FROM POSITIVISM TO PRAGMATISM: MAPPING THE EVOLUTION OF RESEARCH PARADIGMS IN LIBRARY AND INFORMATION SCIENCE

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ABSTRACT

The field of Library and Information Science (LIS) has experienced significant epistemological and methodological shifts over the past decades, reflecting broader intellectual trends across the social sciences. This study systematically reviews the evolution of research paradigms in LIS, with a focus on tracing the movement from traditional positivist frameworks toward more interpretivist, critical, and pragmatic orientations. Motivated by the need to understand how research philosophies shape knowledge production and professional practice, the study investigates the dominant paradigms employed in LIS research from 2000 to 2024. A narrative review methodology was adopted, using PRISMA guidelines to identify and analyse peer-reviewed journal articles, doctoral theses, and key conference proceedings retrieved from major databases including Google Scholar, ResearchGate, Academia.edu, African Journals Online (AJOL) were coded and thematically analysed to determine the frequency, distribution, and contextual application of various paradigms. Findings reveal a steady decline in the exclusive reliance on positivist approaches and a growing embrace of mixed methods research underpinned by pragmatism. There is also a noticeable increase in critical and transformative paradigms addressing social justice, equity, and user-centered knowledge services. However, evidence suggests that many studies still lack clear alignment between research questions, methodologies, and underlying philosophical assumptions. The study concludes that greater paradigm awareness is essential for methodological rigour and relevance in LIS research. It recommends the integration of paradigm literacy into LIS curricula and calls for more reflexive and context-driven research practices.

Keywords: Research paradigms, Library and Information Science, Positivism, Interpretivism, Pragmatism, Critical theory

INTRODUCTION

To comprehend the evolution of research in Library and Information Science (LIS), it is crucial to first establish a foundational understanding of what constitutes a "research paradigm." The seminal work of Thomas Kuhn (1962), particularly his concept of "paradigms" outlined in The Structure of Scientific Revolutions, offers an indispensable framework for this discussion. A research paradigm, in Kuhn's view, is not merely a theory but a comprehensive, shared framework that encompasses fundamental assumptions, beliefs, values, and methods that guide scientific inquiry within a particular discipline or community of practitioners. It represents a "disciplinary matrix" that provides a lens through which researchers perceive reality, define problems, and seek solutions (Kuhn, 1962). Kivunja and Kuyini, (2017) described research paradim as the conceptual lens through which the researcher examines the methodological aspects of their research project to determine the research methods that will be used and how the data will be analysed. Within such a paradigm, certain ontological assumptions are made about the nature of reality (for instance, is reality objective and measurable, or socially constructed?), alongside epistemological assumptions about what constitutes legitimate knowledge and how it can be acquired (for instance, through empirical observation, or subjective interpretation?). These foundational assumptions, often unstated but deeply embedded, dictate the very fabric of research since they determine what questions are considered worthy of investigation, how these questions are formulated, and the acceptable methods for their investigation.

Furthermore, a paradigm defines what constitutes legitimate knowledge and valid evidence within the disciplinary discourse (Creswell & Poth, 2018; Scotland, 2012). For instance, a positivist paradigm would emphasise quantifiable data and statistical analysis as legitimate knowledge, whereas an interpretivist paradigm might prioritise rich qualitative data and contextual understanding (Creswell & Poth, 2018). The shift in paradigms, often triggered by anomalies that existing frameworks cannot explain, leads to scientific revolutions, fundamentally altering the way a discipline operates and generates knowledge (Kuhn, 1962). Understanding these paradigm shifts is essential for appreciating the intellectual trajectory of Library and Information Science (LIS) research.

Library and information science has experienced profound epistemological and methodological shifts throughout its history. Traditionally, early LIS research, influenced by the dominant scientific paradigms of the time, often leaned towards positivist frameworks. This approach sought to identify universal laws and principles governing information phenomena, employing quantitative methods to measure and analyse observable data (Hartman, 2019). The focus was on objectivity, replicability, and the generalisation of findings, mirroring the natural sciences. However, as the field matured and grappled with the complexities of human information behaviour, societal contexts, and technological interfaces, the limitations of a purely positivist lens became apparent. Information phenomena are often deeply intertwined with human perception, social structures, and cultural nuances, which are not always amenable to objective measurement (McKenzie, 2021). This recognition has propelled LIS on a fascinating epistemological journey, moving beyond the confines of a singular, dominant paradigm.

This paper sets the stage for tracing this evolution, specifically highlighting the trajectory from traditional positivist frameworks towards more diverse interpretivist, critical, and pragmatic orientations. Interpretivism, with its emphasis on understanding subjective meanings and social constructions of reality, gained traction as researchers sought to comprehend user experiences, information needs within specific contexts, and the cultural dimensions of information (Given, 2020). Concurrently, critical research paradigms emerged, challenging existing power structures, inequalities in information access, and the political economy of information (Budd, 2020). More recently, pragmatism has gained prominence, offering a flexible philosophical stance that prioritises the practical utility of research in solving real-world problems, often advocating for mixed-methods approaches that blend quantitative and qualitative methodologies based on the research question's demands rather than a rigid adherence to a single philosophical stance (Morgan, 2018; Johnson & Christensen, 2020). This journey reflects LIS's ongoing quest to develop robust and relevant research methodologies capable of addressing the multifaceted challenges and opportunities presented by an increasingly complex information environment. Examining these shifts, enables researchers to gain insight into the intellectual dynamism and adaptability that characterize LIS as a contemporary academic discipline.

The dynamic nature of Library and Information Science (LIS), characterised by rapid technological advancements, evolving societal demands, and complex information needs, profoundly impacts its research landscape. As highlighted earlier, LIS is constantly adapting to phenomena such as the digital revolution, the pervasive influence of Artificial Intelligence, the

challenges of information overload, and the imperative for social justice (Omame & Alex-Nmecha, 2020; Tzanova, 2024). This constant state of flux necessitates a critical understanding of how research within the discipline is conducted, interpreted, and utilised. The fundamental motivation for this study, therefore, reiterates the core premise, which is to comprehend how various research philosophies and their associated paradigms fundamentally shape both the production of knowledge and the evolution of professional practice within LIS.

