

The Paradigm of Science in Critical Analysis of Positivism and Postmodernism

Irfan Maulana Adnan¹ * & Abdullah² 

¹²Universitas Islam Indonesia, Yogyakarta, Indonesia

²Universitas Al-Ahga, Mukalla, Yemen

Abstract

This paper presents a critical analysis of two dominant paradigms in the philosophy of science: positivism and postmodernism. While existing literature often positions these paradigms dichotomously, this study argues for their potential integrative and complementary roles in addressing contemporary epistemological crises and the complex challenges of modern science. Employing a qualitative approach through descriptive-analytical library research, this article reveals that positivism provides a robust methodological foundation for empirical science but often neglects subjective and moral dimensions. Conversely, postmodernism offers a pluralistic, contextual view of truth as a social construct, challenging epistemological absolutism. The primary conceptual contribution of this paper lies in its proposal of a reflective, interdisciplinary framework that synthesizes the empirical rigor of positivism with the critical, contextual awareness of postmodernism. This synthesis aims to foster the development of knowledge that is not only scientifically valid but also humanistically meaningful and contextually relevant.

Keywords: Positivism, Postmodernism, Philosophy of Science, Epistemology, Empiricism.

Paradigma Sains dalam Analisis Kritis Positivisme dan Postmodernisme

Abstrak

Tulisan ini menyajikan analisis kritis terhadap dua paradigma dominan dalam filsafat ilmu, yaitu positivisme dan postmodernisme. Berbeda dengan literatur yang seringkali memposisikan keduanya secara dikotomis, studi ini justru mengargumentasikan peran integratif dan saling melengkapi dari kedua paradigma dalam merespons krisis epistemologis dan tantangan kompleks ilmu pengetahuan kontemporer. Dengan menggunakan pendekatan kualitatif melalui studi kepustakaan deskriptif-analitis, artikel ini mengungkapkan bahwa positivisme memberikan landasan metodologis yang kuat bagi ilmu empiris namun cenderung mengabaikan dimensi subjektif dan moral. Sebaliknya, postmodernisme menawarkan pandangan pluralistik dan kontekstual yang memandang kebenaran sebagai konstruksi sosial serta menolak absolutisme epistemologis. Kontribusi konseptual utama makalah ini terletak pada usulan kerangka kerja reflektif dan interdisipliner yang mensintesis ketelitian empiris positivisme dengan kesadaran kritis-kontekstual postmodernisme. Sintesis ini bertujuan untuk mendorong pengembangan pengetahuan yang tidak hanya sahih secara ilmiah, tetapi juga bermakna secara humanis dan relevan secara kontekstual.

Kata Kunci: Positivisme, Postmodernisme, Filsafat Ilmu, Epistemologi, Empirisme.

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Contact: Irfan Maulana Adnan | 24913026@students.uui.ac.id

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INTRODUCTION

The development of globalization has had a significant impact on various aspects of life, including education. As a strategic institution, education plays a role as a means of developing individual potential through a structured and continuous learning process ([Aziz et al., 2025](#)). In this context, the philosophy of science serves as a critical foundation that guides us to not only know what is being studied, but also to understand why and how that knowledge is obtained, organized, and justified ([Husnaini et al., 2024](#)).

The dynamics of the development of the philosophy of science are influenced by various paradigms that offer different perspectives on the nature of knowledge and truth. Positivism, which is rooted in empiricism, emphasizes sensory experience and objective verification as the only basis for valid knowledge ([Adnan et al., 2025](#); [Sundaro, 2022](#)). This paradigm has provided a strong methodological foundation for the advancement of modern science. On the other hand, postmodernism emerged as a response and critique of modernism's claims of objectivity and absolutism, offering a more pluralistic, relative perspective and viewing truth as a social construct ([Setiawan & Sudrajat, 2018](#); [Iskandar et al., 2023](#)).

Although comparisons between positivism and postmodernism have been widely discussed, the literature often gets stuck in dichotomous descriptions that pit the two against each other. Studies such as [Setiawan & Ismail \(2023\)](#), for example, focus on the application of legal positivism in the postmodern era without exploring the potential for productive dialogue or synthesis at the philosophical-epistemological level. This article aims to fill that gap. The purpose of this study is not merely to present a descriptive comparison, but to provide a critical synthetic analysis to evaluate the strengths and limitations of each paradigm and—as a specific contribution of this paper—to propose the possibility of an integrative-reflective approach.

