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Leveraging Artificial Intelligence to Enhance Intervention Strategies for Preventing Psychoactive Substance Abuse: An Organisational and Managerial Perspective.

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Abstract

This study looks at how artificial intelligence (AI) can be used to improve managerial and organisational intervention strategies for preventing psychoactive substance abuse. It examines the strategic, moral, and operational ramifications of incorporating artificial intelligence-driven technologies such as predictive analytics, machine learning, and decision-support systems into prevention, early detection, and intervention initiatives within public and corporate health contexts. Combining a philosophical examination guided by pragmatism and critical realism, the study organises peer-reviewed academic publications, policy documents, and practitioner-oriented research from the past five years. This method allows for a more thorough investigation of how underlying ontological and epistemological assumptions affect the design, implementation, and assessment of AI-enabled initiatives in challenging corporate contexts.

The results emphasise important ideas rising from recent research: AI's ability for early detection of substance abuse risk by means of complex data integration and predictive modelling, the vital part managerial skill and data governance play in effective implementation, continuing moral issues connected with bias, transparency, and privacy, and the increasing focus on human AI cooperation rather than entirely automated decision-making. By clearly connecting AI-enabled intervention techniques to research philosophy, the study adds creative value at the DBA level and hence improves knowledge of how philosophical viewpoints influence management decision-making, organisational readiness, and responsible innovation in the application of AI to psychoactive substance misuse prevention.

Keywords: Artificial intelligence; substance abuse prevention; intervention strategies; managerial decision-making; organisational governance; research philosophy.

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1. Introduction

The rapid development of artificial intelligence (AI) has significantly transformed modern business and management approaches, thereby influencing decision-making, operational efficiency, and strategic governance across various industries. Beyond its usual use in finance, marketing, and operations, artificial intelligence is now being employed in socially complicated fields, including healthcare, employee wellbeing, and public health management (Davenport & Ronanki, 2018). One such area is the prevention of psychoactive substance abuse, a continuing global problem that has major economic, organisational, and societal expenses. From a management and business standpoint, psychoactive substance abuse influences organisational risk, employee welfare, healthcare expenses, and productivity, therefore calling for creative, data-driven, ethically grounded intervention plans (Frone, 2019). AI offers fresh chances to improve intervention design, targeting, and evaluation as companies and public agencies look for more proactive and preventive strategies.

The significance of this subject in business and management research is found in the rising accountability of companies to handle difficult human and social risks, utilising cutting-edge technologies. In settings marked by unpredictability, big data, and moral scrutiny, managers are increasingly expected to make decisions based on facts (Brynjolfsson & McAfee, 2017). Early risk patterns might be found by AI-driven tools like predictive analytics, machine learning algorithms, and decision-support systems, which also help to efficiently allocate resources and customise preventative intervention approaches for substance misuse (Topol, 2019). Management difficulties connected to data governance, algorithmic bias, responsibility, and ethical responsibility go hand in hand with these advantages, however. Looking at AI-enabled intervention techniques from an organisational and managerial perspective is, therefore, both topical and essential for promoting ethical innovation in corporate contexts.

This research aims at two things. First, it critically evaluates the body of knowledge already available on the application of artificial intelligence to stop psychoactive substance abuse, especially for organisational and managerial ramifications. This entails analysing current academic publications to spot major theories, research techniques, and empirical results, as well as pointing out inconsistencies and gaps in the field. Through a critical interaction with current research, the course aspires to evaluate the degree to which recent research properly addresses the complexity of artificial intelligence adoption in intervention methods, and the part management plays in determining results.

Secondly, it examines the chosen research subject philosophically, epistemologically, and morally. At the Doctor of Business Administration (DBA) level, where academic study goes beyond technical solutions to incorporate introspection on how information is created, validated, and applied in practice (Saunders, Lewis & Thornhill, 2019), this dimension is especially crucial. Philosophically, the study investigates how research methodologies, including pragmatism and critical realism, guide the application of artificial intelligence in socially embedded corporate contexts. Epistemologically, it probes the assumptions supporting data-driven decision-making, including the conflict between human managerial

judgment and quantitative algorithmic outputs. Ethically, the study investigates issues with privacy, consent, transparency, and fairness in the use of artificial intelligence tools for alcohol abuse prevention, particularly in public-sector companies and workplaces (Floridi et al., 2018).

