



Digital Devide : An Analysis of the Socio-Economic Impact of Extended Internet Access to University Students During The COVID-19 Lockdown (A Case Study Of Yogyakarta State University

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Abstract. Across the globe, it has been reported that only a little over fifty percent of total households have internet connection. This situation is now being highlighted by the recent outbreak of the SARS CoV – 2 Coronavirus (COVID -19) which has sent the World's economy into a downward spiral. Its negative impact on education has seen schools and related businesses shut, while students are now compelled to study from the confines of their homes, many of whom do not have access to the internet. This study examines the socio-economic impact of the extended [free home-based] internet access provided by Yogyakarta State University, to her students during the COVID -19 lockdown. Convenience and snow-balling sampling techniques were used respectively in this study. Data was collected with the aid of an online questionnaire and descriptive statistics was employed in analyzing the data. The result confirms that the extended internet access provided to students during the COVID -19 lockdown was successful and had a positive impact on the socio-economic lives of the students. The findings from this study will be beneficial to all relevant educational institutions and authorities that may wish to implement similar projects in the future especially amidst a pandemic.

Keywords: Online learning; COVID -19; Internet Usage; Online Education; Coronavirus; Yogyakarta State University

I. INTRODUCTION

As the SARS CoV – 2 Coronavirus (COVID -19) pandemic ravaged the world, various governments and companies responded to the evolving pandemic with the cancellations of public events and closure of offices, religious houses, educational institutions with the aim to curb the spread of the highly contagious pneumonia-like disease. This situation birthed the new slogan that seems to be on everyone lips including the elites “Work from home, Learn from home & Worship at home”. Among education communities, students are now compelled to study from the confines of their homes

via online learning, revitalizing the all important role of information technology (Internet) in education and the new knowledge economy.

In Indonesia, when the first two COVID-19 cases were reported in early March, the country quickly went into a panic state driving many educational, economic and social activities online. This positioned the internet as a crucial resource while simultaneously exacerbating the economic and social ruins of the household that cannot afford the internet or are cut off from the contemporary knowledge-based society. Information has been described as the lifeblood of the new knowledge economy [1]. The Internet which is a global network of computers over large distances has become an enormous part of people's daily lives [2]. Created by the United States of America's Military as a means of communication in the 1950s [3], and introduced to academic institutions as a tool to enhance students' academic experience in the mid 1990s [4], it has become a vital resource within academic communities especially at the higher levels of education. This wireless technology brought about the benefit of mobility into traditional educational activities [5], making it easier for students to obtain several amounts of up-to-date information quickly and effectively [6]. The Internet apart from being a tool for communication, now also serves as a tool for social interaction, education, business and many other purposes [6].

Generally, Information Communication Technology (ICT) enhances the way people think, live and interact with their environment. However, in most developing countries, ICT accessibility is only on a very limited scale, and this raises doubts about these countries' ability to participate in the potentials and benefits of a contemporary knowledge-based society [7]. This concern would even be made pronounced in the educational sectors of these developing nations especially during a pandemic like the COVID 19, as the model of online learning seems to be a more suitable alternative to keeping educational institutions open, posing health and safety risk for students and other educational staff alike. For students with access to the internet, information is readily available and can

be accessed easily and quickly via the Internet, anywhere and anytime however this does come at a cost.

Today, the world is approaching a tipping point where an inability to access to internet is likely to put a student at a competitive disadvantage and increases the educational gap between the have and have-nots, a situation which has been describe as the 'digital divide'. The term 'digital divide' was introduced in the 1990s and defined as the gap separating those who have access to new forms of information technology from those who do not [8]. This divide seems to be applicable in various fields and is potentially irreversible [9]. For this study, we align with [10], who uses the term 'digital divide' to describe situations in which there is a marked gap in access to or use of ICT devices measurable by the number of phone lines per inhabitant, the number of Internet users, or of mobile telephones in a particular population. The OECD [11], recognizes the digital divide and refers to it as the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regards to their opportunity to access information and communication technologies (ICTs) and their use of the Internet for a wide variety of activities. In this contemporary knowledge-based society, Internet access inequalities can indeed be considered an economic and social handicap. It is rather dishearten to find that some students do not have access to reliable internet at home, hence robbing them of a meaningful students' collegiate experience. These students' ability to seek information, conduct research, and other activities are limited. The digital divide has remained an important public policy debate, encompassing social, economic and political issues [8].

