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Growth analysis of cyber security awareness among mass people of Bangladesh: a case study

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**GROWTH ANALYSIS OF CYBER SECURITY AWARENESS AMONG MASS PEOPLE
OF BANGLADESH: A CASE STUDY**

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Masters of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

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APPROVAL

This Thesis titled “**Growth Analysis of Cyber Security Awareness Among Mass People of Bangladesh: A Case Study**”, submitted by Iffat Ara Nabi to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 19th September, 2018.

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DECLARATION

I hereby declare that, this thesis has been done by me under the supervision of **Dr. Sheak Rashed Haider Noori, Associate Professor**, and Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

At present world internet has become the main source of communication not only in the developed countries but also in the developing countries like Bangladesh. As we know almost everything has its pros and cons. And it's not different in the case of using Internet.

With the easy access of internet life is becoming easier but the cybercrimes are also increasing day by day. Moreover in developing countries like Bangladesh where people are not much aware about the cyber securities are facing more threats. People are not aware of the risks of the cyber threats and thus not use and store their information securely. Most of the people are just enjoying the easy access of social media, easy money transactions and other cyber facilities without knowing about how important it is to know about the information security and how to handle them. Adults are giving their smart devices at children's hand where there can be very sensitive and important information.

The aim of this research is to analyze how people of Bangladesh are aware about cyber security and how they manage facing cyber threats.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Without internet we cannot think a moment and thus we are getting more and more dependent on easy doing features in Cyber World. In the previous the developed countries had the best features software, websites and other smart tools. But now the developing countries are not lagging behind much in getting new technologies.

Yet the main problem is in developed countries they take Cyber Security so seriously at every extent but in developing countries like Bangladesh has knowledge about Cyber security in some extent. We are using technologies and smart tools for its easy access without knowing much about its security issues. Online surfing has become the regular work of maximum people but they don't know how they can be fooled by hackers. There are even very less policies in organizations about sending emails also because they actually don't care much about spam emails. As a result Cyber Crime is getting worst in Bangladesh and will get more dangerous if measures will not be taken. Recently from a blog about world's biggest global threats has been shown that big cybercrimes like Ransom ware getting more popularity because of its economic value [1]. Such cybercrime will frequently attack developing countries and we should be very careful from now.

From a world cybercrime report it has been seen that most of the fraud has been done by carding services [2]. No doubt Cyber World is making the world too closer and too small but most furious thing is avg. Fraud value is getting higher then avg. Transaction value which is clear on the report of RSA 2018[3].

1.2 Motivation

Increasing rate of internet users are facing many cyber threats as cybercrimes are also increasing with the growth of internet user rate. The motivation of this research is to find out the growth of awareness about cyber security in Bangladesh. Also to find out how they know about cyber security and how they are taking this issue. This research also shows different criteria of cyber security and awareness about the criteria among the people.

1.3 Rationale of the Study

In Bangladesh with the increasing use of internet cyber threats are also increasing. It is good news that Government has started using some measures and also started studying with statistical results with the CIRT website. The BGD E-GOV CIRT has set its objective to manage the cyber security in different sectors [3]. Still Bangladesh has more and more to go to establish security against dangerous attacks and threats. Most of the cases education about cyber security has to be one of the main attempts so that mass people of Bangladesh at least get the idea about cyber threats, hacking and how should it be handled. Overall study reflects its specification to analysis the awareness level of cyber security in the research questions.

1.4 Research Questions

From the perspective of Bangladesh Cyber Security Awareness there are some questions to specify this research. They are the following:

1. What is the rate of Cyber Security Knowledge among the mass people of Bangladesh?
2. How a growth analysis about Cyber Security Awareness can be important to take further measures?

1.5 Expected Output

The expected output of the research is to set a result as a statistical way to show how people are aware about cyber threats and cybercrimes and how they are treating them. The output will also show the percentage of awareness in various cyber security criteria. Also government works will be shown as a output.