Modern science is based on the principles of positivism and empiricism, which place observation, sensory experience, and laboratory testing as the only sources of knowledge that are considered valid ([Firnanda & Husnaini, 2025](#)). Meanwhile, in postmodernism, science is understood as something that is not entirely objective, but rather subjective and the result of human interpretation, so that truth is relative ([Sundaro, 2022](#)). These different perspectives on science influence how humans understand reality, including its religious dimension. These three entities, namely subjectivity (*'Ulūm al-dīn*), objectivity (social sciences), and intersubjectivity (humanities), are closely related to the religious dimension of humans and cannot be separated from one another. All three need to be interconnected to form a complementary and integrated whole ([Abdullah, 2020](#)). This paper aims to critically analyze the views of positivism and postmodernism in the philosophy of science, particularly in understanding the basis, methods, and truth of knowledge.

Therefore, this article aims to offer a new perspective by analyzing how positivism and postmodernism can dialectically interact and complement each other in expanding our understanding of reality. This interdisciplinary and reflective approach is considered important for producing knowledge that is not only methodologically and empirically robust (the legacy of positivism), but also sensitive to the complexity of context, values, and the subjective dimensions of humanity (the insights of postmodernism). Through this synthesis, this paper seeks to contribute to the development of contemporary science that is more inclusive and relevant in responding to the challenges of the modern world.

RESEACH METHOD

The research method used in this paper is a qualitative approach with a library research method. According to Sugiyono, this approach helps qualitative research obtain more in-depth and meaningful data. This study uses a qualitative method with descriptive analysis due to several considerations, namely

that this study can describe and explain a problem in the form of words, reasoning, and images ([Sugiyono, 2013](#)). This approach aims to examine and analyze in depth the views of the philosophy of science in the positivism and postmodernism schools of thought through a review of primary and secondary literature, such as philosophy books, scientific journals, and relevant academic writings. The analysis is conducted descriptively and analytically, namely by describing the main concepts of both schools of thought and comparing their basic principles in understanding science, truth, and the role of humans in the epistemological process.

DISCUSSION

The Epistemological Foundation of Positivism

Simply put, epistemology is the theory of knowledge ([Sanusi, 2018](#)). Epistemology aims to investigate how something can happen, how we acquire knowledge about it, how we distinguish it from other things, and how we understand the situation and conditions of something in the context of space and time ([Pajriani et al., 2023](#)). The term "epistemology" was first introduced by J.F. Ferrier in 1854. Epistemology is a branch of philosophy that examines the origins, structure, methods, and validity of knowledge ([Nurviana & M. Husnaini, 2025](#)). According to Dagobert D. Runes, epistemology is a branch of philosophy that discusses the sources, structure, methods, and validity of science. Meanwhile, according to Azzumardi Azra, epistemology is the science that discusses the authenticity, meaning, structure, and validity of knowledge ([Suprapno & Abdullah, 2022](#)).

Terminologically, knowledge can be defined as understanding obtained by individuals through self-awareness. Knowledge arises from observation and direct experience. As a form of cognitive understanding, knowledge includes information or insights that require awareness, a knowing subject, and a known object ([Husnaini & Harimurti, 2024](#)). Throughout the history of scientific development, various philosophical approaches have emerged to explain how humans understand the world around them. One approach that has had a major influence on modern scientific thinking is positivism, which helps humans provide a perspective that the stage of human logical development greatly influences the development of science ([Ferdiansyah et al., 2023](#)).

This school of thought was born as a response to metaphysical speculation, which was considered to have no empirical basis, and as an effort to build a solid and rationally accountable foundation for science. Auguste Comte, a 19th-century French philosopher and sociologist, was the main figure behind the development of positivism. He prioritized knowledge derived from direct observation and supported by data that could be proven and tested for accuracy ([Jubaedah & Hayati, 2024](#)). Thus, positivism became an important foundation in establishing scientific principles for the exploration of objective knowledge. In acquiring knowledge, the positivist paradigm is based on the use of common sense and direct observation. Essentially, positivism believes that the only valid knowledge is that which comes from concrete or personal experience ([Rahim & Fitrisia, 2023](#)). Although positivism strongly emphasizes empirical experience as the basis of knowledge, this approach is not without a number of fundamental philosophical limitations.

Comte could not go so far as to say that experience is a pure manifestation of the present, a pure event, because every verification of a hypothesis assumes that truth is a memory, just like that of the five senses ([Girel, 2021](#)). This indicates that empirical knowledge is not entirely free from subjective elements, because memory also plays a significant role in the verification process. Memory brings past experiences which are then combined with data from the five senses to form a complete understanding.

