

THE DIALECTIC OF RIGOUR AND GENERALIZATION: A CONTENTIOUS DEBATE AMONG PROPONENTS OF QUANTITATIVE AND QUALITATIVE RESEARCH PARADIGMS

RAHIM, AJAO GANIYU

Department of Business Administration
University of Lagos
Lagos, Nigeria.
Abdulrahimajao@yahoo.com

OFUANI, AIWANEHI BARBARA

Department of Business Administration
University of Lagos
Lagos, Nigeria.
Nehigabriels@rocketmail.com

BAMIDELE, WALE-OSHINOWO

Department of Business Administration
University of Lagos
Lagos, Nigeria.
Bamidele_oshinowo@yahoo.co.uk

ABSTRACT

The philosophical paradigms underpinning quantitative and qualitative research methods are founded on diverse traditions and approaches of investigation. The two methodological approaches having come from different paradigms are expected to come up with diverse understandings and explanations that aligns solely with the individual epistemology guiding each. The purpose of this paper is thus to examine the dialectic of rigour and generalization of quantitative and qualitative research methods and how this has led to the contentious debate swirling in the literature. To achieve the aforementioned objectives, a systematic and critical review of literature was conducted and discussed. Our findings suggest that the approaches of quantitative and qualitative research methods do not lend credence to the assertion that one research approach is more scientific than the other, instead, it afford a deeper understanding of reality, uncover the way people make meaning about social world and their experiences. Consequently, the supremacy argument between quantitative and qualitative methods is unnecessary, unproductive and is misguided. The paper therefore concluded that the dichotomy of supremacy quarrel among the proponents of quantitative and qualitative research has generated a growing debate for too long. We hereby suggest that the argument that one research approach is more rigorous and generalizable than the other should be disregarded while

faced with the task of picking an appropriate research method for a study; instead, researchers should adopt methods that would foster a deeper understanding and exhaustive account of the phenomena under investigation and where necessary integrate the two approaches to advance knowledge and business practices.

Keywords: Qualitative research, quantitative research, rigour, generalization, methods, reliability, validity,

INTRODUCTION

Research involves a systematic attempt to seek deeper understanding of a phenomenon. In social and business research, two major approaches of conducting research are: quantitative and qualitative methodologies. The two approaches differ in many ways (i.e. their philosophical paradigm, nature of data sought, methods of data collection and analyses). However, the two approaches are not without overlaps. Like many other conceptions in business and management research, there comes a moment when the central intellectual issues and paradigm shift from one dominant perspective to a new line of inquiry. Within the academic community, “the paradigm war” represents one of the most contentious issues among proponents of quantitative and qualitative researchers. Often times, the dispute has triggered contentions that one paradigm is more rigorous and generalizable than the other. The quantitative approach, seek to measure phenomenon that can be described by figures such as turnover rate, gross domestic product, per capital income etc. The emphasis of quantitative research is on what is observable and amenable to empirical scrutiny (Denzin & Lincoln, 2011). Qualitative researchers, on the other hand, are interested in understanding the meanings which people have constructed, the way people make sense of their world and their experiences (Merriam, 2009).

From this perspective, qualitative research method is characterized by its objectives, which is founded on a deeper understanding of some aspects of social life and its methods which (in broad-spectrum) generate words, rather than figures as a method of data analysis (Haradhan, 2018). According to May and Pope (1996), quantitative research design is one in which the researchers employ positivist approach to develop and validate knowledge (i.e., articulate hypothesis to test theory), through strategies of inquiry such as experiment and survey to drawn conclusion. In contrast, a researcher adopts a qualitative research design in an attempt to comprehend knowledge founded primarily on constructivist perspectives by utilizing strategies of inquiry such as narratives, phenomenologies, ethnographies, grounded theory studies and case studies (Denzin & Lincoln, 2011). Over the last decades, researchers have experience concern regarding the strength of one method over the others. area of controversy has been between those who label themselves as quantitative researchers and those who believe in the tenet of qualitative paradigm. The quarrel has ensued into philosophical stand-off where one group claimed supremacy over another or tendency to highlight the strengths of their methodology and the inherent weaknesses of the other method. The paradigms of quantitative and qualitative research methods are fundamentally different (Hill, 1986). According to Worrall (2000), quantitative research commands extensive respect because of its predictive benefits. Therefore, the capability to make precise explanation is one of the exceptional features of quantitative methodology.