1.6 Report Layout

The entire report is designed with five important chapters. In the first chapter introduction and main objective of the research is reflecting. In the second chapter the background of this research study will be shown. In the third chapter it will be shown which methodology is being used to set the expected output. In the fourth chapter the survey result and discussion is taking place. In the last chapter the research will come to its conclusion with future works reflection.

CHAPTER 2

LITERATURE REVIEW

2.1 Background Study

After researching various areas of information security it has to be stated that there has many more cybercrimes that are increasing day by day. Also new types of cyber threats are coming towards us of which we don't even any knowledge [11]. Global cyber security will face eventually more attacks if preventive security grid cannot be made. From reviewing previous background of Bangladesh cybercrime reports it is clear that organizations of Bangladesh are not much sincere about cyber security. They can't even imagine how cyber threats and attacks can steal their valuable information and damage whole process. In the workplaces employees can be the most important hand to manage cyber security which most of the organizations don.t understand and take the importance of Cyber Security expert lightly[4].Even government officials have not yet using adequate measures about their financial security. Cyber wars are taking place in government officials because of harming internal systems and important financial transactions worldwide [5].

2.2 Related Works

Worldwide many surveys have done for different areas of cyber security. Also there are some works where there are surveys of cybercrimes happened for the previous years. Best measures can be taken if the problems of cyber security and causes of cybercrimes are known [6]. Many types of security measures are noticed also. Smart grid cyber security is very effective as it always target first human safety [7].

From reviewing the recent Bangladesh governments CIRT website it can be state that vulnerability is maximum in Bangladesh since now [12].

