QUALITATIVE AND QUANTITATIVE RESEARCHES; DIFFERENCES AND SIGNIFICANC IN GENERAL RESEARCH METHODOLOGY .

BY

ALFRED ABHULIMHEN-IYOHA ESQ

EDO STATE JUDICIARY, BENIN CITY, NIGERIA.

+2348055968440

2021

Introduction:

Research is the most widely used tool to gain new knowledge. Research can be done in any field whatsoever. There are two standard ways of conducting research; qualitative research or quantitative research. There is a belief that one method is better than the other, however, they serve different purposes. Some researchers prefer to use either one of the two even though both methods have their pros and their cons. The former method of research is preferable for smaller research while the latter is more suitable for larger research. This research paper aims to discuss the qualitative and quantitative methods of research extensively, the advantages and disadvantages of their use, their differences as well as using both methods conjunctively. The introduction is followed by the methods of research and what they are. Then it presents the pros and cons of both methods of research, the differences between them, and finally the combined use of both research methods.

Qualitative Method of Research

Qualitative research is a field of inquiry in its own right.[1] It involves the studied use and collection of a variety of empirical materials; case study, personal experience, life story, interviews, artifacts, cultural texts, productions, observational, historical, interactional, and visual texts, that describe routine and problematic moments and meanings in individual's lives.[2]Qualitative research is a method of research that adds to the understanding or knowledge of the human mind or behavior and to figure out how people think, what they feel and why they feel that way. It is very exploratory and the studies done are quite complex. More weight is given to the views of the participants during the research.[3]

Qualitative research helps you learn why a thing was done as opposed to what was done. This method focuses on people's emotions, takes time to find out why a certain thing was done the way it was. Hypothetically speaking, in a factory, it was found that 80% of the workers liked to eat a certain food more than others. Qualitative research would go further into finding out why

[1]Norman K. Denzin and Yvonna S. Lincoln (eds.) (2003), Collecting and Interpreting Qualitative Materials,(4th ed., Sage Publications, Inc., 2012), Page 28
[2]Norman K. Denzin and Yvonna S. Lincoln (eds.) (2003), Collecting and Interpreting Qualitative Materials, (4th ed., Sage Publications, Inc., 2012),Page 30
[3]Surbhi S. Differences between Qualitative and Quantitative Research Last Accessed 27th April, 2019. https://keydifferences.com/difference-between-qualitative-and-quantitative-research.html

those people prefer that particular food over others, and if there is something that can be done to make the others better, as opposed to Quantitative which seeks to find out which food people preferred to eat and why they refuse to eat the other types of food.

Qualitative research is intended to approach the world out there and to understand, describe, and sometimes explain social phenomena in a number of ways[4]:

i. By analyzing experiences of individuals or groups; experiences can be related to biographical life histories or everyday practices, they may be addressed by analyzing everyday knowledge, accounts and stories.
ii. By analyzing interactions and communications in the making; this can be based on observing or recording practices of interacting and communicating.
iii. By analyzing documents; or similar traces of experiences or interactions.

Sources of Qualitative Research

- Interviews
- Focus groups
- Documents
- Personal experience
- Case study
- Secondary Data
- Observations

Quantitative Method of Research

Quantitative research is a method of research that basically generates numbers and facts using statistics, logic and math. It seeks to establish a cause and it is usually very precise and accurate. You can quantify opinions, behaviors, and get results from a larger sample population. They are much more structured and include surveys, interviews, online polls and more.[5] Assuming you are currently on an airplane and you want to know how many cars, buses, and trucks are on the road, you can easily conclude that 50% of vehicles are cars, 20% are trucks and 30% buses. This is

[4]Steiner Kvale, Doing Interviews (London: Sage Publications Ltd, 2008) page 5
[5]Surbhi S. Differences between Qualitative and Quantitative Research, Last Accessed 27th April, 2019 https://keydifferences.com/difference-between-qualitative-and-quantitative-research.html

definitely quantitative. Getting hard facts based on statistics. Using the hypothesis from the Quantitative research regarding factory workers eating a particular food more than the others, the fact that 80% of workers eat that food is the statistics needed in a quantitative research. It focuses more on what the workers did, as opposed to why it was done.

Bryman defined quantitative research as, "A research strategy that emphasizes quantification in the collection and analysis of data…"[6] It means quantitative research denotes amounting something. This research method attempts to investigate the answers to the questions starting with how many, how much, and to what extent. Payne and Payne stated that, "Quantitative methods (normally using deductive logic) seek regularities in human lives, by separating the social world into empirical components called variables which can be represented numerically as frequencies or rate, whose associations with each other can be explored by statistical techniques, and accessed through researcher-introduced stimuli and systematic measurement."[7] The quantitative research focuses on those aspects of social behavior which can be quantified and patterned rather than just finding them out and interpreting their meanings the people bring to their own action.

