

Application of Positivism and Post Positivism Approach in Contemporary Research

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ABSTRACT

This article explores the differences between positivism and post-positivism research approaches in contemporary research examining its assumptions with content and meta-analysis method. Positivism is a scientific philosophical movement, emerged in the early middle ages, based on the positive philosophy from 16th-century Francis Bacon period to August Comte. Its emphasizes shared reality and universal principles, using quantitative methods and empirical observation, top-down approach and deductive method to find universal laws. Post-positivism, on the other hand, recognizes subjectivity and context, using both qualitative and quantitative methods, inductive, bottom-up approach to comprehend complex realities. Positivist research does not always rely on quantitative methods, and post-positivism is more interpretive. Larger samples are favorable to make smaller, in positivism approach. Post-positivist consider research to be "soft," and for more in-depth studies, small samples are typically used. The article also discusses the increasing trends of research triangulation, combining quantitative and qualitative methods to gain richer insights. The article also explores the strengths and limitations of positivism and post-positivism.

INTRODUCTION

Research paradigm of inquiry is a philosophical-analytical framework used by researchers to examine real-world problems. Presenting paradigms chronologically suggests a progression from narrowness to enlightenment, but this is untrue (Murphy, 2021). The term "positivism" comes from the positive philosophy that was prevalent in 16th-century Francis Bacon's writings. The rationalist, empiricist philosophy that gave rise to positivism was developed by Immanuel Kant, Aristotle, Francis Bacon, John Locke, and Auguste Comte. Auguste Comte, who lived in the 19th century, is credited with creating and popularizing positivism. As a response to theology and metaphysics, positivism developed and emphasized the existence of a shared reality, it is founded on universal principles. According to Crotty (1998) positivism rejects everything that is subjective, abstract, or metaphysical but embraces experience and verified knowledge. It is described as a scientific philosophical movement that emerged in the early middle ages. Auguste Comte, a French philosopher, established positivism as a philosophical movement, coining the term "sociology" to study social phenomena. Influenced by Descartes and Locke, positivism posits that all sciences are the same due to shared laws and discoveries (Croatian encyclopedia, 2021). Social-humanistic processes differ from natural phenomena due to their governed by laws. Research in social and humanistic sciences often focuses on attitudes, opinions, and emotional reactions. The culture of positivism influences school curriculum, particularly ethical and moral education, which is the primary purpose of education (Singh, 2022). The research methods handbook, 2005 explains that positivists argue that empirical and scientific knowledge can explain the world, minimizing discrepancies between perceptions and actual states. Quantitative measurement is used in data collection to mitigate personal biases. In 1965, Thomas Kuhn and Karl Popper challenged logical positivism, leading to the post-positivism school of thought. Popper promoted falsification as an alternative to verifications, arguing that false beliefs cannot be confirmed. Post-positivism reformulates positivism, reintroducing its fundamental presumptions, including experimental methodology and objective truth (Miller, 2007).

Statement of the Problem

The humanities and social sciences face challenges in selecting a suitable paradigm or research philosophy, as researchers must consider their purpose and data needs before prioritizing approaches. A single methodological framework is not sufficient for progress, as qualitative and quantitative methods have flaws and restrictions. The abundance of scientific methods presents both benefits and challenges, leading to incorrect method choices and irrelevant results (Bender B., et al., 2002).

Objective of the study

The study explores the application of positivism and post-positivism philosophy in research, focusing on their concepts, distinctions, and challenges in social research, aiming to understand their shortcomings and challenges.

METHODOLOGY

This paper uses secondary data, including research papers, journal articles, online journals, and survey reports, using descriptive and analytical meta-analyses and desk review and content analysis methods.

RESEARCH RESULT

Discussion about Positivism and post-positivism approach in philosophical views

Auguste Comte, a French philosopher, established positivism as a philosophical movement, focusing on the study of social phenomena. Influenced by thinkers like Hume, Kant, and Henri de Saint-Simon, Comte coined the term "sociology" to refer to the branch of social science that studies social phenomena and structures. During the Enlightenment, philosophers Descartes and Locke inspired positivism, during the 17th and 18th century Enlightenment which shifted from totalitarianism to independent thought and objective knowledge. This evolution reflects the scientific community's commitment to objective, fact-based truth(Study Smarter UK,2022). Positivism, influenced by scientists like Copernicus and Galileo, uses experimentation and data collection to interpret natural laws, shaping scientific breakthroughs and clinicians' approaches to scholarly understanding, according to international standards (Ponterotto , 2005).