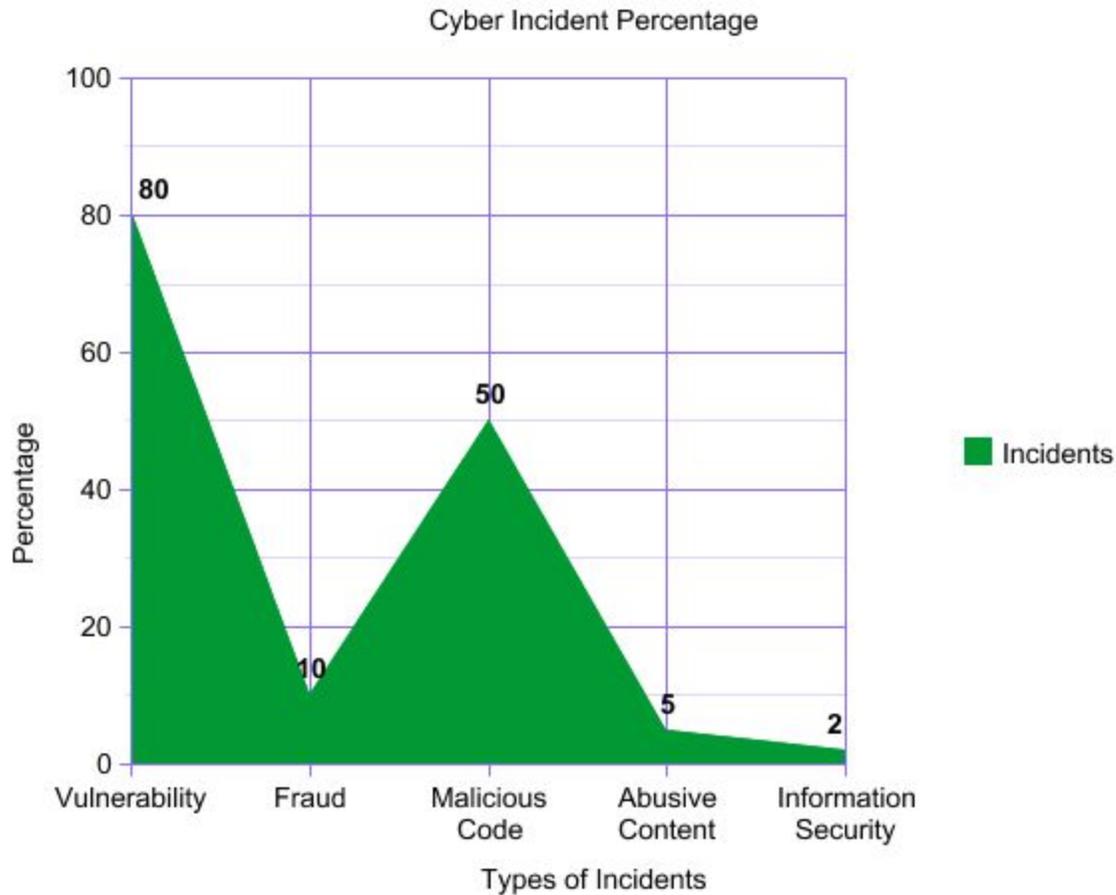


Fig. 1. Analysis of Cyber Incident Occurred since now according to incident classification

2.3 Research Summary

Though Bangladesh educational institution has started to learn students about Information and Communication Technology, Cyber security should be main feature of their computer related subject. Not only that educational organization should do regular camping and use posters to remind students about how cybercrimes can be held and how they have to know about cyber security. Adults should not give their smart devices to the child as the device can have very much personal information and they can be mistakenly misused by the children.

2.4 Scope of the Problem

Now people are facing many kinds of cyber threats. In this way Bangladesh will face major problem as a cyber-threat if people are not properly aware about the issue. They have to be sincere about their personal data and have to know how to properly and securely use them. Before the problem arises at a great extent this research result can help how the awareness level has to be raised among the people.

2.5 Challenges

In the perspective of Bangladesh the main challenge is the lack of literate people. Still all the people of Bangladesh are not literate and because of this they will not understand the importance of the growth analysis of the Cyber Security. Also the literate people don't want to give importance to the cyber security in some extent. In Bangladesh the internet usability is still open for all age people. So the children get unknowingly effected by cybercrime.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

It is very important to know about any topic before taking valuable steps. So Cyber security is such a topic which absolutely has to be surveyed first before taking steps. When there will be much information about how Bangladeshi people are aware about Cyber security It will be easy to understand the lacking [8]. Thus it can be told that this research is very important as it carries survey result. No other method can be more powerful about cyber security than survey results. When above 18 years old people answer the questions of survey it makes the result more perfect. This significance of this research is very much valuable.

3.2 Research Subject

The main subject of research is cyber awareness rate analysis. Here survey on the people plays great role to utilize the research subject. In this research is based on survey questions named as “Survey on Cyber Security Awareness among Mass People of Bangladesh “among general people. This survey contains both online and offline versions. Maximum survey is done offline so that literally the statistics can be utilized. Online survey has also shown much response as well.

3.3 Data Collection Procedure

As this research methodology has used online and offline both version so this research has its better position. For online web URL is used to send in social media and others. For offline printed version is used to analyze the results [9]. First online data are analyzed to see its result. Later on offline data's has been taken to offline to analyze the result. For online version Survey monkey is used as a survey tool. The questionnaire was based on multiple choices and it was easy to understand and answer for general people.

The survey questions have covered the following areas:

- i. Password Protection
- ii. Virus or Trojan
- iii. Anti-virus
- iv. Hacking
- v. Phishing Attack
- vi. Information Security
- vii. Incident Reporting

This survey has used chain web URL referral technique for online and also referral technique for offline [10]. This survey has done among the people who were at least 18 years old. People as students, job holders, business person all could be answer the survey questions. The survey technique was divided into the following criteria:

- a) Cyber Crime
- b) Cyber Attack Awareness
- c) Incident Reporting

The techniques have used the following flow to analyze result:

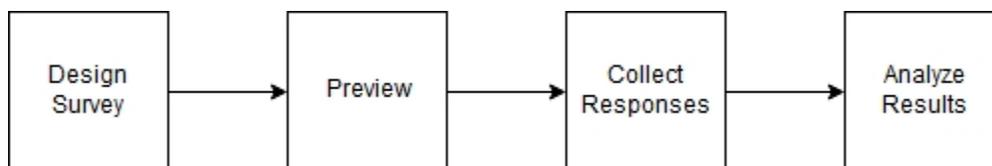


Fig. 2. Flow of Survey Techniques

CHAPTER 4

EXPERIMENTAL RESULTS AND DISCUSSION

4.1 Introduction

From the analyzed result it can be seen that most respondents are female. Male are also responded to a great extent. About 60.53% were female whereas male were 39.47%. All were 18+ and were in different profession. Some were students; some were in job or business profession. Also some are doing others. All respondents completed the survey fully.