In the context of modern science, the positivism approach has been widely implemented in the development of natural and social sciences. Methodologies that emphasize observation and

experimentation based on concrete data make positivism the basis for developing systematic scientific theories. Therefore, this paradigm not only influences perspectives on science but also determines significant validity standards in the development of modern science and objectivity in the scientific research process ([Nainggolan & Yosef, 2024](#)). Thus, the contribution of positivism cannot be ignored, as it has laid a strong foundation for the development of modern scientific methods.

Criticism of Positivism

Although the positivist paradigm has contributed to the advancement of science, this approach has not been immune to criticism for focusing too much on empirical observation, hypothesis testing, generalization of natural laws, and ignoring the socio-cultural context in the formation of knowledge ([Oktavia et al., 2024](#)). In the positivist view, natural phenomena are no longer understood as abstract concepts, but are explained through cause-and-effect mechanisms. This approach views the object of study as something that can be generalized.

Auguste Comte, the founder of positivism, criticized that we should not only focus on facts, but also include aspects of life that cannot be measured or calculated quantitatively ([Fahrudin, 2025](#)). Similarly, Hart in Berteau states that there is no requirement for laws to reflect or fulfill certain moral demands. The theory of social facts, which is part of the positivist approach, argues that the existence of law depends on social facts, not moral values.

Similarly, John Stuart Mill was a thinker who combined expertise in philosophy and economics and criticized positivism because this school of thought did not expand the understanding of norms and morals into a more comprehensive scope ([Oktavia et al., 2024](#)). Meanwhile, positivism seeks to distinguish between meaningful and meaningless statements, stating that only statements that can be verified are considered meaningful, and aims to ensure that every statement based on meaningful empirical facts is included in the realm of science. However, Popper also criticizes that such standards will actually render scientific theories meaningless, because these theories cannot be verified absolutely ([Maxwell, 2017](#)). Thus, criticism of positivism shows that this approach has a fairly narrow scope in understanding science and human value.

The Postmodern View of Science

In the history of Western thought, modernism emerged as a response to traditions and dogmas that were considered to limit human rationality. This view placed reason and scientific methods as the main foundations for understanding reality. Science began to be seen as the only path to progress and enlightenment. It was in this context that the belief arose that modernism placed positive and empirical science as the benchmark of truth. This modernist view, which emphasizes objectivity and positivism, caused moral and religious values to lose their authority. As a result, a moral and spiritual crisis emerged that could trigger violence, alienation, and a loss of direction in life ([Setiawan & Sudrajat, 2018](#)).

The presence of postmodernism cannot be separated from modernism because the word modernism implies progress, grandeur, and rapid development. Modernism always promises change to a more stable world. However, modernism has a negative side that can cause humans to lose direction in their lives. Postmodernism was initially a reaction to modernism. Postmodernism refers to forms of culture, intellectualism, and art that have lost their hierarchy or principle of unity and are characterized by extreme complexity, contradiction, ambiguity, difference, and interconnection, making them difficult to distinguish from parody. Postmodernism is defined as a paradigm that rejects the limits of interpretation. In this perspective, knowledge is considered subjective and, in other words, there is no scientific knowledge that is truly neutral or value-free ([Iskandar et al., 2023](#)). Therefore, postmodernism rejects the idea that there is only one truth and allows for various perspectives in understanding the world.

According to postmodernism, our understanding of the world is influenced by many historical, social, and cultural factors, not just one. Through education, moral and ethical values can be instilled from an early age so that the younger generation is prepared to play a positive role in their environment ([Adnan, 2025](#)). Meanwhile, in postmodernism, education has encouraged an inclusive approach that recognizes and respects student diversity and enables them to acquire better problem-solving skills. In addition, postmodernism encourages a reflective and critical approach to learning, which encourages students to question their own beliefs and principles and consider the opinions of others ([Iskandar et al., 2023](#)).

