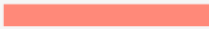




# DIGITAL LITERACY PROGRAM



DEPARTMENT OF INFORMATION TECHNOLOGY AND TELECOM  
MINISTRY OF INFORMATION AND COMMUNICATIONS  
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## 1. Introduction

The digital literacy program is initiated as one of the components under the Digital Drukylul Flagship Program. The program aims to enhance the digital skills of the citizens across the country which is of tantamount importance as Bhutan embarks toward the digital transformation. The Royal Government of Bhutan has made tremendous efforts and continues to focus on developing and improving ICT infrastructure and services. The development of Information and Communication Technologies (ICTs) and their integration with all spheres of people's lives have become inevitable in this digital era considering the opportunities and impact it can bring to an individual's life.

Any technology will be insufficient if people do not understand how to put it to effective use as part of their lives or their work, either because they are not trained to use it, or they are unable to imagine the benefits. The program is focused to address this issues through conducting hands-on-training on various critical areas to be digital literate such as computer fundamentals, G2C services, digital payments, working with google workspace, online security, ICT for business and secure social media usage and further it is supported by various sensitization and awareness programmes through the development of digital contents. As of today, the Department with support from the Local Government administration has trained around 5,071 people from diverse segments of society (civil servants, youth, monastic bodies, armed forces, entrepreneurs etc) across the country.

The Digital Literacy program assessment study was carried out to assess the impact of the program so far and this report presents key statistics and findings on the impact across the country.

## 2. Objective

The main objective of the survey is to:

- i. Study the impact made so far by the digital literacy program to the citizens across the country
- ii. Assess the pattern on consumption of technology by the citizens to gain better insight

## 3. Methodology

### 3.1 Target population and sample size

A **Simple Random sampling** methodology was used to select the respondents. A total of 651 respondents was the sample size selected for the study

### 3.2. Sample Frame

The target population was selected based on the training record maintained by the Department. A total of 2878 people undertook the digital literacy program from the year 2019-2021. In order to get the maximum response, all the individuals who complied the criteria were included while determining the sample size. Using Simple Random Sampling methodology, a sample of 651 sample size was determined from a total of 1453 individuals who qualified for the study.

### 3.3 Sample Size Calculation

A simple sample size calculation formula was used to determine the sample size.

$$\text{Sample Size} = \frac{Z^2(r)(1-r)}{e^2}$$

- Level of confidence desired (95%)	Z <sup>2</sup>	3.8416
- Estimate of a key indicator to be measured (50 percent)	r	0.5
- Margin of error to be attained (5 percent)	e <sup>2</sup>	0.0025
- Sample Size	SS	<b>384</b>

Sample size:  $3.8416 \times 0.5 \times 0.5 / 0.0025 = 384$

The survey was carried out for only those individuals that underwent the digital literacy training in 16 Dzongkhags. For wider representation, 651 sample size was finalized for the survey as the acceptable minimum sample size is 384.

### **3.4 Reference Period**

The past twelve months from the date of enumeration was defined as the reference period for the digital literacy program assessment report.

### **3.5 Survey Questionnaire**

A structured questionnaire was developed as per the objective of the survey consisting of 13 main sections: Identification of user location, Occupation, helpfulness, overall understanding, importance of digital literacy, ability to use digital space, digital skills, frequency of use, cyber security awareness and skills, use of social networks, willingness to impart the skills attained, barriers to use technology, and priority level of technology.

### **3.6 Data Collection**

Google form was used to design the questionnaire and collect the response. The data collection was carried out during the month of March till April 2022 through the online mode. After recording the response, the responses were then transferred to excel and STATA for analysis.

### **3.5 Data processing and reporting**

The data collected through Google Form was exported to STATA for data cleaning, analysis and report writing. The data cleaning was done by validating the structure of the data and completeness of response. After cleaning and validation of the data, the results were generated as per the report outline.

### **3.6 Limitation**

The survey is focused only on those individuals that underwent the digital literacy training in the 16 Dzongkhags.

## 4. FINDINGS OF THE SURVEY

### 4.1 Distribution of respondents by Dzongkhags and occupation group

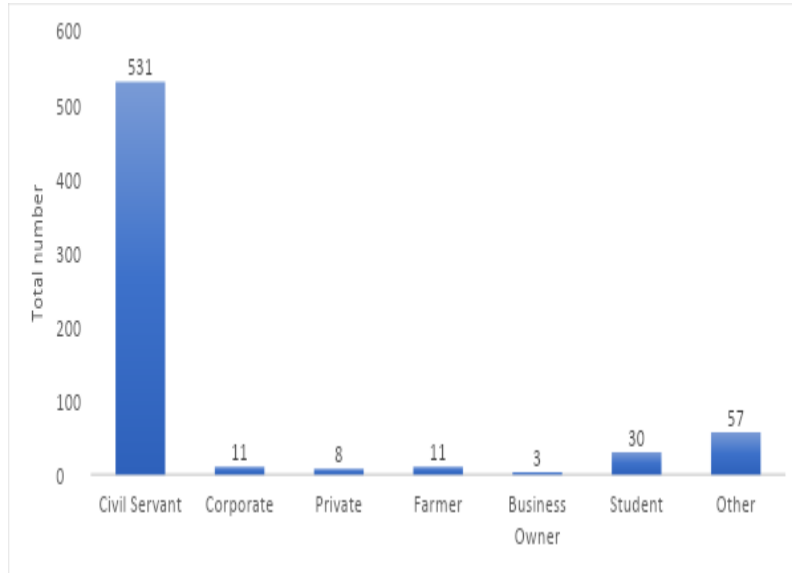
The survey on digital literacy training enumerated 651 individuals across the country from various occupational groups.