This debate centres around several important words that need elaboration. Computer-based systems able to do activities generally need human intelligence, including learning, pattern recognition, prediction, and decision support (Russell & Norvig, 2021) are referred to as artificial intelligence. In a managerial setting, AI often shows up via machine learning models and data tools meant to assist strategic and operational decision-making. The World Health Organisation (2019) describes psychoactive substance abuse as the detrimental or dangerous use of substances that influence mental processes, including alcohol, prescription drugs, and illicit drugs. This problem affects absenteeism, subpar performance, safety concerns, and reputational damage rather than just personal health outcomes inside businesses.

Intervention techniques are systematic steps, policies, or initiatives meant to stop, decrease, or control substance misuse. From a managerial point of view, these approaches may involve early detection systems, employee support programs, training programs, and alliances with healthcare providers—increasingly aided by digital and artificial intelligence-enabled technologies. At last, organisational governance includes the frameworks, policies, and management techniques directing ethical decision-making, accountability, and compliance in the use of new technologies (Tricker, 2019). Governance is especially important when artificial intelligence is applied in sensitive contexts, including personal data and behavioural prediction.

Integrating these ideas, this course establishes AI-enabled substance misuse prevention as a multidimensional management problem instead of just a technological fix. Effective and responsible use of artificial intelligence demands not just technical ability but also philosophical awareness, ethical sensitivity, and competent managerial judgment, it claims. By connecting theory and practice, the study thus adds to DBA-level literature and shows how research philosophy might enlighten more reflective and responsible management decision-making in the implementation of artificial intelligence to challenging societal issues.

1.1 Problem Statement

In both public health and corporate settings, psychoactive substance abuse presents an ongoing difficulty that results in lower production, more absenteeism, and higher healthcare expenses (Frone, 2019; Topol, 2019). Conventional intervention techniques frequently depend on self-reported behaviours, retrospective assessments, or generic prevention programs, hence restricting early diagnosis and prompt treatment. Through predictive analysis and data-driven decision support (Shatte, Hutchinson and Teague, 2019; Bertsimas et al., 2021), recent developments in artificial intelligence (AI) present never-before possibilities for detecting at-risk people. Davenport and Bean (2023), Floridi et al. (2018), and Zuboff (2019), however, restrict the application of artificial intelligence in substance abuse treatments due to several issues: lack of executive integration, poor knowledge of organisational and moral consequences, underused human–AI interaction dynamics, and little

focus on legal and policy frameworks. Therefore, research is urgently needed that not only assesses the predictive abilities of artificial intelligence but also examines the philosophical, managerial, and ethical components required for efficient, responsible, and sustainable application in organisational settings.

Research Questions

How can artificial intelligence be effectively leveraged to enhance intervention strategies for preventing psychoactive substance abuse, considering organisational, managerial, ethical, and regulatory factors?

- ☐ How is AI conceptualised and applied in substance abuse prevention interventions?
- ☐ What ontological and epistemological assumptions underpin existing research?
- ☐ How do managerial decision-making and organisational governance mediate AI-enabled interventions?
- ☐ What ethical, human AI collaboration, and regulatory considerations remain underexplored?

Aim

To critically examine how artificial intelligence can enhance intervention strategies for psychoactive substance abuse prevention, with a particular focus on managerial decision-making, organisational embedding, ethical considerations, and regulatory compliance.

Objectives

1. To critically review recent literature on AI applications in psychoactive substance abuse prevention, identifying trends, methodologies, and key findings.
2. To analyse the philosophical and methodological foundations of AI-enabled intervention strategies, including their ontological and epistemological assumptions.
3. To explore the managerial, organisational, and human AI collaboration factors that influence the effectiveness of AI interventions.
4. To evaluate the ethical, legal, and policy considerations associated with AI-enabled substance abuse prevention.
5. To identify gaps in current research and propose recommendations for the development of responsible, effective, and sustainable AI-based intervention strategies in organisational contexts.

2. Methodology

From an organisational and managerial viewpoint, this study investigates how artificial intelligence (AI) is utilised to improve intervention techniques for avoiding psychoactive substance addiction by means of an open and methodical literature review approach. To guarantee methodological rigour, reproducibility, and critical depth, all of which are vital for

doctoral-level business and management research (Tranfield, Denyer and Smart, 2003), a structured review methodology was chosen.