In Yogyakarta State University, the impact of Information technology has been greatly felt both in the classroom and on campus. From the availability of course materials online to large ranges of academic resources being at students finger tips. With recent happenings, students are not permitted or allowed to go to campuses during the COVID-19 imposed lockdowns, and are forced to adopt the alternative of moving to full online education from the traditional method. Some researchers have stressed the fact that essential aspects for online education such as internet coverage, availability of computers and smartphones among the students population need to be considered [12]. With the COVID-19 induced lockdowns where students are forced to study from home, it becomes quite a challenge to get reliable and affordable internet service given the dwindling financial fortunes of some households resulting from the massive job cuts, and cost reduction measures been carried out by some business enterprises in a bid to survive the economic crunch brought on by COVID- 19 pandemic. Although some educational Institutions across the globe are aiding and actively helping students transition smoothly to full online learning while also providing safety nets, students have reported several challenges, generally pertaining to personal stressors, technological, and pedagogical and learning issues [13].

1.1. Objective and Significance of study

With the various programs being carried out by Yogyakarta State University to mitigate the effects this COVID- 19 pandemic, little or no study has been done to

evaluate the impact of these programs. This study is intended contribute in filling this gap in literature by evaluating students' satisfaction level with the free home-based internet access provided by Yogyakarta State University and how such program impacted on their social and economic lives during the COVID-19 induced lockdowns. The findings from this study will support education administrators at various levels of governance in public and private educational institutions, in formulating, developing, and implementing sustainable, adaptive, coherent, effective and equitable response measures to rapidly evolving crisis situations that could pose significant disruption to educational systems and opportunities at both national and international level.

Literature Review

The COVID -19 pandemic is a rapidly evolving global health crisis and has caused governments world over to impose travel restrictions, quarantines, along with other stay at home measures. In developed economics like the US, a survey by the Pew Research Center conducted in April reported that more than half of U.S. adults (53%) agreed that the internet has been vital for them personally during the COVID 19 pandemic lockdowns [14]. This situation has rekindled debates about the digital divide, stressing that it may hinder individual's ability to complete everyday tasks including schoolwork [15]. An EDUCAUSE QuickPoll on 1st of April, 2020 that received responses from 267 higher education institutions found that the COVID-19 pandemic has greatly distorted higher education activities in the year 2020 and institutions are relying largely on digital alternatives to carry out operations [13].

1.1. Internet Access and Students' Difficulties Transiting To Online Education

Student's access to the Internet especially during pandemic scenarios is fundamental to achieving the vision for their future [16], and Institutions are now pursuing several tactics to help students transition smoothly to full remote access at the least possible cost, however this process has remained somewhat difficult [13]. In a survey by [13], 36% of institutions surveyed reported that their students were having moderate or extreme difficulty getting the internet bandwidth they need to continue their academic work while access to equipment or devices was next at 26%. A report from World Economic Forum [15], also revealed that as schools and office work transitioned online during the COVID-19 lockdown, billions of people are at a disadvantage due to lack of internet access. The 2019 State of Broadband report [17], put the global figure of households with an internet connection at just 54.8%. Unfortunately, the low -income countries seem to be hard hit with only 19% of households being connected when compared to 87% in developed countries [18]. Summarily these findings are worrisome, as the digital divide is almost at a 50-50% level among the world's population.

1.2. Internet Access and Socio-Economic Development

Information and communication technologies (ICTs), has been identified as a key potential factor for economic growth and social development [8]. The digital revolution that brought about Innovations such as the social media and online

marketplaces as well as the convergence of these innovations with virtually all existing human activity have permeated society and impacted on productivity, economic growth and business creation [19]. The internet stirs economic activities and facilitates provision and access to fundamental services. Although the Information and communication technologies (ICTs) has transformed the lives of many, a large portion of the world population still misses out on the tremendous political, social, economic, educational, and career opportunities created by the digital revolution due to the digital divide [1].

