



Authority for
Info-Communications
Technology
Industry of Brunei Darussalam

BRUNEI DARUSSALAM HOUSEHOLD ICT SURVEY REPORT 2010



AUTHORITY FOR INFO- COMMUNICATIONS TECHNOLOGY INDUSTRY OF BRUNEI DARUSSALAM (AITI)

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MESSAGE FROM THE CHIEF EXECUTIVE OF AITI

With the rapid development of ICT usage in Brunei Darussalam, it is a milestone that the internet society has progressively evolved on adopting ICT products and services ranging from hardware and software applications. This positive growth together with social trends have influenced the level of utilization of ICT. To present this development, AITI as the promoter for the development of ICT industry has conducted the very first “Household ICT Survey” for the year 2010.

With this report it would not only provide basic indicators of the ICT situation in households in Brunei Darussalam but also facilitates an assessment and monitoring of the extent to which the Bruneian households have access to ICT and its related facilities.

The findings from the Household ICT Survey portrays an interesting result which shows that the usage of ICT is as high as more than 60% in both household and individual usage. The response rate throughout the survey is quite encouraging and I would like to thank those who responded to the survey for without their cooperation this survey would not be a success.

I would hope that this report creates a pivotal information resource to the stakeholders of the ICT industry, policy makers and researchers to identify ICT gap and develop plan to bridge gap within the information society.

Haji Yahkup bin Haji Menudin

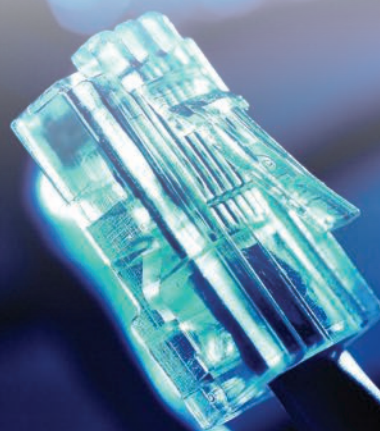
Chief Executive

Authority for Info-communications Technology Industry (AITI)

introduction

The Authority for Info-communications Technology Industry of Brunei Darussalam (AITI) for the first time conducted a Household ICT survey in Brunei Darussalam for the year 2010. AITI has engaged Rennovo Solutions Sdn Bhd to conduct a Household ICT Survey to gather a selected set of ICT related data which enables collection of data on ICT penetration within the households in Brunei; it provides data on the basic indicators of the ICT situation in households, its trends and usage. The Brunei ICT survey covered 8048 households and individuals across the entire country. The purpose of this project is to gather a selected set of ICT related data and carry out an analysis on the data collected.

The survey was divided into two parts – household section and individual section. This allows capturing information about both units, for example how many households have access to the internet (household level), as well as what do internet users actually do when accessing the internet and how frequently do they do that (individual level). Given sampling design, i.e. stratified random sampling, results are representative for both households and individuals.





From the overall questionnaire survey result, the key findings of household section and individual section are stated below:

Household Section

Basically all household have access to electricity, have a TV set and mobile phones.

About half of the households in Brunei have access to the internet.

Within the households with internet access, an average of 4 household members is using the internet.

The majority of households access the internet via fixed broadband.

Households with no internet access claim costs as the main reason.

Individual Section

About 2 out of 3 individuals in Brunei are using the internet.

There are issues with the quality of internet access as well as internet fees.

The ideal fee for internet is on average B\$30.

Most individuals accessing the internet at home or at work.

Main reason for using the internet is mails, news and entertainment.

Individuals not using the internet claim lack of interest, lack of knowledge and costs as key reasons.

Overall, internet usage is strongest correlated to age, education and income. With a personal internet access rate of 67%, Brunei is among the Top 50 countries in the world in terms of internet penetration. It is higher than most Asian countries, Europe (58.4%) and Australia (61.3%) but slightly behind North America (77.4%).

methodology

2.1 Overview

• Topic:	Info – Communications Technology										
• Coverage:	Nationwide										
• Approach:	Representative household survey										
• Sampling Method:	Stratified, multi – stage random sampling										
• Selection of Respondent:	Kish Grid										
• Sample Size:	8,048 interviews (approximate of 10% of household)										
• Respondents:	Household members age 7 – 10										
• Method:	Paper & Pencil Interview (Self – completion)										
• Timelines:	July to August 2010										
• Reporting and statistical units:	Households and Individuals										
• Sampling Error:	1.1 (95% confidence interval for total sample)										
	<table><tr><th>Number Size</th><th>Error</th></tr><tr><td>• 8048</td><td>±1.09%</td></tr><tr><td>• 4000</td><td>±1.55%</td></tr><tr><td>• 1000</td><td>±3.1%</td></tr><tr><td>• 500</td><td>±4.38%</td></tr></table>	Number Size	Error	• 8048	±1.09%	• 4000	±1.55%	• 1000	±3.1%	• 500	±4.38%
Number Size	Error										
• 8048	±1.09%										
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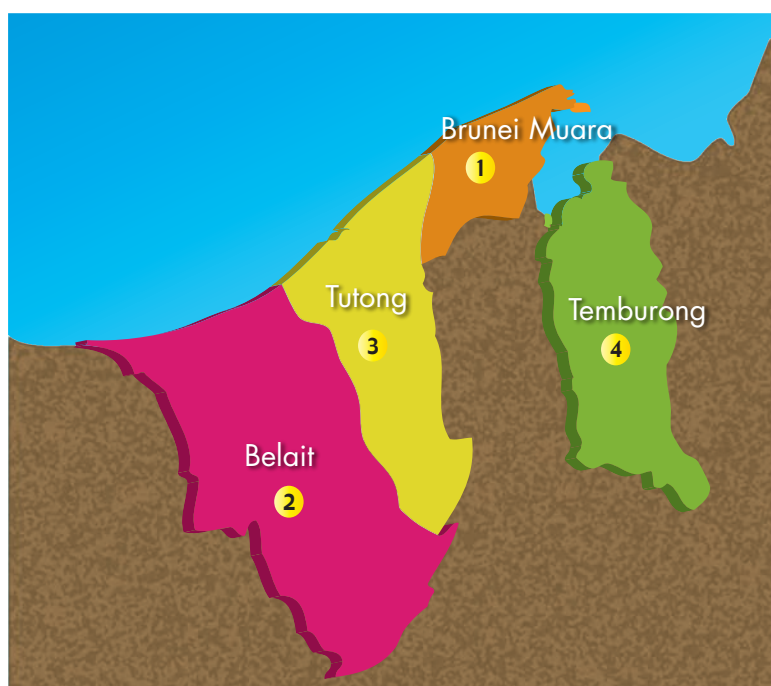
The sampling methodology and approach had to take into consideration the specific situation of Brunei, i.e. its division into 4 Districts (Daerah), 38 Sub-Districts (Mukims) and almost 400 kampungs. To collect the ICT information, a **probability sampling** design is applied. This means that every single unit (i.e. household and individuals) in the sampling frame had a known and non-zero chance of being selected into the survey sample.

Based on available census information about Brunei, it is possible to allocate the respective number of households to be surveyed for each district, mukim and kampong. The smallest sampling unit was a kampong. Selection of households within each kampong was done using a randomly selected starting point, and then following a standard random route approach, i.e. interviewers were advised to contact every number household.

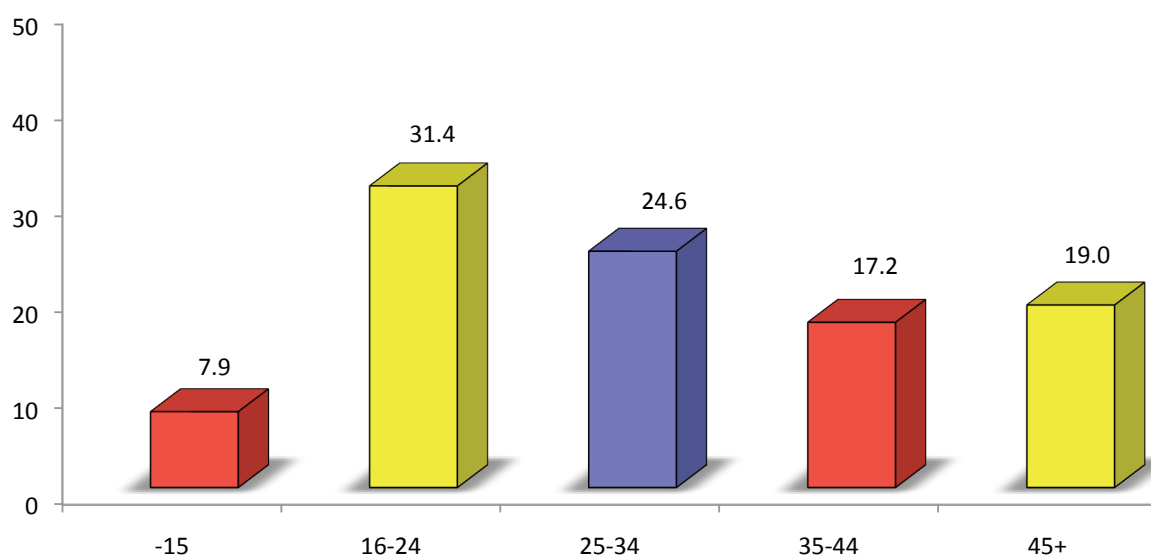
The respondents for the survey were selected among all eligible members of the household using a **Kish tables / Kish Grid**. Kish tables provide a method by which each eligible person in a household has an equal probability of selection into the survey sample. The selected respondent gave then information on a household level (e.g. Internet Access available?) as well as personal level (e.g. what is the internet used for?)

