
**The Reliability of Four Elements of Research in Effective Mitigation of Covid-19
Pandemic for Rapid Global Health and Economic Recovery with focus on Nigeria**

BY

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ABSTRACT

The study sought to examine the extent of the reliability of four elements of research in effective mitigation of Covid-19 pandemic for rapid global health and economic recovery. Ex-post facto research design was adopted for the study. The study was conducted in Nigeria. The population of the study comprised social researchers, psychologists, and medical researchers. Simple random sampling technique was used to select 50 Social researchers, 50 psychologists, and 50 medical researchers, giving a total of 150 respondents constituting the sample size for the study. The Main Instrument used in this study was a Questionnaire titled “Elements of Research and Effective Mitigation of Covid-19 Pandemic (EREMCPQ)”. Face validation of the instrument was carried out to ensure that the instrument has the accuracy, appropriateness, completeness and the language of the study under consideration. Cronbach Alpha technique was used to determine the level of reliability of the instrument. The reliability coefficient obtained was 0.84 and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as simple regression. The test for significance was done at 0.05 alpha levels. The study concluded that there is significant joint influence of the four elements of research (objectivity, systematicity intellectuality and purposefulness in that order) on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery. One of the recommendations was that It is pertinent that medical and social researchers need to prioritize the four elements of research when (objectivity, systematicity, intellectuality and purposefulness) if their quest for mitigation of covid-19 must be yield a useful result.

KEYWORDS: Intellectuality, purposefulness, objectivity, systematicity, Covid-19 pandemic, economic, reliability, global health, recovery

Introduction

It is a fact that over the years, research has become an integral part of our daily living and system. There is no discipline without involvement of research with the sole aim of making discovery, finding a dependable solution to a well-defined problem as in the case of corona virus and other prevalent crises. That means research is the process of development and verification of valid knowledge about things of health, material, social, economic or educational values we come directly or indirectly in contact with on daily basis at our

different locations. Research is a scientific way of settling dispute and it helps to dispel rumours. It serves as a “decision court” for rival hypotheses.

The word “RESEARCH” is defined in various ways by different researchers based on their various fields of study or discipline. The important thing to note here is that, irrespective of the field of study, every research has four elements such as: intellectuality, objectivity, purposefulness and systematicity. Hence, Ibanga, in Akpan (2017) states that based on the four elements of research, it could be said that research is systematic and objective intellectual activity undertaken for the purpose of either solving a well-known problem or increasing the store of knowledge.

The above definitions have given us an inside of the four elements of research and have also given us the reasons for much involvement of intellectuality, objectivity, purposefulness and systematicity as the needed four elements of research substantially reliable for effective mitigation of the spread of Covid-19 pandemic. It is quite amazing that effective involvement of these elements to mitigate the spread of covid 19 pandemic will remarkably help in Rapid Global Health and Economic Recovery, including Nigeria as a country. This is true because several technological advancements made today are the products of research and development. The vehicles and air craft used by us today are also products of research. Even this zoom conference is necessitated by research and development with indispensable inclusion of the four elements of research. All these stand as strong reason why we must universally intensify active inclusion of *Intellectuality, Purposefulness, Objectivity and Systematicity* in the quest to mitigate the spread of corona virus globally.

Statement of the Problem

It is obvious that for some months now the world has been facing, with COVID-19, a unique and unprecedented health crisis in terms of its magnitude, severity and speed of proliferation in endangering millions of human lives and creating a huge disruption in the global economy and operation of millions of businesses. Since the beginning of the COVID-19 crisis, health organisations across the world, under the initiative of the World Health Organisation, have been on investigation to find out the factors behind the development of the virus in order to curb its spread. These actions are taken because they are necessities for quick mitigation of the pandemic. At this time of crisis, it is important to remember that we may all have some means of helping in a positive way. Since research as a process aims at finding out solution to problems, scientific research is of immense relevance if the pandemic is to be put to an end. The aforementioned problems lay the foundation to which this study is built as it is in a way making efforts to find out the extent to which the four elements of research (intellectuality, purposefulness, objectivity and systematicity) are substantially reliable in effective mitigation of Covid-19 pandemic for rapid global health and economic recovery.

Purpose of the Study

This study was guided by one objective, which is

1. To find out the joint influence of IPOS (i.e. intellectuality, purposefulness, objectivity and systematicity) in research on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery.

Research Questions

1. To assess the joint influence of IPOS in research helps on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery.

Hypotheses

H₀: There is no significant joint influence of the reliability of intellectuality, purposefulness, objectivity and systematicity on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery.