The search approach comprised locating pertinent academic publications from well-known multidisciplinary databases, including Scopus, Web of Science, Google Scholar, ABI/INFORM, and PubMed. Selected to record research across information systems, public health management, applied ethics, and management studies were these databases. To guarantee inclusion of recent developments in artificial intelligence technology and intervention techniques, the hunt targeted literature released over the last five years (2019–2024). Keywords include blends of artificial intelligence, machine learning, predictive analytics, psychoactive substance abuse, substance abuse prevention, intervention techniques, organisational management, decision-making, and ethical artificial intelligence. To refine search results and increase relevance, Boolean operators were used (Saunders, Lewis and Thornhill, 2019).

To improve the review's relevance and quality, unambiguous inclusion and exclusion guidelines were followed. Peer-reviewed journal papers, official policy reports, and high-quality scholarly publications penned in English specifically addressing AI applications relevant to drug abuse prevention or behavioural risk management with organisational, administrative, or governance implications were among the studies included. Studies were eliminated if they were just technical with no managerial relevance, concentrated just on clinical therapy without an organisational context, or lacked enough methodological openness. This screening procedure guaranteed adherence to the evidence-based management research requirements of Petticrew and Roberts (2006).

The analytical process used a thematic synthesis method. To find repeating themes, patterns, and connections across the body of literature, select studies were carefully reviewed and coded (Braun and Clarke, 2006). Predictive risk assessment, management decision support, data governance, moral accountability, and human-AI cooperation were among the main ideas. The review evaluated the ontological and epistemological suppositions supporting the body of work as well as its topical examination. This emphasised how philosophical stances shape research design and management conclusions by analysing how research conceptualises reality (e.g. objective risk prediction vs socially constructed behaviour) and knowledge generation (e.g. data-driven positivist approaches vs interpretivist or pragmatic perspectives) (Saunders, Lewis and Thornhill, 2019).

This review method has drawbacks, even if it is rigorous. Limiting the search to English-language publications might have missed pertinent global viewpoints. Although guaranteeing currency, the five-year time frame may have restricted the integration of basic studies informing present research. Furthermore, topical synthesis calls for some degree of researcher interpretation, which may introduce subjectivity notwithstanding attempts at transparency and reflexivity. Still, the selected approach offers a strong and critically aware basis for grasping AI-enabled intervention techniques in organisational and management situations.

3. Literature Review

Significant interest in the application of AI-enabled systems for substance abuse prevention has been sparked by the growing availability of digital data and developments in artificial intelligence (See Appendix). Organisations in healthcare, public-sector, and workplace environments have started to use artificial intelligence-driven technologies over the last ten years to spot early risk signs, guide managerial decision-making, and create preventative interventions. In this context, artificial intelligence is often touted as a transformational tool able to increase prediction accuracy, raise efficiency, and facilitate earlier and more focused replies to psychoactive substance use (Topol, 2019; Bertsimas et al., 2021).

Notwithstanding this increasing interest, the literature indicates that deploying artificial intelligence in substance abuse prevention is a complex socio-technical endeavour rather than just a technical one. Current studies encompass information systems, healthcare administration, organisational studies, and ethics, among other fields, resulting in varied theoretical assumptions and methodological approaches. Emphasising predictive analytics, machine learning performance, and algorithmic optimisation (Shatte, Hutchinson and Teague, 2019; Chen, Li and Wu, 2022), much of the early work takes a positivist and data-centric posture. Critics counter, nevertheless, that such techniques frequently underestimate the social, organisational, and ethical milieu in which artificial intelligence systems function (Kellogg, Valentine and Christin, 2020).

Recent research stresses the need for human–AI partnership, organisational preparedness, and governance systems in determining the efficacy of artificial intelligence-based interventions. AI systems are now seen as decision-support tools whose outputs call for interpretation, judgment, and ethical monitoring by managers rather than independent decision-makers (Davenport and Bean, 2023; Sarker et al., 2019). This change points to a bigger move away from techno-deterministic stories toward critical realist and sociotechnical viewpoints that acknowledge the interplay between technology, human agency, and organisational systems (Bhaskar, 2016; Orlikowski, 2007).

