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THE USAGE OF ICT BY
HOUSEHOLDS AND INDIVIDUAL IN INDONESIA

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I.   INTRODUCTION

This paper presents an overview of patterns of access and use of ICT by households and individuals in Indonesia based on the main indicator developed by International Telecommunication Union (ITU). To measure access and usage of ICT by households and individuals ITU ditermine 12 indicators consists of 6 indicators of ICT access by households and 6 indicators of ICT usage by individuals. Fundamental differences in terms of access and the user is referring to the availability of access to ICT in the home while the user is an individual one or more household members is access at home or anywhere. (ITU, 2010).

Patterns of access and usage of ICT sector and individual households are presented based on the results of a survey in 2011 conducted by Research and Development of Human Resources Agency - Ministry of Communications and Information Technology Republic of Indonesia. Individual samples were selected based on a stratified random method, a random sampling method, but a representative representing the entire population.

Information identified in this survey is about (1) radio ownership, (2) ownership of television, (3) phone ownership, (4) computer ownership, (5) an individual user's computer, (6) ownership of internet access, (7) individual internet users; (8) the location of individuals accessing the Internet; (9) internet access activity, (10) individual cell phone users; (11) type of internet access, and (12) the frequency of accessing the internet.

Access and Usage of ICT Survey by Households and Individuals in 2011

Based on the results of population census 2010 the Central Statistics Agency (BPS), has been ditermined 10,000 sample households based on population density in each province. The sample was selected proportionally based on population density in each province, city / county, and districts are selected, taking into account the sampling error of one percent. Of the 10,000 questionnaires distributed directly through an interview a number of 89.95% or 8995 are valid. The survey showed that about 98.60% of households have access to ICT at home

Determination of the sample using four clusters in each province, the cluster north, south, west and east. Each cluster consists of a collection of some cities and counties located in the north, south, west, and east of the province. Then from each cluster were selected a city / county as a representative of each cluster, with the provision if the cluster is found capital of the province, the provincial capital to be chosen as a representative of one cluster. While the other three clusters, may be selected city/county anywhere. Then, from each city/county selected two districts, each of which is close to the city/county and away from the city/county. This is done so that the sample distribution is quite evenly spread across Indonesia. Comparison between sample surveys with a population of Indonesia population censuses of 2010 BPS can be seen in the image below.

Most respondents were 60.32% in Java, respondent in Sumatra as much 21.28%, etc. as shown in Figure 1. Proportion of households is comparable to the population in each island. Java and Sumatra are an island that have the largest population compared to other islands.
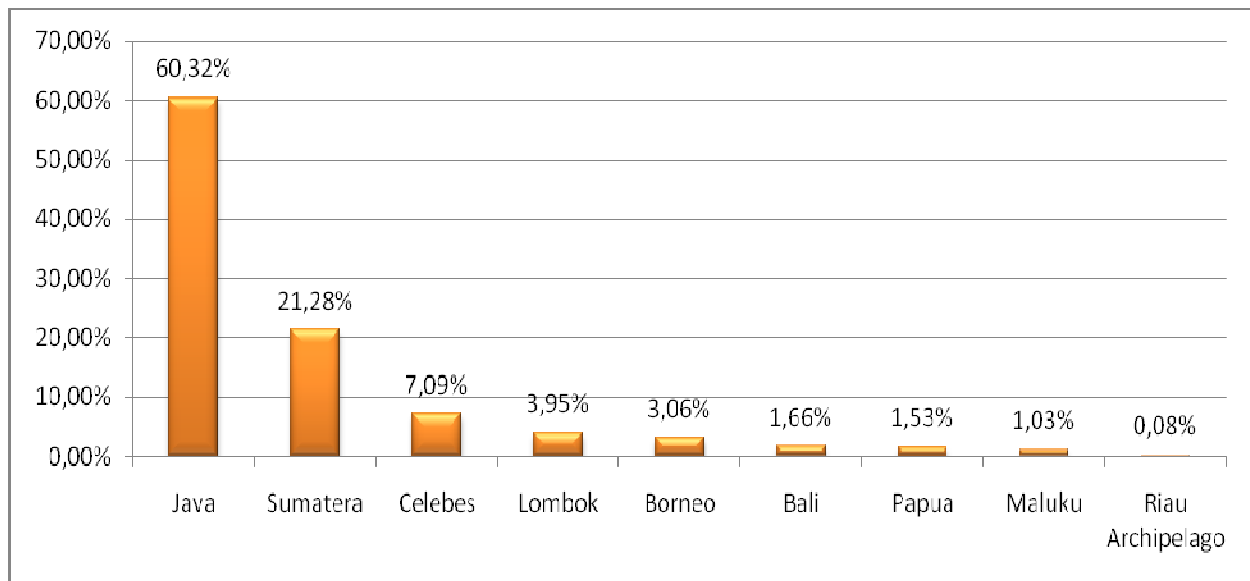
Figure 1.
Distribution of Respondents Based on the Island