Modernity desires intellectual freedom through the project of deconstructing the beliefs of modernity's truth. Postmodernism emphasizes relativity and the elimination of absolutism, as well as the rejection of the absolutism of rationality, science, and even divine truth ([Arifullah, 2015](#)). The development of thought in the Western world cannot be separated from the dynamics between modernism and postmodernism, two major currents that shape the way of looking at science, reality, and life values. The following is to understand the figures of postmodernism social theory thinkers, the characteristics of thought and criticism of postmodernism:

1. Several Postmodern Social Theory Thinkers

First, Jean Francois Lyotard, in his book entitled *The Postmodern Condition: A Report on Knowledge* (1979), was one of the first authors to comprehensively discuss postmodernism as a broader cultural phenomenon. He used the "language games" approach to explain that various forms of knowledge have rules and cannot be forced into a single system. Therefore, for Lyotard, postmodernity is a moment in which diversity, difference, and plurality are recognized as legitimate in the development of science and social life. Lyotard considers postmodernism to be the opposite of modernism and to have emerged before and after modernism. According to Lyotard, diversity of thought can only be achieved by radically seeking dissent, or disagreement, and rejecting unity ([Lyotard et al., 2002](#)). Jean Francois Lyotard is a postmodern thinker who has contributed greatly because he offers a philosophical basis for the postmodern movement. His rejection of the idea of grand narratives and his thinking that considers differences and language games as alternatives to unity ([Novita Dwi Indriyani, 2024](#)).

One term often used to describe the rejection of grand narratives is anti-foundationalism. Anti-foundationalism in socio-cultural theory and philosophy asserts that the metanarratives that form the foundation of Western modernity, with their universality and privilege in ideas such as socialism, humanism, and science, are flawed, and therefore we must try to produce modes of knowledge that are more sensitive to variation. This can be achieved when intellectual thinkers shift from their status as "legislators of belief" to "interpreters" ([Aritonang, 2024](#)).

Second, Michel Foucault is a postmodernist figure who rejects the universality of knowledge. Foucault's theory encourages critical thinking from various disciplines, such as philosophy, sociology, and cultural studies. His theory focuses on the analysis of power, knowledge, and social control, and provides a critical perspective on the power structures hidden in everyday life ([Cella Dewi Avinina, 2024](#)). The following are some of Foucault's assumptions that reject Enlightenment thinking ([Setiawan & Sudrajat, 2018](#)): 1. Knowledge is not something metaphysical, abstract, or universal, but rather specific to a particular time and place. 2. No knowledge can describe the world objectively, as it is always influenced by a particular point of view. 3. Knowledge is often considered pure and neutral, when in fact it is always connected to systems of power.

Third, Jacques Derrida One of the main concepts developed in his thinking is deconstruction. In his theory of Deconstruction, he attempts to contribute to the theory of knowledge, which at that time was considered indisputable and very rigid. Therefore, Derrida's theory of

deconstruction questions and challenges the rigid and standard basic structures of modern science, which seem to hinder new theories that could help us understand the world. This theory also re-examines how modernism views society, including things such as togetherness and natural reality. Thus, Derrida's theory of deconstruction opens up space for new perspectives that are more critical of knowledge. He invites us not to simply accept stable structures and meanings ([Kusumastuti, 2023](#)).

Fourth, Jean Baudrillard, known as a philosopher and sociologist, but his works show that he masters various fields of science, especially in the social humanities. His works are always related to postmodernism and post-structuralism and always criticize and oppose what is happening in society, especially those related to traditional conservatism. Baudrillard's thinking was influenced by many figures, such as Karl Marx, Ferdinand de Saussure, Roland Barthes, Michel Foucault, Levi Staruss, and others. The works of these figures show their influence. For example, Barthes' thinking was widely used in his first work, *The System of Objects*, published in 1968. His first book discusses semiology and how it relates to modern society. He explains how every aspect of capitalist society has changed from a mode of production to a mode of consumption. The utility value of consumer objects has changed to a symbolic value and a sign that is displayed in lifestyles in various media ([Saumantri et al., 2023](#)).

Fifth, Fredric Jameson is one of the world's leading Marxist thinkers who focuses on criticism of postmodernism. Jameson analyzes postmodern culture and its impact on social change using various Marxist theories. He is one of several postmodern theorists who link the logic of postmodern culture to the more advanced capitalist economic system. Jameson was initially known as a literary critic until he wrote an article that later developed into a book on the critique of postmodernism called *Postmodernism, or The Cultural Logic of Late Capitalism*. This book established Jameson as a critic of postmodernism. Jameson argues that changes in postmodern cultural products are merely changes in the mode of operation of capitalism so that it can continue to accumulate capital ([Ihsan, 2022](#)).