2.2 Geographical Diagram

8048 Interview were conducted across all 4 districts and 38 Mukims. The distribution of interviews across districts and mukims was based on latest available population figures.

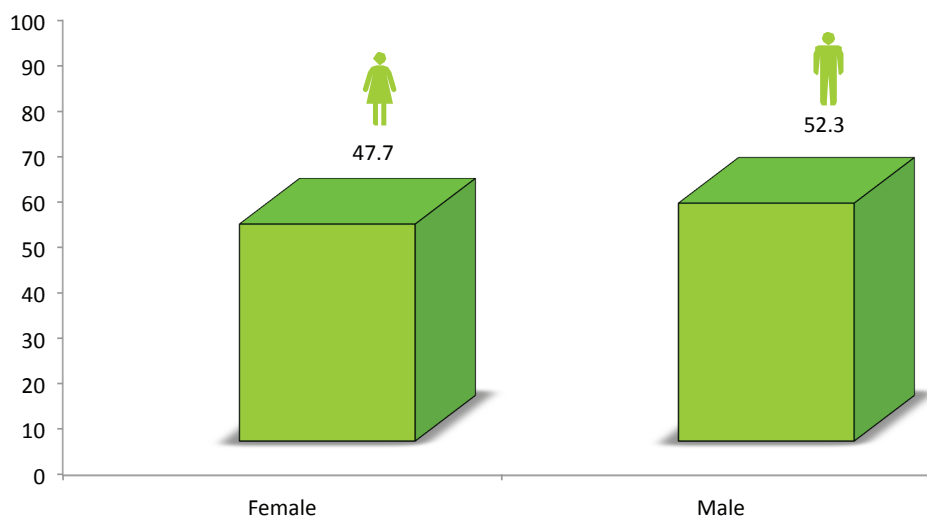


2.3 Structure (Demographic Information)



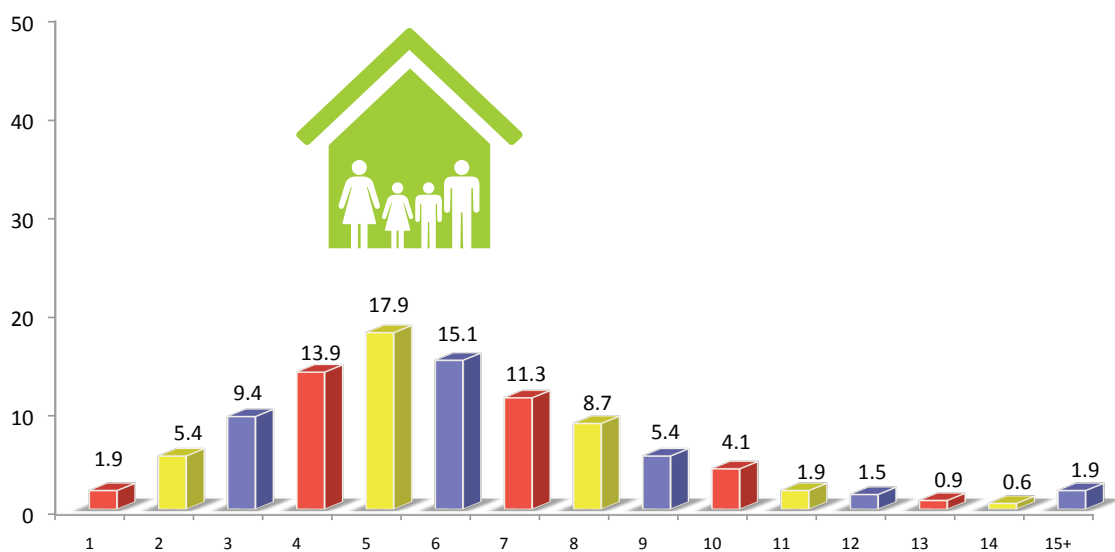
The ICT sample had a good distribution across all age groups – ranging from age 7 to 70.

Gender (%)

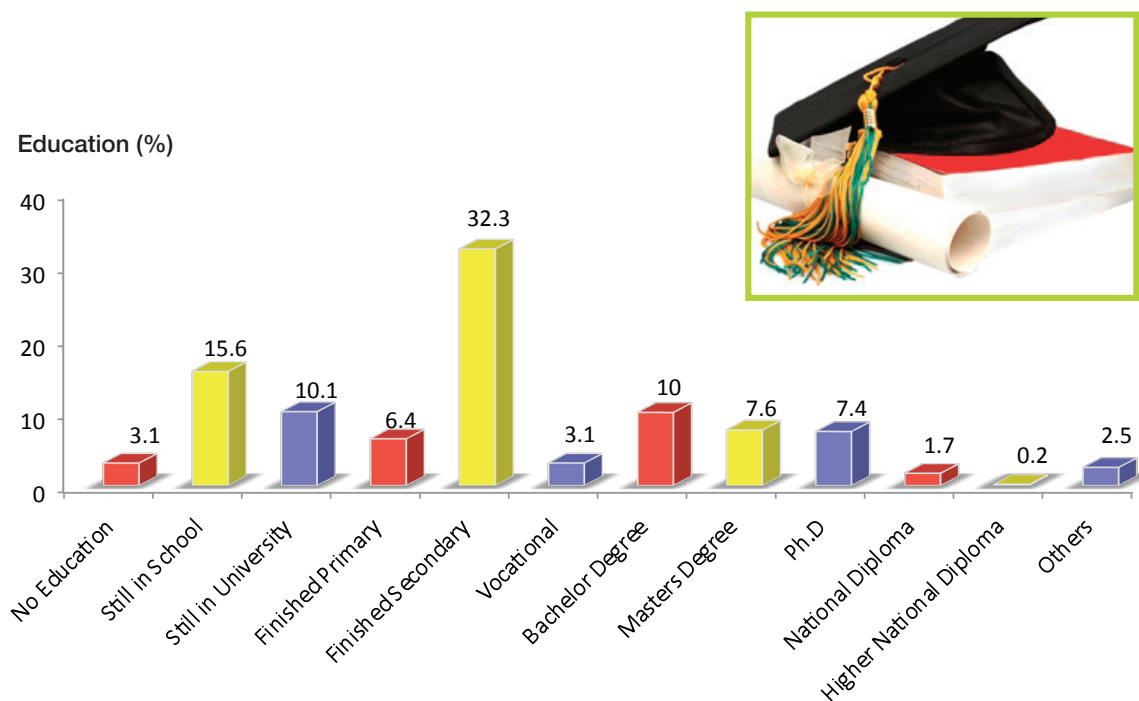


In terms of gender, the sample was almost equally split between male and female respondents.

Household Size (%)



The ICT also shows a good representation of all household sizes – with highest number of respondents coming from households with 5 members.