II.   RESULT OF SURVEY

2.1.   Proportion of Households Who Have Radio and Television

Figure 2.1 shows the two main indicators (HH-1 and HH-2) are used to measure access to ICT by households and individuals is the proportion of households owning a radio and television. Proportion of households with a radio is calculated by dividing the number of households with radio and the total number of sample households. While the proportion of households with television is calculated by dividing the number of households with television and the total number of sample households. In the picture can be seen that the level of radio ownership is lower than the rates of television ownership. The proportion of households with radio is only about 55.52%, while the TV is owned by 95.56% of respondents.
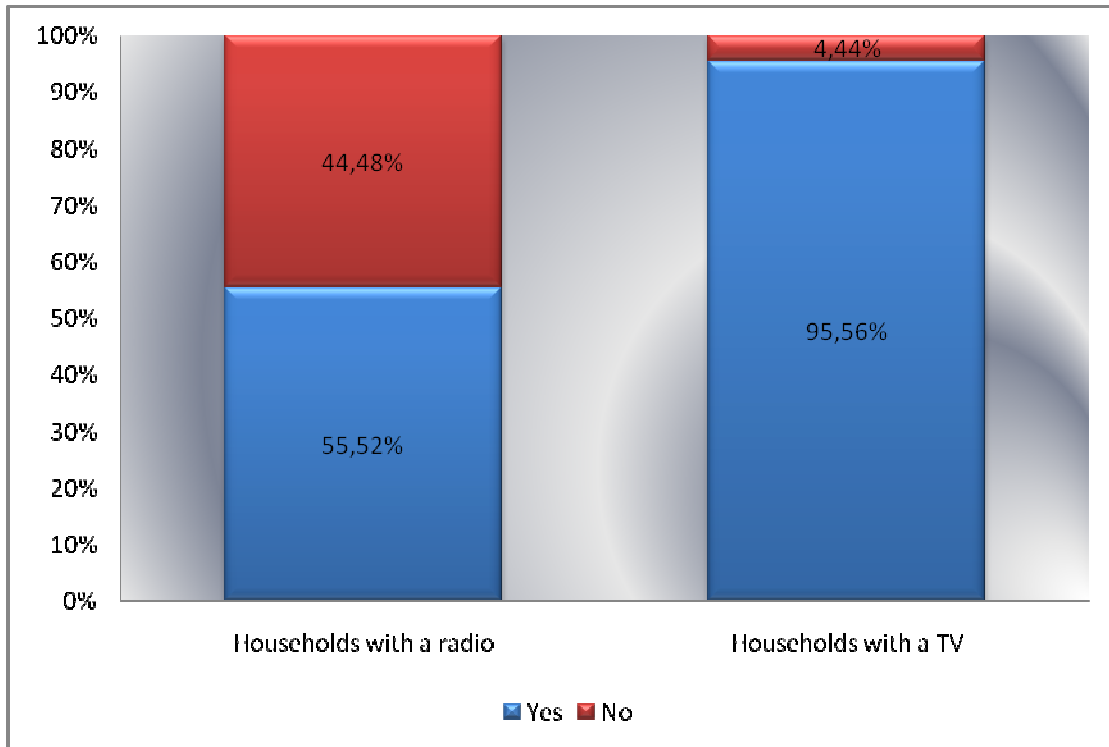
Figure 2.1.
Proportion of Households Having Radio and Television