Sources of Quantitative Research

- Surveys
- Observations
- Secondary Data

Advantages and Disadvantages of Qualitative Research Method

This makes it possible to gain better insights to the research process. On one hand, you have the perspective of the data that is being collected. On the other hand, you have the techniques of the data collector and their own unique observations that can alter the information in little ways.

Advantages of Qualitative Research Method

[6]Bryman, A. (1988). Quantity and quality in social research. London: Sage. P22
[7]Payne, G., & Payne, J. (2004).Key concepts in social research. London: Sage. P180

- Berg and Howard characterize qualitative research as meanings, a concept, a definition, metaphors, symbols and a description of things.[8] This definition clearly show that qualitative research contains all necessary instruments that can evoke recall which aids problem-solving. The methods employed in data collection give full description of theresearch with respect to the participants involved. The participants' observation and focused group nature of qualitative research approach create wider understanding of behavior. Hence, qualitative research approach provides abundant data about real life people and situations.
- The way data is being retrieved using this method is very unique. The method of using proper research such as pictures, interviews and words make the research and information received more factual and very descriptive.[9]
- The emergent of theory from data allows the researcher to construct and reconstruct theories where necessary, based on the data he generates, instead of testing data generated elsewhere by other researchers. Expressions and experiences of the participants are easily understood even when there are little or no information about them.[10]
- Human behaviors, which include interaction, thought, reasoning, composition, and norms, are studied holistically due to in-depth examination of phenomena. The close relationship that exists between the researcher and the participants in this approach makes it easy for the participant to contribute to shaping the research.[11]
- It is easier for people to express themselves with genuineness when using the quantitative research method, because it becomes possible to encourage the participant, which makes the outcome very desirable.
- With qualitative research, you can easily complete small size projects on a smaller budget since it produces faster results and more accurate results. It is also very easy to understand people better, and why they do what they do.

[8]Berg, B. L. & Howard, L. (2012).Qualitative Research Methods for the Social Sciences. (8th ed). USA: Pearson Educational Inc. p12

[9] Md Shidur Rahman; The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language "Testing and Assessment" Research: A Literature Review, p104

[10]Leedy, P. &Ormrod, J. E. (2014).Practical Research Planning and Design. (10th ed). Edinburgh: Pearson Educational Inc. p270

[11]Sherman, R. R. & Webb, R. B. (1990). Qualitative Research in Education: Focus and Methods. London: Falmer Press, p25.

Disadvantages of Qualitative Research Method

- It is found that qualitative researchers view the social world as being dynamic and not static. In view of this, they limit their findings to the particular group of people being studied instead of generalizing.
- The users of the approach are said to write fictions because they have no means of verifying their true statements. Since the approach is characterized by feelings and personal reports, it is believed that the approach cannot give reliable and consistent data when compared to using quantifiable figures.
- The non-use of numbers by qualitative researchers makes it difficult and impossible to simplify findings and observations. Qualitative researchers believe that the social world (phenomena and experiences) has many dimensions. Hence explanations are based on the interpretations of the researcher.[12]In view of this, proper explanation cannot be given because the result depends onthe explanation of the researcher at that time of which different researcher may give a different explanation. So,the research cannot be repeated by another researcher at another place and still get the same results.
- There is a possibility that the research collected might be biased based on the skills and observations of the researcher.
- Researchers must be familiar with the subject matter which they have to research on, else it might prove difficult gathering data, and the quality of the research might not be up to par.

Advantages and Disadvantages of Quantitative Research Method

Quantitative Research has some key advantages as well as some faults. On the one hand, it can serve to give accurate statistic data on any research. On the other hand, you have no idea as to the reasons why the result received is the way it is.[13]

[12]Leedy, P. &Ormrod, J. E. (2014).Practical Research Planning and Design. (10th ed). Edinburgh: Pearson Educational Inc, p270.
[13] Eyisi Daniel; The Usefulness of Qualitative and Quantitative Approaches and Methods in Researching Problem-Solving Ability in Science Education Curriculum, p 92.

Advantages of Quantitative Research Method

- This method uses statistical data as a tool for saving time and resources, as it places emphasis on numbersand figures in the collection and analysis of data. Imperatively, quantitative research approach can be seen as being scientific in nature.[14]
- The use of scientific methods for data collection and analysis make generalization possible with this type of approach. Interaction made with one group can be generalized. Also, the interpretation of research findings need not be seen as a mere coincidence.
- Since the research approach basically relies on hypotheses testing, the researcher needs not to do intelligent guesswork, rather hewould follow clear guidelines and objectives.
- Denscombe describe quantitative research as "researcher detachment" researchapproach. When looking at the "researcher detachment", it may be seen as strength of quantitative researchapproach from one angle, yet from another angle it may seem as its weakness. The issue of researcher being bias with either his data collection or data analysis will be highly eliminated when the researcher is not in directcontact with the participants, that is, he collects his data through telephone, internet or even pencil-paper questionnaire. There is full control for alternatives such as interpretations, explanations, and conclusions. In other words, the objectivity of the researcher will not be compromised.[15]

