COVID-19 Pandemic and Its Impact on Research and Development in the Social Sciences

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Abstract

The spread of the novel Coronavirus, COVID-19, is causing severe disruption to various sectors in Nigeria and across the global world. The paper, therefore, examined the successes, challenges and prospects of R&D in social sciences before and during COVID-19 crisis among five randomly selected Universities in the South western Nigeria. The data were collected online from 335 social science researchers from the research institutions and a technique of Analysis of Variance (ANOVA) was employed. The findings showed that the pandemic worsened the already precarious situation among academics in Nigeria. It was concluded that a new hybrid model of research should emerge, post COVID-19, and that it is high time researchers key-in to a range of digital options being offered by education technology. The study thus recommended that Nigerian government and corporate organisations should provide adequate grant to persons with bright scientific and creative ideas so that they can put the innovation into practice.

Keywords: COVID-19, pandemic, impact, research and development, social sciences

Introduction

COVID-19 pandemic caught the world totally unprepared. The spread of COVID-19 has brought with it an unprecedented shock to the global economy (KPMG Report, 2020). It crept into our national life in Nigeria in February, 2020, and since then, the nation has seen the bright and ugly sides of the pandemic. With millions of people in Nigeria and around the world in a virtual lockdown for about two-quarter, a ripple effect throughout the economy became noticeable. Most experts agree that a significant drop in economic output is inevitable. This pandemic affects every facet of education, research output is not left out. Research activities in the country are seriously impaired. In fact, the COVID-19 pandemic has undoubtedly disrupted the scientific enclave.

Research and Development (R&D) refers to innovative activities undertaken to develop new services or products, or improving existing ones (Adegoke, Adedayo, Aderinto & Yesufu, 2017). It takes place in tertiary institutions, government agencies and private organization spread across the country. The common interest of researchers is that a robust technology and enough funds were the only prerequisite for a successful research while the important role a global health hazard could play in research has not been given considerable attention (Jimoh, 2018). The impact of the measures to contain the pandemic in Nigeria was more pernicious than anticipated. The virus and the confinement measures requesting people to work from home have caused a significant damage to the productive activities as well as ideal of new discovery. Researchers have been confined to their homes thereby restricting the efforts of advancing the frontier of knowledge. The distinctive rise of e-

learning and digital platforms which aid working remotely from any location have not really proven to be helpful. Individual behavioral changes, such as fear-induced aversion to workplaces and other public gatherings, are a primary cause of negative shocks to the growth of research efforts during pandemics.

There exists legion of problems that have bedeviled the progress of R & D in social sciences in Nigeria before the outbreak of the pandemic and these include: inadequate funding, lack of facility, quality of personnel, research environment or government policy (KPMG Report, 2020). The breakout of the COVID-19 is only aggravating/speeding the problems. Many of our respondents claimed to have lost enormous opportunities for research awards and travel grants for 2020 scientific events. The reduction in scientific events and closure of the scientific workplace result in the extension of research time and, in some cases, putting the experiments on hold, or downscaling them to a bare minimum and thus results in reduced scientific output. Besides, most of international collaborative researches have either been suspended or out rightly cancelled. Research is currently skewed towards find solutions for COVID-19. Many funding agencies feel obligated to finance research that is related to COVID-19 and its effect. The need to urgently develop vaccines take precedent. By and large, the ongoing COVID-19 pandemic is seriously affecting research output.

The continuous spread of this pandemic has led to a palpable fear of a worldwide health catastrophe. In response to this, several reports on the economic effects of a major epidemic have been produced recently. So far there has been no study of the potential consequences of a pandemic on research and development in social and management sciences in Nigeria, hence the need for this paper. Thus, there is a need to investigate how researchers in social sciences are affected by COVID-19 pandemic and how it influences the research efforts during the health crisis. The effects of COVID-19 on social scientists in Nigeria were discussed in the light of theoretical information. We also took a deeper look at the way they think, feel and act as researchers.