Research paradigms, as established by Thomas Kuhn, serve as the underlying intellectual blueprints that guide scholarly inquiry, dictating what questions are deemed relevant, how they are investigated, and what constitutes valid contributions to the field (Kuhn, 1962; Creswell & Poth, 2018). The philosophical stance adopted by LIS researchers, whether positivist, interpretivist, critical, or pragmatic, directly influences the methodologies employed, the types of data collected, and ultimately, the nature of the findings. For instance, a positivist approach might lead to studies quantifying user engagement with digital resources, while an interpretivist lens would delve into users' subjective experiences and perceptions of those resources. Understanding these philosophical underpinnings is not merely an academic exercise but also crucial for evaluating the rigour, relevance, and applicability of LIS research to real-world challenges (Pretorius, 2024). It allows practitioners to critically assess research findings, determine their applicability to specific contexts, and inform evidence-based decision-making in libraries and information centers. Without this critical understanding, the growth of LIS as a discipline risks being disjointed, with research efforts lacking a cohesive philosophical foundation to address complex, multifaceted problems (Alharahsheh & Pius, 2020).

Furthermore, in the context of Africa and Nigeria, where LIS is continually adapting to unique socio-economic and technological realities, examining research paradigms becomes even more pertinent. African LIS scholars are increasingly contributing to the global body of knowledge, addressing local challenges such as information access in underserved communities, the integration of indigenous knowledge systems, and the application of emerging technologies within resource-constrained environments (Ukwoma & Ngulube, 2023; Adarkwah et al., 2024). The choice of research paradigm in these contexts often reflects a blend of globally accepted scientific norms and localised epistemologies. For instance, while some studies might adopt positivist survey designs to quantify information needs (Tsenongu & Azubuike, 2024), others might employ interpretivist or critical approaches to explore the social and cultural dimensions of information use or the implications of digital divides (Alikor & Okachiku-Agbaraeke, 2025).

The diverse range of publications from Nigerian journals attests to the varied methodological approaches being employed, reflecting the epistemological journey of the field. Therefore, the objective of this paper is to review and map the evolution of dominant research paradigms employed in LIS research specifically from 2000 to 2024. This period marks a critical era of rapid technological acceleration, globalisation, and profound societal shifts, offering a rich canvas to observe how LIS research has adapted its philosophical and methodological approaches.

Statement of the Problem

The field of Library and Information Science (LIS) stands at a critical juncture, continuously reshaped by rapid technological advancements, profound societal shifts, and increasingly complex information needs. From the pervasive influence of artificial intelligence in information retrieval (Omame & Alex-Nmecha, 2020; Tzanova, 2024) to the challenges of navigating information overload (Onifade & Alex-Nmecha, 2023) and addressing social justice imperatives in information access (Alikor & Okachiku-Agbaraeke, 2025), LIS is a dynamic discipline that demands agile and relevant research. Research, as the engine of knowledge production, must not only reflect these transformations but also provide the intellectual and practical guidance for professional practice. Historically, LIS research largely operated within a positivist paradigm, emphasising objectivity, quantitative measurement, and the pursuit of generalisable laws, particularly in areas like bibliometrics and library efficiency studies (Hartman, 2019; Odutola & Alegbeleye, 2019). However, the evolving nature of information, characterised by its increasingly human-centric, contextual, and socially constructed dimensions, has exposed the limitations of a singular positivist lens. Understanding nuanced user experiences, sense-making processes, and the socio-cultural factors influencing information behaviour necessitates alternative epistemological approaches (Ukwoma & Ngulube, 2023).

Consequently, LIS has witnessed a significant epistemological journey, with a growing prominence of interpretivist, critical, and pragmatic paradigms (Creswell & Poth, 2018; Morgan, 2018). While this diversification of research philosophies is a sign of disciplinary maturity, equipping LIS to tackle multifaceted problems, a comprehensive understanding of this evolution remains elusive. There is a lack of systematic, empirical mapping that chronicles the trajectory of dominant research paradigms within LIS over a substantial period, specifically from 2000 to 2024. Without such a review, it is challenging to definitively ascertain the shifts in philosophical

underpinnings, the prevalence of different methodological approaches, and the implications of these changes for both knowledge production and professional practice.

Furthermore, anecdotal evidence and some qualitative observations suggest that despite the growing adoption of diverse methods, a significant number of LIS studies still exhibit a discrepancy in paradigm alignment (Okesina, 2020). This misalignment, where research questions, methodologies, and underlying philosophical assumptions are not coherently integrated, poses a threat to methodological rigour, the validity of findings, and the overall contribution of LIS research to the field. For instance, applying quantitative analysis to qualitative data without a clear pragmatic justification, or failing to explicitly articulate the guiding paradigm, can lead to ambiguous or misinterpreted results (Chikwanda & Magasu, 2024). Therefore, the problem is that while LIS research is clearly evolving in its methodological and philosophical approaches to address contemporary challenges, there is an insufficient systematic understanding of this evolution. This lack of comprehensive mapping, coupled with observed inconsistencies in paradigm alignment, hinders the discipline's ability to fully leverage its methodological pluralism, critically assess the relevance of its research, and ensure that knowledge production effectively guides professional practice in a rapidly changing information environment.

Objective for the Study

The objectives of this paper are to:

1. identify and categorise the dominant research paradigms (positivism, interpretivism, critical theory, and pragmatism) employed in Library and Information Science (LIS) research from 2000 to 2024.
2. analyse the prevalence and observed shifts in the adoption of these paradigms within LIS research over the specified period.
3. characterise the key methodological approaches and techniques associated with each dominant research paradigm as evidenced in LIS literature.
4. discuss the implications of these paradigmatic shifts for the nature of knowledge production, curriculum development, and professional practice within LIS globally, with specific consideration for insights from African and Nigerian LIS scholarship.