4.2 Experimental Results

They have taken around 5-8 minute time to complete about 26 questions in the survey. As they take the sufficient time for multiple choice questions it is sure that they have answered properly by justifying the questions.

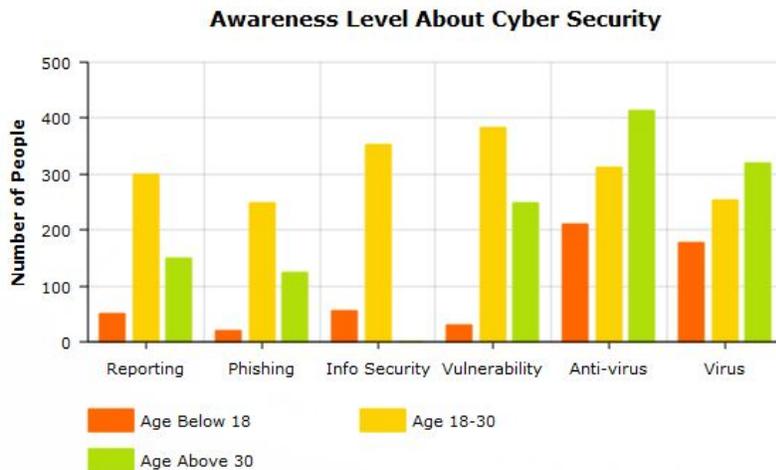


Fig. 3. Awareness Level Of Cyber Security Among People of Different Age

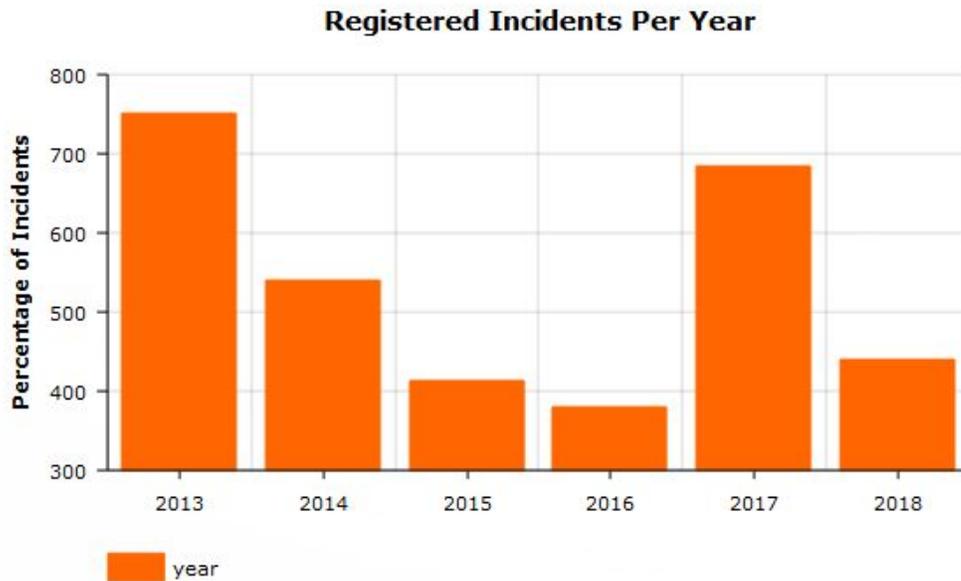


Fig. 4. Registered Incidents Per Year in Bangladesh According to Government CIRT Reports

4.3 Descriptive Analysis

After the complete survey the analyzed result has shown different positions in the awareness level. It is clear from the result that very less people know about Cyber-attacks.