The main objective of the paper is to examine the challenges and prospects of R&D in social sciences before and during COVID-19 crisis in Nigeria with a view to preparing social scientists to be able to function effectively and unhindered in future crisis. Specifically, the paper attempt to provide answer(s) to the question: 'What impact, if any, does COVID-19 pandemic have on social research work?'

Literature Review
Research is seen as a factor of discovery and rediscovery of knowledge. It has become an increasingly relevant tool for individual, institutional and national development. The quest for knowledge is indisputable in an ever-increasing changing world from the rear to the fore; from basic to advance and from spatial to a global village (Chukwu, Malachy, Agbawodikeizu & Agwu, 2016). Hence, survival in a world of such dynamism can only be attained through positive adaptation which is a product of innovative ideas. Achieving this expands the frontier of knowledge which is aimed at digging up knowledge for personal and public consumption, while seeking remedy to problems. Research and Development are interwoven from time immemorial. It is in this regard that Odia and Omofonmwan (2018) asserted that progressive change in the social structure in society is usually as a result of novel peoples' ability in creative and innovative ideas. Therefore, the evidence of knowledge as a precedent for development is measured through progressive changes induced by creativity and innovations.

Though, it is doubtful if R & D in social sciences maintains a clear cut from other categories of research, it has a remarkable uniqueness in its methodology. However, the depth of the methodology and focus of social research is a matter of concern for the simple reason that it has been plagued with serious institutional, logistical and structural challenges (Jimoh, 2018). These impediments have deprived R & D in social sciences especially in Nigeria of its supposed astuteness when compared with trend of similar research efforts in other parts of the world, mostly

Western world. Similarly, Jimoh, (2018) opined that the situation of R & D in social sciences is quite worrisome and deserves not only maximal attention but also quick intervention as it has affected several areas of the Nigerian nation which include economic, political, religious, cultural areas and among others. It is in reaction to the foregoing that Adegoke, Adedayo, Aderinto and Yesufu (2017) opined that research and development in social sciences beam its searchlight on what is happening at the household and national levels to the historical analysis of phenomenon.

Several challenges have bedeviled the successes and prospects of research and development in social sciences in Nigeria and this culminated in slowing the pace of its growth or keeping it stagnated. It has been observed that the desired and conducive environment for social research is not yet available in Nigeria (Odia and Omofonmwan, 2018). According to these authors, a conducive environment, the requisite facilities and the right frame of mind are needed by social researchers if they were to perform effectively and optimally.

Many scholars such as Omodia (2016); Kamba (2018); Odia and Omofonmwan (2018); Mapolisa and Mafa (2018); Dauda (2019) and Obikeze (2019), have varied positions on whether past research and development efforts in social sciences have affected the developmental strides with particular reference to those issues that impede on the astuteness and quality of social research. Nevertheless, they are all of the opinion that research and development efforts in social sciences in Nigeria could have done better, especially when compared to research efforts in other climes in the advanced nations of the world.

COVID-19 has put scientific research into the spotlight in a way that the current predicament could not have imagined even some months before the outbreak of the pandemic (Hammoud et al, 2020). Dhakal (2020) opined that the pandemic has imposed an adverse effect on research efforts as field work is the soul of social science research. Furthermore, the most visible impact for now is that academics and researchers now work remotely with heavy reliance on internet. Tetvadze (2020), Moswana (2020) and Tetvadze (2020) also corroborated Dhakal's view when they noted that many could not go on with their research as planned as field trips would not be possible, library closure denied access to some of the reading material that are not found the internet and the internet data is also a challenge as it is costly to purchase data for a prolong usage. The difficulty will also move to data collection as it will not be possible to conduct or focus on group interview at the respondents' residence as you will be putting yourself and the participants at risk.