Literature Review

Intellectuality in Research and Mitigation of Spread of Covid-19

Referring to Intellectuality in research, Akpan (2017) states clearly that research is not a mere activity but a thoughtful and intellectual activity. This means that research appeals to one's intellect, provoking and enhancing one's thinking faculty. According to Umoh (2018) research requires a lot of forward and backward reasoning with application of high level of intelligence. Intellectuality understands the importance of evaluating the quality and completeness of the evidences. Intellect is a term used in studies of the human mind, and refers to the ability of the mind to come to a correct conclusion about what is true or false, and about how to solve problems (Sangha, 2015).

Actually, Dana (2014) posits that the human intellect is irreplaceable. Therefore, in research, the discipline based on human intellect called "knowledge management" was created to solve problems including Covid-19 and other crisis. According to Stephen (2020), the application of intellectuality and critical thinking results to efficient reasoning, decision making, and problem solving skills amidst the Covid-19 pandemic. The role of intellectuality is creativity and innovation in the fight against COVID-19, which has given rise to resilience and coping strategies against the pandemic (Reiter-Palmon et. al., 2020).

Purposefulness in Research and Mitigation of Spread of Combating Covid-19 Pandemic

Purposefulness is the quality of knowing what you intend to do, or behaviour that shows this. The research purpose is a statement of "why" the study is being conducted, or the goal of the study. Akpan (2017) states that purposefulness in research is a purposeful endeavor. The aim, more often than not, is to solve a well-defined problem such as case of Covid-19. There are, however, purposes in research other than solving particular problems. Purposefulness inspires scientists across the globe to be working tirelessly to understand the virus at a molecular level; how it survives, mutates, spreads and infects humans. Collectively, these efforts enhance their ability to develop both preventive and therapeutic strategies against Covid-19. Clinical efforts on vaccine is an example of purposefulness which lead to prevention and treatment. Thus, there is great need for scientific research if the pandemic is to be put to an end. It is thus relevant that the four elements of research can be adopted in combating the Covid-19 pandemic effect.

The purpose statement is a statement that evolves the overall direction or focus for the study. Purposefulness provides the general direction of the research (Creswell, 2012). We humans are great knowledge accumulators. We love knowing about everything, and these days, it is quite easy to obtain knowledge. This is likely to be a familiar scenario in everyone's life amidst the Covid-19 pandemic. But how do we distinguish relevant and accurate information from irrelevant ones, i.e. purposefulness of the information. This implies that information or an action's purposefulness makes it relevant and vital.

Researchers have exhibited purposefulness in their research. Igomu, (2020) asserts that the federal government, medical researchers globally and the World Health Organisation, are working tirelessly for the purpose of discovering vaccines and drugs to cure COVID-19. This is purposefulness in display. Their tiredless effort is with the purpose of minimizing the pandemic.

Objectivity in Research and Mitigation of Covid-19 Pandemic

Objectivity in research denotes that research is not supposed to be influenced by personal feelings, opinions, interests, expectations or biases. Objectivity in research calls for open-mindedness. It is pertinent to note that researchers need to prioritize objectivity, minimizing bias by randomizing a large enough number of patients and matching other studies. These critical components of high-quality, trustworthy researches are required to generate high confidence that the estimates and the of effect.

In its purest sense, the idea of objectivity assumes that a truth or independent reality exists outside of any investigation or observation. The researcher's task in this model is to uncover this reality without contaminating it in any way. In research, a realistic aim is for the researcher to remain impartial; that is, to be impartial to the outcome of the research, to acknowledge their own preconceptions and to operate in as unbiased and value-free way as possible. Same is also expected of the interviewees who are expected to show high level of open mindedness and honesty as well.

According to Elliot (1992), objectivity means, being fair and open to all sides of the argument. To be objective or to have an objective view is to see things the way they are. When we speak of being objective, just what do we mean? One thing, apparently, is that we have taken pains to try to eliminate bias. To be objective or to do an objective study is to be or do something that is not primarily about us, but about the world itself. We want to be objective in our views, objective in our methods, and above all, to have objective knowledge. To use the vernacular, we want to see and to tell it like it is.

In adopting objectivity in research, Resnik, (2001), averred that 'objective research' has several different meanings in the social sciences and humanities.