2.2. Proportion of Households Who Have Phone

The main indicators of access to and use of ICT by households and individuals following is the proportion of households with telephone (HH-3). Proportion of households with a telephone is calculated by dividing the number of households owning any type of phone / phone only cable / mobile phone only / both wired and mobile phone and the total sample of households. As with television, telephone ownership rate in Indonesia is also very high. Most (90%) of respondents claimed to have a phone and only 10% who do not have a phone. If traced further about the type of phone is used, then the majority of respondents chose a cell phone (HP) as a medium of communication, namely 87.64%. While the telephone cable owned by only 25.19% of respondents.
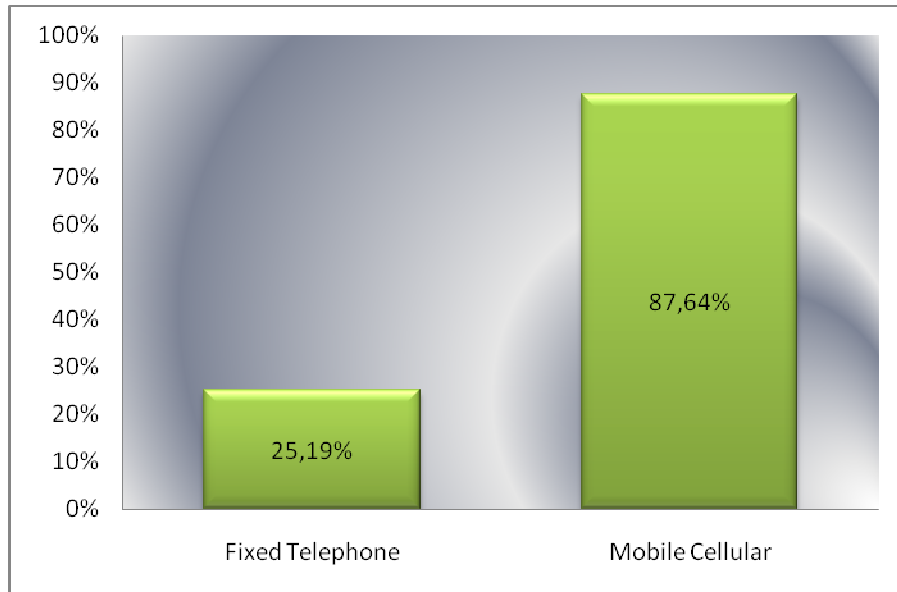
Figure 2.2.
Proportion of Households Who Have Phone

2.3. Rate Ownership and Use of Computers and Internet

Described in this section will describe the four indicators of computer ownership and Internet access by households and the use of computers and the Internet by individual household members. Proportion of households with computers (HH-4) is calculated by dividing the number of households that have computers with the total sample, whereas individuals in the household who use computers (HH-5) is calculated by dividing the number of individuals who use computers in the last 12 months with a total samples. Furthermore the proportion of households with internet access (HH-6) is calculated by dividing the number of households with internet access and the total sample, then the proportion of individuals in households that use the internet (HH-7) is calculated by dividing the number of individuals who use the internet in the last 12 months last and the total sample.

Figure 3.6 shows a comparison between the level of ownership and use of computers and internet access. In the picture can be seen that the level of computer ownership and internet is smaller than the level of use. Based on the level of ownership, the proportion of households owning a computer was greater than that which has internet access. In contrast, the proportion of computer

use actually smaller than the use of the internet. Based on survey results, levels of internet usage is still quite low, around 37.51%, while the remaining 62.49% by not using the internet. This picture seemed to support the low level of internet penetration in Indonesia is only around 16.1% in 2011.
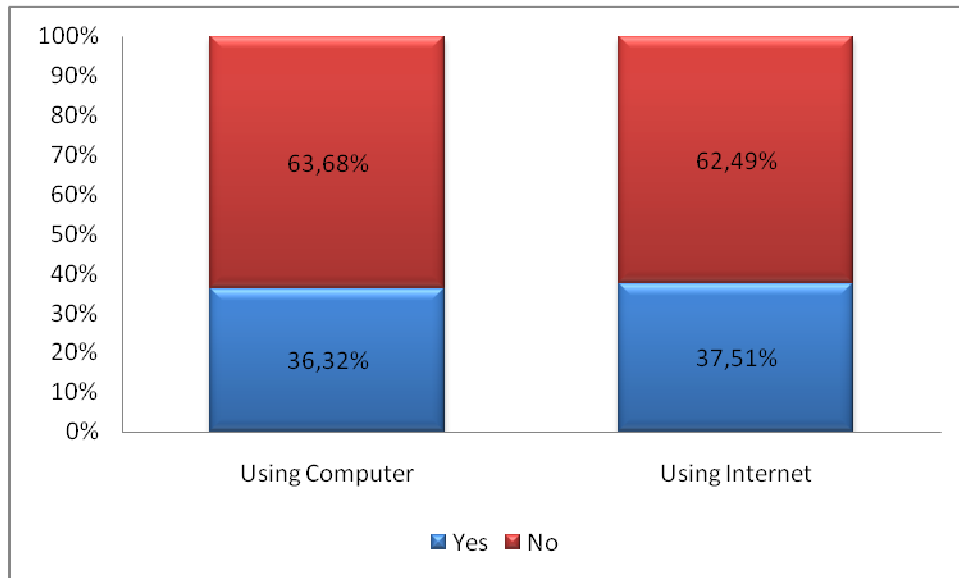

