http://dx.doi.org/10.18623/rvd.v23.n4.4735

EXAMINING THE EPISTEMOLOGICAL FOUNDATIONS OF PROJECT AND PROJECT MANAGEMENT RESEARCH: METHODOLOGICAL ISSUES

EXAMINANDO OS FUNDAMENTOS EPISTEMOLÓGICOS DA PESQUISA EM PROJETOS E GERENCIAMENTO DE PROJETOS: QUESTÕES METODOLÓGICAS

Article received on: 10/2/2025
Article accepted on: 1/2/2026

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The authors declare that there is no conflict of interest

Abstract
The authors argue that project management lacks a single unified theory, and that projects operate in open systems where outcomes depend heavily on context. Despite this, research practice often adopts methodologies that implicitly assume closed systems and linear causality. The paper contends that the search for general cause–effect patterns tends to marginalize the particular features that shape outcomes, while exclusive focus on the particular prevents the development of shared patterns and normative recommendations. The article reviews paradigms and epistemological foundations in the field and then audits recent journal publications to examine whether researchers state and apply methodology coherently.

Keywords: Project Management Theory. Open Systems. Epistemological Foundations. Methodological Coherence. Context Dependence.

Resumo
Os autores argumentam que a gestão de projetos carece de uma única teoria unificada e que os projetos operam em sistemas abertos, nos quais os resultados dependem fortemente do contexto. Apesar disso, a prática de pesquisa frequentemente adota metodologias que implicitamente assumem sistemas fechados e causalidade linear. O artigo sustenta que a busca por padrões gerais de causa e efeito tende a marginalizar as características particulares que moldam os resultados, enquanto o foco exclusivo no particular impede o desenvolvimento de padrões compartilhados e de recomendações normativas. O artigo revisa paradigmas e fundamentos epistemológicos no campo e, em seguida, audita publicações recentes de periódicos para examinar se os pesquisadores declaram e aplicam a metodologia de forma coerente.

Palavras-chave: *Teoria da Gestão de Projetos. Sistemas Abertos. Fundamentos Epistemológicos. Coerência Metodológica. Dependência do Contexto.*

1 INTRODUCTION

The paper is presented as an epistemological evaluation: it examines how knowledge about projects and their management is produced through research. Because methodology follows from philosophical views about knowledge, methodological choices shape what researchers can claim to know. The authors therefore ask whether researchers select and apply methodologies carefully enough, especially given the contextual character of projects.

A key concern is cumulative: if the epistemological basis of studies is weak, then the field's knowledge base for both scholarship and practice will also be weak. Methodological opacity also makes it harder to compare and synthesize studies across paradigms.

2 THEORETICAL BASIS FOR UNDERSTANDING PROJECT MANAGEMENT

The authors describe project management as theoretically fragmented. The field borrows from multiple disciplines and lacks a generally accepted integrated theory. This produces an eclectic conceptual mix; bodies of knowledge (BOKs) may rest on different theoretical assumptions; and practitioners can struggle to integrate diverse ideas across enterprise–program–project interfaces. In practice, the use of guidance varies with context, competence, and organizational circumstances.

The paper stresses that even if general patterns could be identified, their application would remain contingent on context. Recognizing the role of context in words while neglecting it epistemologically in methodology is treated as a central problem.

2.1 Methodology versus methods

A recurring issue is the misuse of the term 'methodology'. Methodology is the overall system of inquiry grounded in epistemology, whereas methods are the detailed tools and techniques used to execute research (e.g., surveys, interviews, case studies, models). Confusing these levels hides the philosophical assumptions that govern claims about causality, generalization, and context.

3 PARADIGMS

Beyond methodology, research is shaped by paradigms—intellectual frameworks that embody systems of ideas and beliefs and influence how a discipline defines problems and validates knowledge. Paradigms also shape professional tools, services, and certification programs. The paper notes that some standards reflect an execution-centric paradigm and may omit crucial definitional and front-end stages.

Several paradigm classifications are reviewed. One influential mapping identifies approaches such as systems analysis (rational-deterministic), organizational design (integration/differentiation and temporary organizations), project-based structures (front-end and exogenous influences), strategic direction (projects linked to business strategy and capabilities), information processing (uncertainty and economic concepts like transaction costs), and critical management (power, control, and who benefits from dominant discourse).

From the critical-management perspective, the paper also highlights rational/normative, processual, and narrative perspectives, corresponding respectively to simple cause–effect structuring, socio-technical processes, and interpretive/critical narratives.