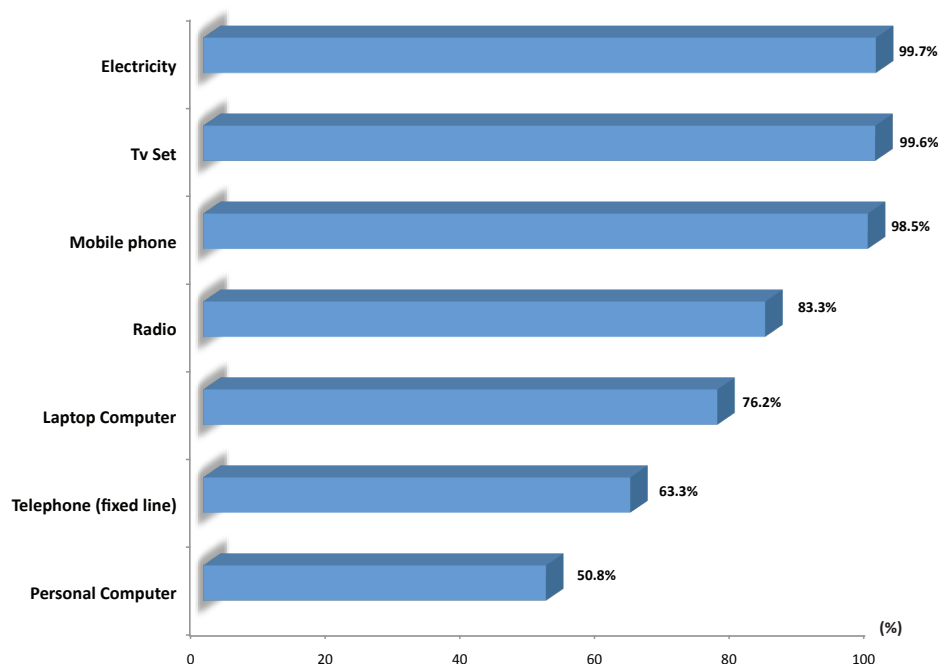
The ICT Survey respondents have all different kinds of educational background.

findings of the household ict survey

3.1 HOUSEHOLD SECTION

3.1.1 Available Services and Devices in Households

Base: Total Sample (N=8048).

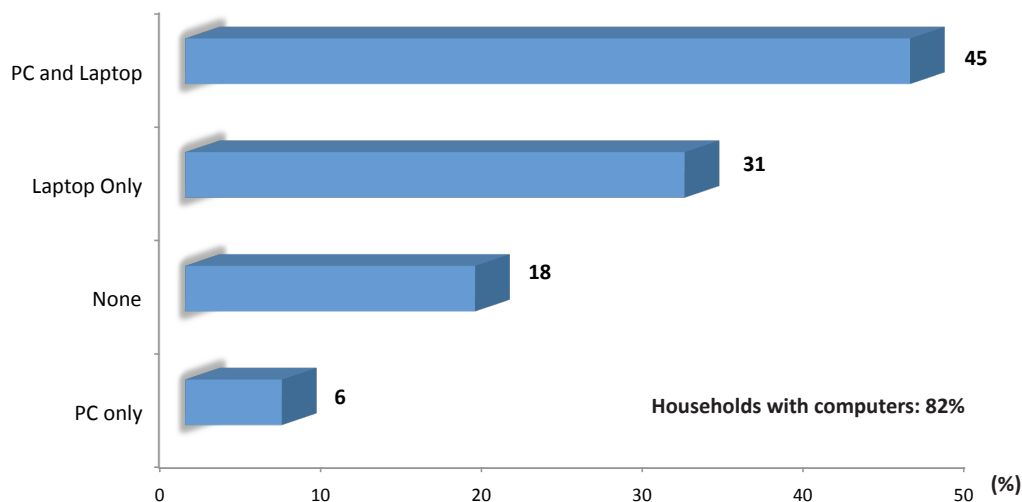


The chart above shows the number of services that are present in each household. Almost all households in Brunei have access to electricity; have a TV set and mobile phones. More than 80% of households do have a radio, 76% a laptop computer, 63% a telephone (fixed line) and about half of all households (50.8%) have a personal computer.

It is interesting to note that personal computers and laptop computers are available especially in the age group of 16-24 years in the Brunei-Muara district. The availability of a laptop computer is decreasing with age, i.e. older people have less laptop computers available in their households. However there is no such correlation with other devices, for example TV set or mobile phones.

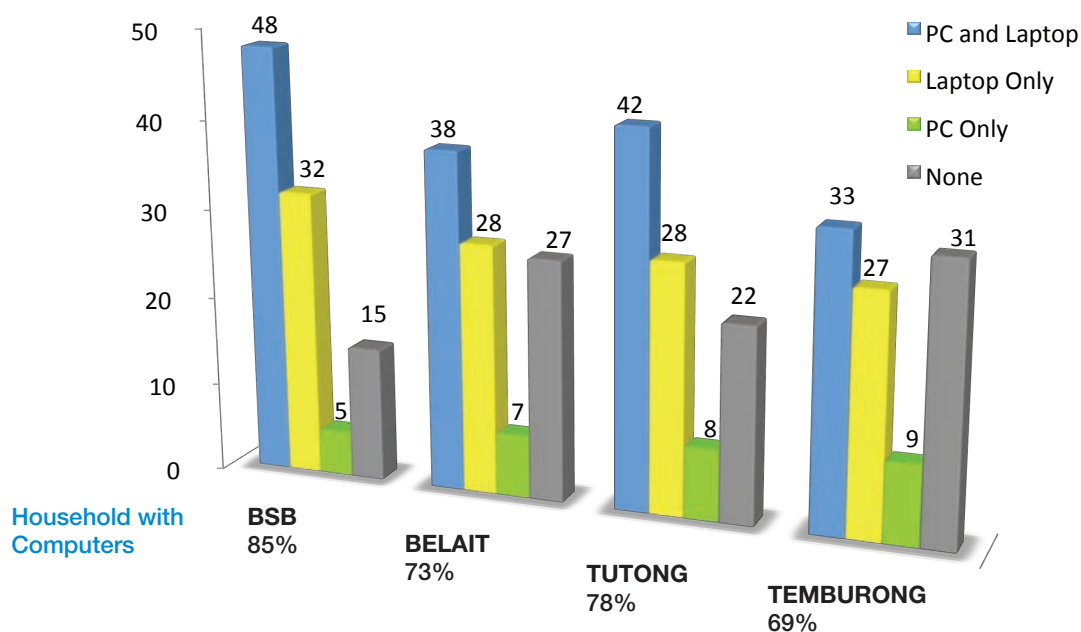
findings of the household ict survey

3.1.1.1 Available IT Devices in Households – PC and Laptop



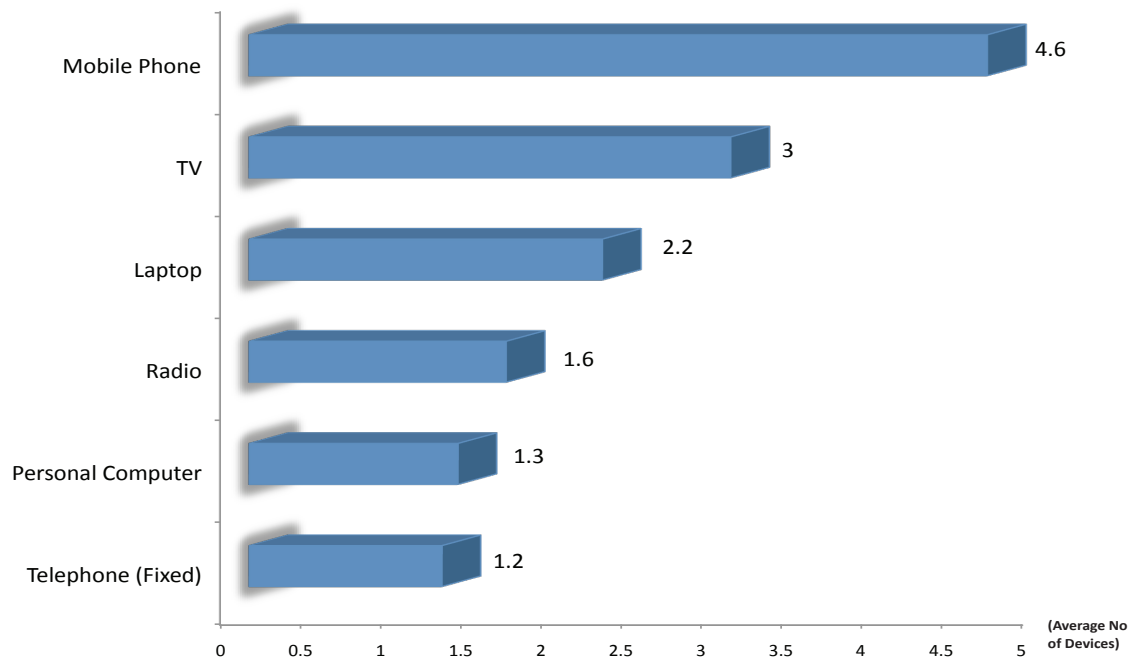
Overall, 82% of households own a computer, regardless of whether it is a PC or a laptop. The household penetration with Laptop computers is 76%, while PC's are found in 51%. About half of all households in Brunei (45%) have both devices (PC and Laptop). About 1 out of 5 households (18%) has neither a PC nor a Laptop at home. 31% of households have only laptops, while 6% have only PC at home.