Amidst the several inequalities exposed by COVID-19 globally, the digital divide turns out to be the most pronounced [15]. In the OECD countries, various policies and programmes are been initiated to bridge the digital divide [11], among which include, pushing policies to make it easier for low-income households with school-age children to have broadband, while stressing that low-income students are at a disadvantage without online access to the internet [20]. With the COVID-19 lockdowns, the world has seen diminished economic activities and the hardest hit remains the most vulnerable populations such as students and low-income households [21], exacerbating these population's economic and social ruins.

1.3. Internet Access and Yogyakarta State University

Yogyakarta State University is ranked among top Indonesia Universities with all the necessary amenities, infrastructure and quality teaching services desirable by students, among which include on-campus wireless connectivity, aimed at furnishing students with a meaningful learning experience. In April, during the COVID-19 pandemic lockdowns and in order to facilitate students transition to fully online learning, Yogyakarta State University in collaboration with other relevant stakeholders offered monthly free internet packet directly to each student dedicated phone line usable from the confines of their home [22];[23]. This was with the intention to make the socio-economic life easier for students, lecturers, as well as parents who were experiencing various forms of challenges brought about by the COVID-19 pandemic.

II. RESEARCH METHODOLOGY

This study was administered at Yogyakarta State University, Indonesia. The respondents comprise of undergraduates and graduate students across the various faculties of the University. Convenience and snow-balling sampling techniques were used respectively in this study. Data was collected with the aid of an online questionnaire sent to various students groups consecutively for two days and descriptive statistics was employed in analyzing the data. A total of thirty-eight questionnaires were completed. The demographic information of the study respondents are presented in Table 1 below.

Table 1: Demographic Information of Study Respondents

Parameter	Freq.
Education Level	
Bachelors	5
Masters	32
Doctorate	1
Age	
Below 18	0
18 - 22	3
23 - 27	24
Above 27	11
Gender	
Male	20
Female	18
Marital Status	
Single	31
Married	6
Divorced	1
Religion	
Islam	35
Christianity	2
Others	1
Faculty	
Language & Arts	2
Economics	10
Sport Science	1
Education	8
Social Sciences	5
Math & Natural Sci.	6
Engineering	6
Nationality	
Indonesian	28
Foreign	10

Total number of respondents is 38.

III. RESULT AND DISCUSSION

Findings from this study show that the students of Yogyakarta State University are satisfied with the provision of the free internet packet by the University during the COVID-19 lockdown and the program positively impacted on their social and economic lives. The program was both timely and relevant especially as there has been a global call for education administrators to take the necessary steps to develop and implement strategies and programs that mitigate the adverse disruptions in the educational sector brought about by the COVID-19 Pandemic [21].

From this study, it was revealed that 76% of the respondents had signed up for the free Internet Packet and that they are satisfied with such provision. However, of the remaining 24% that did not sign up, 13% said that they were unaware of the program, 10% said they were not interested and 8% failed to mention a reason. While exactly half (50%) of the of respondents found the free internet packet to be helpful towards the continuation of their academics, 65% found it also helpful in the completion of other non-academic tasks such as seeking general purpose information, keeping up

with the news, and friends & family. In the same vein, 65% reported that they share the free Internet data packet with family and friends for various purposes. On the devastating effects of the COVID-19 Pandemic on the source of livelihood, 84% of the respondents reported that the COVID-19 Pandemic has negatively affected the source of livelihood of their friends and family members while 69% reported having the same experience personally.

Notably, this study has its limitations. Generalization of the results to the population should be done with caution due to the small sample size and the sampling techniques adopted therein.

IV. CONCLUSION

As educational activities transition fully to online medium, internet access has become a key resource however not every student is opportune to have such resource due to the ever present and growing digital divide. For internet access to be meaningful and fulfill its role of closing the educational opportunity gap during this COVID-19 lockdown, it must be reliable and affordable for students. The extended internet access provided to students by Yogyakarta State University during the COVID -19 lockdowns was successful and had a positive impact on the socio-economic lives of her students. The free internet packet program by Yogyakarta State University is not only making her students study smoothly during the Covid-19 lockdown, but by extension making the world a better place by ensuring inclusive and equitable quality education and learning opportunities for all irrespective of their economic and social background.

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