Since the outbreak of the pandemic, it is very difficult to estimate its long-term effects. Although society has been hit by several pandemics in the past, it is difficult to estimate the long-term economic, behavioural, or societal consequences as these aspects have not been studied to a great extent in the past.

Methods
This section presents the methods used in this study such as the sample and sampling procedure. It also contains the research instrument employed and the data analysis techniques adopted.

Population
A survey was conducted from September 3 to 23 October 2020. It attracted responses from only 335 (about 68%) out of 500 projected social science researchers from five randomly selected Universities in the South Western Nigeria. The Universities include Obafemi Awolowo University, Ile-Ife, Osun State; Federal University, Oye-Ekiti, Ekiti State; Lagos State University, Lagos; University of Ibadan, Ibadan, Oyo State and Chrisland University, Abeokuta, Ogun State. The data were collected online and just 17 other responses were turned in behind schedule.

Sample and Sampling Procedure
A sample of 100 questionnaires was administered in each of the research institutions mentioned. The selection of these institutions was done randomly.

Research Instrument
The study is limited to the South-West because we are constrained by time. Structured questionnaire was used to elicit information from the respondents while chart and percentages were used for the data presentation.

Method of Data Analysis
The paper compared the state of R & D before and during the COVID-19; hence, it employed Analysis of Variance (ANOVA) method of analysis. This paper focused on One Way repeated measures ANOVA which examines differences in the means of two or more different groups or times. Therefore, the technique was used to examine the state of R and D before and during the COVID-19 in Nigeria.

The underlying idea of the ANOVA with repeated measures is based on a decomposition of the total sample variance. The two groups in this paper consist of the same subjects before and during COVID-19 crisis. Thus, the variance is determined by the following equation:

$$SS_t = \sum_{i=1}^{n}\sum_{j=1}^{k}(y_{ij} - \hat{y})^2 \qquad\qquad 1$$

where, *SS* is the sum of squared differences; j is the factor level; *k* is the number of factor level; *n* is the sample size, $\hat{y}$ is the mean and y_{ij} implies the attributes of the units of analysis i and factor level *j*. The degree of freedom (df) for treatment in this paper is defined as *k -1*

Also, SS can also be separated into the treatment variance and residual variance as follows:

$$SS_t = \qquad SS_{treat} + SS_{res} \qquad\qquad 2$$

Thus, the F test statistic is derived from the relationship of the treatment variance to residual variance.

$$F = \qquad \frac{SS_{treat}}{SS_{res}} \qquad\qquad 3$$

The F-distributed test statistic is compared with the critical value of the theoretical F-distribution is determined by degrees of freedom.