Below is the computer penetration (in %) for each district. It can be seen that Brunei-Muara has the highest computer penetration which is 85%, followed by Tutong which is 78%, Belait having 73% penetration and Temburong having the lowest computer penetration of about 69%.



3.1.1.2 Number of Devices in Households

Base: Total Sample (N=8048).



Households have on average 4.6 mobile phones in use, 3 TV sets and 2.2 laptop computers. However, when it comes to personal computers and telephones (fixed line), households usually only have one such device.

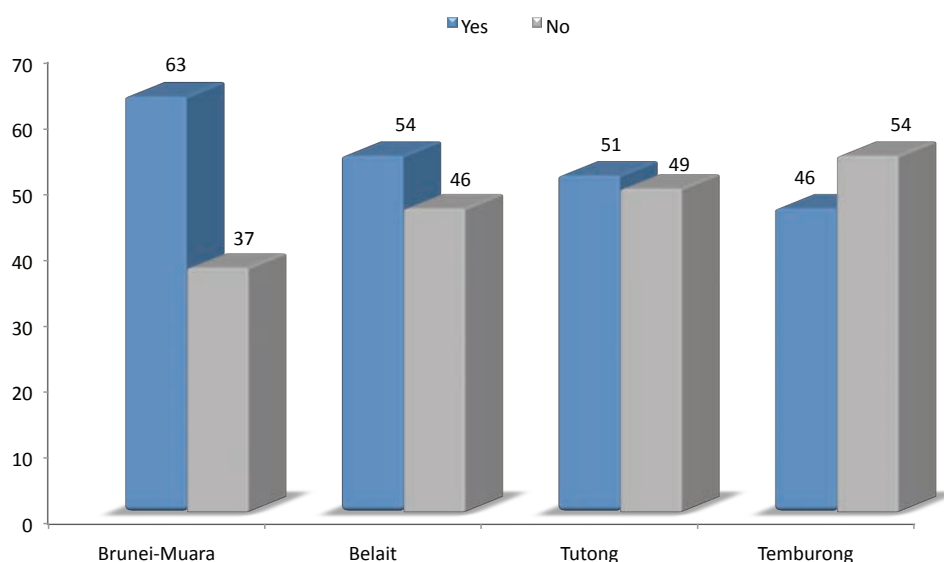
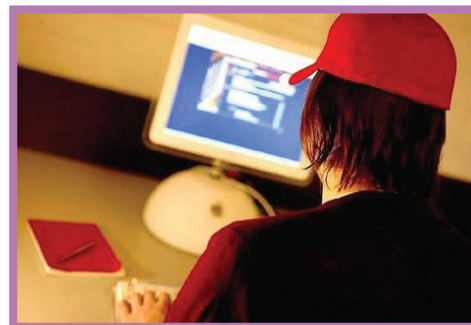
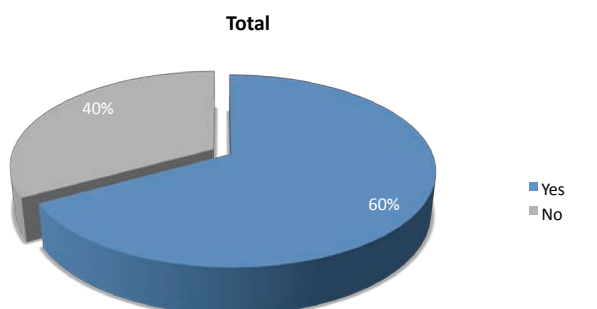


findings of the household ict survey

3.1.2 Internet Access in Household

Base: Total Sample (N=8048).

Internet Access in Household (including mobile access)



The chart shows the availability of household internet access. About half (60%) of all households in Brunei currently have access to the internet.

Access to the internet is especially high in households with children still in school/university and in high-education households. Access to the internet is also strongly correlated to household income. High income household shows high internet penetration.

Internet access is also correlated to age – with households having members aged 16-24 years have the highest access rate. Internet access is highest in the Brunei-Muara District.

Access to Internet	Total Brunei %	Total Belait %	Belait Mukims			
			Bukit Sawat %	Kuala Balai %	Melilas %	Labi %
Yes	60	54	20	75	100	32
No	40	46	80	25	0	68

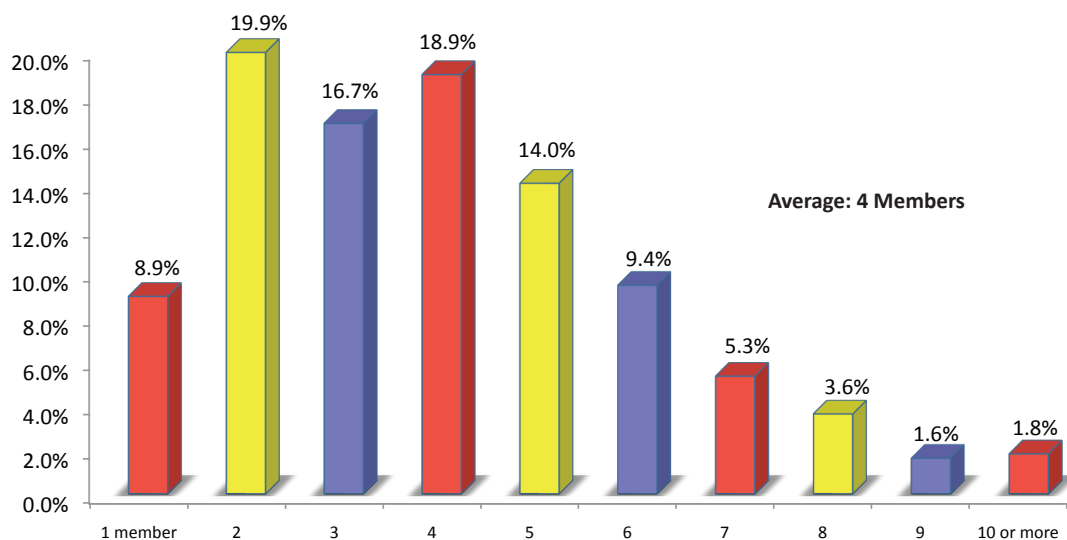
Access to Internet	Total Brunei %	Total Tutong %	Tutong Mukims			
			Tanjong Maya %	Lamunin %	Rambai %	Ukong %
Yes	60	51	59	24	3	19
No	40	49	41	76	97	81

Access to Internet	Total Brunei %	Total Temburong %	Temburong Mukims			
			Amo %	Labu %	Bokok %	Apoi %
Yes	60	54	20	75	100	32
No	40	46	80	25	0	68

findings of the household ict survey

3.1.3 Amount of Household Members Using the Internet

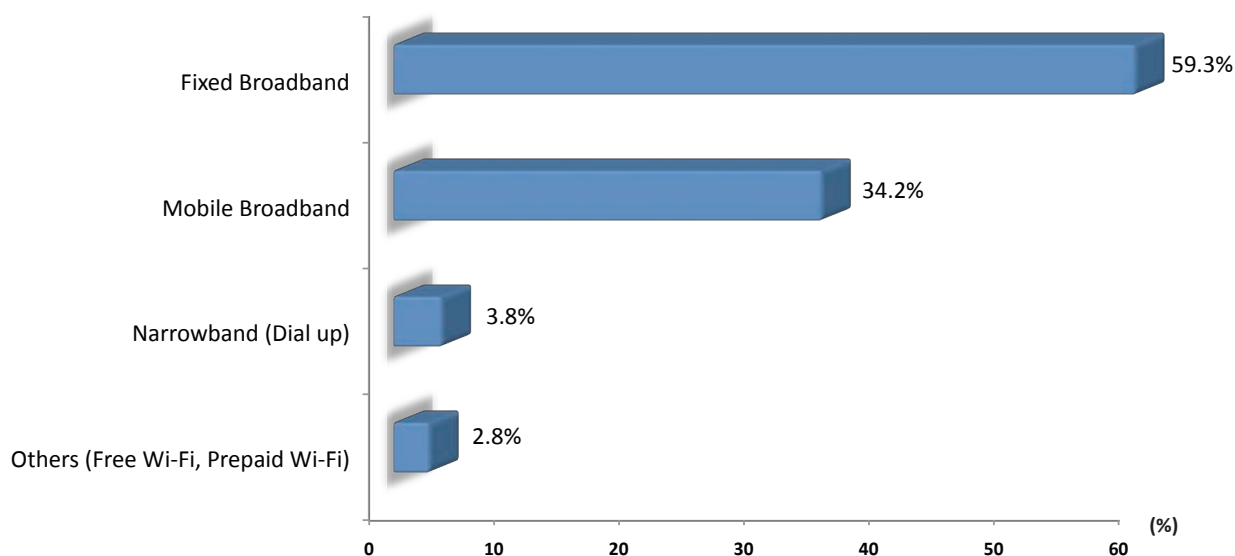
Base: Household with Internet Access (N=4111).



