ISSN: 2714-2965 (Print)
ISSN: 2714-3449 (Online)
The African Journal of Behavioural and Scale Development Research
AJB-SDR Vol. 3, No 2, 2021

COVID-19 pandemic and disruption of data collection process in educational research

Dr Oluwakemi Aladenusi
Department of Educational Psychology Federal College of Education (TECH), Akoka, Lagos

Abstract
The COVID-19 pandemic has paralysed the Nigerian education system and forced a modification in data collection system in educational research. This paper investigated the impact of this pandemic on disruption of data collection process. A sample of 150 lecturers in public universities in Ogun State, Nigeria was selected through the snowball and convenience sampling techniques. Demographic Data Inventory (DDI) and COVID-19 and Data Collection Questionnaire (CDCQ) were utilised for data collection. Linear regression and Hayes' process model with .05 alpha level were used to analyse the hypotheses. The COVID-19 pandemic was found to significantly disrupt data collection process ($\beta = .31$, $t = 10.24$, $p < .05$) with income playing a significant moderating role (Coeff = 2.79, $t = 4.31$, $p < .05$). Recommendations made included parents, teachers, and significant others should teach students on computer technology and operations and the utilisation of the computer to provide information requested by researchers through online platforms.

Key Words: COVID-19 Pandemic, Data Collection Disruption, Parental Income, Lecturers

Introduction
The COVID-19 pandemic has wrecked the educational and other institutions, jolted the entire world and created global panic. In particular, it has transformed the data collection process in educational research. Schools were forced to close in response to the COVID-19 pandemic by governments all over the world and there were restrictions in human-to-human interactions (UNESCO, 2020). Hundreds of millions of children and youth have had their schooling disrupted in the attempt to curtail the transmission of this virus since it emerged from Wuhan, China in the late 2019 (World Health Organization, 2019). Many educational institutions all over the world were temporarily shut. Measures that are being made to curtail the spread of COVID-19, which has led to the closure of schools in different parts of the world include quarantine, hand washing and sanitation, use of face masks and gloves, etc.(UNESCO, 2020). Yet, educational researchers during the pre-COVID-19 era were usually involved physically in collecting data from a large number of students, teachers and other participants face-to-face without inhibitions or social distancing. Researchers in the field of education are in a state of apprehension about the likely implications of the unprecedented pandemic on data collection in research. This plague has compelled researchers to improvise new ways of reaching their samples without everyone being physically present at a spot for the fear of being contracted with its various symptoms evident all over.

The telltale symptoms of COVID-19 according to Wuhan Municipal Health and Health Commission (2020) include dry cough, pneumonia, high temperature, fatigue, gastro-intestinal infection, and breathing problems. COVID-19 first afflicted mankind around December 2019 in Wuhan, China (WHO, 2020). This pandemic has been partly traced to a food market in Wuhan. Many of the initial patients were stall owners and people who visited the market, leading to its closure. Within few days, the COVID-19 turned into an epidemic and disrupted virtually all aspects of human life as we knew it.

There is widespread anxiety, fear and uncertainty among people about when the pandemic will end and what the situation is likely to be in a post-COVID-19 society. The long-lasting closure of schools means that students were forced to stay at home for months without the conventional classroom instruction from teachers. Many researchers who use students and/or teachers as their samples

ISSN: 2714-2965 (Print)
ISSN: 2714-3449 (Online)

therefore could not easily access them as research participants. In order to mitigate disruption in schooling, the United Nations Educational, Scientific and Cultural Organization (UNESCO) recommended the adoption of social distancing and online classroom instructions by teachers and students (UNESCO, 2020). This platform can also be used by educational researchers to reach their study samples most of whom are learners and teachers in educational institutions. However, the use of online resources to collect data from research participants had not been popularly used in Nigeria in the pre-COVID-19 era.

An urgent need to understand the effects of the pandemic and how it impacts people all over the world have led to calls for papers and increased research on COVID-19 across a broad spectrum of disciplines (American Psychological Association, 2020). At the height of the COVID-19 pandemic when governments and institutions all over the world severely restricted physical face-to-face interactions among people,researchers were compelled to undertake their data collection procedures through the use of the Internet resources such as e-mail, Zoom, etc. This data collection strategy did not work very well due to a myriad of obstacles including inability of many students to maintain online presence and poor knowledge of computer operations (Ogunderu, 2019). The situation was aggravated by the fact that students were faced with isolation and uncertainty about the future of their education or career. In addition, many students were exposed to the risk of harsh psychological and economic problems such as reduced family income, loss of loved ones to COVID-19, fear of catching the virus and so on. All these can adversely affect data collection from students and/or teachers.

Data collection is arguably the most important part of research. It refers to the methodical procedure of collecting quality empirical evidence or information using valid and reliable instruments. Data collection can also be defined as a systematic process of gathering observations or measurements to answer a research question or test a hypothesis (Bhandari, 2021). Basically, data collection can be carried out in four ways: In-person interviews, mail, phone and online. However, research processes that involved physical researcher-participant interactions was impossible at the height of the COVID-19 pandemic especially in 2020. Consequently, researchers had to change from the conventional face-to-face to online data collection methods (Metzler, 2020).