4 BODIES OF KNOWLEDGE (BOKS) AND GUIDES: THE GENERAL–PARTICULAR PROBLEM

BOKs are shaped by paradigms and by epistemological orientations. Some widely used guides prioritize task execution and control while downplaying front-end definition, exogenous influences, strategy, and human factors. The authors argue that such guides align closely with positivism, which seeks general explanations and standardized solutions and tends to treat context as secondary.

The authors emphasize a core tension: guidance can become too abstract to be useful if generalized too far, but it can lose portability if made too specific. The challenge intensifies in a multidisciplinary field. When authors fail to state their theoretical or methodological stance explicitly, integration of knowledge across disciplines becomes even harder.

5 RESEARCH METHODOLOGY AND PHILOSOPHICAL UNDERPINNINGS

The paper argues that project research faces a methodological challenge similar to that found in geography: a discipline may borrow theory from elsewhere yet still confront strong contextual effects. In project management, a lack of critical methodological awareness can generate self-reinforcing beliefs, just as BOKs can reinforce professional assumptions about what counts as appropriate knowledge.

5.1 Positivism and empiricism

Positivist and empiricist traditions often rely on linear causality and closed-system models. The authors argue that projects are usually open systems, making strict cause–effect modeling prone to 'atomizing' the phenomenon—isolating variables while ignoring interacting contextual influences. This can hinder complete explanation and misrepresent the nature of project causality.

The authors also discuss the induction–deduction problem. Early positivism relied on inductive verification, but contradictory evidence can undermine induced 'laws'. Popper's falsification approach emphasizes deductive testing. The authors suggest that many project studies do not operate with strong deductive logic and may embed normative agendas (what ought to happen) while presenting themselves as purely descriptive.

A related critique concerns importing theories from other disciplines (e.g., economic models that create closed systems by excluding factors). Even when excluded factors are later reintroduced as variables, this may not resolve a deeper mismatch between open-system reality and closed-system assumptions.

5.2 Empiricism and case studies

Empiricism is framed as useful when phenomena are not well conceptualized and researchers must investigate 'what the story is' through observation and data. In project research, case studies are a common empiricist method. Single-case designs can support

deep contextual understanding and theory building, while multiple-case designs support comparison across settings.

However, empiricist work can be limited in identifying causal mechanisms, and it may drift toward instrumental ‘what works’ narratives. The paper links this to grounded theory and to interpretive elements that can enter case-based inquiry through perception and narrative.

6 OTHER METHODOLOGIES AND THE INTERPRETIVE TURN

Interpretive methodologies, including hermeneutics and ethnography, are described as strong for understanding perceptions and meanings—key aspects of the particular. Their weakness lies in producing generalizable patterns. The authors note that interpretive work is not prevalent in the journal sample they later review, so they do not develop this evaluation at length.

The paper references a broader shift in critical management toward particularist explanations (sometimes described as a postmodern turn). It warns that exclusive focus on the particular can paradoxically reinforce the status quo by fragmenting critique and limiting shared conclusions.

7 APPLYING CRITICAL REALISM

Critical realism is introduced as a promising alternative because it treats causality as rooted in the internal structure and mechanisms of the object of study, while recognizing that contextual conditions trigger and shape how causal powers manifest. Outcomes are therefore contingent: similar mechanisms can yield different results under different conditions.

The paper explains that objects have structured elements—both abstract and concrete—and possess causal powers and liabilities. Contextual conditions, themselves having their own properties, mediate outcomes. This allows for general events that may not always replicate, general events with context-specific features, and particular events that do not replicate.

The authors argue that this matches project environments where uniqueness, asset specificity, and uncertainty are common. They also note that realism can be interpreted differently by researchers, with debates between structuralist and more empiricist emphases.

8 RECENT RESEARCH ON PROJECTS: IJPM 2005 AUDIT

To examine whether researchers state and apply methodology explicitly, the authors audit 68 papers published in the International Journal of Project Management in 2005, including an IRNOP special issue. They record whether papers seek general explanations, particular explanations, or both; whether methodology is made explicit; what methods are used; and whether authors reflect after analysis on the appropriateness of methods or methodology.

The authors report that over 90% of papers do not make methodology explicit, and many use ‘methodology’ to mean ‘method’. They argue that this obscures epistemological requirements such as addressing context, causality, and the general–particular tension. Positivism is reported as dominant (over two-thirds), empiricist approaches about one-fifth, and other bases rare. Critical realism does not appear in the audited sample. They also report that no paper conducts an explicit post-review of methodology and only a minority reflect on methods.