The above chart implies on how many members are accessing the internet in each household. On average, there are 4 household members accessing the internet.

3.1.4 Type of Internet Access

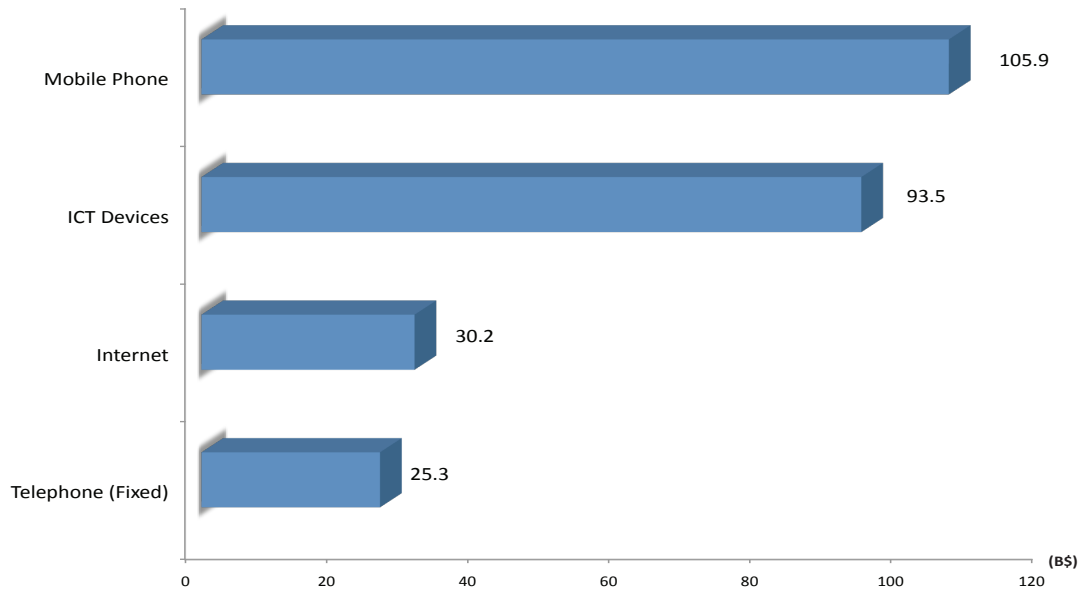
Base: Household with Internet Access (N=4111).



The chart shows the type of internet access available in the household. The majority of households (59.3%) are using fixed broadband to access the internet, followed by 34.2% using mobile broadband. Other means of accessing the internet are hardly used.

3.1.5 Monthly Household Spend on ICT Devices

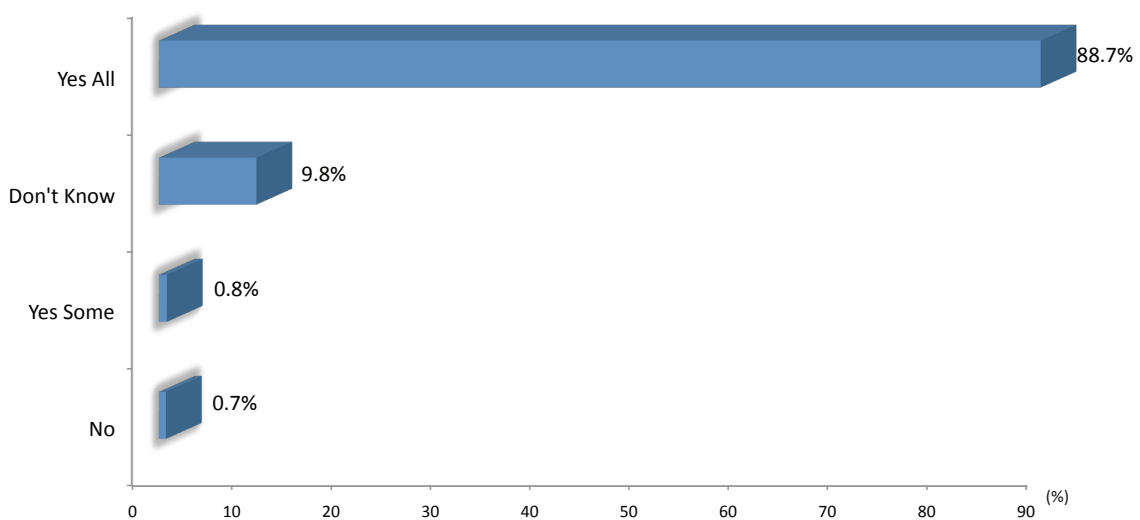
Base: Household with Access to these devices.



The above survey chart shows the monthly devices expenditure per household. Monthly expenditure on ICT devices is highest for mobile phones; the average amount per household is B\$106.

3.1.6 Computer Protection

Base: Household with Internet Access (N=4111).

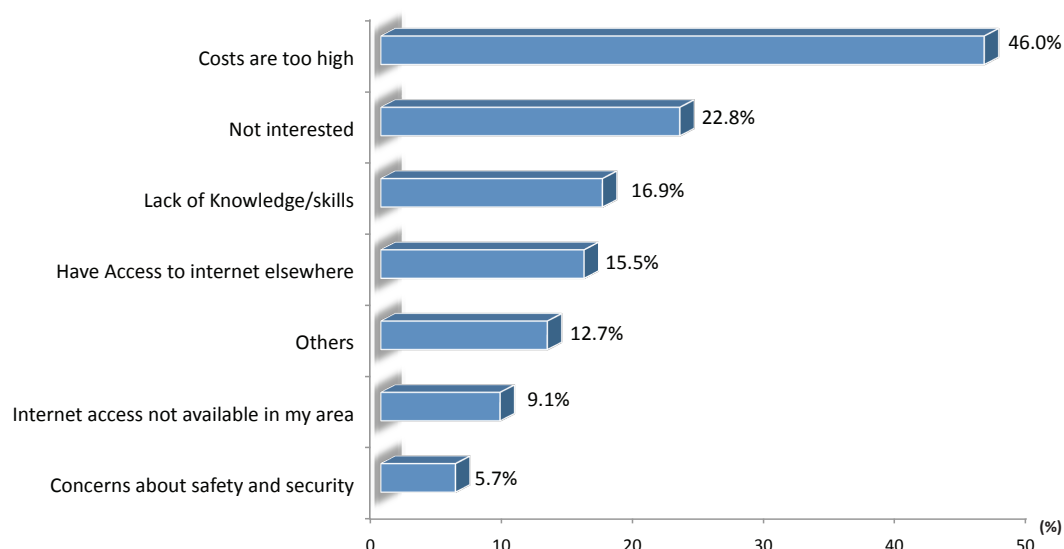


The chart shows to determine whether the household have enforced any security policy in their computers. Most computers are protected by anti-virus software or firewall. Only a small minority does not seem to know or be aware of the potential threat of computer viruses.

findings of the household ict survey

3.1.7 Reasons for No Internet Access in Household

Base: HH with No Internet Access (N=3916).



The survey chart shows the reasons why some households have no internet access. The main reasons for households currently not accessing the internet are costs. About half of households who are not using the internet say “costs are too high” (46%). About one out of five households (22.8%) do not seem to be interested in using the internet, while about 17% claim lack of knowledge as reason.