2. Characteristics of Postmodernist Thought

Postmodernism is characterized by a rejection of grand narratives, a rejection of absolute beliefs, and the application of a more pluralistic, ironic, and deconstructive approach to reality. An emphasis on difference, heterogeneity, and the rejection of the distinction between popular culture and high culture are other characteristics of postmodernism. In addition, Wang Ning says that postmodernism in literature cannot be separated from its underlying historical and social context, showing that postmodernist thinking is not only aesthetic but also ideological and political ([Ning, 2013](#)). Thus, postmodernism not only offers a new approach to the interpretation of literary works, but also criticizes the foundations of modern thinking.

3. Criticism of Postmodernism

Harvey, in his book *The Condition of Postmodernity*, criticizes postmodernism, particularly for its relative and fragmented nature. He argues that postmodernism destroys the foundations necessary for social criticism because it rejects metanarratives and absolute truth ([Harvey, 1989](#)). Meanwhile, Terry Eagleton, a Marxist literary critic, in his book *The Illusions of Postmodernism*, assesses postmodernism as a movement full of contradictions that ultimately reinforces the capitalist system. He also highlights that postmodernism rejects the concepts of universal truth, fixed identity, and grand narratives. Eagleton considers postmodernism to be more conservative than progressive, because it is unable to offer real alternatives after deconstructing other theories ([Eagleton, 1996](#)).

Comparison of Positivist and Postmodernist Perspectives

Positivism and postmodernism are two very different paradigms in understanding the nature of science, truth, and scientific methodology. Both emerged in different historical contexts and challenges of the times, but still have an influence on the development of contemporary philosophy of science. Positivism places empiricism and observation at the forefront of scientific development. Positivism encourages understanding as a set of rules created by authorities without considering social values or morality ([Habibani & Fatimah, 2024](#)). The principles of positivism developed by Comte form the basis for the use of scientific methods in the social sciences, becoming the foundation for modern academics in their quest for truth. Scientific methods such as experiments, systematic observation, and verification became the main standards in constructing valid and accountable knowledge.

Comte said that there are three stages of human development, with the positivistic stage. First, the theological stage shows belief in divine powers behind natural phenomena, the metaphysical stage involves criticism of theological thinking, and the positivistic stage emphasizes experience and experimentation as the basis for scientific thinking. Comte used his methods in various fields of science, including natural sciences, chemistry, life sciences, astronomy, and social physics (sociology). To understand these phenomena, his method involved observation, experimentation, and comparison. Because it involved simple, common, and abstract natural phenomena, exact science was considered the basis for other sciences ([Prassadi et al., 2023](#)).

In contrast, postmodernism rejects a single view of truth and considers that every form of knowledge is influenced by social, cultural, linguistic, and power contexts. Postmodernist thinking is radical and critical of Western philosophy, which tends to use rationalism as the main foundation in science and knowledge, while the tendency toward universalism in philosophy has been eliminated by postmodernism. Postmodernism promotes diversity of perspectives in understanding reality with the aim of evaluating past perspectives in an effort to solve various problems faced by humans today, as well as ongoing social and cultural crises ([Ilham, 2018](#)). Postmodernism is a way of thinking related to attitudes, general culture, or theoretical criticism, which emphasizes relativity, anti-universality, nihilism, criticism of rationalism, and criticism of fundamentalism or science.

Thus, a comparison between positivism and postmodernism reveals a fundamental shift in the way science is viewed. Positivism emphasizes objectivity, order, and standardized scientific methods, while postmodernism challenges the dominance of this view by offering a more pluralistic, contextual, and critical approach to established knowledge structures. Although these two paradigms are diametrically opposed, they complement each other in enriching the discourse of the philosophy of science and encouraging deep reflection on how humans understand reality, truth, and authority in science.

The Implications of Positivism and Postmodernism on Science

Positivism and postmodernism have contributed greatly to the advancement of science through different approaches, assumptions, and implications. Positivism asserts that science must be based on empirical data that can be verified through observation and experimentation. This positivistic view has greatly influenced the development of modern science. The development of contemporary science depends on rigorous scientific methodologies involving observation, experimentation, and empirical verification.

Modern scientific thinking also shows a clear separation between science and religion, as religion is often considered a different realm that cannot be defined empirically ([Nainggolan & Yosef, 2024](#)). The influence of positivism is not limited to the development of science, but also has implications related to theology and the separation between religion and science that positivism always promotes, which causes conflict in one's understanding of reality, existence, and the nature of God.