Table 1

Audit Dimensions (Reconstructed)

Dimension	What it captures (paraphrased)
Explanation orientation	General patterns, particular explanations, or both.
Methodology explicit?	Whether the methodological/epistemological stance is stated beyond naming methods.
Methods used	Surveys, interviews, case studies, modelling, ethnography, etc.
Post-review of methods	Any reflexive assessment of methods after analysis.
Post-review of methodology	Explicit reassessment of methodological fit after analysis.

Table 2

Reported Epistemological Distribution in the 2005 Sample (Approx.)

Orientation	Approx. share (reported)	Interpretive note
Positivist	Over ~66%	Emphasis on general patterns; may underplay context in open systems.
Empiricist	About ~22%	Often exploratory/case-based; mechanisms may be under-specified.
Other/mixed	Under ~10%	Includes interpretive/structural/mixed; rare in sample year.

Table 3

Common Reporting Issues

Issue	Why it matters (paraphrased)
Methodology not stated	Limits evaluation of epistemological fit and synthesis across studies.
Methodology conflated with method	Leaves assumptions about causality and context unexamined.
Linear causality in open systems	Oversimplifies multi-causal outcomes and interaction effects.
Generalization from single case without justification	Weakens transferability and can mislead best-practice claims.
No post-analysis reflexivity	Reduces transparency about limitations and slows cumulative learning.

Table 4

Illustrative Audit-Style Sample Table

Paper	Topic	Context	Epistemology	General/Particular	Methods	Methodology explicit?	Post-review methods?	Post-review methodology?
Crawford (2005)	Competence perceptions	Project managers	Positivist	General	Test/survey instrument	No	No	No
Garcia et al. (2005)	Decision-making meetings	Meeting efficiency	Interpretive + modelling	General	Ethnographic + game theory	No	No	No
Bing et al. (2005)	PPP/PFI risk allocation	UK public sector	Positivist	General	Survey questionnaire	No	No	No
Sing & Tiong (2005)	Life-cycle costing	Myanmar bridges	Positivist	General	Case study	No	Yes	No

Xu et al. (2005)	Contractor collaboration	China	Empiricist	Both	Pilot interviews	No	No	No
Shore & Cross (2005)	Culture	Science projects	Positivist + interpretive	General	Interviews + case studies	Yes	No	No
Partington et al. (2005)	Programme competence	Programme management	Interpretive	Particular	Phenomenography + observation/interviews	Yes	Yes	No
Milosevic & Patanakul (2005)	Standardization	High-velocity firms	Empiricist + positivist	Both	Case study + survey + interviews	Yes	No	No
Diallo & Thuillier (2005)	Trust & communication	African development projects	Positivist	General	Survey questionnaire	No	Yes	No
Iyer & Jha (2005)	Cost performance	India construction	Positivist	General	Survey questionnaire	No	No	No
Olander & Landin (2005)	Stakeholders	Sweden	Empiricism w/ positivist lean	Both	Case studies	No	No	No
Linderoth & Pellegrino (2005)	IT-enabled change	Projects	Interpretive	Particular	Ethnographic	Yes	No	No
Taylor (2005)	Risk management	Hong Kong IT	Positivist + empiricist	Both	Interviews	No	No	No
Uher & Brand (2005)	Payment legislation	NSW	Positivist	Both	Survey questionnaire	Yes	Yes	No
Whitty (2005)	Memetic paradigm	PM paradigm	Positivist	Both	Evolutionary memetics + reductionist analysis	Yes	No	No

9 CONCLUSION

The paper concludes that research methodologies in project studies are frequently selected and applied in ways that do not adequately address context or the general–particular tension. Because most audited papers do not state methodology explicitly, it becomes difficult to locate studies within epistemological and paradigmatic frameworks,

relate outputs across streams, and use findings to develop BOKs. This methodological opacity can therefore slow progress in both research and practice.

Given projects' contextual, open-system character, the continued dominance of positivist and empiricist traditions is treated as surprising. The authors argue that critical realism, which can engage both general mechanisms and particular outcomes, appears underused and deserves greater attention.

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Authors' Contribution
All authors contributed equally to the development of this article.

Data availability
All datasets relevant to this study's findings are fully available within the article.

How to cite this article (APA)

Valencia, A. M. C., Ramos, J. O., Toledo, P. del C. V., & Pizarro, M. R. E. (2026). EXAMINING THE EPISTEMOLOGICAL FOUNDATIONS OF PROJECT AND PROJECT MANAGEMENT RESEARCH: METHODOLOGICAL ISSUES. *Veredas Do Direito*, 23(4), e234735. https://doi.org/10.18623/rvd.v23.n4.4735