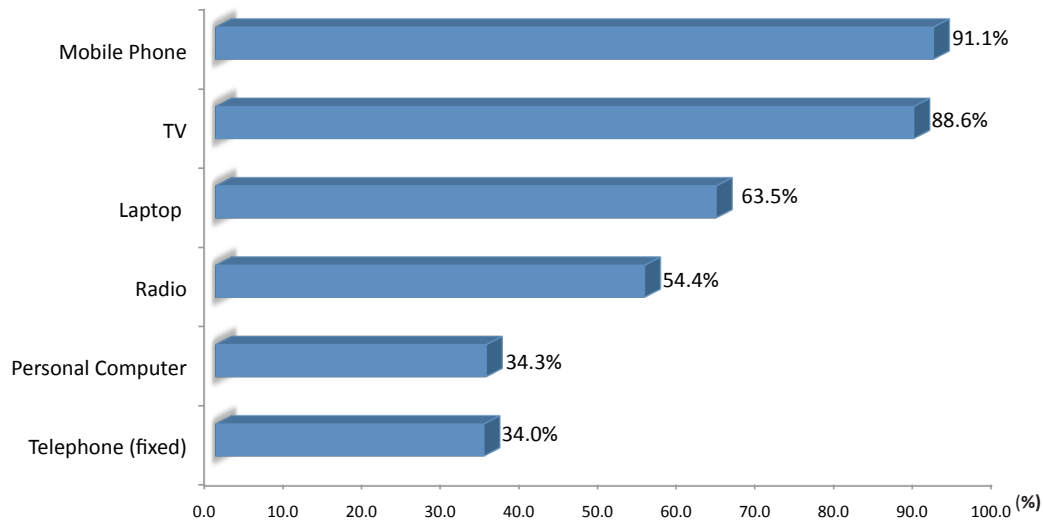
No Access Reasons	Total	Education (Groups)				Age (Groups)					District			
		No	in school	Mid level	high level	-15	16 - 24	25 - 34	35 - 44	45 +	BSB	Belait	Tutong	Temburong
Not interested	22.8	36.2	12.2	25.7	21.0	14.5	15.9	21.4	24.5	34.6	21.2	27.0	25.0	20.0
Costs are too high	46.0	31.9	52.9	46.0	43.2	50.5	51.7	46.3	47.5	36.7	46.8	46.8	39.0	49.2
Lack of knowledge / skills	16.9	30.3	9.5	21.3	6.1	12.2	9.4	15.1	16.0	28.9	13.9	22.1	24.1	18.3
Have access to internet elsewhere	15.5	4.8	20.1	11.7	25.9	14.5	20.7	19.3	13.4	9.1	16.1	13.2	17.8	8.3
Concerns about safety and security	5.7	3.2	7.3	5.2	6.3	6.8	5.0	4.8	7.4	5.3	5.4	5.9	7.5	6.7
internet access not available in my area	9.1	18.6	13.7	6.0	10.9	11.3	10.7	9.7	8.1	7.1	7.6	3.9	22.1	25.8
others	12.7	6.9	13.7	12.2	14.3	15.4	14.8	11.8	12.7	9.7	13.2	11.5	12.9	10.8

There is a clear correlation between having no access to the internet and education, age and district. “Not interested in the internet” is especially high among older households, while lack of knowledge is clearly correlated to education. It seems also that internet services are not available in some areas, especially in Tutong and Temburong District. About 15% of households are saying they have access to the internet at some other place, which is especially the case among better educated households (access at work) as well as for the age group of 16-24 years (access to internet at school/university).

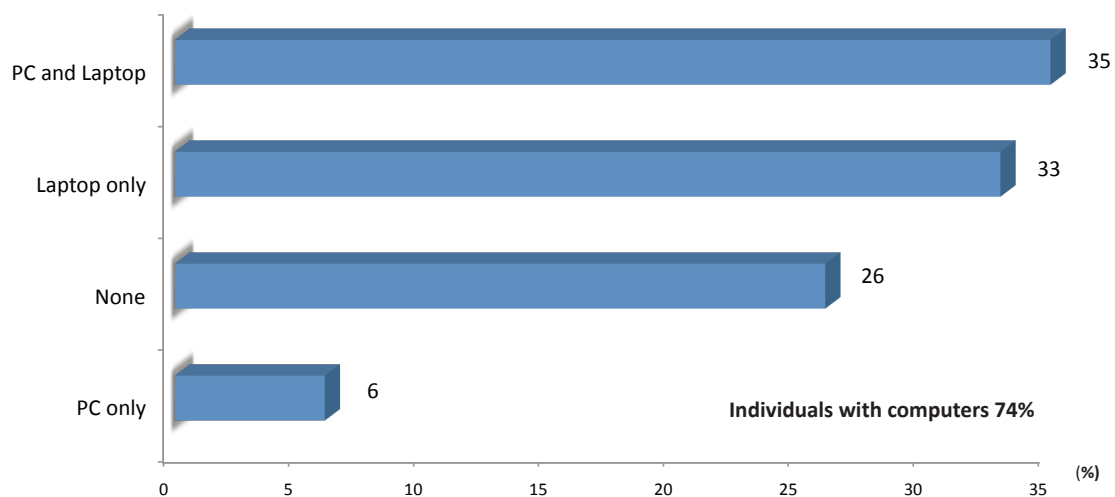
3.2 INDIVIDUAL SECTION

3.2.1 Usage of Devices

Base: Total Sample (N=8048).

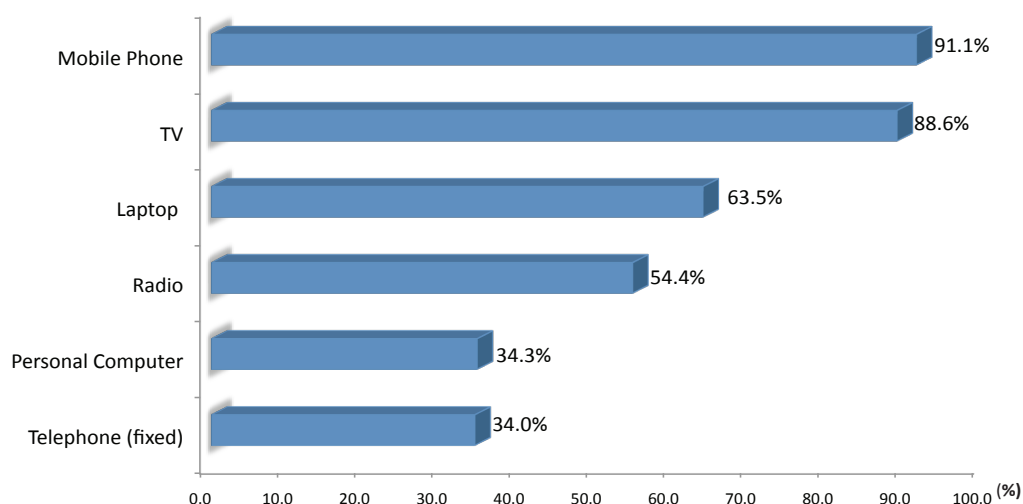


The above chart shows the devices that the respondent has used over the past 12 months. Almost all respondents have personally used a TV and a mobile phone within the last 12 month. A laptop computer was used by 68.1% and a personal computer by 41.1%.



The chart shows to determine whether the household have enforced any security policy in their computers. Most computers are protected by anti-virus software or firewall. Only a small minority does not seem to know or be aware of the potential threat of computer viruses.

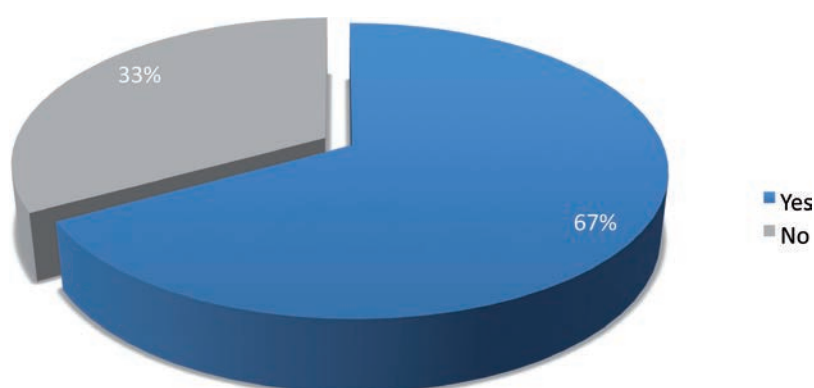
3.2.2 Frequency of Use



The survey chart shows on how frequently the respondent uses these devices on a daily basis. Mobile phones have the highest usage frequency; more than 90% are using this device daily. Laptop computers are used by 63.5%, while fixed line telephone is only used by 34%.