Figure 2.3.
Ownership level and applicability of the Computers and Internet

2.4. Location of Internet use by individuals in 12 Months

Location of individuals using the Internet is the main indicator (HH-8) are calculated based on the proportion of individuals in households that use the internet in the last 12 months. The location was chosen by the respondents to access the internet at home (59%), anywhere via HP (57.88%), and in the cafe (57.62%). The rest, they rely on internet connection at work (29.76%), school / college (28.33%), and connect with a friend / brother (22:32%), as shown in Figure 3.6.
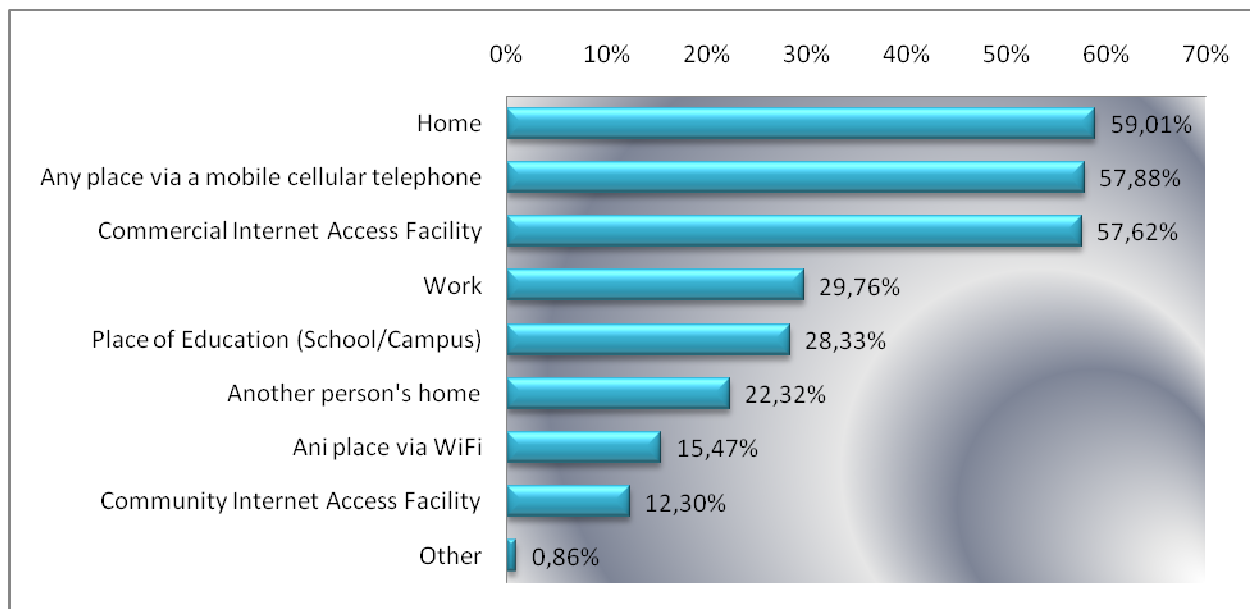
figure 2.4.
Internet Access Locations

2.5. Internet activities by individuals in 12 Months

Activities of individuals in using the Internet is the main indicator (HH-9) are calculated based on the proportion of individuals in households that use the internet in the last 12 months of the total sample. The survey results showed that the activity is most often done when surfing the internet is open social networking site, which is recognized by the 64.43% of respondents. In accordance with the ratings that appear on www.alexa.com, a site that features indicator of a website's popularity, social networking sites are the sites most frequently accessed by Internet users from Indonesia. Proved in the last three months, Face-book ranks first as the most visited sites, while twitter was in position 9.