Dzongkhag	Frequency	Percent
Chhukha	61	9.37
Dagana	33	5.07
Gasa	23	3.53
Haa	20	3.07
Lhuntse	37	5.68
Mongar	55	8.45
Paro	81	12.44
Punakha	23	3.53
Sarpang	29	4.45
Thimphu	40	6.14
Trashigang	28	4.30
Trashi Yangtse	25	3.84
Trongsa	51	7.83
Tsirang	42	6.45
Wangdue Phodrang	51	7.83
Zhemgang	52	7.99
<b>Total</b>	<b>651</b>	<b>100.00</b>

Table 1: Distribution of respondents by Dzongkhags

### Distribution of respondents by Occupation

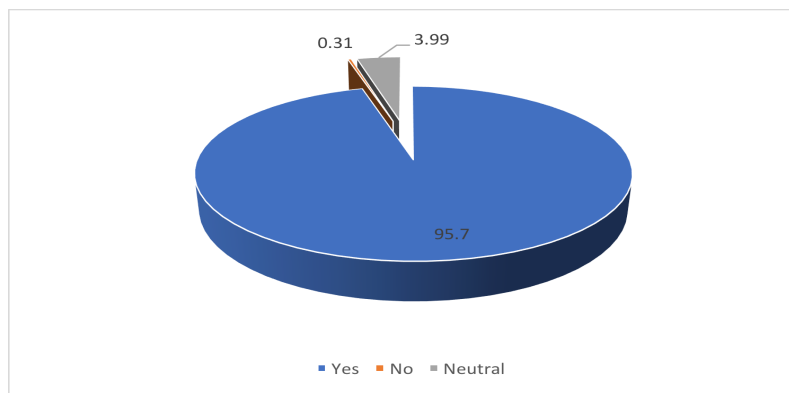
As shown in the graph 1 below , most of the survey respondents were civil servants (531), followed by those whose occupations were not classified (57), then by Students (30), Corporate employees (11), Farmer (11), Private employees (8) and Business owners (3).



Graph 1: Distribution of respondents by Occupation

### 4.2 Overall Impact of the digital literacy training

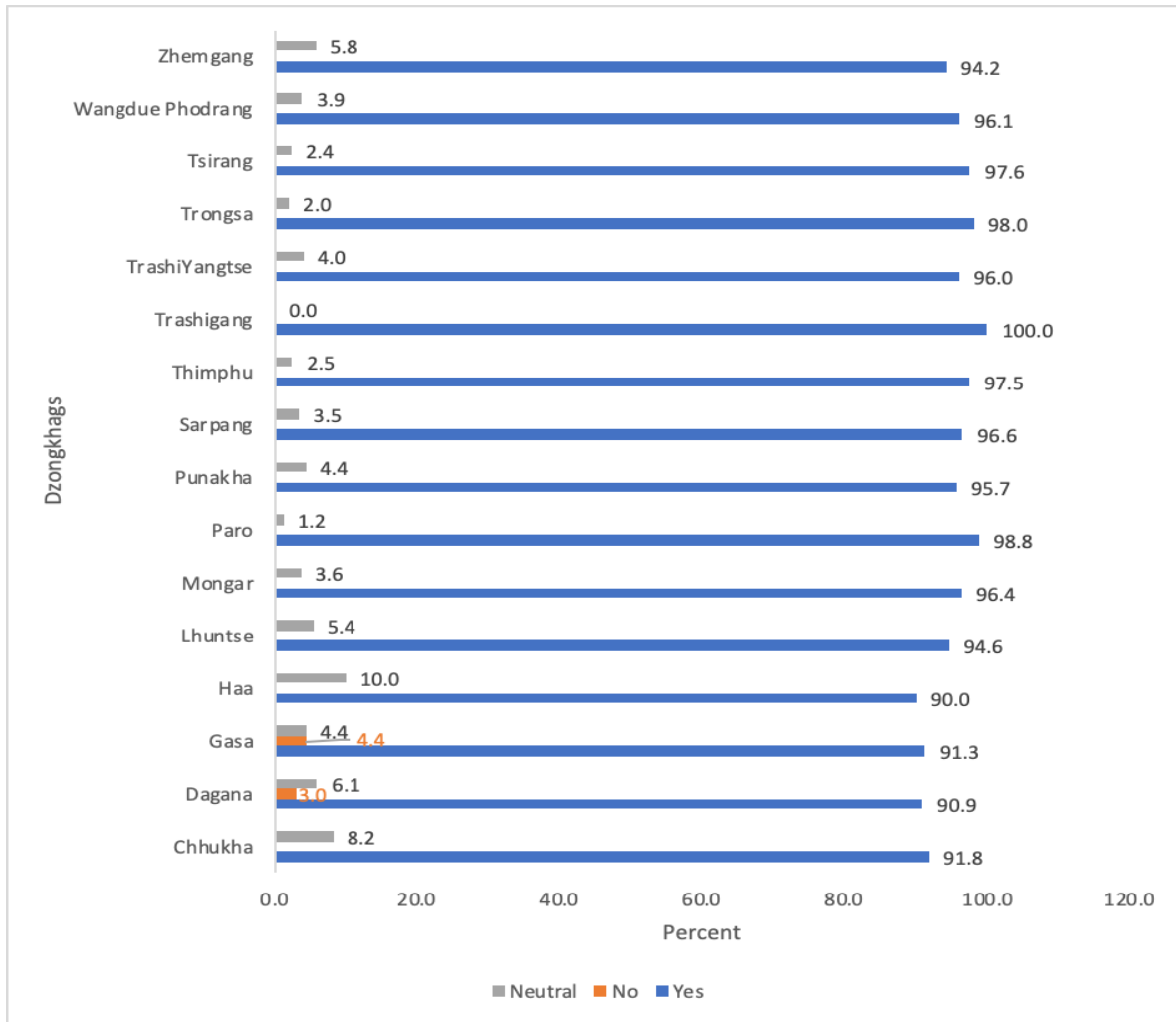
Almost 96% of the respondents found the training program to be effective while a little more than 0.3% felt that the training was not effective. Close to 4% found it to be neutral.