Disadvantages of Quantitative Research Method

- Researcher detachment from the participants is also a weakness within the quantitative research approach.Researcher detachment means that he is an "observer" or an "outside looking in". With this type of researcher/participant relationship, it will extremely difficult to get the in-depth study of the phenomena

[14]Gorard, S. (2001). Quantitative Methods in Educational Research: The role of numbers made easy. London: The Tower Building, p24.
[15] Md Shidur Rahman; The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language "Testing and Assessment" Research: A Literature Review, p104

withinits natural settings. He will neither understand the group or individuals working with him nor will he appreciate them.[16]

- As a result of using predetermined working strategies, the approach does not require or encourage imaginative, critical and creative thinking.[17]
- Since quantitative research involves numbers, some certain topics might be difficult to quantify.
- Survey instruments are sometimes vulnerable to errors.

Differences between Qualitative and Quantitative Research Method

There is a common misconception that one is better than the other. However, they serve different purposes.[18] Here are some key differences between the two methods of research:

- Qualitative research is a method of inquiry that tries understands the human mind, how they think and feel. Quantitative research uses scientific method to generate numerical data by employing statistical and mathematical technique.
- Qualitative research is holistic while Quantitative research is particularistic in nature.
- Qualitative research follows a subjective approach since the researcher is intimately involved while Quantitative research is objective, as the researcher is uninvolved and uses precise observations and analysis to answer the inquiry.
- Qualitative research is exploratory while Quantitative research is conclusive.
- The reason used to synthesize data in Qualitative research is inductive while the reasoning in Quantitative research is deductive.
- Qualitative research is based on purposive sampling, where a small sample size is selected with the purpose of understanding the target concept while Quantitative research relies on random sampling where a large representative sample is chosen in order to get the results of the whole population.
- Verbal data is collected in Qualitative research while measurable data is collected in Quantitative research.

[16] Eyisi Daniel; The Usefulness of Qualitative and Quantitative Approaches and Methods in Researching Problem-Solving Ability in Science Education Curriculum, p 92.
[17]De Vaus, D. A. (2014).Surveys in Social Research. (6th ed). Australia: UCL Press, p83.
[18]Surbhi S. Differences between Qualitative and Quantitative Research. Last accessed; 27th April, 2019 https://keydifferences.com/difference-between-qualitative-and-quantitative-research.html

- Sources used in analysis of Qualitative research are words, pictures, and objects, while that of Quantitative research is numerical data.
- The methods used in Qualitative research are in-depth interviews, focus groups, etc., while methods of conducting Quantitative research are structured interviews and observations.
- Qualitative research develops initial understanding while Quantitative research recommends a final course of action.
- Qualitative research helps you learn why people did it, while Quantitative research tells you what they did.
- Qualitative research is quite rich and gives you an insight on people's feelings and emotions while Quantitative research gives you more numerical facts about a trend.

Qualitative Research and Quantitative Research Method (Mixed Method)

Mixed methods research involves collecting and analyzing both quantitative and qualitative data. The quantitative data includes closed-end information that undergoes statistical analysis and results in a numerical representation. Qualitative data, on the other hand, is more subjective and open-ended. It allows for the "voice" of the participants to be heard and interpretation of observations. Considering the methods discussed in the quantitative and qualitative modules, an example of how the methodologies may be mixed to provide a more thorough understanding of a research problem includes; a researcher may collect data using a quantitative data instrument. The researcher may then follow up by interviewing a subset of the participants to learn more detailed information about some of the survey responses, providing a more thorough understanding of the results.[19]

A mixed method capitalizes on both strengths and offsets the weaknesses of both research methods. It is common to combine qualitative and quantitative research. Quantitative approaches can be used to gather qualitative data (e.g. a questionnaire or survey that includes open-ended questions). Similarly, one type of research can facilitate another.

[19]Prof. Khalid Mahmoud, Centre for Innovation in Research and Teaching (CIRT): Overview of Mixed Methods https://cirt.gcu.edu/research/developmentresources/research_ready/mixed_methods/overview

Conclusion:

It is common to combine qualitative and quantitative research. Quantitative approaches can be used to gather qualitative data. Similarly, one type of research can facilitate another. For example, a small number of interviews (qualitative) may be used to inform the design of a MCQ questionnaire (quantitative). Most qualitative research includes some element of quantification, and much quantitative research includes some discussion of qualitative issues.[20]

Qualitative and quantitative research approaches and methods represent different research strategies and differ in their theoretical, epistemological and ontological issue. The use of any approach depends on the researchers' method of data collection and analysis.

An ideal research is one that considers fusing both methods together, although, some particular area requires just one method of research which depends on the information required by the researcher. While Qualitative research tends to be interpretative, Quantitative research is concrete.

[20] LUMS Effective Learning; UG Updated by HH 28/06/2016 – Qualitative and quantitative research, p2.