The research methods handbook,2005 describes that Positivism, originating from the Enlightenment scientific revolution, posits that our experiences with the natural world can provide facts about it. Its goal is to describe the mechanisms and law-like relationships controlling the world. Since ancient times, positivists have maintained that only empirical and scientific knowledge can explain the world. Quantitative measurement is used in data collection techniques to mitigate personal biases. Positivism is widely used in physical and social sciences for its high standards of validity and reliability, but is often criticized for being scientific and not completely free from human bias(Research Methods Handbook,2005). Positive theories analyze the world as it is, focusing on physical components like nations and international organizations. They rely on the scientific understanding of the natural world, which functions according to laws discovered through observation, and the social world (Testbook ,2024).

Positivists research aims to create causal relationships for predicting and managing phenomena. It is based on Mill's ideas, including the goals of science, methodology, laws of nature, evidence for law, and sampling and inference. These ideas emphasize the importance of a single, identifiable reality, the use of empirical data, and the importance of larger samples for better understanding (Park ,2020).

According to the textbook, Positivism is a philosophical approach to understanding the world that emphasizes the use of empirical data and scientific methodologies. Originating in the 19th century, it aims to establish a precise methodology for knowledge acquisition through observation, experimentation, and verification. Key characteristics of positivist research include empirical

observation, objectivity, quantitative analysis, generalizability, deductive reasoning, and replicability. Researchers aim to maintain neutrality, minimize bias, and use quantitative methods to identify patterns, relationships, and trends. They also value the replicability of findings for verification (Horvath and Duhovnik , 2005).

Misconceptions about science stem from a time when positivism dominated, validating some ideas. However, science has evolved into a post-positivist era, eliminating many stereotypes of scientists. Positivism opposes metaphysics (Conjointly,2025).

Positivism is a philosophy that focuses on describing what we encounter and focusing on what we can see and measure. It rejects the idea that knowledge is impossible to know more, focusing on positive and negative reinforcers of behavior (Reich ,1994). The scientific method is used to discover the truth and gain a sufficient understanding of the world, with the universe and world being deterministic. Empiricism, which involves measurement and observation, is embraced by positivists, with experiments being the main strategy used in the scientific method. This perspective emphasizes the importance of identifying natural laws through direct manipulation and observation (Park,2020).

Advantage

The positivist methodology in social sciences focuses on manipulable and controlled variables, minimizing unrelated variables. This approach favors experimental designs, including quasi-experimental ones, which validate or improve theories, generating new research questions and generating new theories (Cook et.al,2001).

Positivist research methodology assesses social science research based on its ability to reduce internal validity risks. These risks include maturation, history, instrumentation, testing effect, selection, mortality, and interaction of selection and maturation. The rigor of positivist research relies on quantitative underpinnings, using statistical inference to estimate experiment effects. Large sample sizes are crucial for identifying significant effect sizes based on suitable statistical tests. A fundamental law of inferential statistics states that larger sample sizes increase confidence in findings and decrease uncertainty in statistical results (Park &Lee,2018).

Post Positivistic Approach in Research

In its critique and revision of positivism, post-positivism is a meta-theoretical position that acknowledges the impact of researcher bias and values on observation while continuing to pursue objective knowledge through techniques such as triangulation and mixed methods. Since its inception in the 1950s, post-positivism has offered a substitute for the conventional positivist method of conducting methodical research (Popper 1959).

Post-positivism arguing that reality exists in the human mind and is an individual's creation. It rejects the idea that science should only investigate certain aspects of the world, arguing that it doesn't provide an in-depth examination of human behavior (Crossan , 2003). Post-positivists believe that all theories are subject to revision and observations are flawed. They consider

research to be "soft" and use small samples for in-depth studies. Design research shares similarities with cognitive psychology or sociology, making it a social process. To consider human elements and behavior in design, design researchers should consider research methodologies employed in social sciences. This study uses both positivism and post-positivism to analyze student design projects and understand the basic design artifact knowledge elements and their causal relationships (Wang et.al, 2007).

The positivist approach, particularly logical empiricism, was influential in the Anglo-American scientific-philosophical discourse after World War II. However, it faced increasing criticism in the 1960s, particularly from the Marxist left. Post-Kuhnian critics of positivism have focused on developing universal principles for theoretical knowledge, rather than historic relativism. Alternatives to positivism include structuralists, hermeneuticians, and dialecticians, who focus on deeper processes and hidden forces that govern systems (Cook & Beckman,2010).

Positiveists disapproved of this approach, believing that empirical reality was the only thing that existed, and all other aspects were subjective constructs. They believed that scientific theories were complex statements about relationships between surface phenomena. Critics argue that the use of theoretical entities as a component of the scientific method is not entirely warranted, as research in this area appears valid if there are underlying rule formations or hidden patterns that govern observed aspects of reality (Loughlin,2012).

Post-positivists, structuralists, and dialecticians have all subscribed to these schools of thought, rejecting the notion of deep structures or underlying patterns. By conducting intensive studies of a limited number of cases, researchers can extract through analysis the underlying patterns reflected in surface structures, rather than starting with survey-based measurements or guesses about the connections between data. This rejection of deep structures or underlying patterns has led to later orientations like postmodernism and post structuralism, which somewhat echo positivism (W. Wenjuan, 2007).