However, sometimes positivism, which emphasizes experience-based review and universal generalization, is often unable to overcome the complexity of real-world phenomena. This is particularly evident in public administration, where decisions and actions are influenced not only by empirically measurable factors but also by subjectivity, context, and broader interpretations. This complexity requires a more holistic and interpretive approach to understand phenomena in depth.

Comte, as the founder of positivism, argued that it is not enough to focus only on facts, but it is also necessary to consider aspects of life that cannot be measured or calculated. Positivist theory tends to overlook the role of social, cultural, and political contexts in shaping knowledge. This shows that to understand social, political, and cultural phenomena more deeply, a more comprehensive and inclusive approach is needed. This emphasizes the importance of considering complexity, subjectivity, and context when understanding social, political, and cultural phenomena ([Oktavia et al., 2024](#)).

This is where postmodernism offers an alternative that enriches the perspective on science. Postmodernism rejects the idea that there is only one universal truth that can be found objectively. Instead, truth is considered a social construct that is relative and context-dependent. When the scientific paradigm dominated the sciences (natural sciences), especially positivism, the possibility of a foundation for society's understanding of the real world was again called into question. Modern Western culture, which glorifies rationality, caused a radical reaction, known as the “postmodern wave” or “postmodernism.”

Hidayat's research entitled *Implications of Postmodernism in Education* states that it is difficult to identify the influence of postmodernism on education ([Hidayat, 2006](#)). This is because postmodernism is rarely discussed in relation to education, except when critically and fundamentally examined through various types of epistemological criticism presented by the postmodernism movement, which focuses on issues such as deconstruction, plurality, anti-establishment, and differentiation. Contemporary educational issues can be implicitly traced through these types of criticism.

In social research, for example, the positivistic paradigm is very suitable for analyzing statistical data. This is because the positivist view of knowledge must be based on empirical observation, hypothesis testing, and scientific methods. Meanwhile, the postmodern paradigm is more suitable for understanding individual narratives, symbols, and power relations in society. According to these two paradigms, no single approach is sufficient to explain the whole of reality. Instead, modern science demands openness to various cross-paradigm approaches.

Thus, the implication of positivism and postmodernism for science is a broader and deeper understanding of the various dimensions of reality. Positivism forms the foundation of systematic scientific methodology, while postmodernism broadens the epistemological horizon by reviewing the importance of subjectivity, context, and plurality. These two approaches do not need to be dichotomously opposed, but can complement each other in developing science that is not only empirically accurate, but also humanistically meaningful.

CONCLUSIONS

This article highlights two paradigms in the philosophy of science, namely positivism and postmodernism, each of which offers different foundations, methods, and understandings of the nature of knowledge and truth. Positivism emphasizes the importance of empirical experience, observation, and concrete data as the basis for objective and verifiable knowledge. This paradigm has made a major contribution to the development of modern science, particularly in the natural and social sciences, by emphasizing systematic and objective scientific methods. However, positivism also has limitations, especially in understanding aspects of human life that cannot be measured quantitatively, such as moral values, subjective experiences, and socio-cultural meanings. In contrast, postmodernism emerged as a response and critique of positivism

and modernism. Postmodernism rejects claims of singular truth and absolute objectivity, emphasizing plurality, relativity, and contextuality in science.

This paradigm views knowledge as the result of social construction influenced by historical, cultural, and power factors, thus opening space for various perspectives and interpretations. Figures such as Jean-François Lyotard and Michel Foucault highlight the importance of narrative diversity and criticism of power structures in the production of knowledge. Ultimately, a comprehensive understanding of science requires openness to various paradigms. The integration of objective (positivistic), subjective, and intersubjective (postmodern) approaches is essential so that science does not become trapped in narrow reductionism but is able to capture the complexity of reality, including moral, cultural, and human dimensions.

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Authors



1st Irfan Maulana Adnan   Served as the main author of this study. He was responsible for formulating the research problem, developing the conceptual and theoretical framework, conducting the literature review and qualitative descriptive-analytical analysis, and drafting the initial and final versions of the manuscript. He also carried out the critical synthesis between positivist and postmodern paradigms and articulated the proposed integrative and reflective framework in the philosophy of science.

(email: 24913026@students.uui.ac.id)



2nd Abdullah Contributed  as a co-author by providing academic supervision and theoretical guidance throughout the research process. He critically reviewed the philosophical arguments, strengthened the theoretical analysis, and contributed to revising and refining the manuscript to ensure conceptual clarity, methodological soundness, and overall academic coherence.

(email: abd.kallabib15@gmail.com)