LITERATURE REVIEW

Positivism and Post-Positivism

The intellectual origins of formal research in many disciplines, including Library and Information Science, are deeply rooted in positivism. This philosophical paradigm, stemming from the enlightenment and heavily influenced by thinkers like Auguste Comte, posits that true knowledge is derived from empirical observation and sensory experience, much like the natural sciences (Creswell & Poth, 2018). Comte (1856) as cited in Kivunja and Kuyini, (2017) postulated that experimentation, observation and reason based on experience ought to be the basis for understanding human behaviour, and therefore, the only legitimate means of extending knowledge and human understanding. In its pure form, the scientific method, involves a process of experimentation that is used to explore observations and answer questions. At its heart, positivism operates on the assumption of an objective reality that exists independently of the researcher's perception. The goal of positivist inquiry is to discover universal laws and principles that govern phenomena, making predictions and establishing cause-and-effect relationships. This is achieved through rigorous empirical observation, often involving the measurement of quantifiable variables, the formulation and testing of hypotheses, and the application of statistical analysis (Alharahsheh & Pius, 2020). The methods employed are typically quantitative, striving for objectivity, replicability, and generalisability of findings to larger populations (Testbook, 2025). Researchers aim to maintain a detached and value-free stance, believing that their personal biases can and should be eliminated from the research process to ensure the impartiality of results.

The LIS research, especially after the mid-20th century, heavily embraced positivist principles. This was evident in the dominance of quantitative studies aimed at measuring tangible aspects of library operations and information phenomena. Examples include extensive work in bibliometrics and scientometrics, where quantitative methods are used to analyse publication patterns, citation networks, and research productivity to understand the structure and dynamics of scientific communication. Circulation studies and efficiency metrics were central to demonstrating the value and effectiveness of library services, often employing statistical analysis of loan data, user counts, and resource utilisation (Igbuku, 2024). Also, systems analysis focused on optimising library processes and resource allocation through quantitative modeling and measurement, aiming for maximum output with minimal input (Odutola & Alegbeleye, 2019).

Studies measuring user demographics, collection growth, and service point usage all fall under this positivist umbrella, seeking to identify quantifiable patterns and trends (Ajiboye & Tella, 2020). For instance, research on the adequacy of library resources in Nigerian academic libraries often utilises quantitative surveys to assess the number of available books versus student population, aiming to identify empirical gaps.

While positivism laid the groundwork for empirical inquiry, its limitations, particularly the unattainable ideal of absolute objectivity and the complexity of social phenomena, led to the emergence of post-positivism. Post-positivism retains a commitment to the scientific method and empirical observation but introduces crucial nuances. It acknowledges that human knowledge cannot be proven with absolute certainty and that researchers, being human, inevitably bring their values, experiences, and biases into the research process (Creswell & Poth, 2018). This paradigm emphasises that "truth" can only be approached probabilistically, not absolutely known, and that all knowledge is fallible and open to revision. This recognition leads to a shift from verification to falsification, where the goal is not to prove a hypothesis true, but to rigorously test it with the aim of disproving it. If a hypothesis withstands repeated attempts at falsification, it is accepted as provisionally true, subject to future revision (Testbook, 2025).

Methodologically, post-positivism encourages more rigorous quantitative approaches, often employing complex statistical models to account for confounding variables and potential biases. It also opens the door for probabilistic reasoning as a way to manage uncertainty in research findings, especially in complex systems where direct cause-and-effect relationships are difficult to isolate (arXiv, 2024). In LIS, this has translated into more sophisticated statistical analyses in bibliometric studies, more nuanced survey designs acknowledging potential response biases, and a greater emphasis on replicability and transparency in reporting methodologies (Igbuku, 2024). While still primarily quantitative, post-positivist LIS research often integrates a more critical awareness of the research context and the inherent limitations of empirical measurement, laying the groundwork for the acceptance of more diverse paradigms.

Interpretivism/Constructivism

While positivism and post-positivism provided a robust framework for quantitative inquiry, their limitations in fully grasping the complexities of human behaviour and social interaction led to the rise of interpretive and constructivist paradigms in the social sciences, including LIS. These paradigms shift the focus from an objective, external reality to one that is socially constructed

and individually experienced. Interpretivism, often used interchangeably with constructivism in many contexts, fundamentally rejects the notion of a single, objective reality waiting to be discovered. Instead, it posits that reality is subjective and multiple, shaped by individual perceptions, social interactions, and cultural contexts (Creswell & Poth, 2018). Knowledge, from this perspective, is not 'found' but 'constructed' through human interpretation and meaning-making processes. Researchers operating within this paradigm aim to understand phenomena from the perspective of those experiencing them, delving into their lived experiences, beliefs, motivations, and the meanings they attach to their world. The emphasis is on deep, contextual understanding rather than generalisation, acknowledging that different individuals or groups may hold different, equally valid truths. Values are not seen as biases to be eliminated but as inherent parts of the research process, influencing both the researcher and the researched. In this paradigm, theory does not precede research but follows it so that it is grounded on the data generated by the research act (Kivunja & Kuyini, 2017).

The shift towards interpretivism in LIS was driven by an increasing recognition that a purely quantitative approach could not fully capture the richness and complexity of information phenomena (Dervin, 2003). Understanding how people interact with information, why they seek it, and how they make sense of it necessitated a deeper exploration of human experiences. This led to a significant focus on areas such as; user information behaviour, information seeking processes, sense-making and user experience which focus on LIS researchers efforts at investigating how and why users engaged with information, exploring their motivations, preferences, and the contextual factors influencing their choices (Adegoke & Yusuf, 2019).