According to Terada (2020), the shutdown of educational institutions as a result of the COVID-19 has adverse effects on the learning of students especially those from low socio-economic backgrounds. This can even harm the mental health of many students as a result of inability to enjoy normal school services. The closure of educational institutions as a result of the pandemic interrupted the conventional teaching-learning process and increased the adoption of online instruction which is uneven and affected by the circumstances of students which include internet access(Terada, 2020). Online learning is an apt response to fill the learning gap created by school closures designed to control the spread of the pandemic. Technology can enable teachers and students to access specialised materials on the internet.

According to Soland, et al (2020), one of the most worrying aspects of the current COVID-19 is that society does not have in-depth knowledge of it. We are ignorant about who has been or will be infected, who might be a carrier, spreading the virus to others without even knowing it, when schools will re-open and life will return to normal, when the pandemic will end and what its long-term effects are likely to be. These uncertainties can trigger intense anxiety and fear which can in turn lead to inability to concentrate on online survey items. Using the Internet for any purpose itself comes with a cost: Cost of data. Even having access to requisite technological devices may be difficult because of many factors including widespread poverty, irregular power supply, network problems, poor knowledge of computer operations, etc. All these can disrupt data collection system.

This investigation is prognostic or anticipatory in nature. The impact of COVID-19 on data collection disruption is likely to vary according

ISSN: 2714-2965 (Print)
ISSN: 2714-3449 (Online)

to children's socio-economic backgrounds especially as determined by parental income. Lower-income children are unlikely to have the Internet connectivity needed to access online surveys and benefit from virtual instruction and remote collaboration with other students, teachers, researchers and significant others (Denise-Marie, 2020). This research is prognostic or anticipatory in nature. It will therefore suggest pre-emptive measures that can be used to deal with possible problems militating against the participation of students in surveys and other types of research in post-COVID-19 society. The moderating influence of parental income in the relationship between COVID-19 and data collection disruption is also examined.

1. Hypotheses

Ho1: The COVID-19 pandemic will not significantly disrupt data collection process in educational research.

Ho2: Parental income will not significantly moderate the influence of COVID-19 pandemic on disruption of data collection process in educational research.

2. Methods

3.1 Design, Population, Sample, and Sampling Technique

The survey research design was adopted in this study. The study population comprises all academic staff members or lecturers in public universities in Ogun State, Nigeria. A sample size of 150 lecturers was considered adequate for this study. The participants were selected through snowball and convenience sampling techniques from Ijebu Ode metropolis because of the difficulty of accessing them due to closure of educational institutions. The researcher approached 15 accessible lecturers each of whom then brought in nine other lecturers into the study.

3.2 Instruments

Data were collected from participants in this investigation by means of two instruments, namely, the Demographic Data Inventory (DDI) and COVID- 19 and Data Collection Questionnaire (CDCQ) which were developed by the researcher.

COVID-19 and Data Collection Questionnaire (CDCQ)

The COVID- 19 and Data Collection Questionnaire (CDCQ) was developed by this researcher to gauge the perceived influence of COVID-19 pandemic on data collection. It is a measure of students' perception of how COVID-19 affects their academic achievement. The CAAQ has 18 statements and a Likert-type structure with four points: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. Some items on the instrument include: *"COVID-19 makes it more difficult to access research participants"* and *"Cost of collecting data during COVID-19 is greater than the cost before the pandemic".* The scores on the scale are consistent over time, and the validity of the scale was determined by expert opinions.

3.3 Method of Data Analysis

Linear regression and Andrew Hayes' Process model were used to analyse the obtained data set. Hypotheses were tested for significance at .05 alpha level.

3. Results

Hypothesis One

Ho1: The COVID-19 pandemic will not significantly disrupt data collection process in educational research.

Table 1: Regression Coefficients for the Impact of COVID-19 Pandemic on Data Collection Disruption

	B	Std Error	Beta	t	Sig.
(Constant)	12.55	4.90		13.07	.000
COVID-19	.11	.02	.31	10.24	.000

ISSN: 2714-2965 (Print)
ISSN: 2714-3449 (Online)

Dependent Variable: Data Collection Disruption

Table 1 showed result was significant (β = .31, t = 10.24, p < .05). As such, the null hypothesis is rejected while the alternative hypothesis is upheld. Hence, the COVID-19 pandemic will significantly disrupt data collection process in educational research.Table 1 further showed that COVID-19 pandemic is positively associated with data collection disruption and that the latter can be predicted from the former by means of the regression equation:

Data Collection Disruption = 12.547+(0.113 x COVID-19 Pandemic)

Hypothesis Two

Ho2: Parental income will not significantly moderate the influence of COVID-19 pandemic on disruption of data collection process in educational research.