- i. Objective research as unbiased or impartial- Thus, an objective researcher is like a judge who attempts to give a fair hearing to both sides. The objective judge listens to both sides of a dispute without giving undue consideration to either.
- ii. Objective research as value-free i.e., is unaffected by moral, economic, social, political, or religious values- Thus, an objective researcher is like a judge who attempts to make decisions based on legal and empirical evidence without allowing his values to affect his judgment and reasoning.
- iii. Objective research as reliable or trustworthy- Thus, an objective researcher is like a thermometer that reliably reports the temperature. We can trust the thermometer's report. In the like manner Covid-19 medical researcher are expected such

Objective research as factual or real- Objective theories are theories that correctly depict real phenomena, they can be contrasted with fiction, propaganda, speculation, and fraud. In undergoing Covid-19 research, flawed methodology and suboptimal reporting of research findings could lead to biased estimates of effect (over-estimates or under-estimates). This could lead to treatment decisions that are not optimal based on biased estimates which could potentially harm the patient.

In their study on “Risk of bias in RCTs” Guyatt & Busse (2020a) posited that although ongoing clinical trials are testing the efficacy and safety of several treatments for COVID-19, including chloroquine and hydroxychloroquine, there is not yet credible evidence from clinical trials on the efficacy and safety of those agents in COVID-19. But the important thing here is the need for true situation of Covid-19 that can help in giving quick solution to this pandemic.

Systematicity in Research and Mitigation of Combating Covid-19

Research is a systematic process, following a well-planned and articulated procedure that conforms to scientific method. The essence of this systematic procedure is to ensure that research findings are, not products of chance. It is interesting to note that, regarding systematicity in research, organization of the work is paramount.

Because there is a definite set of procedures and steps which you will follow, there are certain things in the research process which are always done in order to get the most accurate results. A systematic research is usually organised in a similar way (Hughes, 2001): The COVID-19 pandemic is challenging for our everyday lives. In these times it is important to ensure that research ethics and research integrity standards remain in rapidly developing research projects and publications to the COVID-19 pandemic.

Arina et. al. (2020) in their study on “Public knowledge, attitudes and practices towards COVID-19” averred that systematicity and orderliness in government information directly influences the knowledge, attitudes and practices that people hold toward the disease. Information should be brief; according to Saifuddin (2020) the overload of information may cause confusion and difficulty ascertaining correct information.

Research and Post Covid-19 Economic Recovery

The Covid-19 pandemic has economic consequences for many countries. In Nigeria, just as applicable to other countries globally, the country’s lockdowns froze economic activities, causing job losses and supply chain disruptions. To recover the economy of the country sound researches that promote innovations and development are needed. Equally, according to EU (2020), research and innovation (R&I) play an essential role in the response to the Covid-19 outbreak. They are also critical levers to ensure a sustainable and inclusive recovery, while boosting the resilience of our production sectors, the competitiveness of our economies and the transformation of our socio-economic systems. Research and innovation actions are an essential part of the coordinated EU response to the public health threat of Covid-19. They channel public and private investments and align funding and investment streams to underpin the Recovery. In the current context, we need science-driven solutions, including better scientific understanding of the virus as well as the development of vaccines, treatments and diagnostics. R&I also provide the technologies that allow for safer and faster tracking of the virus. Science and innovation contribute to create common standards (e.g. for diagnostics tests, health data, product approvals, joint public procurement of innovation, and development of clinical guidelines) (EU, 2020).

Method

Correlational survey design was adopted for the study and the study was conducted in Nigeria. The population of the study comprised social researchers, medical researchers and psychologists. Simple random sampling technique was used to select 50 Social researchers, 50 medical researchers and 50 psychologists, giving a total of 150 respondents constituting

the sample size for the study. The Main Instrument used in this study was a Questionnaire titled “Elements of Research and Effective Mitigation of Covid-19 Pandemic (EREMCPQ)”. Face validation of the instrument was carried out to ensure that the instrument has the accuracy, appropriateness, completeness and the language of the study under consideration. Cronbach Alpha technique was used to determine the level of reliability of the instrument. The reliability coefficient obtained was 0.84 and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as multiple regression. The test for significance was done at 0.05 alpha levels.

Results and Discussions

Hypothesis one

TABLE 1: Simple Regression Analysis of the joint influence of intellectuality, purposefulness, objectivity and systematicity on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery

Model	R	R-Square	Adjusted R Square	Std. error of the Estimate	R Square Change
1	0.99a	0.98	0.98	0.135	0.98

***Significant at 0.05 level; df= 148; N= 150; critical R-value = 0.179**

The above table 1 shows that the calculated R-value (0.99) was greater than the critical R-value of 0.197 at 0.5 alpha levels with 148 degrees of freedom. The R-Square value of 0.98 predicts 98% of the reliability of the 4 elements such as intellectuality, purposefulness, objectivity and systematicity in effective mitigation of Covid-19 pandemic for rapid global health and economic recovery. This rate of percentage is highly positive and therefore means that there is significant influence of the reliability of the four elements of research on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery. It was also deemed necessary to find out the influence of the variance of each class of independent variable as responded by each respondent (see table 2).