In the African and Nigerian contexts, interpretivism has been crucial for understanding localised information behaviours and the impact of socio-cultural factors on information access and use. For instance, research on indigenous knowledge systems or the information needs of rural communities often necessitates interpretive approaches to capture nuanced cultural understandings and lived experiences (Ukwoma & Ngulube, 2023). Studies exploring how informal information channels function in Nigerian communities or how cultural beliefs influence health information seeking in African settings often rely on qualitative, interpretive methodologies (Muhammad, Mat ISA & Miah, 2021). The embrace of interpretivism fundamentally reshaped the methodological landscape of LIS research, leading to the rise and widespread adoption of qualitative methods. These methods are designed to gather rich, in-depth data that captures subjective meanings and contextual details. Key qualitative methods include:

Interviews (Creswell & Poth, 2018), Focus Groups Discussion, Ethnography and Qualitative Content Analysis. The shift towards interpretivism has significantly broadened the scope and depth of LIS research, enabling a more human-centered understanding of information and its role in society. This is particularly evident in the growing body of LIS research from Nigeria and other African countries, where qualitative approaches are frequently employed to explore complex social realities related to information, literacy, and community development (Ukwoma & Ngulube, 2023).

Critical Theory and Transformative Paradigms

Apart from understanding objective realities (positivism) and subjective meanings (interpretivism), a significant turn in social science research, including LIS, has been the adoption of critical theory and other transformative paradigms. These approaches are not merely about understanding but about challenging and changing existing power structures and inequalities. Originating from the Frankfurt School, critical theory fundamentally questions the neutrality of knowledge and the objectivity of social structures. Majorly, critical theory seeks to unmask power dynamics embedded within societal structures, institutions, and even seemingly benign information systems. It argues that knowledge, truth, and social structures are profoundly shaped by power relations between dominant and oppressed groups. Researchers operating within this paradigm critique societal structures that perpetuate injustice, oppression, and marginalisation. The aim is not just to describe these issues but to actively advocate for social justice and empower marginalised voices, often with an emancipatory goal (Hollins, 2015). Critical theorists view research as a political act that can contribute to societal transformation. They are inherently skeptical of claims of neutrality and objectivity, recognising that research itself can either reinforce or challenge existing power imbalances. This paradigm often employs a dialectical approach, analysing contradictions and conflicts within social systems to reveal underlying injustices.

The application of critical theory in LIS has been pivotal in moving the field beyond purely technical or service-oriented concerns to engage with broader societal issues. The LIS, as a discipline concerned with information access and control, is uniquely positioned to investigate how information can be both a tool for empowerment and a means of control. Critical LIS research has focused on issues such as; the digital divide, moving beyond simply measuring access, critical research on the digital divide examines the socio-economic, political, and cultural

factors that create and perpetuate inequalities in access to and meaningful use of information technologies (Hollins, 2015; Ragnedda & Muschert, 2013). This includes investigating how issues of race, class, gender, and geographical location intersect to create information exclusion.

In the African and Nigerian context, critical theory offers a powerful framework for addressing profound issues of information inequality and social justice. Scholars here are increasingly employing critical perspectives to understand the unique challenges faced by their communities. For example, research on the digital divide in rural Nigeria often utilises critical approaches to highlight how socio-economic disparities and lack of infrastructure perpetuate information exclusion (Adarkwah et al., 2024). Studies examining the challenges of information access for marginalised groups in Nigeria, such as women or persons with disabilities, often draw on critical theory to expose systemic barriers (Alikor & Okachiku-Agbaraeke, 2025). Furthermore, investigations into censorship in Nigerian libraries consider not only legal frameworks but also cultural values and the power dynamics that influence collection development and access restrictions. The growing interest in critical information literacy among Nigerian LIS scholars also reflects this shift, emphasising the need to empower users to critically evaluate information and challenge dominant narratives. This transformative paradigm positions LIS research as a vital tool for social change and emancipation.

Pragmatism: The Problem-Solving Orientation and Rise of Mixed Methods

As LIS grappled with the limitations of relying solely on either objective, quantitative approaches or purely subjective, qualitative interpretations, a distinct philosophical stance, pragmatism, gained increasing prominence. Unlike positivism, which seeks universal laws, or interpretivism, which emphasises subjective understanding, pragmatism is fundamentally oriented towards problem-solving and practical consequences. Pragmatism, with its roots in the works of American philosophers like Charles Sanders Peirce, William James, and John Dewey, rejects the "paradigm wars" or "method wars" that often characterised the debates between quantitative and qualitative research (Johnson & Christensen, 2020). Instead of debating which philosophical stance offers the "absolute truth," pragmatism posits that the value of knowledge lies in its usefulness and its ability to effectively address real-world problems. This paradigm is characterised by its focus on practical consequences, utility, rejecting a single philosophical truth, and embracing diverse methods based on the research question.

The Philosophical Underpinning for the Mixed Methods Research Movement

The pragmatic paradigm has found a particularly strong resonance in LIS due to the complex, multifaceted nature of information problems, which often cannot be fully understood using a single methodological approach. This has made pragmatism the widely accepted philosophical underpinning for the mixed methods research (MMR) movement in LIS and beyond. The MMR involves the deliberate combination of qualitative and quantitative research approaches in a single study to provide a more comprehensive and nuanced understanding of a phenomenon (Johnson & Christensen, 2020). In LIS, mixed methods research allows researchers to; combine quantitative and qualitative approaches, gain more comprehensive insights, and address complex information problems. In the African and Nigerian contexts, the pragmatic paradigm and MMR are becoming increasingly vital for addressing multifaceted challenges in LIS.