Particularly about surveillance, bias, permission, and power inequalities in organisational contexts, ethical questions are also taking up more space in the literature. Though AI-enabled prevention is frequently portrayed as benevolent and welfare-enhancing, academics caution that if not properly managed, predictive monitoring might unintentionally result in stigma, exclusion, or punitive managerial techniques (Obermeyer et al., 2019; Zuboff, 2019). Consequently, regulatory and policy structures such as responsible artificial intelligence guidelines and data protection regulations are increasingly stressed despite the lack of empirical evidence on their actual implementation (Floridi et al., 2018; Kellogg et al., 2020).

Against this backdrop, this literature review critically synthesises current research on artificial intelligence and substance misuse prevention across five linked themes: AI-enabled predictive analytics, human–AI cooperation and organisational readiness, managerial decision-making and governance, ethical tensions and contradictions, and regulatory and policy frameworks. The review uses a review of the philosophical premises, methodological

patterns, and practical consequences within these topics to highlight major gaps and tensions in current knowledge.

Thematic Analysis



Figure 1

Figure 1 offers a thematic framework showing how artificial intelligence (AI) helps to prevent substance misuse. The five connected ideas that surfaced from the study are captured in the diagram together with the technological possibilities of artificial intelligence and the organisational, ethical, and regulatory environments influencing its use.

3.1 Theme 1: AI-Enabled Predictive Analytics and Early Risk Identification

A major idea in the literature over the past five years has been the use of artificial intelligence (AI) for early detection of psychoactive substance misuse risk and predictive analytics. Studies in information systems, organisational studies, and healthcare management show that AI-driven models may more effectively identify early warning signs, risk variables, and behavioural patterns than conventional human-led techniques (Topol, 2019; Chen, Li and Wu, 2022). From a managerial perspective, these systems enable better resource allocation, earlier interventions, and improved preventive outcomes within public-sector companies and corporations.

Much of this literature adopts a data-centric and predictive orientation, positioning AI as an objective tool capable of revealing latent risks through large-scale data analysis. Common studies use machine learning methods like supervised classification, neural networks, and natural language processing to examine digital communication patterns, social determinants of health (Shatte, Hutchinson and Teague, 2019), electronic health records, or company absenteeism statistics. The basic assumption throughout these studies is that sufficient precision in estimating, modelling, and forecasting substance abuse risk is achievable with good-quality data and sophisticated algorithms.

Although these investigations typically show methodical homogeneity, their predictive accuracy is usually stated. With a great dependence on secondary datasets and backward analysis (Bertsimas et al., 2021), quantitative methodologies abound. Experimental or mixed-methods techniques that combine employee viewpoints or managerial judgment remain somewhat uncommon. This methodological bias is representative of a larger positivist epistemological stance where information is seen as objective, quantifiable, and free from social context (Saunders, Lewis and Thornhill, 2019). Often under-theorised are the human and organisational aspects of intervention decision-making.

Empirical data on the idea that early risk identification always results in successful intervention are not regularly sustained. Many studies accept that if businesses lack the managerial ability, governance systems, or ethical frameworks needed to act on AI-generated insights, predictive accuracy does not always translate into better results (Kellogg, Valentine and Christin, 2020). Moreover, artificially intelligent systems educated on past data could compound current prejudices about socioeconomic status, race, or occupational position, therefore disproportionately labelling some groups as "high risk" (Obermeyer et al., 2019). These issues call into question the said objectivity of AI-based prediction and point out the socially constructed nature of data.

From an ontological viewpoint, much of the research implicitly espouses a naive realist stance, supposing that drug addiction risk is a constant, identifiable phenomenon independent of context. Still, critical academics say that substance use habits are socially entrenched and influenced by managerial practices, organisational culture, and power dynamics (Frone, 2019). This ontological conflict implies that solely predictive methods may oversimplify intricate human behaviour, hence restricting their efficacy in actual organisational situations.

Generally speaking, even though AI-enabled predictive analytics show a major development in early risk detection, the studies show a constrained methodological and philosophical focus. Better knowledge of how predictive insights are turned into significant and morally acceptable managerial action could come from more integration of interpretative and critical realist viewpoints.