Pie-Chart 1: Overall impact of digital literacy training

### 4.3 Impact of the digital literacy training on the respondents by Dzongkhags

The respondents in 16 Dzongkhags felt the training to be effective and helpful, a little more than 4% of respondents in Gasa and 3% in Dagana felt that the training was not effective.

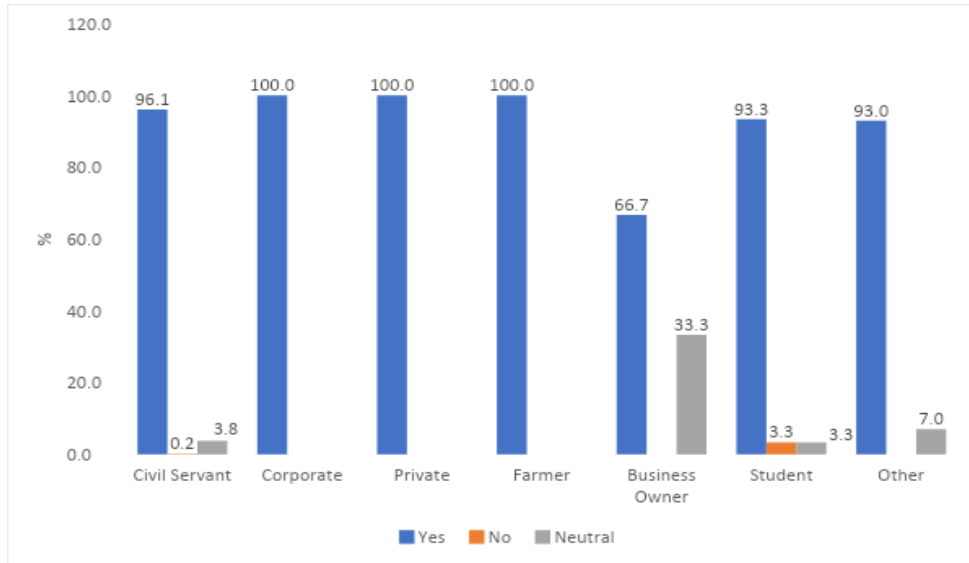


Graph 2: Impact of the digital literacy training by Dzongkhags



#### 4.4 Impact of the digital literacy training by Occupation

From the occupational distribution group, private individuals, corporate employees and farmers were the one who found the training to be most effective while a little more than 3% of students and over 0.2% of civil servants felt that the training was not effective.