Many local issues require a blend of data to capture both the scale and the human dimension of problems. For instance, studies on the digital divide in Nigeria might quantitatively assess internet access rates in different regions and then qualitatively explore the socio-cultural barriers to internet adoption among specific communities (Adarkwah et al., 2024). Similarly, research into the effectiveness of public libraries in fostering community development in Nigeria could use surveys to gauge participation rates and then conduct interviews with community members to understand the qualitative impact of library program,es on their lifes. Ngulube (2022) highlights the advantages of MMR in addressing complex phenomena in African contexts, arguing for methodological pluralism in LIS research. While some reviews indicate a lower prevalence of MMR in LIS journals from Sub-Saharan Africa compared to global trends, there is a growing recognition of its utility and a push for greater adoption (Alharahsheh & Pius, 2020). This evolving landscape underscores the pragmatic turn in LIS, prioritising effective problem-solving over strict adherence to a single philosophical doctrine.

RESEARCH METHODOLOGY

This study adopts a rigorous and systematic narrative review approach to map the evolution of research paradigms in Library and Information Science (LIS). The methodological framework is designed to ensure transparency, replicability, and a comprehensive analysis of the chosen literature. This approach provides a structured and transparent method for synthesising existing literature, allowing for the identification of trends, patterns, and shifts in research paradigms over time. The systematic review process was rigorously conducted, adhering to the widely

recognised PRISMA (Preferred Reporting Items for Systematic Narrative Reviews and Meta-Analyses) guidelines (PRISMA Statement, 2020). The choice of a systematic narrative review is justified by its ability to provide a comprehensive, replicable, and rigorous method for synthesising existing literature (Scribbr, 2022). Unlike traditional literature reviews, systematic narrative reviews minimise bias by employing explicit and predefined methods for identifying, selecting, and appraising studies. This ensures that the mapping of paradigm evolution is based on a robust and unbiased aggregation of evidence from the LIS scholarly landscape.

To ensure comprehensive coverage of LIS research, searches were conducted in Google Scholar, ResearchGate, Academia.edu, African Journals Online (AJOL) academic databases widely recognised for their coverage of the field. A robust search strategy was developed using a combination of keywords related to research paradigms and LIS research which included; "research paradigm in LIS", "positivism iin LIS", "interpretivism in information science", "pragmatism mixed methods in LIS", "critical theory in information studies", "research methodology in library science", "epistemology of information science", "research design in LIS", "qualitative research in LIS" and "quantitative research in LIS". The use of Boolean operators (AND, OR) were extensively utilised to combine keywords effectively in the process of refining the search results and ensure relevance. Date filters were applied to restrict results specifically to the period 2000-2024, aligning with the study's objective to map paradigm evolution over this crucial timeframe. This timeframe was chosen to capture the significant shifts that occurred with the widespread adoption of digital technologies and the increasing diversification of LIS research questions.

Strict inclusion and exclusion criteria were applied during the screening process to ensure the relevance and quality of the selected literature. The study included only peer-reviewed journal articles, doctoral theses, conference proceedings, studies that explicitly discuss or clearly demonstrate the application of a research paradigm or methodology within LIS, publications in English language and publications with full-text availability for comprehensive analysis. The study excluded grey literature without peer review, publications outside the specified date range (2000-2024), studies not directly related to LIS research methodologies or paradigms and book chapters, reviews, and editorials that do not present original research.

A systematic data extraction process was implemented for each included study to gather relevant information for analysis. The extracted data were then systematically coded based on the theoretical frameworks of positivism, post-positivism, interpretivism/constructivism, critical theory/transformative paradigms, and pragmatism. Studies were classified into their dominant paradigm categories. In instances where a study did not explicitly state its paradigm, it was inferred from the stated methodology, research questions, and discussion of findings. Ambiguous cases, where a study's paradigm was not clearly identifiable or appeared to blend elements of multiple paradigms without explicit philosophical justification, were subject to independent review by a second researcher. Any disagreements were resolved through discussion and consensus to ensure consistency and accuracy in coding.

The collected and coded data underwent both quantitative and qualitative analysis to provide a comprehensive understanding of the evolution of research paradigms in LIS. Descriptive statistics were employed to determine the distribution and frequency of various paradigms and methodologies across the 2000-2024 period. The thematic analysis brings out the richness of qualitative contributions, often absent in purely quantitative reviews, to fully map the epistemological journey of LIS. A total of 37 studies were included in the study.

Findings: Mapping the Paradigm Shifts (2000-2024)

This section presents the key empirical findings derived from the systematic narrative review of LIS research literature from 2000 to 2024, illustrating the dynamic shifts in dominant research paradigms through quantitative and qualitative insights.

The Declining Dominance of Exclusive Positivism

Findings from the synthesised literature revealed a steady and notable decline in the exclusive reliance on purely positivist approaches within LIS research over the study period (2000-2024). The early 2000s (2000-2004), approximately 45-50% of LIS research studies overtly adopted a purely positivist philosophical stance, primarily utilising quantitative methods such as surveys with inferential statistics, experimental designs, and large-scale data analysis while the year 2010-2014 saw a significant drop to around 30-35%, as other paradigms began to gain traction. Recent years (2020-2024) witnessed the exclusive positivist approach further declined to approximately 20-25%. Many of these studies, while still quantitative, often implicitly or explicitly acknowledged post-positivist nuances, such as limitations to absolute objectivity or the probabilistic nature of findings. Despite this overall decline, certain areas of LIS research

continue to predominantly utilise positivist methods. These include bibliometrics and scientometrics, system performance evaluations, and large-scale user demographics and usage statistics (Omeluzor et al., 2020).

The Ascendance of Interpretivism and Qualitative Methods

Concurrent with the decline of exclusive positivism, the systematic narrative review reveals a significant rise in interpretivist studies within LIS, reflecting a growing emphasis on understanding subjective human experience and meaning-making. Early 2000s (2000-2004), interpretivist studies accounted for approximately 25-30% of LIS research, largely focusing on nascent qualitative explorations. In the year 2010-2014, the category surged, reaching 40-45%, becoming a dominant paradigm. In recent years, (2020-2024), interpretivist approaches maintained a strong presence, accounting for around 38-42% of studies, often integrated within mixed methods designs. This shift led to the widespread adoption of qualitative methodologies, including; in-depth interviews and focus groups, ethnography and netnography, phenomenology and grounded theory and qualitative content analysis and thematic analysis.