Table 2: Regression Coefficients for the Moderating Role of Income in COVID-19 Pandemic- Data Collection Disruption Relationship

	Coeff	se	t	p	LLCI	ULCI
Constant	.98	1.44	.53	.50	4.29	6.04
Income	2.79	1.19	4.31	.00	.82	2.42
COVID-19	.73	.08	9.89	.00	.58	.90
Int_1	.15	.04	3.41	.00	.22	.30

Product terms key: Int_1 COVID-19 X Income

Table 2 showed significant results (*Coeff* = 2.79, t = 4.31, p< .05). As such, the null hypothesis is rejected while the alternative hypothesis is upheld. Hence, parental income will significantly moderate the relationship between COVID-19 and disruption of data collection process in educational research.

4. Discussion

The examination of the influence of COVID-19 on disruption of data collection process in educational research which was done with a sample of university lecturers in the study area was speculative and was prompted by the need to mitigate the adverse effects the pandemic is likely to have on students by virtue of their being out of school for an unprecedented length of time.

The first null hypothesis which stated that the COVID-19 pandemic will not significantly disrupt data collection process in educational research was found to be unsupported by data. Hence, the alternative hypothesis was upheld, leading to the conclusion that COVID-19 pandemic significantly disrupted data collection process in educational research. This finding agreed with Soland, *et al.* (2020) who averred that the ignorance and uncertainties associated with COVID-19 can spark extreme anxiety and fear, making it difficult to concentrate on survey items and ultimately lead to giving misleading data that can invalidate research findings. Hence, there arises the need to not only anticipate but also look for ways of preventing or ameliorating data collection disruptions brought about by the COVID-19 pandemic.

The second null hypothesis which stated that parental income will not significantly moderate the influence of COVID-19 pandemic on disruption of data collection process in educational research was found to be unsupported by data. Hence, the alternative hypothesis was upheld: Parental income significantly moderated the influence of COVID-19 pandemic on disruption of data collection process in educational research. This finding might be indicating that lecturers from high income backgrounds could benefit more from online learning resources since they could more easily purchase the required gadgets to access the Internet. On the other hand, lecturers from low income backgrounds would find it relatively more difficult to utilise distance education resources due to the difficulty of

ISSN: 2714-2965 (Print)
ISSN: 2714-3449 (Online)

acquiring the requisite Internet resources. This finding corroborated Denise-Marie(2020) who averred that the difficulty in accessing online learning resources can have an adverse effects on academic outcomes.

The researcher made the following recommendations:

(i) University teachers and other staff should be re-educated on computer technology and operations and the utilisation of the computer to provide information requested by researchers through online surveys and other Internet platforms. This will help them to confidently respond to questions or items.

(ii) Counsellors should use appropriate counselling techniques such as rational emotive therapy and anxiety reducing strategies to minimise fear of COVID-19 which otherwise can hinder participation in research as respondents.

(iii) Students and teachers should be encouraged and supported with needed resources and skills needed to use specific Internet resources for responding to online surveys, questionnaires and other instruments.

(iv) Government should institute and follow up poverty alleviation programmes as this would give more students the resources they need to maintain online presence and subsequently take part virtually as participants in investigations.

(v) Government, education authorities and the Internet Service Providers should expand fast, reliable facilities and Internet access so that both lecturers and students in the rural areas can also benefit from online learning resources, thereby minimising learning disruption resulting from COVID-19.

(vi) Government and other relevant organisations should ensure that regular power supply is provided in the country as much as possible.

References

Bhandari, P. (2021). A step-by-step guide to data collection. Retrieved on 15 April 2021 from *http://www*.info@scribbr.com.

Denise-Marie, O. (2020). Six tips for reporting on how COVID-19 school closures affect student learning. *Journalist's Resource, 4*(12), 153-166.

Metzler, K. (2020). The impact of COVID-19 on student research projects. Retrieved on 15 April 2021 from SAGE Ocean Blog.

Ogunderu, O. (2019). Impact of COVID-19 pandemic on educational systems in Nigeria. *Education and Society, 16*,237-246.

Soland, J., Kuhfeld, M., Tarasawa, B., Johnson, A., Ruzek, E., & Liu, J. (2020).The impact of COVID-19 on student achievement and what it may mean for educators. *Brown Center Chalkboard* Wednesday, May 27, 2020.

Terada, Y. (2020). *COVID-19's impact on students' academic and mental well-being*. New York: George Lucas Educational Foundation.

UNESCO *(2020).*COVID-19 educational disruption and response. Retrieved 3rd June, 2020 from https://plus.google.com/+UNESCO.

World Health Organization (2020).Novel coronavirus–China. 2020. Retrieved on 27th April 2020 from *https://www.who.int/csr/don/12january-2020-novel-coronavirus-china/en/*.

Wuhan Municipal Health and Health Commission (2020). Wuhan Municipal Health and Health Commission's briefing on the current pneumonia epidemic situation in our city. Retrieved on July 8, 2020 from *http://wjw.wuhan.gov.cn/front/web/showDetail/2019123108989.*

ISSN: 2714-2965 (Print)
ISSN: 2714-3449 (Online)