Richard (2009) contends that though the ability to predict has come to be widely recognized as supposedly superior merit of quantitative research approach, but it is interesting to note that advocates of such position failed to consider that the worth of prediction in the field of social sciences is minimal or vague at best. Qualitative research design is non-standardized, unconstrained and hooks on to the subjective experience of both the researcher and the phenomenon being investigated (Drapeau, 2002). In the opinion of Lincoln and Guba (2000) and Trochim (2002), quantitative research method attempt to achieve objectivity, replicability, and generalizability of findings, and are typically fascinated in prediction. These scholars went further to state that quantitative methods are also frequently characterized as presumptuous because of their standpoint that there exists a single “truth” autonomous of human perception. A major concern raised over qualitative research approach from proponents of quantitative research paradigm revolves around the belief that qualitative paradigm lacks rigour (Davis, 1998). In the opinion of Paul (2017), quantitative research is value-free and minimizes subjectivity. However, researchers are often confronted with a number of phenomena that is difficult to comprehend using quantitative approach. For example, issues like, why are bachelors unmarried? What is responsible for high rate of divorce? Why do people smoke despite the harmful effect of smoking? And why do students join cults despite social and harmful effects of belonging to a secret cult?

The aforementioned problems cannot be objectively probed except the investigator(s) listen to what people have to say and the researcher(s) is/are bound to discover a fascinating, as well as divergent opinion from the respondents. They are however, the kind of research questions best answered through qualitative research methods. The worth of any research endeavor, irrespective of the methodology adopted, is to strive towards rigour and generasability. Proponents of quantitative paradigm distinguish the substance of a research by evaluating its reliability and validity (Payton, cited in Krefting, 1991). In the opinion of this scholar, qualitative research is assessed through different approaches and principles different from quantitative methodologies. Most social phenomenon is not only complex as earlier stated but connected to numerous canals of knowledge that fit into diverse disciplines. For this reason, a valid comprehension of some phenomenon entails multidisciplinary approaches. Therefore, the idea of being able to discern and document one accurate and impartial reality of a phenomenon is a doubtful claim (Bent, 2006). Against the aforementioned research background, this paper seeks to accomplish the following objectives (1) to examine the notion of rigour and generalization of quantitative and qualitative research approach, (2) to elucidate how theory influence the philosophical tenets of quantitative and qualitative research paradigms, and (3) to discuss the underlying paradigms underpinning quantitative and qualitative research methods.

The Role of Theory in Research

Providing explanation of a given phenomenon encompasses two interrelated processes theory construction and testing (David, 2002). The intellectual process that is used in theory building research is called inductive reasoning which include beginning with particular observation and drawing out a theory from the observation. On the other hand, the reasoning procedure employed in theory testing research is called deductive reasoning- it encompasses predicting that certain consequence will occur (empirically observable), if a given theory is true

(David, 2002). All theories are founded on concept; therefore, concept represents the building block of theory (Denzin & Lincoln, 2011). According to Lawrence (2004), theory is often view as “a tangled maze of jargon” and “abstraction” that are irrelevant to the real world. Contrary to this view, theory plays a significant role in research. Hempel (1952) is one of the earliest scholars to offer scientific definitions of the theory. He defined theory as a multifaceted and intricate spatial network through which system and observation becomes a floating stratagem, while rubrics of interpretation control and guide them. From this viewpoint, there is no basis for theory except there is a vibrant explanation for the association between variables of interest. Silver (1983), observes that once a proper conceptualization is offered for theory, its real beauty, emotional implication and relevance often vanish with time. According to Leedy and Ormrod (2005, p.4), “a theory is an organized body of concepts and principles intended to explain a particular phenomenon”.