When it came to the matter of password protection it is clear that people are now getting sincere about their password. It is though a great sign of improvement but many more to improve.

When it comes to information security Bangladesh is lagging behind. Maximum people easily transfer their confidential company information using personal devices which should not be a company's policy.

4.4 Summary

From the overall analyzed result it can be seen that people are less sincere about cybercrime and incident reporting. Though Bangladesh Government has taken steps with BGD CIRT E-GOV but still people don't know about the website. People have to learn more about attacks, threats and how can be they harmed by all these.

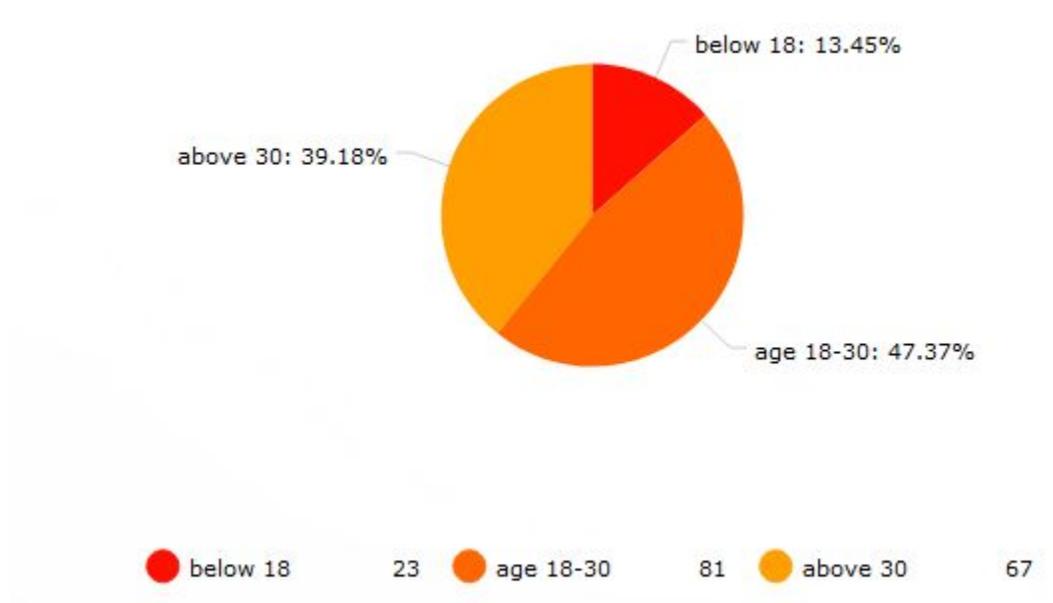


Fig. 5. Awareness Level of Cyber Security Among Different Group of Age Pie Chart

CHAPTER 5

SUMMARY, CONCLUSION AND IMPLICATION FOR FUTURE RESEARCH

5.1 Summary of the Study

This research clearly shows that government is taking proper steps but they are not enough for creating good cyber security awareness among people. They have to be more specific about the term. People are not aware of the risks of the cyber threats and thus not use and store their information securely. Most of the people are just enjoying the easy access of social media, easy money transactions and other cyber facilities without knowing about how important it is to know about the information security and how to handle them.

5.2 Conclusions

As a result it can be said that Bangladesh has a lot more to improve and better steps should be taken to let people aware about information security, cybercrimes etc. From the above statistics and results we can summary some ideas about how people are aware about the cyber security and cyber related areas. After this research I will try to do more survey for perfect result about cyber security awareness.

5.3 Implication for Further Study

In further this research will extend its criteria by analyzing the growth rate of applications or software usability to handle cyber threats. Also I will set a result to show that how people are aware about using their personal device and public smart devices. Also there will be try to make an application so that whenever any threats will come it will detect that the app is trying to pass or change personal data.

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