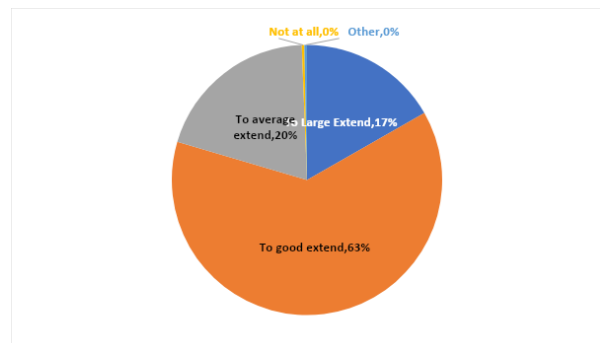


Graph 3: Impact of the digital literacy training by Occupation

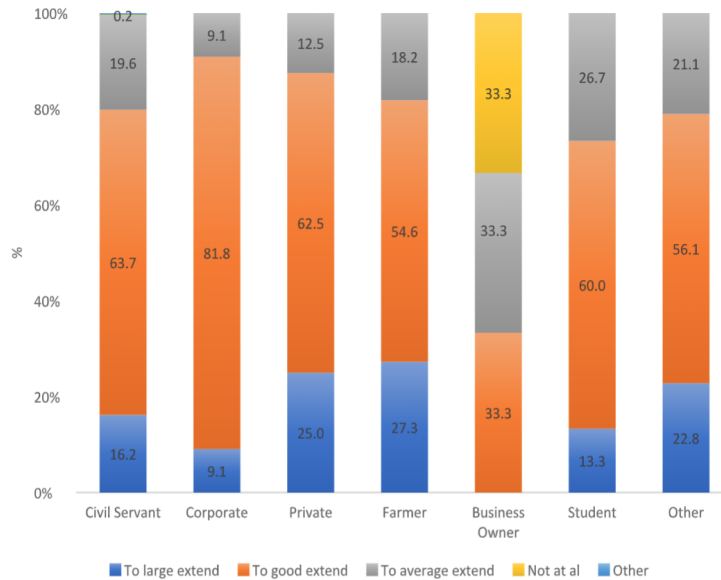
#### 4.5 Impact of the training on expanding the overall understanding of the role and use of technology

As shown in the chart to the right, Over 17% agrees to have extended their knowledge to a larger extent. 63% have reported expanding their knowledge to a good extent with just under 20% of respondents feeling to have extended to an average.

Pie-Chart 2: Impact of the training on expanding the overall understanding of the role and use of technology



The graph below shows the program has a huge impact on the farmers with a significant percentage of 27 followed by private individuals with 25%. Others account for 23% while civil servants and corporate account 16% and 9% respectively. The respondents under various occupational group indicate a good level of understanding on the role and usage of digital technology

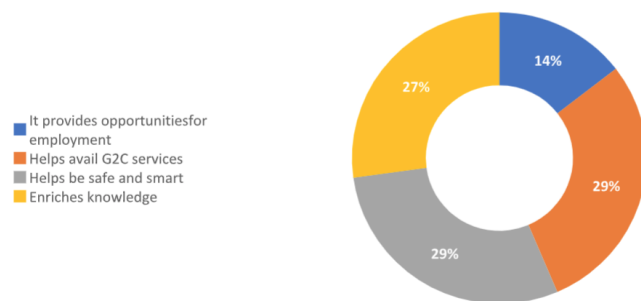


Graph 4: Impact of the training on expanding the overall understanding of the role and use of technology by Occupation

#### 4.6 Overall percentage distribution on the importance of digital literacy

About 29% of the respondent feels that it's important to be digitally literate to avail G2C services. Another 29% feels it helps them to be safe and smart using digital technology. Over 27% feel it enriches their knowledge with 14% reporting it as opportunities for employment.

Pie-Chart 3: Overall percentage distribution on the importance of digital literacy



#### 4.7 Overall percentage distribution of computer literacy skill

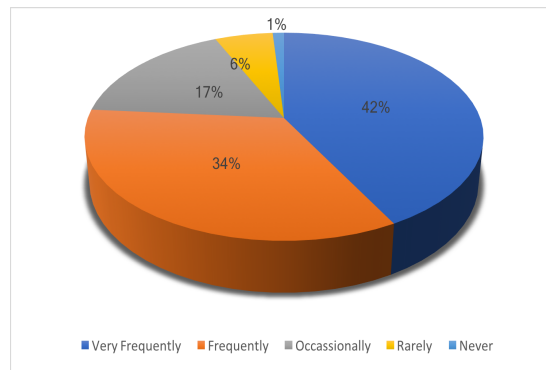
A cross tabulation analysis based on the table below shows that 79% of respondents have skill in computer hardware, 18% have skills in intermediate level with just over 2% responding to have no skill. Similarly 60% and 45% of respondents have skill in computer devices and know how to add and remove hardware respectively. Over 31% have an intermediate level of skills in both the areas. 9% and 24% have reported having no skill in computer devices and adding hardware respectively. Further 76%, 64% and 90% of respondents have reported to have skill in scanning computer viruses, installing programs and using computers for learning purposes respectively, however 7% 14% and 2% respectively feel that they have no skills in these three areas.

Sl.No	Area of skills	Yes	Intermediate	No
1	Do you understand the basic functions of computer hardware components?	79%	18%	2%
2	Can you connect different computer devices?	60%	31%	9%
3	Can you add/remove hardware in the computer?	45%	31%	24%
4	Can you scan computers for viruses?	76%	17%	7%
5	Can you install and remove the program on the computer?	64%	23%	14%
6	Do you use the computer for learning purposes?	90%	8%	2%

*Table 2: Overall percentage distribution of computer literacy skill*

#### 4.8 Overall percentage distribution of the frequency of using MsOffice, Google Documents, Email, Internet, G2C services, Digital Payment, Video Conference, Social Network

Over 42% of respondents are using it on a very frequent basis. 34% of the respondents have reported using it on a frequent basis, 17% occasionally and with just under 6% reporting to have used it rarely. 1% of respondents have indicated never using it.



*Pie-Chart 4: Overall percentage distribution of the frequency of using digital application*

#### 4.9 Table 3: Overall percentage distribution of respondents with the skill in various digital application

The table below illustrates the percentage distribution on the level of skills of the respondents in using various digital platforms and applications. Of all the applications, the respondents have good knowledge on Ms Office, Google document and video conferencing tools followed by G2C portal.