Accordingly, theories explain “How” and “Why” something occurs as it does (Johnson & Christensen, 2007). Good theory building, according to Dubin (cited in Lynham, 2002) should produce two forms of knowledge: outcome knowledge, such as explanative and predictive knowledge, and process knowledge, which focuses on how to enhance understanding of a phenomenon. Good theory and theory building process should also echo two vital criteria: rigour and relevance (Marsick, 1990), or what may labeled as validity and utility (Van de Ven, 1989). Generally, the goal of a good theory is to describe and explicate how things really work and in so doing, assist in solving teething problems that have wider implications social implications. Kaplan (1964) claims that theory is fundamentally idealistic. McMillon and Schumacher (2000) outlined four criteria that must be met by a theory to develop and advance scientific knowledge. Firstly, it must offer explanation about the observed phenomenon. Secondly, it must be consistent with a previously instituted body of knowledge. Thirdly, it must provide a mechanism for confirmation and modification of reality, and fourthly, it must inspire further research in areas that require additional research investigation.

The combined frame of reference that social scientists must bear in mind when conducting research – particularly within the quantitative approach, which is considered to be more formalized than the qualitative approach – encompasses two constituents: the logical structure of the research path and the technical instruments adopted to gather the needed data (Piergiorgio, 2003). According to Anfara and Mertz (2006), the relationship between theory and qualitative methods is both complex and contentious. Although theories offer a basis through which researchers can design and conduct their studies, the variety of theoretical and philosophical methods underpinning qualitative research can at times be puzzling and tasking. Mitchell (1993) posits that the development of knowledge through qualitative research could actually commence in the absence of a theory. This position has become somehow acceptable by other prominent researchers. For instance, Creswell (2009) claims that the role of theory varies with the type of research design adopted by researchers. Swanson, Lynham, Ruona, and Torraco (2000) maintained that there is no universal method of theory building and in fact it is unnecessary. Therefore, the form of theory-building research method utilized in any given study is predicted by the nature of the theory building process adopted, not by the desired method of the researcher-theorist or the practitioner-theorist (Lynham, 2002). As a result, it is less imperative whether or not researcher supports one particular theory-building research method over another.

An Overview of Quantitative and Qualitative Research Methods

The method of gaining knowledge encompasses two complementary research approaches: the quantitative approach and the qualitative method. Quantitative research depends on quantification in collecting and analyzing data and uses descriptive and inferential statistics as methods of data analysis. The qualitative research, on the other hand, relies on qualitative and descriptive methods of data collection and analysis. Qualitative research methods address a number of vital issues that relate to managing subjectivity; however, not all scholars agree that subjectivity can be completely eliminated in a research. Miles and Huberman (1994) contended that a good account of a story can still be wrong, thus, it is practically unmanageable to express a comprehensive and completely accurate account of a phenomenon. In the opinion of these scholars, reality may be viewed as a tricky concept and more complex than researchers assume. This is due to the fact that some of the things researchers claim to know may not necessarily be true (Earl, 2008). As expressed by Lee (2000), even a combination of quantitative and qualitative research methods does not offer a complete view of the reality.

Thomson (2008) opines that a clear dissimilarity exists between the quantitative and qualitative research methods, while quantitative research approach focuses on measuring the parts in an issue, qualitative research design attempts to produce a picture which portrays the whole. According to Patton (2002), nothing comprehensively captures the dissimilarity between quantitative and qualitative methods than the divergent logics that underpin their method of enquiry and sampling methods. Kleinig (cited in Flick, 2009) claimed that qualitative approach operates without the use of quantitative methods of enquiry, whereas quantitative research design requires qualitative approaches to elucidate the form of association that exist between phenomena of interest. According to Denzin and Lincoln (2011), the difference between qualitative and quantitative approaches is at best estimated, because both types of research are umbrella terms that shelter diverse techniques. Specifically, qualitative inquiry employs divergent philosophical assumptions, methods of inquiry, and procedures of data collection, analysis and interpretation of data (Creswell, 2009). As expressed by Roberts (2002), the outcomes of qualitative research are expositions of taxonomies, accounts of cultural sceneries, and the advancement of theory.