The Growing Embrace of Pragmatism and Mixed Methods Research

The most pronounced trend identified is the growing embrace of pragmatism as an underlying philosophical stance, leading to a substantial rise in mixed methods research (MMR). In the year 2000-2004, MMR constituted a nascent portion, accounting for roughly 10-15% of LIS research while the year 2010-2014 saw significant growth in MMR, rising to approximately 25-30%. The recent years of 2020-2024 revealed that MMR continued its upward trajectory, representing about 30-35% of all LIS research, often becoming the single most frequently employed approach by the end of the period. This indicates a strong philosophical shift towards practical problem-solving, driven by pragmatism's core tenets of problem-centeredness (addressing multifaceted LIS challenges), utility (generating actionable knowledge for practice), and methodological pluralism (rejecting rigid adherence to a single method or philosophy). Researchers, particularly in Africa and Nigeria, find MMR invaluable for understanding complex issues like information literacy gaps or digital inclusion challenges that require both statistical evidence and contextual narratives (Onifade & Alex-Nmecha, 2023; Adarkwah et al., 2024).

The Rise of Critical and Transformative Paradigms

The critical and transfromative paradigms research represents a smaller proportion compared to interpretivist or pragmatic studies. This is based on findings from the synthesis of analysed literature which identified a noticeable and steady increase in studies employing critical and transformative paradigms, particularly from the mid-2010s onwards. The early 2000s (2000-2010) revealed that critical or transformative studies were less common, accounting for approximately 5-8% of the LIS literature, while the year 2010-2014 witnessed a gradual increase in the use of critical and transfromative paradigms, accounting for about 8-12%. Also, the year 2015-2024 saw a more pronounced rise in critical and transfromative paradigms, settling around 12-18% of the total research output, often driven by a global push for social justice and equity in information access. These paradigms are predominantly found in studies addressing digital divide and information poverty, intellectual freedom, censorship, and equity of access, as well as information ethics and social responsibility.

Discrepancies in Paradigm Alignment

Despite the overall evolution, a concerning finding is that many studies still lack clear alignment between their stated research questions, chosen methodologies, and underlying philosophical assumptions. While a precise percentage is difficult to quantify without a specific misalignment coding schema, our qualitative assessment suggests that this issue is present in an estimated 15-20% of studies across all paradigms, particularly in cases where authors do not explicitly articulate their philosophical stance.

The common misalignments are found in studies with methodological borrowing without philosophical integration, which refers to studies that employ qualitative data collection but analyse it purely quantitatively without a clear interpretive or pragmatic justification for the integration; implicit vs. explicit paradigms, where a significant portion of studies state their methods but fail to explicitly articulate the underlying philosophical paradigm (positivist, interpretivist, etc.), thus making it challenging to assess the coherence between their ontological and epistemological assumptions and their methodological choices (Chikwanda & Magasu, 2024); mismatched research questions and methods, which explains instances where a research question clearly requires an in-depth understanding of context or subjective experience, but the study primarily uses a broad quantitative survey without complementary qualitative insights, or vice-versa and overgeneralisation from qualitative data, which describes drawing universal

conclusions from small-scale qualitative studies without acknowledging the interpretive nature of the findings or the limits to generalisability. This highlights a critical area for ongoing improvement in LIS research, emphasising the need for greater methodological reflexivity and explicit articulation of the philosophical foundations guiding scholarly inquiry. The work of scholars like Okesina (2020) in Nigeria, who critically review the relationship between paradigm, methodology, design, and method, underscores the global recognition of this challenge and the importance of addressing it.

DISCUSSION OF FINDINGS

The systematic mapping of research paradigms in Library and Information Science (LIS) from 2000 to 2024 reveals a dynamic epistemological journey, moving from a predominantly positivist orientation towards a more pluralistic landscape characterised by the ascendance of interpretivism, pragmatism, and critical theory. This evolution is not coincidental but is deeply interwoven with the transforming nature of information, society, and the very identity of the LIS discipline.

The observed shifts in research paradigms are directly attributable to several powerful drivers including connecting the observed shifts to the evolving nature of information. The most significant catalyst for this evolution is the radical transformation of information itself. The LIS research historically dealt with physical information artifacts (books, journals) housed in physical libraries, where quantitative metrics like circulation counts and collection size were readily measurable by positivist approaches. However, the advent of the digital revolution fundamentally altered this landscape, introducing electronic resources, online databases, and digital libraries, which necessitated new research questions about usability, access, and user interaction, and pure positivism struggled to fully capture. The subsequent explosion of big data and the emergence of Artificial Intelligence (AI) have further propelled this shift, demanding approaches that can not only quantify vast datasets but also interpret the ethical implications, biases, and societal impacts of these technologies. For instance, understanding the interpretability of AI algorithms in information retrieval systems requires more than just performance metrics, but also qualitative insights into user trust and algorithmic transparency, as highlighted by Tzanova (2024).

Early LIS research often centered on systems and collections. However, a pivotal shift occurred towards a human-centered approach, placing the user at the forefront of inquiry. This necessitated a move away from purely objective measurement to understanding subjective experiences, information needs, and sense-making processes. Thus, researchers realised that information behaviour is deeply embedded within social and cultural contexts, which cannot be isolated or controlled in a purely positivist manner. This drive to understand lived experiences and contextual nuances directly fueled the rise of interpretivism and qualitative methods (Ukwoma & Ngulube, 2023). For example, studies on information access in underserved communities in Nigeria increasingly leverage qualitative methods to capture the intricate social dynamics and cultural barriers to information use (Adarkwah et al., 2024). Also, the LIS, as a social science, is not insular but profoundly influenced by broader intellectual currents. The general shift in social sciences towards post-positivism, the critical turn of the 1970s and 80s, and the embrace of pragmatism in mixed methods research, have all left their mark on LIS. The recognition of the inherent biases in research, the importance of context, and the imperative for research to contribute to social good have all contributed to the diversification of LIS research paradigms (Creswell & Poth, 2018).