As seen in Figure 2.5, in addition to opening the social networking site, many other activities that are performed by using the internet to find information about goods / services (48.55%), send and receive email (47.33%), download movies / images (46.98%) , and send messages via Instant messaging by 46.74% of respondents.
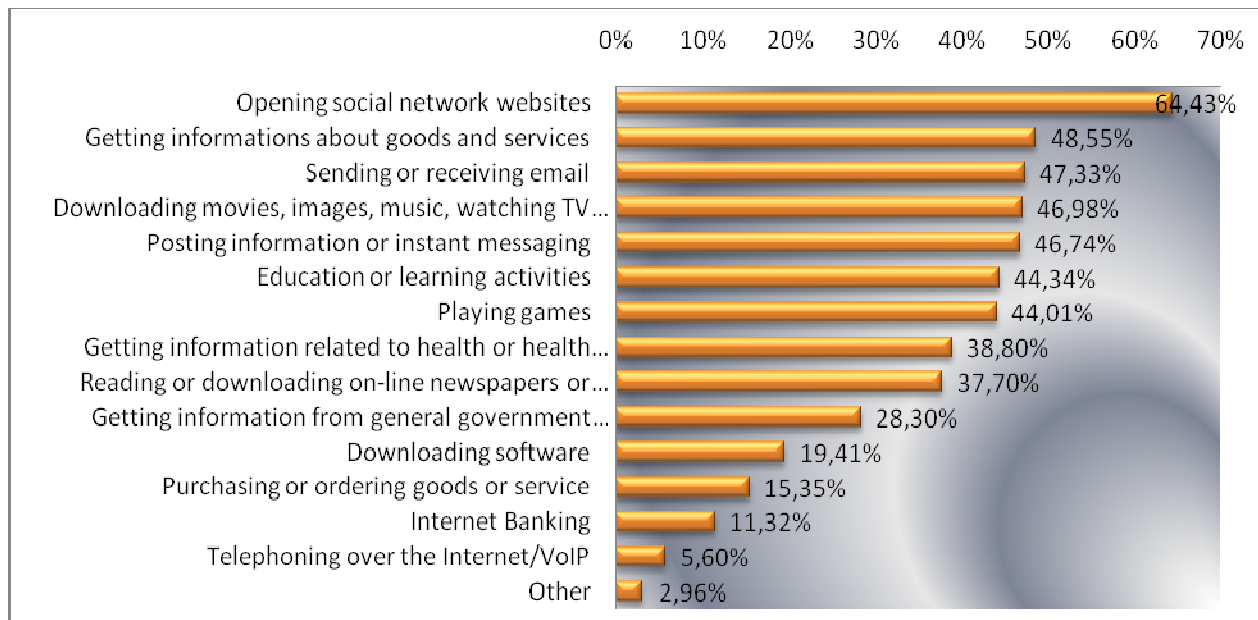
Figure 2.5.
Activities of Internet Access