Post-positivism is a research approach that emphasizes critical realism, subjectivity, and a mixed methods approach. It acknowledges that our perceptions and interpretations shape our understanding of reality, and seeks to understand the deeper structures and mechanisms that underlie observable phenomena (Hoyle et.al., 2009). Post-positivism also emphasizes the importance of understanding research findings in light of their larger historical, social, and cultural backgrounds. Researchers practice reflexivity by critically analyzing their own contributions and considering alternative viewpoints. Pragmatism is a key aspect of post-positivism, urging researchers to be adaptable and open-minded. Phenomenological research, ethnographic research, and action research are all methods used to study and understand the complexity of reality. These approaches aim to provide an insider's view of a community and help researchers create workable solutions to academic and organizational issues (Testbook ,2024).

Difference Between Positivism and Post Positivistic Approach

The Vienna Circle's logical positivism, based on the work of philosophers like Russell, Pearson, Avenarius, and Mach, aimed to create a rigorous understanding of science due to Einstein's theory of relativity. Post-positivist theories reject positivism, focusing on the experience of power and examining various subjects and agents. They reject comprehensive narratives that explain the global system and aim to understand international political phenomena through in-depth case analysis. Post-positivist theories emphasize the use of power and focus on various subjects and agents, rather than science or social science (Dr. SULTANA, 2020).

The differences has been stated below. Irrespective of the research types, research ethics are to be followed

Aspect	Positivism	Post-Positivism
Epistemological Position	Objective reality exists and can be known.	Objective reality exists, but is mediated by perceptions and interpretations.
Role of Subjectivity	Minimizes or ignores the role of subjectivity.	Acknowledges the influence of subjectivity in shaping research processes and outcomes.
Research Focus	Emphasizes empirical observation and measurement.	Combines empirical observation with qualitative insights, recognizing the value of multiple perspectives.
<u>Quantitative</u> vs. <u>Qualitative</u>	Primarily quantitative methods.	Often employs mixed methods, combining quantitative and qualitative approaches for a holistic understanding.
Objectivity	Strives for objectivity and neutrality.	Recognizes the impossibility of complete objectivity and encourages reflexivity in research practice.
Generalization	Seeks universal laws or principles.	Aims for contextual understanding; generalization is seen as context-dependent and may involve multiple layers of reality.

Role of Theory	Deductive reasoning; theory-driven research.	Critical realism; acknowledges the role of theory but may use inductive reasoning and considers multiple perspectives.
Flexibility	Less flexible in terms of methods and theories.	Embraces a pragmatic approach, allowing for flexibility in choosing methods and theories based on the research question.
Replicability	Emphasizes replicability for validation.	Acknowledges the importance of context, and while replication is valued, it may not always be straightforward due to contextual factors.

Source: Testbook ,2024.

According to the textbook, a philosophical position and research methodology known as positivism places a strong emphasis on the value of empirical data and scientific methodologies in comprehending the world. With the goal of establishing a precise methodology for knowledge acquisition based on observation, experimentation, and verification, it arose in the 19th century in response to previous philosophical and theological approaches. Positivist research typically follows a deductive approach, where hypotheses are derived from existing theories or empirical observations and then tested through data collection and analysis (Maksimović, & Jovanović ,2019). While still striving to achieve objective results through triangulation and multiple data sources; essentially, it aims to capture a more complete picture of reality by considering both measurable data and subjective experiences. Combining quantitative (surveys, statistics) and qualitative (interviews, focus groups) methods to gain richer insights.

CONCLUSIONS

This article provides a summary of the research method, focusing on the philosophical considerations and methods of data collection and analysis of positivism and post-positivism approaches. Positivism is consistent with the hypothetico-deductive model of science, focusing on generalizable inferences, replication of findings, and controlled experimentation. Post-positivist research acknowledges limitations of strict objectivity and integrates subjective experiences and context.

Research aims to confirm or refute hypotheses, and a paradigm is a set of logically related assumptions that guide research. The quantitative paradigm,

based on positivism, is characterized by empirical research and the ontological position that there is only one truth. However, social sciences and humanities cannot develop within a single methodological approach due to their weaknesses and limitations. The existence of a large number of scientific methods is both an advantage and a challenge for researchers. The choice of an appropriate paradigm is crucial for many problems in the social sciences and humanities, as it determines the methodological direction, research questions, objectives, and respondents' objectives. Merging paradigms through triangulation can sometimes be useless, as different paradigms are guided by different epistemological and philosophical frameworks. The choice of approach depends on study objectives and research questions. Scholars should carefully evaluate their methodological decisions and philosophical position for rigorous research in various fields.

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