TABLE 2: Analysis of variance of the influence of the reliability of intellectuality, purposefulness, objectivity and systematicity in effective mitigation of Covid-19 pandemic for rapid global health and economic recovery

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	144.33	4	36.08	1965.85	.000b
Residual	2.66	148	0.02		
Total	146.99	149			

a. Dependent Variable: Covid Mitigation

b. Predictors: (Constant), Intellectuality, Purposefulness, Objectivity and Systematicity

The calculated F-value (1965.85) and the P-value as (.000b). Being that the P-value (.000b) is below the probability level of 0.05, the result therefore means that there is significant influence exerted by the independent variables i.e. Intellectuality, Purposefulness, Objectivity and Systematicity on the dependent variable which is Covid-19 Mitigation. To test for the contribution of each of the independent variables, coefficient analysis was performed (see table 3).

Table 3: Coefficient analysis of the influence of each of independent variable on the dependent variable

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.032	0.195		25.807	.000
Intellectuality	-0.073	0.027	-0.089	-2.681	0.008
Purposefulness	-0.017	0.020	-0.023	-0.859	0.392
Objectivity	0.560	0.030	0.682	18.656	0.000
Systematicity	0.364	0.020	0.439	18.200	0.000

a. Dependent Variable: COVID-19 Mitigation

From the above table, it was observed that the most influencing element of research was objectivity (t: 18.656, B: 0.682), this was seconded by systematicity (t: 18.200, B: 0.439). The third in the list was intellectuality (t: -2.681, B: -0.089) while purposefulness was the fourth and of course the least influencing element of research with (t: -0.859, B: -0.023) on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery.

Discussion of Findings

The result of the data analysis in tables 1 and 2 were significant due to the fact that the calculated R-value (0.99) and F-value (1965.85) were greater than the critical R-value of 0.179 at 0.05 alpha levels with 148 degree of freedom. The result implies that there is significant joint influence of the reliability of intellectuality, purposefulness, objectivity and systematicity on effective mitigation of Covid-19 pandemic for rapid global health and economic recovery. The result therefore is in agreement with the research findings of Reiter-Palmon et. al., (2020) who asserted that the role of intellectuality is creativity and innovation and that even in the fight against COVID-19, intellectuality has given rise to resilience and coping strategies against the pandemic.

The results also support Igomu, (2020) who stated that researchers have exhibited purposefulness in their research and that the federal government, medical researchers globally and the World Health Organisation, are working tirelessly for the purpose of discovering vaccines and drugs to cure COVID-19. Supporting this result is the finding of Guyatt & Busse (2020a) who posited that although ongoing clinical trials are testing the efficacy and safety of several treatments for COVID-19, including chloroquine and hydroxychloroquine. Finally, the findings of Arina et. al. (2020) averred that systematicity and orderliness in government information directly influences the knowledge, attitudes and practices that people hold toward the disease. The significance of the result caused the null hypotheses to be rejected while the alternative was accepted.

Conclusion

Based on the findings of the study, it was concluded that:

Covid-19 is real. It need joint efforts of the people, government, NGO and the general public with truth and open mindedness to be overcome swiftly. The victory over covid-19 is delayed due to the fact that there is low level of precautionary measures by the health expert in assessment of test of the suspected covid-19 patient. The general public is yet to strictly adhere to preventive measures against covid-19. The four elements of research (i.e. intellectuality, purposefulness, objectivity and systematicity) has significant influence on effective mitigation of covid-19 for rapid global health and economic recovery.

Recommendations

1. Medical researchers and others should ensure that the four elements of research (IPOS) are adopted in every step of action in the fight against Covid-19 as this will help quicken the needed victory over Covid-19 pandemic within and globally.
2. There is a dire need of the Awareness for full adoption of research techniques to quench any prevalent problem that occur around us and it important to utilize the four elements of research in the combat against such problem.
3. The Nigeria Centre for Disease and Control (NCDC) and global Centre for Disease Control (CDC) as well should be objective in their reports by ensuring that true data and information on Covid-19 is provided at all times. This will help direct and control the attitude of the citizens on this pandemic.
4. In global emergencies, such as the Covid19 pandemic, it is essential to remove all obstacles to the free flow of data, researchers and ideas. Full, timely and fair access to scientific information and research results during crises for researchers, journalists, medical staff and all citizens is of outmost importance for accurate and affordable science-based responses. It is of crucial importance to invest in stronger and more resilient national health systems, capable of rapid and integrated responses.

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