Results

Challenges of Social Science Research before and during the Pandemic

The chart below shows the depth of the impact of COVID-19 on research and development in social sciences in the selected Universities before and during the pandemic.
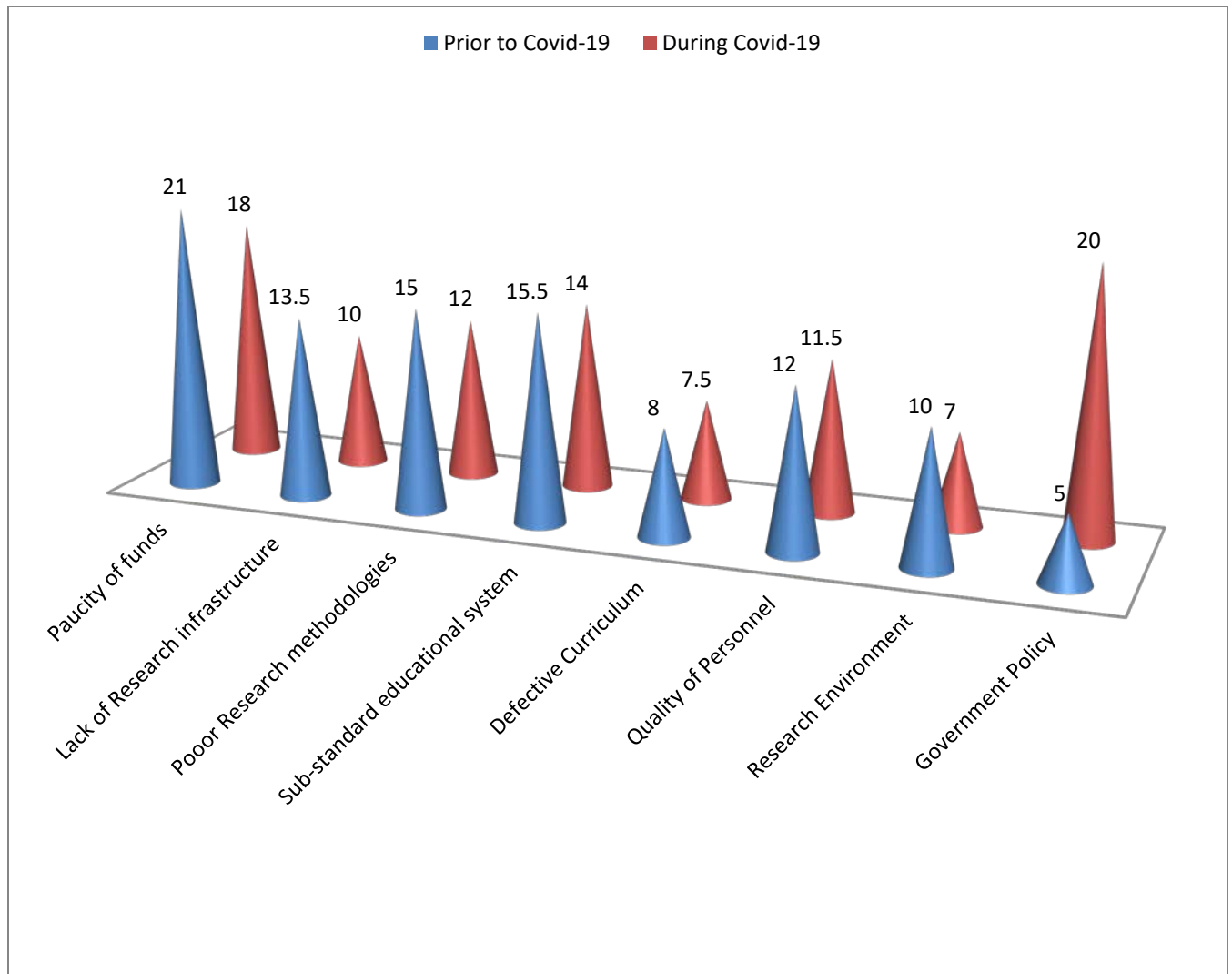
Figure 1: Respondents' Assessment of Challenges of R & D in Social Sciences

From Figure 1, it can be inferred that 21% of the respondents indicated that paucity of fund is a challenge

to R & D before the outbreak of COVID-19 while 18% of the respondents supported the claim that paucity of fund is a challenge to R & D during the pandemic. Also, 13.5% and 10% of the respondents claimed that lack of research infrastructure constituted a hindrance to R & D before and during the pandemic respectively. Similarly, the proportion of the respondents' claims on other challenges identified by the paper such as poor research methodologies, sub-standard educational system, defective curriculum, quality of personnel and research environment followed a similar downward pattern with the exception of government policy.

It was shown that 5% and 20% of the respondents claimed that they were effective before and during the COVID-19 respectively.

Challenges of Social Science Research Prior to COVID-19 Crisis
The results of ANOVA technique presented in Table 1 supported the findings in Figure 1 It was revealed that all the responses appear significant as indicated by their P-values. Also, the results of F-statistics (a ratio of variances) which range from 2.7 to 9.7 indicate that a minimal dispersion or spread among the variables, thus, the model is fit. It equally considers the joint effects of all the

variables. Therefore, by implication, all the identified variables (paucity of funds, lack of research infrastructure, poor research methodologies, sub-standard educational system, defective curriculum, quality of personnel, research environment and government policy) appear to have collective impact on R & D in social sciences in the selected Universities in Nigeria before and during the pandemic.