RESEARCH PARADIGMS: DEFINITION AND MEANING

Research paradigms are under spotlight in the domain of every field of research inquiry; hence, diverse research paradigms are founded on varying philosophical grounds and construction of reality (Oliver, 1997). According to Creswell (2009), scholars logically make claims about what constitutes knowledge (ontology), how we recognize it as knowledge (epistemology), the ideals attached to it (axiology), how we express it (rhetoric) and the procedures for learning it (methodology). Ontology is the understanding and explanation of social reality (Long, White, Friedman & Brazel, 2000) and involves what exists in the world and how it relates to the key assumptions about the phenomenon being investigated (Quinlan, 2011). In research, epistemology refers to the underlying assumptions researchers make about their knowledge of reality and their belief on how they acquire and understand that knowledge (Shirlee-ann & Donna, 2012). Epistemology, according to Quinlan (2011) deals with what

constitutes acceptable knowledge in a field of study and how a researcher knows what he/she claimed to have known.

The word paradigm was coined from the Greek word *paradeigma* which means pattern and was first devised by Thomas Kuhn (1962) to denote a conceptual structure pooled by a community of researchers to investigate problems and to proffer solutions to issues. Smith (2008) articulates paradigms as a common convention, ideals and views about phenomena. Gephart (1999) categorizes research paradigm into three scientifically distinct groups: positivism, interpretivism and critical postmodernism. The main research paradigms, according to Higgs and Titchen (1995) are: empirical-analytical, interpretive and critical research paradigms. In general, scholars identify positivism as the paradigm underpinning quantitative research. On the contrary, the paradigms that underpin the qualitative research are classified distinctively. For instance, Cohen and Manion (1996) differentiate between positivism and anti-positivism and maintain that anti-positivism, which inspires qualitative research, includes phenomenology, ethnomethodology and symbolic interactionism. In another study, Hathaway (1995) adopts the word empirical-analytical to describe the paradigm underpinning quantitative research, and interpretive for the paradigm underlying qualitative research. Thomas and Brubaker (2000) highlighted the paradigm underlying quantitative and qualitative into positivism and postmodernism, while postpositivism operate between the two domains.

Rigour and Generability Debate in Research

Both qualitative and quantitative research methods have standards that can be used to assess rigour (i.e. realism, trustworthiness, and forte) of the research. Within the compass of the qualitative approach, the term trustworthiness is adopted to denote the value of qualitative inquiry (Liamputtong, 2013). In contrast, the notions of reliability and validity are frequently used in quantitative research. Reliability connotes the consistency of findings and validity signifies the truthfulness of findings (Carpenter & Hamel, 2000). According to Kvale (2007), reliability is most often related to whether a finding is dependable. Validity on the other hand, is linked to measurement and is connected with the legitimacy of the conclusions that are drawn from it (Bryman, 2004). As expressed by Carpenter and Hammel (2000), the concepts of validity and reliability are perceived as incompatible with the ontological and epistemological foundations of qualitative research, since the onus of qualitative research is descriptive and unique to historical, social and cultural setting. Agar (1996) alludes that reliability and validity are common to the quantitative paradigm and are not particularly appropriate to qualitative research methods. He further states that a different terminology is necessary to fit the qualitative viewpoint. He advocated notions such as credibility, accuracy of representation, and authority of the researcher. Correspondingly, Leininger (1985) contends that the debate is not whether the data are reliable or valid but how adequately the expressions reliability and validity are operationalized. On this note, she changed the word validity in a qualitative logic to mean acquisition of knowledge/understanding of the phenomenon under investigation. Tobin and Begley (2004) and Hoyer and Severinsson (2007) argued that the debate over the applicability of reliability and validity in qualitative research is a bit complicated. However, the challenge is for the proponents of qualitative approach to suggest acceptable and robust methodology to establish rigour.

