

Descriptive Analysis and Data Visualization on Internet Usage During the COVID-19 Pandemic in Sri Lanka

Amalka Peliarachchi
Department of Computer Science and Informatics
Uva Wellassa University
Badulla, Sri Lanka
amalka@uwu.ac.lk

W.M.P.S.Weerasooriya
Weeari Labs (Pvt) Ltd
Kosgama, Sri Lanka
sandaruu.weerasooriya@gmail.com

Abstract - This research is carried out to analyze the distribution of internet usage and identify the trends in internet usage during the Covid-19 pandemic situation. The sample data is gathered via a questionnaire and R programming language is used to analyze the sample data. By going through the analysis, age of 27 is identified as an average age group who is using internet more frequently and most of them are employable persons. Out of the sample, 10 hours per day is identified as a median value of internet usage on a daily basis and as the major proportion, 43.7% is used internet to continue their career life. Out of the sample, 46.22% have an uncertainty about their internet addiction, 34.45% revealed that they were not addicted to the internet and 19.33% have accepted their internet addiction. Though the acceptance of internet addiction is categorized into 3 levels, the average value of the internet usage in all the levels is higher than 10 hours per day. According to the analysis, within the Covid-19 pandemic period the internet usage of employable persons increased more due to the “work from home” concept. YouTube and Facebook play a major role for conveying information in day to day life and those become most prominent message delivery methods with compare to any other applications. According to the analysis, the potential is there for internet addiction with respect to the internet usage per day. This research has been able to graphically illustrate the importance of digital networks and service platforms based on internet during this global health crisis.

Keywords – addiction, internet

I. INTRODUCTION

The arrival of the Information Communication Technology (ICT) through World Wide Web (Internet) play a vital role in day today life and has affected individuals of different ages [1]. In the present scenario, ICT has become a most effective approach to deliver messages to other parties, and it has been influential in all areas of science, business, education, agriculture, military, etc. [4]. Internet addiction (IA) has arisen as a potential problem for young people with the availability and mobility of new media, which refers to excessive device usage that interferes with their everyday lives. Often the internet is used to carry on research works, maintain the interpersonal communication and business transactions. Other than that, it can be used by someone to get into pornography, extreme gaming, chatting for long hours, and gambling [3]. The novel coronavirus disease, COVID-19, a transferable disease and caused by a variant coronavirus termed SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2). Initially it was identified in December 2019 in Wuhan, China. Since then it has rapidly spread all over the world. The World Health Organization (WHO) confirmed this disease a pandemic on 11 March 2020. Governments in various countries have taken a range of security measures in order to reduce the impact of the pandemic. The WHO has encouraged testing and contact tracing to limit blowout within populations. Physical distancing which has been

promoted by WHO keeps the safe distances between individuals. Moreover it reduces to have close contacts with each other. The subsequent regulations and recommendations are to close childcare, educational and higher educational institutions, cultural and entertainment-related locates. When it feasible, WHO encourages employees and companies to use remote (home) working practices [2].

Research problems which we attempt to address through this research during the Covid-19 pandemic situation are the frequency of internet usage of people in Sri Lanka, the usefulness of the internet for the career development, education, entertainment and social awareness, most frequently used devices to access internet and frequent software applications with trends. After analyzing the data, this research has graphically illustrated the importance of digital networks and service platforms based on internet during this global health crisis.

II. OBJECTIVES

The aim of this study is to find out distribution of internet usage and identify the trends in internet usage during the Covid-19 pandemic situation. In order to fulfill the aim of the research, some objectives are identified. Examine the purposes of using the internet and identify the novel mechanisms to get in touch with the world, investigate the frequency of internet usage among Sri Lankans are identified as objectives of this study.

III. METHODOLOGY

A questionnaire is shared with the people in Sri Lanka during the Covid-19 crisis situation. 130 responses are recorded in the database as a random sample records and after cleansing those records, 119 are selected for analyzing. R programming language is used to analyze the data set and obtained the summary of the sample with different graphical representations.

IV. RESULTS AND DISCUSSION

As shown in the Fig. 1, age distribution of the selected sample had normal distribution with Median 27 and mean 27.43. 72.27% of the sample is employees, 23.53% are university students in various disciplines, 3.36% of the sample is occupied for unemployed persons and 0.84% is for school students. Fig. 2 depicts that the 43.7% of the sample mainly uses internet for the career purpose, 28.57% is used it for education purpose, having entertainment is the main purpose of using internet for the 20.17% of the sample. According to the responses, average internet usage of the sample is 9.992 hours and it is shown in Fig. 3.



Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
15.00	25.00	27.00	27.43	30.00	40.00

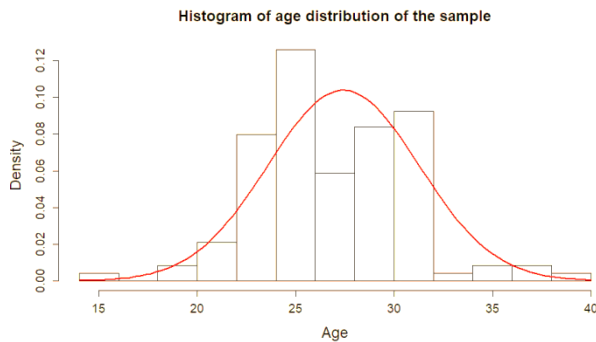


Fig. 5: Histogram for age distribution of the sample

Primary purpose of using internet

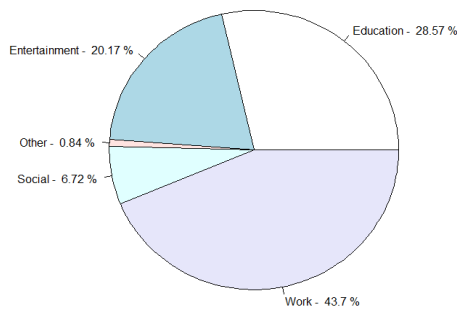


Fig. 2: Primary purpose of using internet

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
2.000	5.000	10.000	9.992	14.000	22.000

Histogram and Normalization curve of Internet Usage per day

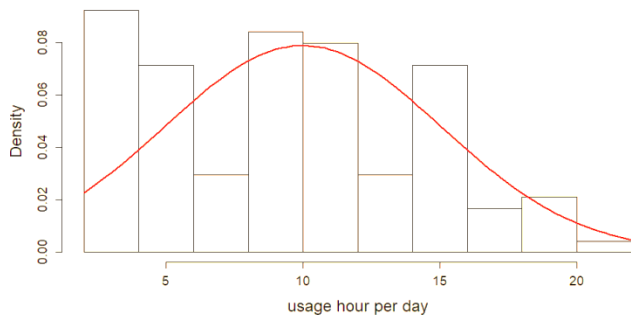


Fig. 3: Histogram and Normalization curve for internet usage per day

Majority of the sample uses Laptop Computers as the primary device to connect with internet where least is using smart phone as the primary device. 57.98% of the people use YouTube more than 2 hours per day where 82.61% of the sample uses Facebook more than 2 hours per day.

As shown in Fig. 4, 46.22% have an uncertainty about their internet addiction, 34.45% revealed that they were not addicted to internet and 19.33% have accepted their internet addiction.

Out of the people who believe that they are addicted to the internet, 65.22% are employees and 26.09% are university students. As the majority 60.87% completed their Bachelor's degree and some are reading their degree in this level. Laptops and Smart Phones are equally used as primary devices with the percentage of 47.83% and 60.87%

respectively. Average internet usage of this level is 11.39 hours per day.

Self Addiction Evaluation

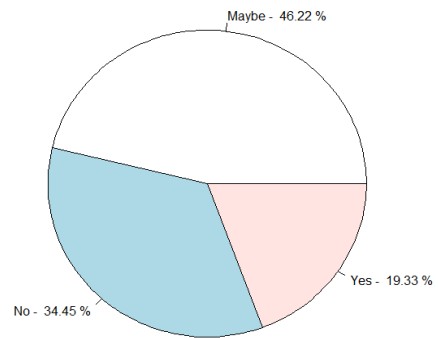


Fig. 4: Internet addiction self-evaluation

Out of the people who have uncertainty about the internet addiction, 74.55% are employees and 23.64% are university students. As the main proportion, 74.55% completed their Bachelor's degree and some are in the reading state. Laptops and Smart Phones are the two main devices which are used to connect with the internet and the percentage of 47.83% and 60.87% are dedicated for each respectively. Average internet usage of this level is 10.00 hours per day.

34.45% strictly revealed that they were not addicted to internet. Out of this group, 73.17% of them are employees and 21.95% of them are university students. As the majority, 80.48% completed their Bachelor's degree and some are reading their degree in this level. Laptop is the most commonly used primary device which has 63.41% as a device usage. 10.00 hours per day is identified as an average internet usage of this level.

V. CONCLUSION

This research has revealed that the employees who use the internet for career purposes and the university students who utilize the internet for academic purposes are the most dominant levels of internet usage. According to the analysis, within the Covid-19 pandemic period the internet usage of employable persons increased more due to "work from home" concept and the online lectures contributed directly to the higher internet usage of the university students. Average age is identified as 27, though the sample ranges between 15 and 40. YouTube and Facebook play a major role for conveying information in day to day life and those become most prominent message delivery methods with compare to any other applications. Moreover the potentiality is there for internet addiction with respect to the sample responses and internet usage per day. This research has graphically illustrated the importance of digital networks and service platforms based on internet during this global health crisis.

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