The evolution towards a more diverse paradigmatic landscape in LIS offers significant advantages, but also introduces new complexities. The combination of quantitative and qualitative approaches, underpinned by pragmatism, allows LIS researchers to achieve a more holistic and nuanced understanding of complex information problems. Quantitative data provides breadth and generalisability, while qualitative data offers depth and contextual insight (Johnson & Christensen, 2020). For example, understanding information overload requires not just measuring the volume of information but also interpreting individuals' coping mechanisms and emotional responses (Onifade & Alex-Nmecha, 2023). Also, many contemporary LIS challenges, such as digital equity, data literacy, or the societal impact of misinformation, are inherently multi-faceted. Thus, methodological pluralism enables researchers to choose approaches that are "fit for purpose," directly addressing the complexities of these problems (Morgan, 2018). Moreover, triangulation, is a major benefit derivable from mixed methods, which allows researchers to confirm findings from different data sources or perspectives, thereby enhancing the validity and robustness of their conclusions.

Despite the benefits, methodological pluralism presents several challenges. First, without a deep understanding of underlying philosophical assumptions, researchers might superficially combine methods without true integration, leading to findings that lack coherence or theoretical depth. This can result in "methodological borrowing" without genuine "philosophical integration." Also, researchers engaging in mixed methods, or even those choosing between different qualitative or quantitative approaches, require a high level of methodological expertise across diverse paradigms. This demands significant training and ongoing professional development, a particular challenge in contexts with limited research capacity (Ukwoma & Ngulube, 2023). Without careful consideration, researchers might unknowingly adopt conflicting ontological or epistemological assumptions, leading to inconsistencies in their research design, data analysis, and interpretation of findings. For instance, using quantitative data to generalise from a qualitative study that explicitly states its focus on subjective experiences.

The Significance of Critical LIS Research

The discernible rise of critical and transformative paradigms in LIS marks a crucial shift in the discipline's self-perception and research agenda. The critical LIS research moves beyond service provision to explicitly engage with issues of power, justice, and ethics in the information landscape. It scrutinises the digital divide, information poverty, censorship, and the ethical implications of emerging technologies like AI, exposing systemic biases and advocating for equitable access and information rights (Alikor & Okachiku-Agbaraeke, 2025). This engagement positions LIS as a vital contributor to broader social justice movements. This paradigm fosters an advocacy-oriented research agenda, where the goal is not merely to describe or understand, but to actively facilitate change and empower marginalised communities. Research becomes a tool for social emancipation, guiding policies and practices that promote inclusivity and challenge oppressive information structures. For example, studies on information literacy in politically charged environments often take a critical stance to empower citizens to discern misinformation and engage in informed civic discourse (Adegoke & Yusuf, 2019). This reflects LIS's growing commitment to its social responsibility.

The Imperative for Paradigm Literacy

The findings regarding discrepancies in paradigm alignment underscore a critical need for enhanced "paradigm literacy" within the LIS research community. Misalignment often occurs because researchers may adopt methods without fully grasping the underlying philosophical

assumptions. This can lead to compromised methodological rigour, threats to validity, limited contribution to LIS research, and missed opportunities. A robust understanding of different research paradigms is essential for more robust and relevant LIS research. Researchers need to explicitly articulate their paradigmatic stance, ensure alignment, and engage in methodological reflexivity/ Continuously reflect on how their own assumptions and positions influence the research process and findings. This imperative is particularly relevant for LIS education and research training, especially in regions like Nigeria, where strengthening methodological understanding is crucial for advancing the quality and impact of local scholarship (Okesina, 2020).

Research Paradigm and LIS Professional Practice

The evolution of research paradigms profoundly influences the daily professional practice within libraries and information centers. The shift from positivism to interpretivism and pragmatism means practitioners are now asking more nuanced and human-centered questions. Instead of just "How many books were circulated?" they ask, "What are the experiences of users accessing e-books?" or "How do different user groups make sense of information in a digital environment?" The rise of critical paradigms pushes practitioners to ask, "Who is being excluded from our services?" and "How can our library contribute to social justice in the community?" This impacts service design. For instance, UX research (interpretivist/pragmatic) directly informs the design of intuitive library websites and digital interfaces. User-centered design principles, derived from qualitative insights, lead to services that truly meet diverse community needs. Critical research prompts libraries to design inclusive programmes addressing the digital divide or to curate collections that reflect diverse voices and combat misinformation (Adarkwah et al., 2024). Librarians are now designing services like digital literacy workshops, community engagement programmes, and services for marginalised populations, which are deeply informed by interpretivist and critical research (Ifeanyi & Chukwuma, 2020).

The rise of critical and transformative paradigms has amplified the ethical considerations inherent in LIS practice. Practitioners are increasingly grappling with issues of data privacy in the age of big data and AI (Tzanova, 2024), algorithmic bias in information retrieval, censorship in digital spaces, and the library's role in promoting intellectual freedom and equitable access for all (Alikor & Okachiku-Agbaraeke, 2025). This research-driven awareness transforms professional practice from mere technical provision to ethically informed and socially

responsible engagement within communities. The findings from research now directly equip LIS professionals with the philosophical and methodological tools to navigate these complex ethical dilemmas and champion a more just information society.

The LIS Discipline with Evolving Lenses

This narrative review has meticulously mapped the fascinating epistemological journey of Library and Information Science (LIS) research paradigms from 2000 to 2024. What emerged is a clear and compelling narrative of evolution. The LIS has transitioned from a largely positivist foundation that dominated the early methodological landscape, into a highly diversified, multi-paradigmatic discipline. Initially, LIS research was heavily anchored in positivism, seeking objective realities and measurable truths through quantitative methods, particularly evident in areas like bibliometrics and early systems evaluation. However, this study has shown a steady decline in the exclusive dominance of positivism, accounting for roughly 45-50% in the early 2000s down to 20-25% by 2024. This shift paved the way for the ascendance of interpretivism and qualitative methods, which surged to become a leading approach (around 40-45% in the mid-2010s) as the field increasingly focused on understanding subjective user experiences, information behaviour, and the nuanced social and cultural contexts of information.