Sl.No	Area of skills	Poor	Fair	Good	Very Good	Excellent
1	Ms Office, Excel, Powerpoint	1%	10%	49%	28%	10%
2	Google Document, Sheet, Slide	3%	16%	48%	23%	10%
3	Video conference tool (Zoom, google meet, Skype etc)	4%	16%	47%	23%	11%
4	Email (Google, yahoo etc)	1%	8%	39%	32%	19%
5	Social Network Services (FB, WeChat, What Apps, Telegram)	2%	7%	34%	36%	20%
6	G2C portal	4%	17%	44%	26%	9%
7	Internet banking (mBoB, mPay, Tpay)	3%	5%	35%	33%	24%
8	Web search	2%	7%	34%	36%	20%

*Table 3: Overall percentage distribution of respondents with the skill in various digital application*

### 4.1.1 Areas of Cyber Security

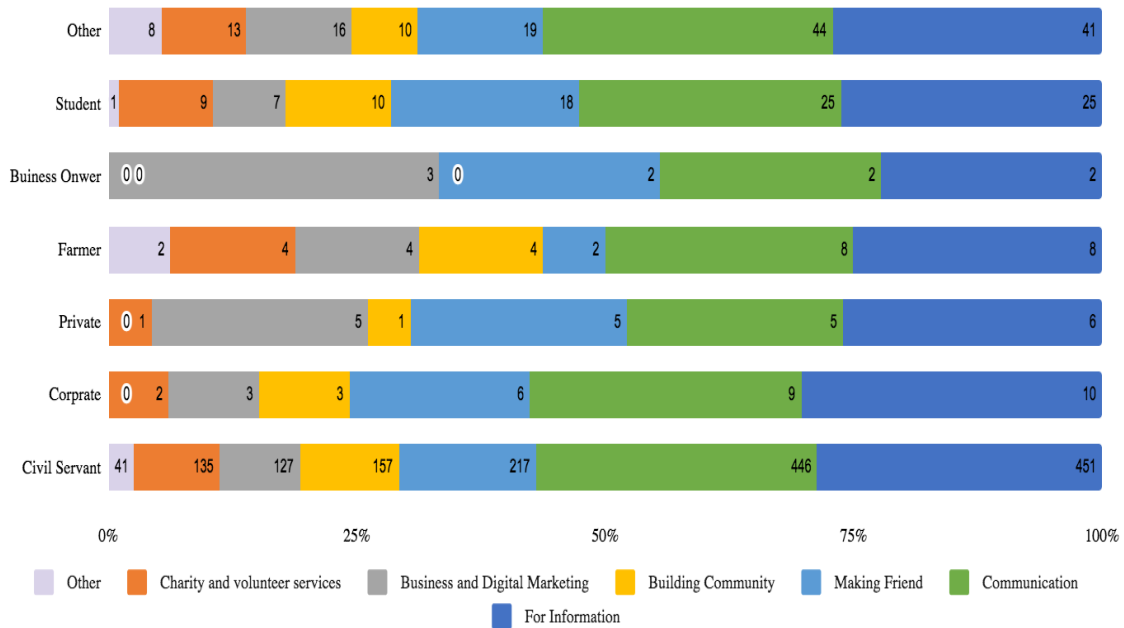
The respondents were asked whether they agreed or disagreed on certain areas concerning cyber security. The following chart depicts the overall distribution on the extent of the ability of the respondents to do certain tasks.

Sl No	Area of Frequency	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1	I can securely navigate in the digital space	11.5%	63.9%	21.7%	2.3%	0.6%
2	I am aware about the cyber threats and it's consequences	24.4%	58.4%	14.4%	1.5%	1.2%
3	I use two factor authentication for email and other online accounts	27%	58.1%	11.7%	2.5%	0.8%
4	I follow password security policy while creating new password	43.3%	50.5%	5.1%	0.8%	0.3%
5	I feel comfortable using online services (G2C and other utility services)	32.4%	55.9%	9.9%	0.9%	0.8%
6	I am confident in using digital payment services (internet banking, Mbob, Mpay, etc)	50.8%	43%	5.4%	0.6%	0.5%
7	I never share screenshot of the financial transaction in digital space	23%	37.5%	24.1%	11.5%	3.8%
8	I always ensure to validate the information obtained from internet before using it or sharing it	33.3%	51.2%	12.3%	2.8%	0.5%