Table 1: ANOVA Table showing the Descriptive Statistics of Challenges of R & D in Social Sciences Prior to and During COVID-19 Crisis.

	Df	Sum Sq	Mean Sq	F-Stat	Pr (>F)
Prior to COVID-19					
Paucity of funds	1	21.0	21.0	7.1	0.0003
Lack of research infrastructure	1	13.5	13.5	5.2	0.0385
Poor research methodologies	1	15.0	15.0	5.4	0.0227
Sub-standard educational system	1	15.5	15.5	5.4	0.0791
Defective Curriculum	1	8.0	8.0	3.2	0.0892
Quality of Personnel	1	12.0	12.0	4.9	0.0796
Research Environment	1	10.0	10.0	4.2	0.0756
Government Policy	1	5.0	5.0	2.7	0.0982
Residuals	32	102.4	3.2		
During COVID-19					
Paucity of funds	1	18.0	18.0	6.1	0.0013
Lack of research infrastructure	1	10.0	10.0	4.2	0.0585
Poor research methodologies	1	12.0	12.0	4.9	0.0724
Sub-standard educational system	1	14.0	14.0	5.3	0.0693
Defective Curriculum	1	7.5	7.5	3.6	0.0795
Quality of Personnel	1	11.5	11.5	4.7	0.0996
Research Environment	1	7.0	7.0	3.5	0.0856
Government Policy	1	20.0	20.0	9.7	0.0082
Residuals	32				

Source: Authors' computation

In line with the results of the descriptive statistics presented above, the claim of the paucity of fund to finance R & D in social sciences by the respondents was significant at 1% level. This inadequacy of fund has also resulted in the lack of motivation to embark of research efforts in the country. Also, lack of research infrastructure was also adjudged to have significant impact on R & D in social sciences as indicated by 5% level of significance in the results. The results revealed that in all those institutions covered, internet facility is not stable where available. Many of

these institutions do not have the required equipment and research facilities. This is indeed a far cry from what is obtainable in developed nations. Besides, the respondents claimed that there are no functional laboratory facilities like statistical and econometric software packages. More worrisome is the fact that the available anti-plagiarism scanner in four of the selected universities is said to be outdated and the researchers have to make use of the non-professional versions.

Research methodology in Social Sciences which maintains a 5% level of significance is also a source of concern by 15% of the respondents. This may be due to the apathy towards research in the country as revealed by the findings of this paper. Most of the available local journals are either moribund or irregular. The charges were equally comparatively higher when compared with the weight attached to the journals in ratings. Social Science researchers sometimes do not follow the necessary research ethical guidelines. This is anchored on the standard of educational system in Nigeria which was found out to be significant at 10% in respect to research effort in Social Sciences. This is an indication that virtually all facets of education system have been broken including research leading to the inability to broaden the frontier of knowledge.

The respondents view that curriculum structure is also defective as indicated by its 10% level of significance. This may not be unconnected with the banking concept of education which does not give room for innovation, creativity and invention or breaking new grounds. Our schools do not develop innate ability and potential of students but rather hand-out the pre-determined knowledge to them in piece meal. For instance, any academic write-up that is not anchored on the existing knowledge or authority is usually discarded or dies prematurely thus, killing innovation and creativity. Good ideas that the proponent could not find a theoretical foundation for are jettisoned or disapproved, thus, discouraging such a researcher. This is the bane of our state of R & D that has not seen moving at the same pace with R&D efforts in developed countries or other climes. This explains why some of our students who go overseas are able to

break new grounds than those who choose to remain here. This is because no idea or thought is useless. In fact, crazy ideas (deviation from the norm) lead to innovation.