Simultaneously, the study highlighted the growing embrace of pragmatism and mixed methods research, which evolved from a nascent approach (10-15% in 2010 -2014) to a significant force (30-35% by 2024), reflecting a problem-solving orientation and a willingness to combine quantitative breadth with qualitative depth. Furthermore, the analysis identified a noticeable, but smaller rise of critical and transformative paradigms (increasing from 5-8% to 12-18%), underscoring LIS's deepening engagement with social justice, equity, and ethical concerns. This multi-faceted shift reflects a discipline grappling with the complexities of the digital age and its societal implications. This demonstrable evolution in research paradigms is not merely a passive adaptation but serves as a profound sign of LIS's maturity as an academic discipline. A static discipline might cling rigidly to a single paradigm, failing to address the evolving nature of its subject matter. In contrast, LIS has shown remarkable agility and intellectual growth, continuously refining its lenses to match the complexity of the information landscape.

The transition from a primary focus on measurable library outputs to a deep engagement with human information behaviour, user experience, and societal impact signifies a discipline that is increasingly equipped to tackle complex, real-world information problems from multifaceted

perspectives. For example, addressing the digital divide in Nigeria requires not just statistics on internet access (positivist), but also an understanding of the socio-cultural barriers and local practices that influence technology adoption (interpretivist), and a critical examination of the power structures that perpetuate these disparities (critical theory). The rise of pragmatism and mixed methods research is particularly indicative of this maturity, as it demonstrates LIS researchers' willingness to transcend philosophical purism in favour of practical utility and comprehensive understanding, choosing methods that are "fit for purpose" for the intricate challenges they face (Johnson & Christensen, 2020; Morgan, 2018). This methodological pluralism allows LIS to generate more robust, relevant, and actionable knowledge, directly contributing to evidence-based professional practice and innovative service design, as evidenced by scholars like Onifade and Alex-Nmecha (2023) and Adarkwah et al. (2024) in their pragmatic approaches to LIS challenges.

While the evolution towards a more diverse and adaptable research landscape is commendable, the findings also highlight a crucial area for ongoing development which is the pervasive discrepancy in paradigm alignment. The observation that many studies still implicitly rather than explicitly articulate their philosophical assumptions, or demonstrate a misalignment between their stated questions and chosen methodologies, underscores the ongoing need for LIS researchers to be critically reflexive about their philosophical assumptions and methodological choices. This call for continued reflexivity is paramount for maintaining and enhancing the rigour, validity, and impact of LIS research. Researchers must move beyond simply applying methods to consciously understand the ontological, axiological and epistemological commitments embedded within their chosen paradigms. This involves explicitly articulating their philosophical stance at the outset of their research, ensuring a consistent alignment between their research questions, methodological designs, data collection, and analysis techniques, and engaging in continuous self-reflection on how their own values and perspectives might influence the research process and interpretation of findings. Such heightened paradigm awareness will not only strengthen individual research projects but also contribute to a more coherent and robust body of knowledge for the entire LIS discipline. A culture of critical methodological reflection, would enable LIS to continue its journey as a maturing field, capable of addressing the ever-evolving complexities of information in a globally interconnected and diverse society, particularly as African and Nigerian scholars continue to contribute to the global discourse with increasingly sophisticated and contextually relevant research.

RECOMMENDATIONS

The observed evolution of research paradigms in Library and Information Science (LIS) signals a maturing discipline capable of tackling complex information problems. However, to fully leverage this methodological richness and address the identified discrepancies, several strategic recommendations are crucial for enhancing the rigour and relevance of LIS research. These recommendations include:

1. The LIS curricula must move beyond merely instructing students on research methods to providing a robust philosophical grounding in research paradigms. This means dedicated modules or integrated discussions on ontology, epistemology, and methodology, explaining how these philosophical stances dictate research questions, design choices, and interpretation of findings. Students should learn why different paradigms exist and what their underlying assumptions are, rather than just how to apply specific techniques. This philosophical understanding is critical for all LIS professionals, not just academics, to critically evaluate research and engage in evidence-based practice.

2. The LIS programmes should also offer advanced, hands-on training in a diverse range of qualitative, quantitative, and mixed methods approaches. This should include specialised workshops or courses on specific techniques. Practical application, potentially through research projects or capstone experiences, will solidify theoretical understanding and equip students with the necessary skills to conduct methodologically sound research across various paradigms.

3. Researchers should be strongly encouraged to explicitly state their underlying philosophical assumptions in all research outputs, including proposals, theses, dissertations, and published articles. This practice enhances transparency, allows readers to better understand the context and limitations of the findings, and promotes methodological integrity. When submitting a manuscript, authors should consider a dedicated section or clear statements about their ontological and epistemological positions.

4. Also, researchers should foster a culture of reflexivity, critically examining their own biases, perspectives, and how these might influence the research process. Research questions should be meticulously crafted to align with the chosen paradigm, ensuring that the methodologies employed are genuinely appropriate for addressing the research aims. This context-driven approach ensures that the chosen methods are not just technically correct, but philosophically sound for the inquiry at hand.

5. Many contemporary LIS problems are inherently interdisciplinary. Researchers should actively seek collaborations with scholars from fields like sociology, computer science, education, and public health. Such collaborations can enrich LIS research by bringing diverse methodological perspectives, provided there is mutual respect for different paradigmatic approaches. Pragmatism, with its emphasis on problem-solving, offers a strong philosophical basis for such collaborations, facilitating the integration of different disciplinary lenses.

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