Table 4: Cyber Security

#### 4.1.2 Percentage distribution of the using social networking services for various fields

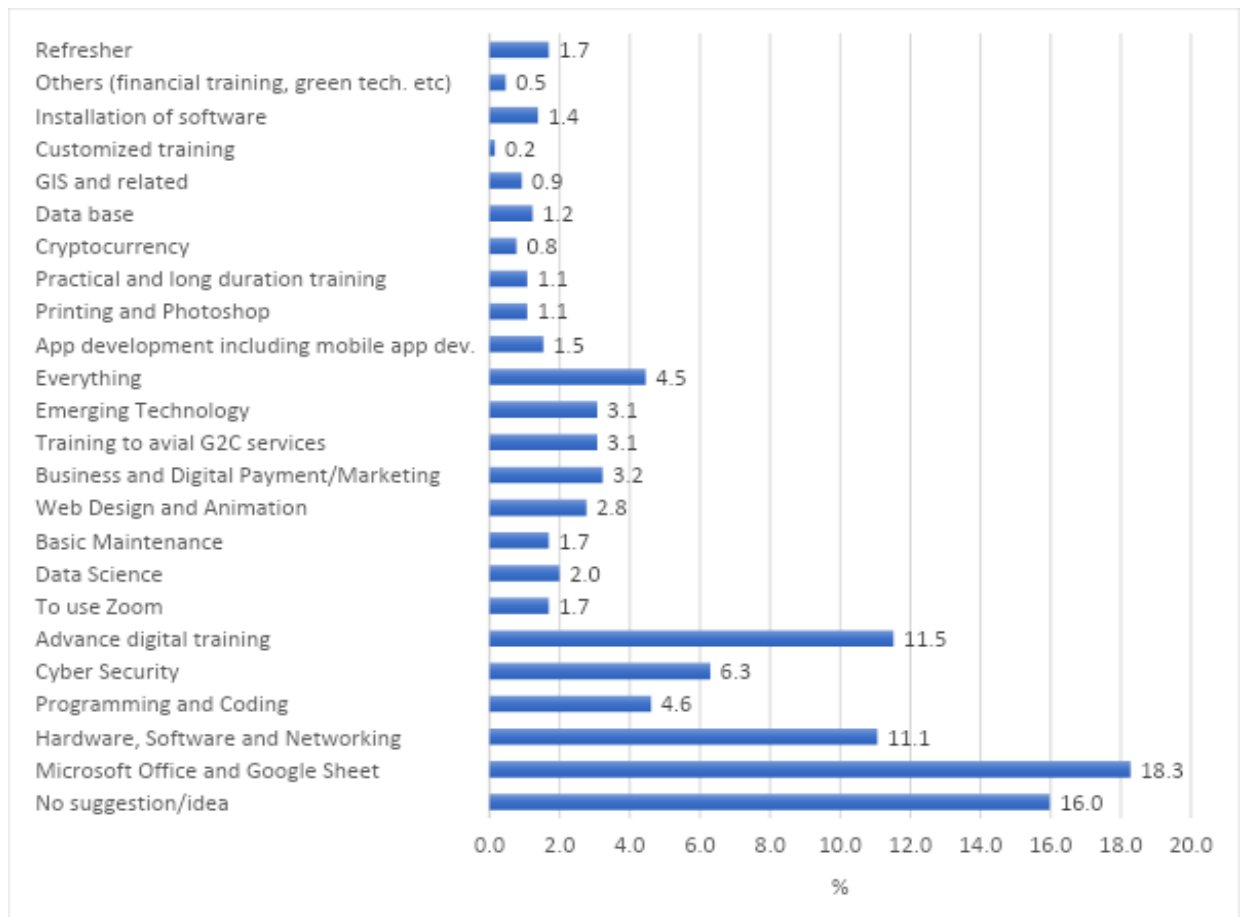
The descriptive analysis based on the following graph shows that more than 30% of the respondents under different occupational groups use social media to access the information and for communication. Close to 40% of the business owners have reported using social media for digital marketing.



Graph 5: Percentage distribution of the using social networking services for various fields

#### 4.1.3 Percentage Distribution of the areas of technology that the respondents would like to have training in the near future.

The graph below represents distribution of the areas of technology that the respondents would like to have training in the near future. 18% is the highest percentage of the respondents who are willing to have training in Microsoft office followed by google workspace. Over 11% have shown interest in advanced digital skills. 6% and around 5% have expressed interest in the areas of cyber security and coding respectively. Most of the interested respondents were students and civil servants. Just 0.2% of the respondents being the lowest, have suggested for the customized training.

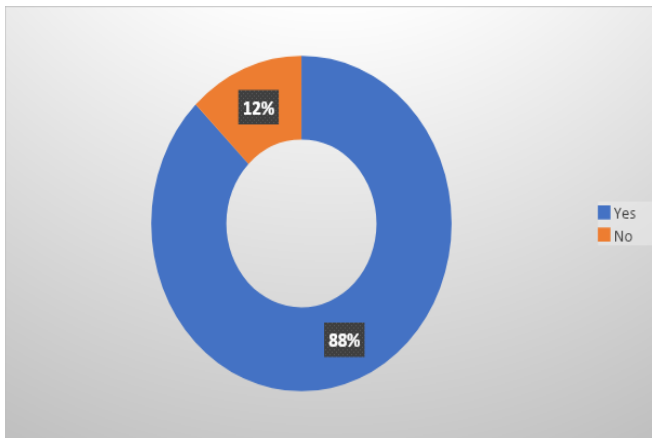


Graph 6: Percentage Distribution of the areas of technology that the respondents would like to have training in the near future.