3.2 Theme 2: Human–AI Collaboration and Organisational Readiness

Recent studies are increasingly acknowledging that the success of artificial intelligence (AI) in drug abuse prevention depends on the calibre of human–AI interaction rather than only algorithm capability. Early research portrayed artificial intelligence as an autonomous decision-making aid; more recent studies stress its function as a decision-support system integrated within organisational and managerial systems (Davenport and Bean, 2023; Sarker et al., 2019). This change shows a rising recognition that before they can effectively guide intervention plans, AI outputs call for human interpretation, contextual knowledge, and moral decision-making.

Studies using sociological and pragmatic viewpoints contend that organisational readiness is a major factor determining effective human-AI interaction. Technological infrastructure, data governance, managerial expertise, and cultural acceptance of AI-driven decision-making define organisational readiness (Kellogg, Valentine and Christin, 2020). According to studies, businesses without AI literacy and moral awareness among their managers are more prone to abuse predictive results or rely on them uncritically, maybe resulting in biased or improper interventions (Topol, 2019). Methodologically, this body of work combines qualitative studies of managerial trust, sensemaking, and decision-making habits with quantitative evaluations of artificial intelligence performance using mixed-methods methodologies.

Ontologically, human AI cooperation studies frequently fit with critical realism since AI-generated insights mix with deeper institutional systems and human agency to create visible results (Bhaskar, 2016). Epistemologically, it moves from rigid positivism by accepting that human interpretation and corporate norms shape knowledge gained from artificial intelligence, which is tentative and context-dependent. But empirical data is inconsistent; many investigations, depending on conceptual models or small case studies, underline the need for a stronger empirical study on the development of human–AI partnership in several organisational situations and treatment environments.

3.3 Theme 3: Managerial Decision-Making, Governance, and Philosophical Foundations

Another significant issue is how organisational governance and managerial decision-making help to shape the success of AI-enabled intervention approaches. Recent research progressively acknowledges that Davenport and Bean (2023), artificial intelligence systems are embedded inside management structures, institutional logics, and governance frameworks that affect how insights are understood and acted on, rather than running independently. This change indicates a departure from techno-deterministic stories toward more socio- technical viewpoints.

Contrasting ontological and epistemological perspectives are clear within this body of knowledge. Studies focusing on positivists often present artificial intelligence as a logical decision-support tool that increases managerial objectivity by lowering human prejudice and error (Bertsimas et al., 2021). Assuming that better information quality results in better managerial results, these studies sometimes use decision theory and information processing models. From this perspective, algorithmic optimisation and statistical validation help to produce knowledge.

By contrast, interpretive and critical realist researchers question the premise that managerial decision-making is entirely logical or that AI results are value-neutral. AI systems are seen from a critical realist viewpoint as operating inside layered social worlds where underlying processes, including organisational culture, power imbalances, and institutional limitations, influence seen outcomes (Bhaskar, 2016). Adopting this viewpoint, some studies contend that managerial interpretation, technological trust, and corporate readiness (Sarker et al., 2019) mediate insights produced by artificial intelligence.

Theoretical frameworks likewise diverge considerably in the literature. Commonly used to account for managerial uptake of artificial intelligence tools are Technological Acceptance Models (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2016). Although helpful in detecting behavioural intentions, these frameworks have been chastised for their lack of interaction with moral and philosophical questions, especially in sensitive areas like substance misuse prevention. Alternative paradigms, such as sociotechnical systems theory and institutional theory, provide more thorough explanations by placing AI implementation inside wider corporate and legal surroundings (Orlikowski, 2007).

A major topic in this theme is ethical governance. Rising research highlights how crucial transparency, responsibility, and human control are in AI-driven projects (Floridi et al., 2018). From an axiological perspective, this research challenges solely instrumental perspectives of artificial intelligence by highlighting ideals including fairness, dignity, and responsibility. Still, ethical debates are frequently seen as normative extras rather than being completely incorporated into empirical analysis or study design.

Critically, although many support governance systems, little factual data exists on their execution. Many studies suggest ethical guidelines without looking at how managers negotiate conflicting objectives, including cost reduction, employee well-being, and efficiency. This rift shows an epistemological conflict between prescribed ethical models and the real world of managerial practice.