Rigour in research is generally regarded as the means of demonstrating integrity, soundness and capability of study (Tobin & Begley, 2004). A research undertaking that is devoid of rigour, is synonymous with fictitious reporting and consequently of no value in advancing knowledge (Morse, Barrett, Mayan, Olson, & Spiers, 2002). As expressed by Farrington (2003), rigour constitutes an aspect of scientific method, through which researchers' link research quality with methodological rigour. Guba (1981) sounds a note of caution and considers that these criteria are primitive, hence should be used as a guide rather than convention. Rigour relates to the transparency or explicitness of the account of how a research was conducted and it encompasses issues that relate to how a researcher assesses the subjects and develops rapport, establish belief, how data are collected, documented, coded and analyzed (Simon, Janice & Carol, 2008). In the opinion of Lincoln and Guba (2000), the replacement of substitute standards for rigour in interpretive studies is not an attempt that rigour should be restrained, in favor of interpretation, but to garner support for interpretive principles of confirmability, auditability, authenticity and transferability as fundamental in laying claim to rigour.

Generalizability denotes the degree to which research findings are appropriate to other population (Ryan & Bernard, 2000). In other words, generalizability is related to the effectiveness and usefulness of one set of findings in explaining other research contexts (Grbich, 2007). Generalization, according to Polit and Beck (2010) is a way of reasoning with a view of drawing comprehensive inferences from a particular observation and this practice has been extensively recognized as quality criteria in quantitative research, but somewhat contentious in qualitative research. Lincoln and Guba (2000) maintained a twisting view; according to them, the only generalization is the fact that there is no generalization. Others researchers accentuated the context-specificity of qualitative research, which further portend limitation of generalization in qualitative research (Wainwright, 1997; Creswell, 2009). Numerous other strands of debate on generalizability have been documented in the literature. For instance, it has been contended that qualitative research symbolizes a unique paradigm and as such should not be evaluated by conventional methods of generalizability or validity and reliability, since the focus of qualitative researchers is on discovery (Hammersley, 1996). Scholar like Denzin (2010) rejects generalizability as a prerequisite objective and claims that incidences of social interaction, if comprehensively defined, signifies a portion from whole. Stake (2005) contends that qualitative methods may offer a previously owned connotation with the investigator's familiarity and thus, establish a natural foundation for generalization. Thus, the resilient basis for generalizability in qualitative research originates with rigorous consideration of a phenomenon in terms of definition and priorities (Metcalf, 2005). In quantitative research, generalizability is reflected as the most vital criterion for assessing the rigour of a study (Polit & Beck, 2010). In qualitative studies, however, the notion of generalization is more intricate and controversial (Misco, 2007). From this logical background, generalization entails extrapolation that can never be fully acceptable because findings are always entrenched within a context (Erlandson, Harris, Skipper, & Allen, 1993).

Triangulation and Mixed Methods in Research

In an attempt to complement the inherent flaws of using quantitative or qualitative research approach individually, researchers conceived triangulation as means of combining

several research methods. In the opinion of Thompson (1999), the absence of integration of quantitative and qualitative research approaches that characterized the social sciences is one of the most important factors responsible for the sentiment, resentments and disinclination to advance combination of the two approaches. The origin of mixed methods can be sketched to the multi-trait approach of Campbell and Fiske in 1959 (quoted in Tashakkori & Teddlie, 2010). According to Creswell and Clark (2011), a mixed method approach is one in which the investigator ties knowledge prerogatives on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic approaches). As expressed by Jick (1983), quantitative and qualitative methods should be viewed as complementary rather than contending factions. Furthermore, with the increasingly diverse and inclusive nature of academic inquiry, researchers are mixing quantitative and qualitative methods to address some research investigation. The rudiment behind mixed methods research design is that, the blend of both approaches offers a superior understanding of a research problem than either approach used alone. Creswell and Clark (2011) noted that combining methodological approaches fortifies the overall research design, as the strengths of one approach counterbalance the flaws of the other and thus offer more detailed and convincing evidence than mono-method approach. Another feasible practical advantage of the mixed method research is that it encourages interdisciplinary cooperation and the adoption of numerous paradigms in a single study.

METHODOLOGY

This paper adopted literature review approach with structural design that integrates both summary and synthesis of previous studies. The goal is to offer an explanation, summary and critical assessment of these studies with a view of expositing existing knowledge and reasoning. A carefully systematic review of literature is particularly suitable for a study of this nature, because they have the potential to offer a vital practical research implication (Cooper, 2003; Okoli & Schabram, 2010). As expressed by Abdullah, Muhammad and Abdusy (2014), the use of literature review approach addresses the necessity for a critique of and the possible reconceptualization of the growing and more expanded knowledge base of a subject matter. A literature review approach was adopted as the methodology for this paper based on the knowledge and understanding that studies concerning quantitative and qualitative research methods are wide-ranging, paradigm specific rather than discipline-specific. Accordingly, it is important to link discrete studies under investigation in such a way that better understanding and dynamics of the methodology underpinning both quantitative and qualitative research methods be expanded to academia.