Similarly, structural composition of personnel in Nigeria vis-à-vis other nations is another daunting challenge as claimed by the respondents. The results indicate a significant relationship at 10% level between incompetent personnel and R & D in social sciences. The implication of the results is that employers of labour (as a result of their practical experience) have severally come to conclude that Nigerian graduates are unemployable. Yet, they have no choice but to employ them where and when it matters most, though at the higher cost of training and re-training. This has become a recycling process from institution intake to graduate to employed labour and then to low productivity, hence low quality of research personnel.

Challenges of Social Science Research during COVID-19 Crisis
The challenges of social science research prior COVID-19 crisis were aggravated at the eve of the outbreak of the pandemic in Nigeria and the situation became worsened during the period. As revealed by the survey, the variables maintain relatively similar significant levels in the two situations (before and during COVID-19 crisis). The significant impact of the paucity of funds to finance R & D in social sciences was heightened as claimed by the respondents. The impact maintained 1% level of significance. The respondents claimed that they have been experiencing the direct effects of reduced funding at the time of responding. It was also claimed that there were apparent signs that funding for COVID-19 pandemic would affect research funding. Ten (10) percent of the respondents claimed that this redirection of funding is already taking its toll on them as their on-going funded research have to be suspended due to the decision of funding agencies to stay action for now. However, just very few of the respondents express hope about the possibility of increased funding for social researchers born out of recognition for the need to better understand the social dimension to the pandemic and its impacts in order to find appropriate solutions.

Government policy also has the same level of significance as well. This implies that the policy thrust of government during COVID-19 crisis is preventive measure. The directive order of government to stay at home during the period has been more effective.

The other variables maintained similar trend but at 10% level of significance. Close three-quarter (62%) of the respondents believed that this pandemic is seriously hindering research activities unabatedly. According to them, delays come in many ways. The laboratory of social science is in the communities. Primary data and information are obtained from people using face to face oral communication. This ceased at this time. Online interview and data collection is very difficult if not totally impossible in this part of the world. Field work which is the soul of social science research is adversely affected during the COVID-19 pandemic. Of serious concern to our respondents were the effects on theses supervision and defense as well as delay in the publication process and disseminating work.

Some categories of the respondents were of the opinions that there were moderate effect of the pandemic on conference/workshop/seminar participation and attendance as the embracement of digital technology through online services or information-sharing platforms like Zoom, has kept people connected around the world. Just 32 percent of the respondents agreed to have taken advantage of this opportunity. However, eleven and half (11.5) percent of respondents said they were positively affected by the delays occasioned by the lockdown in that they had increased time to re-focus their research and this aligns with findings of Dooley (2020).

Research environment and government policy could be partly explained using the need for increased inter-disciplinary collaboration and travel restrictions. This was widely expressed by more than half of them respondents. It was claimed that ninety-three (93) percent of them believed that existing collaborations is significantly and negatively impacted due to increased focus on COVID-19 related research. They equally considered limited travel to international conferences as having an impact on collaborative research and limiting the exposure and dissemination of research. Some expressed a frustration because tackling the pandemic seems to demand increased collaboration, but their own opportunities to collaborate were becoming more limited.

Discussion

It was apparent that before the outbreak of COVID-19 in Nigeria in February, 2020. The research facilities in virtually all multidimensional studies in the field of human endeavor and most importantly Research and Development (R&D) in Social Sciences are not cheap or easy to set up. Thus, the pandemic, as revealed by the findings of the paper, worsened the minimal funding allocated to research in Nigeria. This has led many Nigerian researchers to look for international opportunities to provide the grants and resources needed to carry out research. The results are contrary to the findings of Dooley (2020) that the delays occasioned by the lockdown during the COVID-19 crisis in that had increased time resources to re-focus research. The problem of paucity of funds has resulted to brain drain as many bright minds and scholars have left the shores of the country to more favourable climes where there is sufficient access to funds and resources needed to make research easy to embark upon. This supports the claims of Odia and Omofonmwan, (2018) that environment for social research is not yet conducive in Nigeria.

