 84 %. Fixed broadband usage patterns showed a similar trend if based business scale and revenue of the company. The higher the revenue and the greater number of the company's workforce, the possibility of using the type of fixed broadband Internet access will increase, which is followed by the use of mobile broadband. The narrowband type is the least used by the business sector in Indonesia.
8. The survey shows that the usage level of Local Area Network technology by the business sector is to reach 60% or more than half of companies in Indonesia. LAN usage is dominated by large-scale enterprises, with a percentage of more than 90% if based on revenue and the number of employee.
9. Comparing to the usage of LAN and Intranet technologies, the usage of Extranet by the business sector in Indonesia is still relatively low, or by 13 %, in supporting of its business activities. Similar to the pattern of LAN technology usage, the usage of extranet is also dominated by large -scale enterprises.
10. The activity of business using the internet demonstrate the high percentage for sending and receiving email with 96%, meanwhile the other activity using internet related to the company, such as recruiting new employee, sell/offer a product, provide services to customers are below 50%. This demonstrate that activity using internet dominate by receiving/sending email, on this point is related to the communicate between business with an email to support their activities.