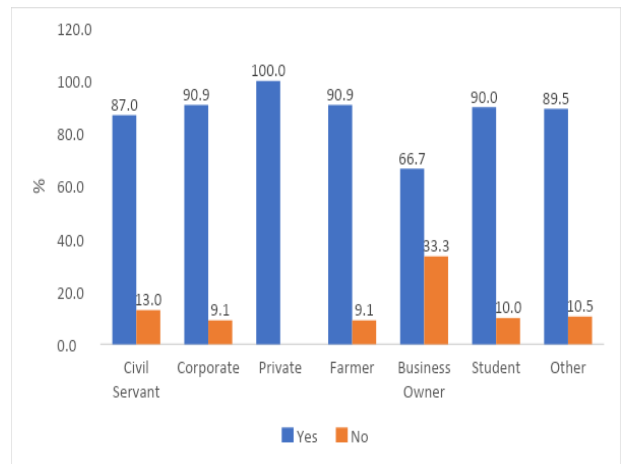


#### 4.1.4 Skill and knowledge sharing

On asking whether the respondents have shared any of the skills gained through this training, a significant percentage of 88% have responded to have shared the skills with their family members, relatives and friends while on other hand about 12% of respondents have reported not sharing it. Among the occupation group, the private individuals, farmers, corporate and students accounts a major portion of over 90% who indicated to have shared the skill gained through the training.



Pie-Chart 5: Overall skill and knowledge sharing

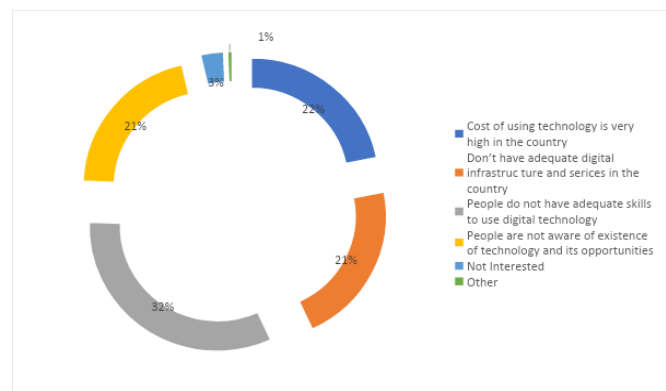


Graph 7: Overall skill and knowledge sharing by Occupation

#### 4.1.5 Overall percentage distribution on the barriers that stop people from using digital technology

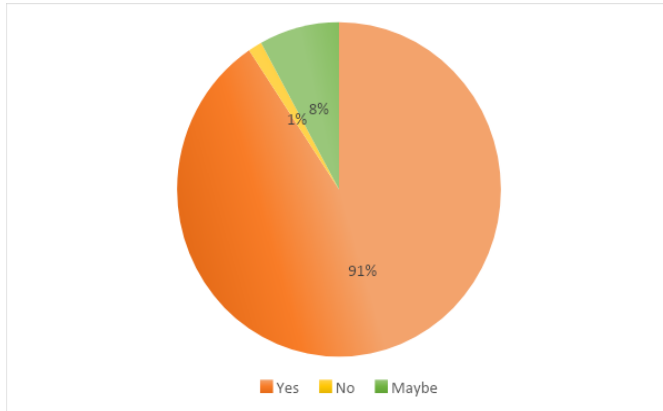
The questions on barriers that discourages people from using digital technology were asked. Majority of the respondents feel that inadequate skills and the cost were the two major barriers that stop people from using it. Further 21% of the respondents have associated it with inadequate infrastructure, services and awareness of such facilities. Furthermore 3% of the respondents have reported not having internet access.

Pie-Chart 6: Overall percentage distribution on the barriers that stop people from using digital technology

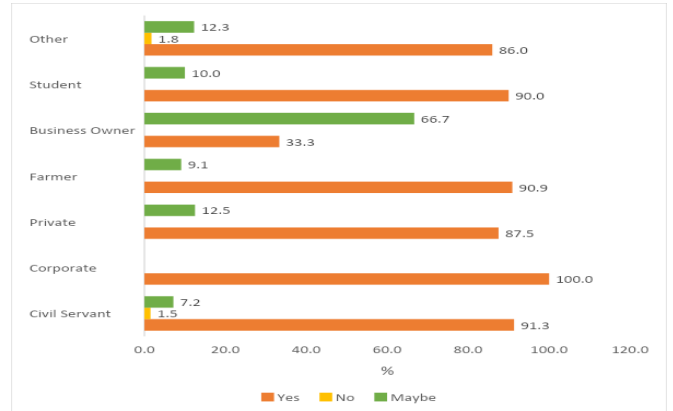


#### 4.1.6 Overall percentage distribution on whether the respondents will recommend their family, friends or relatives to attend this training

Upon asking whether the respondents will recommend this training to their family members, relatives or friends, 91% of them are willing to recommend this training while 8% of the respondents are not sure. From the occupational distribution group, 100% of the respondents of the corporate are willing to recommend this training to their family, friends and relatives.