3.2.3 Personal Internet Usage

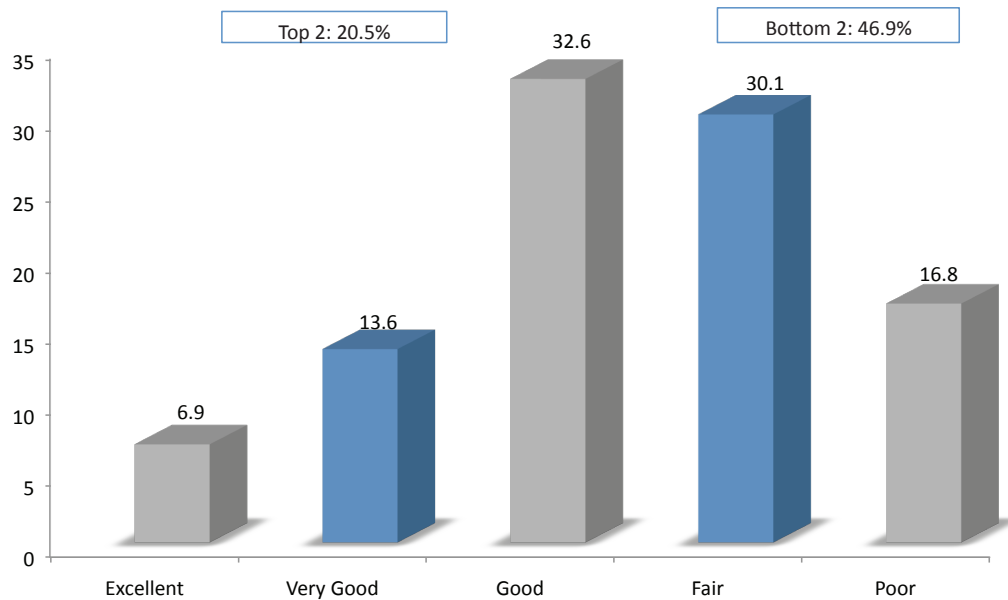
Base: Total Sample (N=8048).



The pie chart shows to determine whether the respondent have personally used the internet over last 12 months. About 67% of all respondents are using the internet personally. This puts Brunei among the top countries in Asia in terms of personal internet usage. Overall internet penetration in Asia is 21.5% and globally 28.7% (Source: ITU 2010). With two-third of the population accessing the internet, there is no “digital divide” in Brunei.

3.2.4 Quality of Internet Access

Base: Internet User (N=5382). Figures: in %.



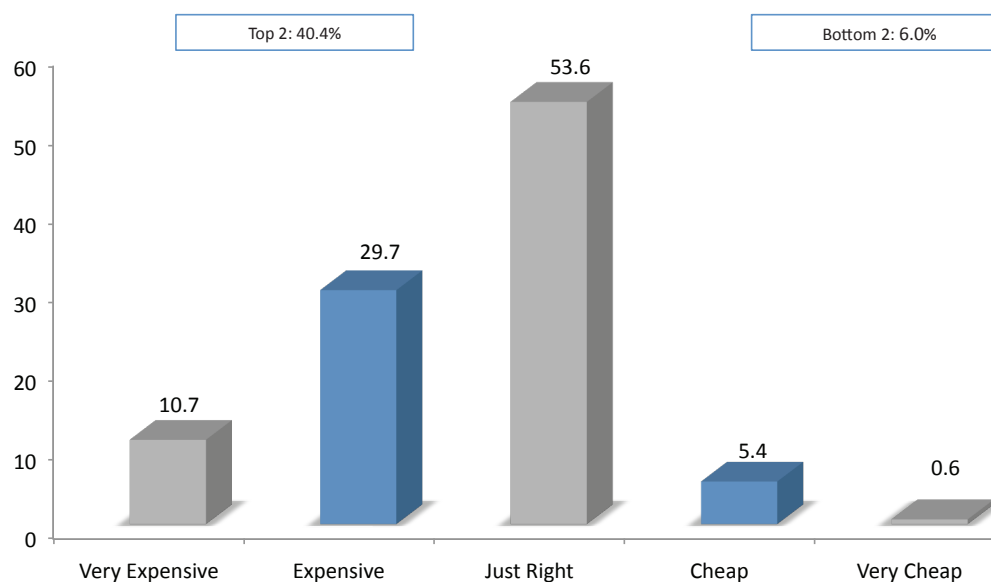
This survey chart shows if the respondent is happy with the quality of the internet access. Satisfaction with the quality of accessing the internet is rather low; only 32.6% say it is “good”, however 46.9% state that the quality is either fair or poor. This clearly points to the need of improving the access quality.

Quality is ...	Total	Age (Groups)						District		
		-15	16 - 24	25 - 34	35 - 44	45 +	BSB	Belait	Tutong	Temburong
Excellent	6.9	10.5	7.9	5.3	5.1	6.4	7.8	3.9	5.0	3.2
Very good	13.6	15.6	15.0	13.1	11.7	11.6	14.7	5.4	13.9	18.2
Good	32.6	29.8	34.0	30.7	30.4	32.5	33.8	26.1	35.5	22.1
Fair	30.1	26.3	27.3	34.2	34.1	30.6	28.8	35.8	33.2	26.6
Poor	16.8	17.9	15.7	16.7	18.7	18.9	14.9	28.7	12.4	29.9

Assessment of the internet quality is overall similar across various demographic groups; however the internet access quality seems to be especially poor in Belait and Temburong District.

3.2.5 Internet Fee Perception

Base: Internet User (N=5382).



The chart shows if the respondent is happy with the fee for internet access. The current internet fees are seen overall as too expensive. Though about half of the respondents say it's "just about right", more than 40% say it is expensive or very expensive. Costs are seen especially too high among respondents perceiving the quality of the internet access as fair or poor.

3.2.6 Ideal monthly Internet Fee

The table below shows the respondent opinion on the ideal fee for broadband subscription.

How much should the monthly fee for Broadband Internet be?

Ideal Fee	Total	Personal Income (Groups)				HH Income (Groups)			
		No Income	Low Income	Mid Income	High Income	No Income	Low Income	Mid Income	High Income
Mean	30.2	30.7	29.3	31.5	37.6	27.8	28.8	30.7	33.3

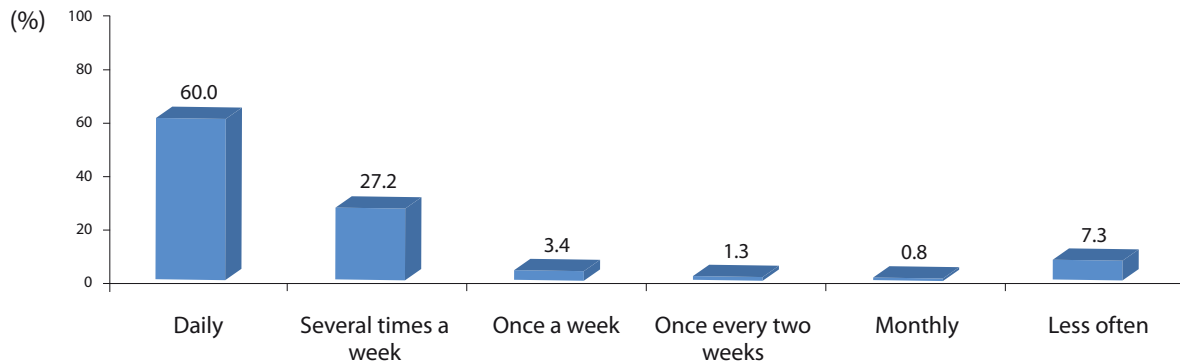
Base: Internet User who think monthly fees are very expensive/expensive (N=1979).

Figures: in B\$.

The ideal monthly internet fee is about B\$30.

3.2.7 Frequency of Internet Usage

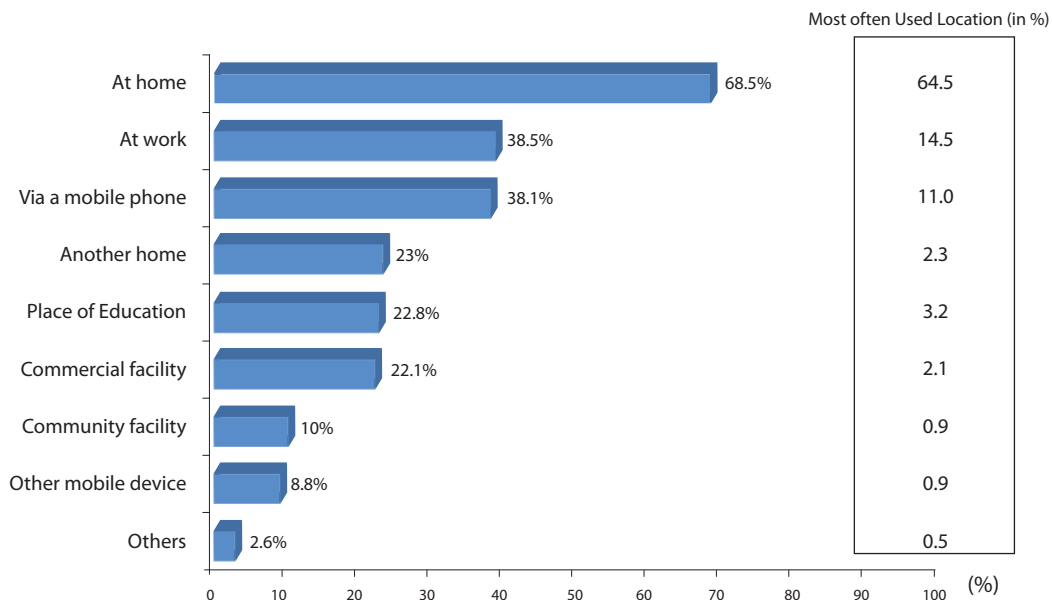
Base: Internet User (N=5382).