2.6. Individuals in households Using Mobile Phones

Mobile phone or cellular (mobile phone) when this is not the stuff is expensive and relatively affordable by most people of Indonesia. This fact is supported by data that in 2010, there were 220 million mobile phones are used or 92 phones per 100 inhabitants (ITU, 2011). Given the multiple owners of ITU indicate that as many as 85% of the adult population or 65% of the total population had access to phones. The survey results showed the use of cell phones (HH-10) in individuals is also quite high, around 86%, although this figure is actually slightly smaller than the level of mobile phone ownership in the household. The proportion of mobile phone users is calculated based on the proportion of individuals in households that use cell phones in the last 12 months to the total sample.
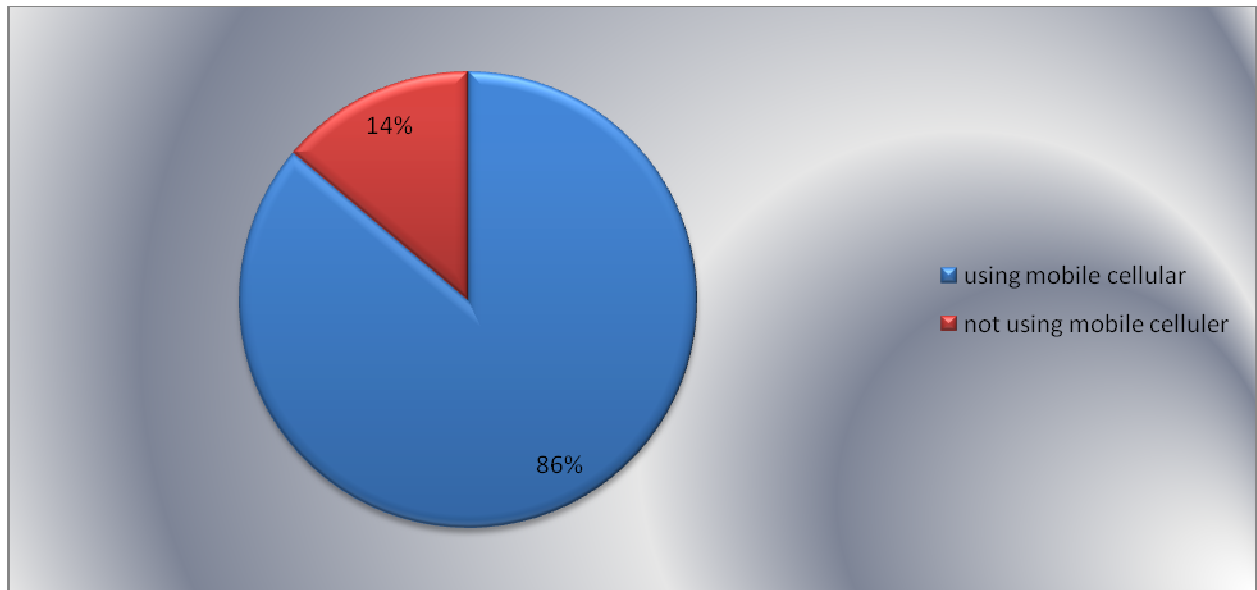
Figure 2.6.
Proportion of Individuals Who Use Cell Phones

2.7. Used type of Internet connection

Proportion of households with internet access by type of access (HH-11) refers to the access service being used. This type of Internet connection used internet users look at the picture 2.7. Connection type is divided into three, namely narrowband, fixed broadband and mobile broadband. Narrowband internet is a network that has a low transfer rate for a channel that is used quite narrow. The term is usually associated with the dial-up connections, such as instant Telkomnet connection. Fixed broadband Internet is a network that uses technology xDSL (Digital Subscriber Lines) / copper cable, FTTH (Fiber To The Home) / fiber optics, leased line, satellite, Wireless Local Area Network and WiMAX. This network has a higher transfer speed for large data path width. While mobile broadband is a high-speed Internet network that uses CDMA technology, HSDPA, EVDO. Generally accessed through portable devices (portable), such as laptops, HP, and so forth. The survey showed most respondents choosing a mobile broadband connection, which amounted to 49.32%. While the narrowband connection to the connection of at least selected respondents, which is only about 25.1%.
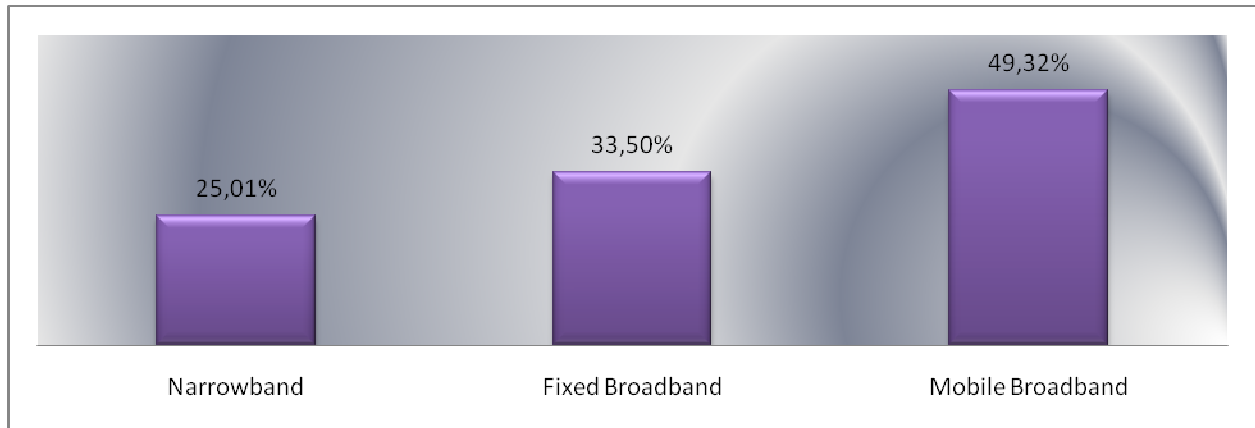
Figure 2.7.
This type of technology the Internet Access