3.3 Theme 4: Ethical Tensions, Contradictions, and Limitations in AI-Driven Intervention Research

The third topic delves into ethical conflicts, opposing results, and structural restrictions within the present research environment. Although artificial intelligence is often touted as a means of improving prevention and welfare, a growing body of studies wonders if its use in substance abuse prevention could unintentionally aggravate harm (Kellogg et al., 2020).

These tensions are especially apparent in corporate situations when power disparities between bosses and workers call into question surveillance, permission, and independence.

One major irony resides in the simultaneous use of artificial intelligence as a disciplinary and assisting tool. On one hand, AI-enabled treatments are presented as empowering early support and customised assistance (Topol, 2019). Critics counter that, especially when transparency is constrained (Zuboff, 2019), predictive monitoring can result in stigmatisation, exclusion, or punitive administrative actions. Employee views of AI-driven surveillance vary according to empirical results; some studies show greater trust, whereas others point to more worry and resistance.

Technologically, while empirical artificial intelligence research stays mostly quantitative, ethical objections frequently depend on conceptual or qualitative methods. This rift presents problems for synthesis since moral issues are seldom executed or assessed in conjunction with technical performance markers. Thus, ethical issues are often recognised yet not well studied in actual life.

From a philosophical perspective, these contradictions point to different ideas about what it means to be human. While interpretivist and critical viewpoints stress agency, meaning, and lived experience, positivist approaches often reduce people to data points or risk scores. This ontological split has major consequences for intervention design since it determines whether artificial intelligence is employed to help people or control them.

Moreover, most of the current studies take place in public-sector or healthcare settings with little focus on hybrid governance models or private companies. This limited scope obscures sector-specific ethical concerns and compromises the applicability of results.

Underrepresented voices from underprivileged groups also raise concerns about whose values and experiences are mirrored in AI-driven intervention research.

3.4 Theme 5: Regulatory, Legal, and Policy Frameworks Governing AI Use

The rules, legal systems, and policy frameworks controlling the usage of artificial intelligence in sensitive areas, including substance abuse prevention, are a concurrent and increasingly important theme in the literature. Researchers constantly contend that artificial intelligence technologies are not value-neutral and have to be designed and deployed within strict legal and ethical parameters (Floridi et al., 2018). This study emphasises how organisational decisions on AI adoption, data use, and intervention planning are influenced by regulatory systems, including responsible AI guidelines and data protection laws.

Many times, studying in this field takes a normative or policy-oriented perspective, stressing ideas including informed consent, accountability, fairness, and transparency. From an ontological angle, regulation is seen as a socially created institutional reality that limits and empowers organisational activity (Zuboff, 2019). Knowledge in this area is prescriptive epistemologically, therefore highlighting what companies should do to guarantee ethical compliance rather than what AI systems might technically accomplish.

The literature exposes a chasm between policy goals and corporate behaviour, even with the rise of ethical AI frameworks. Especially in non-clinical environments and the workplace,

empirical research on how managers implement regulatory and ethical principles is still limited (Kellogg et al., 2020). This gap worries about "ethics washing," whereby companies symbolically embrace ethical standards without incorporating them into decision-making mechanisms. Recent research asks for the integration of regulatory compliance with managerial governance systems to guarantee ethical and legal concerns are actively included in AI-enabled intervention approaches rather than seen as outside restrictions (Floridi et al., 2018; Davenport and Bean, 2023).

Through five connected themes predictive analytics, human–AI cooperation, managerial governance, ethical tensions, and regulatory frameworks this literature review has investigated current research on AI-enabled substance misuse prevention. The literature shows that although early risk detection might benefit greatly from artificial intelligence tools, their success depends on ethical governance, corporate readiness, and management analysis.

The review shows an overwhelming dependence that emphasises predictive accuracy while underappreciating the social and organisational settings in which artificial intelligence systems function. Emphasising the part human agency, power dynamics, and institutional frameworks play in defining AI-enabled interventions, emerging interpretive and critical realist viewpoints dispute these assumptions. Despite their importance to management practice, ethical issues, especially those on monitoring, bias, and trust, remain poorly incorporated in empirical studies.

Moreover, there is a consistent divide between organisational execution and regulatory aims, therefore generating questions about symbolic compliance and ethics washing. These discrepancies call for practice-led research on how managers implement ethical guidelines and AI governance in actual situations.