It is not gainsaying that many institutions where research is carried out are lacking in terms of equipment but the challenge was compounded during the pandemic. For instance, researchers sometimes have to travel across the country to use basic laboratory equipment and data collection but travelling during the pandemic has been greatly restricted as people have to comply with stay-at-home order. This is in support of the findings of Dhakal (2020) which revealed that the pandemic has imposed an adverse effect on research efforts. In fact, the lockdown has impaired access to the small information base as well as inhibited researchers from gathering primary data. This supports the findings of Jimoh (2018) which revealed that social research has been plagued with serious institutional, logistical and structural challenges among which is lack of

research infrastructure. Also, the findings of this paper are in conformity with the work of Tetvadze (2020), Moswana (2020) and Tetvadze (2020) which concluded that many could not go on with their research as planned as field trips would not be possible, library closure denied access to some of the reading materials that are not readily available and the internet data are also a challenge as it is costly to purchase data for a prolong usage.

It was also revealed that Social Science researchers undertaking research often employ the wrong methodology and sometimes do not follow the necessary research ethical guidelines. Thus, the COVID-19 crisis aggravated the precarious situation as wrong methodologies often lead to the wrong results. This supported the claim of Jimoh, (2018) that the depth of the methodology as well as focus of social research is a matter of concern for the simple reason that it has been plagued with serious institutional, logistical and structural challenges. However, the challenge facing R & D in Social Sciences is traceable to inadequate training meted out to these researchers. It has further exposed the weakness of the state of preparedness in social science research and its forecasting ability in the country. This is in line with the submission of the Organisation for Economic and Co-operation Development (OECD) (2012) which maintained that research, especially in social sciences is a formal work undertaken systematically to increase the stock of knowledge in meeting future challenges.

It is no longer news that the education system in the country is broken and needs to be fixed. This broken system has permeated into every facet of teaching and research leading to the inability of the country to create new set of vibrant researchers. Thus, instead of COVID-19 pandemic reviving the already moribund educational system through the e-learning platform, it only aggravates the challenge.

Conclusion
The challenges posed by COVID-19 to research in social sciences provides golden opportunity for social researchers in Nigeria to think out of the box and come up with strategies that will enable them to effectively function in any future pandemic. The paper concluded that social sciences have suffered disproportionate effects since the outbreak. Before now, research in social science is faced with a myriad of challenges ranging from paucity of funds and lack of research infrastructure among others. In fact, the lockdown has impaired access to the small information base as well as inhibited researchers from gathering direct primary data. The pandemic no doubt caught researchers napping.

Recommendation
The current pandemic came with a bag of mixed fortune. It has prompted us to develop coping strategies while it lasted and to begin to look for practical research framework for social scientists to avoid redundancy in the face of any similar threat in the future. The paper recommends that there is a need for concerted efforts and steadfastness on the part of social science researchers; it is high time researchers key-in to a range of digital options being offered by education technology; Nigerian government and corporate organizations should provide grant to persons with bright scientific and creative ideas so that they can put the innovation into practice and the approach of R & D should place more emphasis on preventive rather than curative measure in case of future crisis. What has been made clear during this pandemic is the fact that online technology can play a great role here, it is incumbent upon Social Scientists to take advantage of its full potential. Therefore, a new hybrid model of research should emerge, post COVID-19, and that the integration of information technology in research will accelerate not only data gathering and processing but also dissemination of research findings. It is important to point out that the views expressed by our respondents at this early stage in the current crisis inevitably focus predominantly on short-term and immediate challenges and opportunities, they will also have a longer-term impact. Further research is urgently needed on the likely long-term impact of the pandemic on social science research capacity so that it is there when needed in the future.

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