DISCUSSION

Quantitative and qualitative research methods have for the most part enthused with differing methodological logic and pursue distinct routes in addressing research phenomena. The focus of qualitative research is on the social world instead of the world of nature. Quantitative research, on the other hand, is recognized as the science of numbers, which rely on positivist view. Qualitative research is considered more flexible and liquefied in its methodology than quantitative research. Proponents of quantitative research paradigm view it as less subjective and less worthwhile because, it does not operate by any clear procedures (Andre, Daniel, & Fernando, 2017). Advocates of qualitative research approach refute the

aforementioned claim and argued that the flexible approach of qualitative research is very vital in giving cogent meaning and interpretation of research findings. Notwithstanding, the fact that quantitative and qualitative approaches have diverse ontologies, epistemologies and research strategies, the dissimilarity does not provide basis to adjudged one to be more rigorous and generalizable than the other, because studies that have the comprehensive features of one research approach may also have a characteristic of the other. Therefore, within one research study, the two approaches can be integrated to enhance its rigour and generalization. Hence, the integration of the two methodologies would enable researchers to capitalize on the strength of one approach and at the same time, minimize the inherent shortcoming of the other. Perhaps, it is controversial to claim that the dissimilarity inherent in both research methods is connected to the comprehension of scientific inquiry.

Rigour and generalization are basic qualities in any research undertakings and will forever remain relevant in any research study; however, generalization has continuously been a challenge for researchers because of existence of diverse worldviews (paradigms). Therefore, in order to make logic of these debates, it can be useful to understand the research process as a series of phases that are deeply connected to one methodology or the other all which are fundamental to deeper understanding of a phenomenon. While there are undoubtedly variation in the level of rigour and generalization of research undertaking, none of the research approaches (quantitative and qualitative research methods) can lay claim or supremacy of been more rigorous and having potency for generalization than the other (Denise & Cheryl, 2010). Therefore, for the purpose of doing justice to the complexity of research undertaking, researchers should adopt methods that are open and best suited to the problem under investigation. No single method fits every problem; hence, a choice must be made. Therefore, proponents of quantitative and qualitative research paradigms should collaborate to increase research undertaking that will not only offer complete or insightful understanding, but to advance knowledge and contribute to better research practices.

CONCLUSION

This paper reviews the dialectic of rigour and generalization in quantitative and qualitative research paradigms. All research undertaking, whether quantitative or qualitative, must encompass an explicit and systematic approach to investigate a given problem. Thus, a comparative analysis of quantitative and qualitative methodologies is associated with differing paradigm concerning the plausibility and authenticity of research design and findings. Both quantitative and qualitative research approaches occupy a prominent position in almost all fields of research. Similarly, there are numerous scopes along which the quantitative and qualitative research differs, however, the distinction between the two research approaches is generally considered as problematic and over-simplification. No single research approach can completely capture the reality of life not to talk of controversies surrounding it. Similarly, no single research approach or viewpoint is superior to another in the domain of research. Nonetheless, some methods and approaches are more suitable to certain forms of research inquiry than others. Researcher can possibly develop strategies to minimize subjectivity with a view of enhancing rigour and or generalization. Perhaps, it is not logical to connect qualitative research approach with subjectivity and quantitative approaches with objectivity. Relying on the aforementioned, the differences between quantitative and qualitative research approach in

terms of rigour and generalization can be assumed to have been over exaggerated. All research endeavor is subject to bias and both perspectives have their own methods of dealing with subjectivity without necessarily relegating one of the methodologies to being substandard or labeling the other as the precise. Therefore, the notion that a particular research approach can account for objective reality is a misguided claim, particularly for social and behavioral phenomena, which are not only very complex, but accommodate unbounded entities.

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