2.8. Frequency of Accessing Internet

Frequency of internet use by individuals in the household is a key indicator of access and use of ICT (HH-12) are calculated based on how often a person uses the internet in a day or a period of one week. Behavior of Internet users regarding the frequency or how often they access the Internet is shown in Figure 2.8. The picture shows that most respondents (68%) only occasional Internet access, which is at least 1 time a week. The rest of 32% of respondents claimed to access the internet every day.
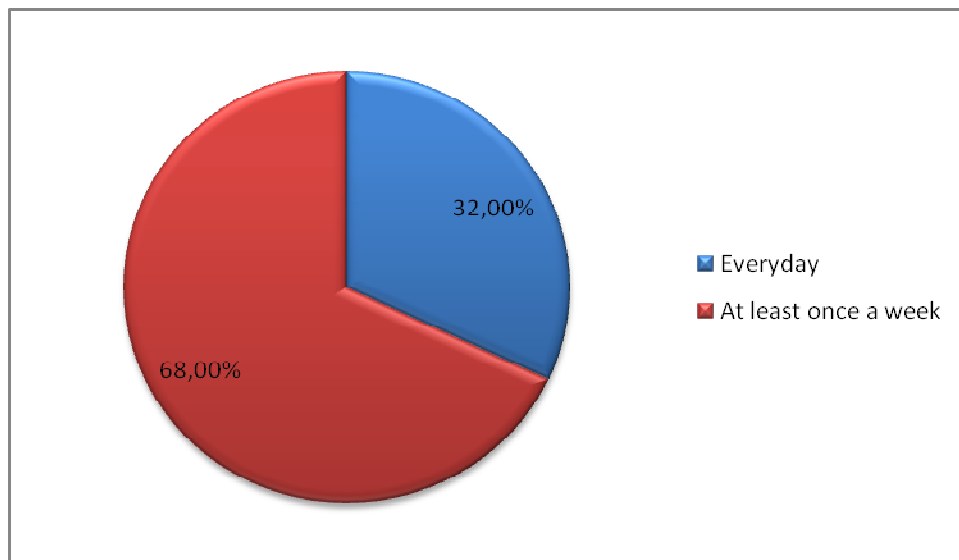

Figure 2.8.
Frequency of Accessing Internet

III. DISCUSSION

1. Based on survey results, obtained some important points regarding access to and use of Information and Communications Technology (ICT) in the household sector in Indonesia: The survey results showed a high of households with access to ICT, that is a number 99% of households surveyed had access to ICT to support their households. Height of households with access to ICT will also occur if the household is classified based on the island.

2. In terms of access to ICT clustering in households, households with radios tend to be too high, which is only about 56%. As with the television, households with televisions far more than the households had radios. The survey results indicate that households with televisions up to 96%. Meanwhile, households with phones also showed a high yield, which is about 90% of households have telephone access. Mobile phone ownership reached 88%, while the telephone cable only reaches 25%. Meanwhile households have telephone access both wired and cellular phones only 23%. Computer ownership rate for households in Indonesia also showed lower results, which is only about 33% of households have computers. Something similar occurred in households with internet access. In Indonesia, households with Internet access amounted to only about 26%.

3. Identification of internet connectivity in households shows that about 49.32% of all households were surveyed using mobile broadband technology. Meanwhile narrowband technology is a technology that at least used by households in Indonesia.

4. Level of use of mobile phones in Indonesia also showed fairly high. The survey shows mobile phone users in Indonesia reached 86%. The high use of mobile phones will also occur if respondents are grouped according to their characteristics, such as gender, age, and occupation.

5. Although computer ownership is still quite low, but the use of computers was slightly higher than its ownership, which is about 36% of respondents use a computer. Something similar occurs in Internet usage, Internet users are slightly higher than the ownership of internet access, that is about 38% of respondents use the internet access.

6. The survey results also show that Indonesia is still lacking optimize the internet. It can be seen from the activity most often performed when accessing the internet is open social networking sites (64.43%) and the frequency of accessing the internet which is very rare.