The table above shows the frequency of internet usage by the respondent. Respondents with access to the internet are using it daily or at least several times a week. The internet is especially used often among high-income households and within the age group of 16-34 years.

3.2.8 Location of Internet Usage

Base: Internet User (N=5382).

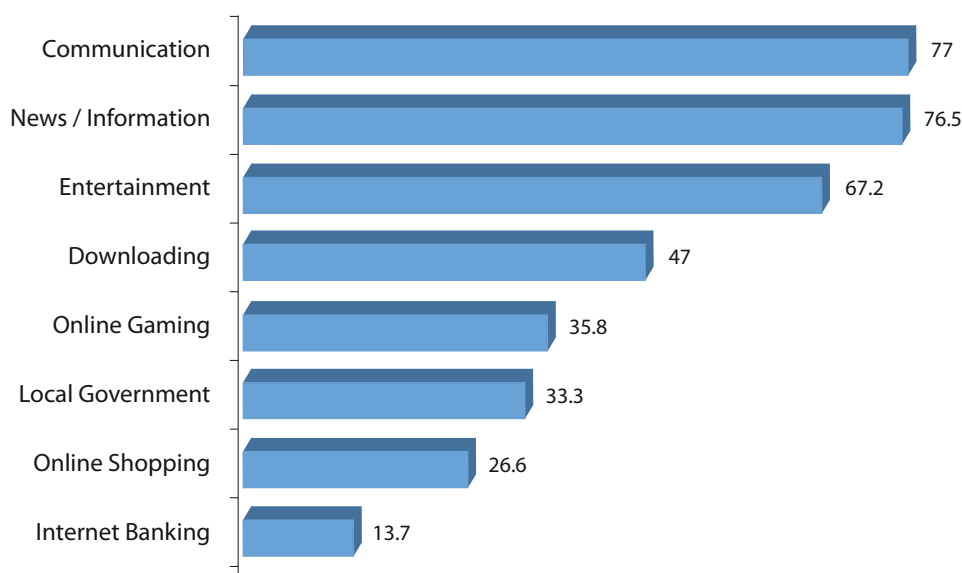


The Blue charts represent on where the respondent has used the internet over the last 12 months. Respondents are using the internet in various locations, especially at home, at work or via a mobile phone (e.g. iPhone). The most often used location is "at home" – almost 65% of internet user uses it there most often.

The total for inside the box is 100%, while the total for the blue chart is greater than 100%. This is because the respondent can use multiple locations to access the internet, while the most often used location can only be one place.

3.2.9 Purpose of Internet Usage

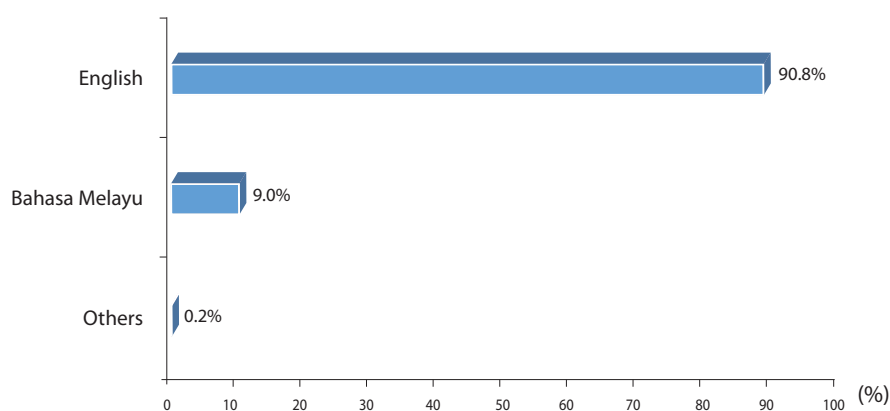
Base: Internet User (N=5382).



The table above shows the reasons of the respondent on the usage of the internet over the last 12 months. The main reasons for using the internet is communication (e.g. emails), news/information and entertainment. On average, the internet is used for about 4 purposes.

3.2.10 Language of Internet Sites Used

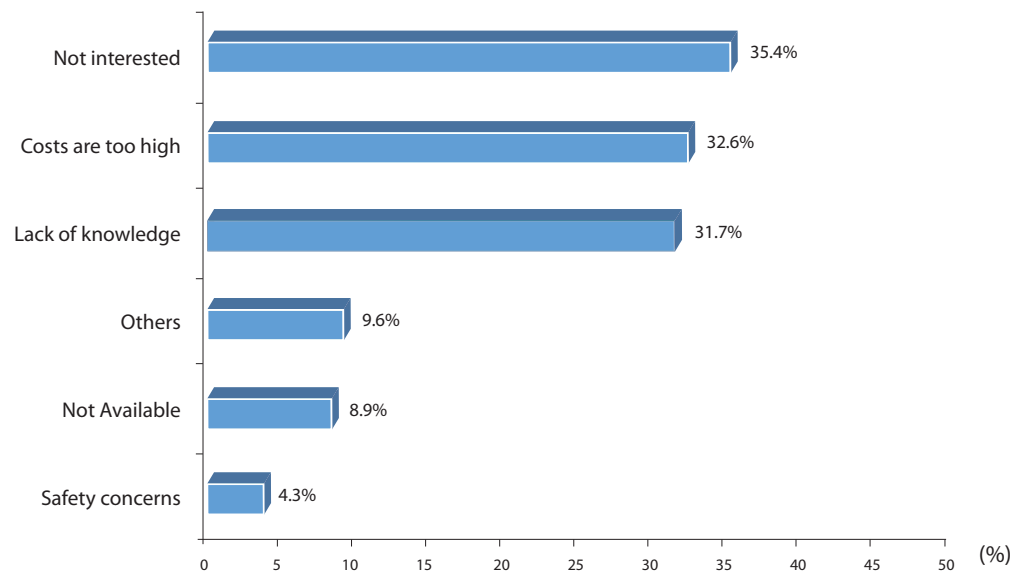
Base: Internet User (N=5382).



The above chart shows the languages of the website visited most often by the respondents. English is the main language for almost all internet sites used. Only 1 out of 10 respondents are using mainly sites in Bahasa Melayu. This also indicates a high level of understanding of the English language.

3.2.11 Reasons for No Personal Internet Usage

Base: Non Internet User (N=2666).



The table above shows the reasons why the respondent did not access internet over last 12 months. Respondents not using the internet claim mainly three reasons: no interest, costs or lack of knowledge. This point to a certain need for more internet-education as well as some form of financial support (mainly for low income households).

Appendix A – Lists of Mukims & No. of Respondents

MUKIM NUMBER	MUKIM NAME	No. of Respondents
1	MUKIM BERAKAS A	693
2	MUKIM BERAKAS B	834
3	MUKIM GADONG A	518
4	MUKIM GADONG B	657
5	MUKIM KIANGGEH	276
6	MUKIM KILANAS	444
7	MUKIM KOTA BATU	254
8	MUKIM PANGKALAN BATU	259
9	MUKIM BURONG PINGAI AYER	52
10	MUKIM SUNGAI KEBUN	155
11	MUKIM LUMAPAS	120
12	MUKIM SENGKURONG	548
13	MUKIM PERAMU	47
14	MUKIM SUNGAI KEDAYAN	37
15	MUKIM MENTIRI	267
16	MUKIM SERASA	321
17	MUKIM SABA	30
18	MUKIM TAMOI	42
19	MUKIM BUKIT SAWAT	16
20	MUKIM LIANG	220
21	MUKIM KUALA BALAI	3
22	MUKIM MELILAS	1
23	MUKIM KUALA BELAIT	675
24	MUKIM SERIA	364
25	MUKIM LABI	27
26	MUKIM KERIAM	149
27	MUKIM TUTONG	322
28	MUKIM KIUDANG	101
29	MUKIM TANJONG MAYA	57
30	MUKIM LAMUNIN	71
31	MUKIM TELISAI	140
32	MUKIM RAMBAI	61
33	MUKIM UKONG	26
34	MUKIM BANGAR	54
35	MUKIM AMO	45
36	MUKIM LABU	17
37	MUKIM BOKOK	71
38	MUKIM APOI	30
TOTAL	38 MUKIMS	8,000 respondents

Note: There are additional 50+ questionnaires distributed randomly

Notes



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