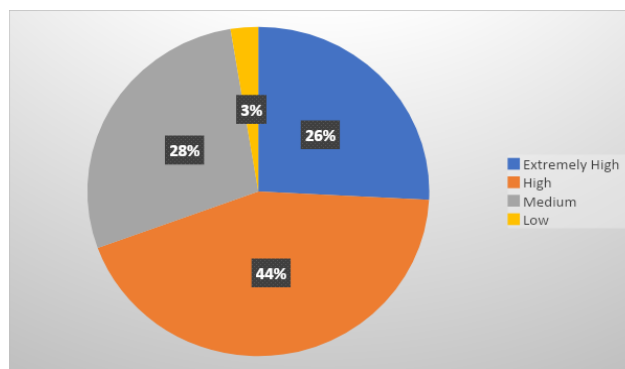
*Pie-Chart 7: Overall percentage distribution on whether the respondents will recommend their family, friends or relatives to attend this training*



*Graph 8: Overall percentage distribution on whether the respondents will recommend their family, friends or relatives to attend this training by Occupation*

#### 4.1.5 Overall percentage distribution of the priority level of technology in respondent's life

The chart on the right represents the priority level of technology. Over 26% of respondents feel it to be extremely important, 44% of respondents feel it to be important, about 28% of respondents feel it to be moderately important with just under 3% of respondents indicating it to be least important.



*Pie-Chart 8: Overall percentage distribution of the priority level of technology in respondent's life*

## Dzongkhag Wise distribution on level of skills in various digital literacy areas

SL. No	Areas of skill	Paro	Haa	Thimphu	Chhukha	Trongsa	Mongar	Lhuntse	Trashigang	Trashiyangtse	Punakha	Sarpang	Tsirang	Wangdue Phodrang	Gasa	Zhemgang	Dagana
1	Do you understand the basic functions of computer hardware components?	84	60	92.5	62.3	82.4	80	75.7	82.1	92	73.9	86.2	69.1	78.4	73.9	88.5	81.8
2	Can you connect different computer devices?	65.4	50	65	55.7	54.9	56.4	59.5	64.3	52	65.2	65.5	66.7	45.1	65.2	57.7	69.7
3	Can you add/remove hardware in the computer? By Dzongkhag	48.2	50	52.5	42.6	43.1	36.4	48.7	42.9	40	34.8	41.4	45.2	43.1	47.8	61.5	42.4
4	Can you scan computers for viruses?	85.2	75	70	73.8	64.7	76.4	64.9	60.7	92	52.2	93.1	73.8	82.4	73.9	78.9	90.9
5	Can you install and remove the program on the computer?	72.8	60	55	63.9	49	63.6	75.7	53.6	68	30.4	65.5	52.4	70.6	69.6	69.2	84.9
6	Do you use the computer for learning purposes?	92.6	90	87.5	85.3	84.3	92.7	91.9	96.4	96	91.3	89.7	81	84.3	78.3	96.2	97
7	I can securely navigate in the digital space	61.7	55	57.5	57.4	62.8	63.6	62.2	71.4	48	56.5	72.4	54.8	66.7	69.6	78.9	81.8
8	I am aware about the cyber threat and its consequence	63	55	55	59	53	58.2	48.7	50	40	43.5	75.9	71.4	60.8	78.3	25	57.6
9	I use two factor authentication for email and other online accounts	54.3	60	67.5	52.5	50.9	50.9	56.8	53.6	52	52.2	79.3	57.1	66.7	69.6	61.5	57.6
10	I follow password security policy while creating new password	60.5	55	55	57.4	52.9	32.7	40.5	39.3	48	56.5	65.5	38.1	50.9	65.2	50	42.4
11	I feel comfortable using online services (G2C and other utility services)	65.43	55	47.5	60.7	58.8	49.1	40.5	53.6	48	47.8	55.2	59.5	64.7	56.5	51.9	60.6
12	I am confident in using digital payment services (internet banking, Mbob, MPay,	51.9	50	42.5	42.6	39.2	36.7	32.4	35.7	36	34.8	51.7	33.3	50.9	56.5	44.2	45.5

etc)																	
13	I never share screenshot of the financial transaction in digital space	35.8	40	37.5	37.7	39.2	36.7	29.7	50	40	34.8	31	38.1	47.1	26.1	34.6	39.4
14	I always ensure to validate the information obtained from internet before using it or sharing it	49.4	45	42.5	50.8	47.1	56.4	40.5	60.7	40	65.2	55.2	59.5	60.8	60.9	38.5	54.6

## Recommendations

1. Target participant for future DL program
  - a. Future program should prioritize and focus more on other occupational groups
  - b. Majority of the civil servants have already been covered- highest skills in computer literacy
2. Content for Digital Literacy program
  - a. Existing content needs to be revised and enhanced- 42% only has good skills
  - b. Focus more on hands-on training to strengthen the skills of participants
  - c. Post skill assessment should be conducted as a part of this training
3. Continuity of DL Program
  - a. Major barriers to use digital technology: inadequate skills, cost and infrastructure & services
  - b. DL program is important to enhance the skills to create a digitally literate society for digital transformation of Bhutan
  - c. More awareness campaigns on the digital platform, e-Services and cybersecurity needs to be initiated.
4. Develop more user friendly e-Services
5. Provide incentives for the rural people wanting to buy devices and incentivize internet data package for the rural people this will address the high cost for using digital technology or Cost could be addressed through promoting the use of community centers for device access to avail eServices or providing a subsidized internet access in individual's device (like CC functioning as internet cafe)