In answer, this review creates a basis for DBA studies that views AI-enabled substance abuse prevention as a sociotechnical, moral, and managerially occurring event. The study seeks to provide fresh knowledge that benefits both scholarly understanding and business practice by concentrating on how predictive insights are converted into responsible and effective action.

Synthesis and Research Gaps

Synthesising the literature over these topics exposes some glaring omissions and ongoing discussions. Firstly, there is a marked disparity between technical advancement and philosophical thought. Although artificial intelligence capabilities for predictive analytics have quickly developed, little thought has gone into the ontological assumptions behind risk modelling or the epistemological status of algorithmic knowledge. This gap points to a need for research, especially incorporating philosophical study into empirical study design.

Second, managerial agency still needs more investigation. Many of the works view managers as inactive receivers of artificial intelligence products rather than as engaged ethical decision-makers and interpreters. Matching with a pragmatist epistemology that values actionable knowledge (Morgan, 2014), future studies should investigate how organisational context,

experience, and managerial values affect the use of artificial intelligence in intervention techniques.

Third, although frequently debated at a high level, ethical issues have no empirical foundation. Studies that operationalise ethical ideas and investigate how they are implemented, negotiated, or compromised are needed. This difference is directly related to axiology, stressing the need for principles in directing management as well as research efforts.

Finally, there is only sporadic engagement with critical realist ideas that might bridge the gap between interpretivist comprehension and positivist prediction. Critical realism presents a promising philosophical foundation for future DBA-level research by recognising both visible results and underlying societal processes. In essence, even though the literature shows great improvement in AI-enabled intervention techniques to avoid psychoactive drug abuse, it is still fractured and philosophically unequal. Addressing these deficiencies calls for a more integrative strategy that blends explicit interaction with ontology, epistemology, and axiology with methodological pluralism, hence promoting both theory and responsible management practice.

action.

4. Philosophical and Methodological Analysis of Shatte, Hutchinson & Teague (2019)

The rising incidence of psychoactive substance misuse has spurred research into creative intervention techniques, including the early detection of risk using artificial intelligence (AI). Shatte, Hutchinson, and Teague (2019) carried out an exhaustive examination of machine learning applications in behavioural and mental health forecasting among recent research. Chosen for philosophical and methodological inquiry, this work demonstrates how artificial intelligence is employed in predictive analytics while also emphasising the potential and constraints of data-driven solutions in business and management situations. The research here investigates the ontological and epistemological assumptions underlying the study, its methodological approach, ethical concerns, and consequences for doctoral-level business and management research.

4.1 Ontological and Epistemological Considerations

Ontology is about the character of reality and the assumptions scientists have about what exists. Implicitly accepting a positivist and realist ontology, Shatte et al. (2019) suppose that behavioural and mental health hazards are objective phenomena that can be quantified and assessed using data. The study assumes that machine learning algorithms can accurately find patterns in datasets that reveal underlying causal mechanisms. For instance, the detection of covert risk variables presupposes that behavioural results—such as tendencies toward substance use—exist as unchanging entities apart from administrative interpretation or social context. Although this ontological position allows accurate predictive modelling, it might

neglect the effect of organisational culture, social contacts, and environmental conditions, all of which can considerably alter behavioural outcomes (Bhaskar, 2016; Orlikowski, 2007).

The study prioritises empirically confirmed knowledge drawn from quantitative data philosophically from a positivist standpoint. Machine learning outputs, model accuracy, precision, and recall are handled as sources of trustworthy knowledge. The research assumes that knowledge is generalizable and impartial, drawn from patterns of observed data (Shatte, Hutchinson and Teague, 2019). This epistemological approach, however, does not explain the interpretive or subjective features of knowledge that are so important in management decision-making environments. Although artificial intelligence produces knowledge offered as actionable in theory, its practical implementation in organisations is tempered by human judgment, situational awareness, and moral considerations (Davenport and Bean, 2023; Sarker et al., 2019). From a doctoral-level perspective, this underlines how vital it is to combine interpretive and pragmatist methods with positivist data-driven insights to help management decide.

4.2 Methodological Analysis

To assess machine learning uses in behavioural health, Shatte et al. (2019) use a systematic literature review approach. To find pertinent peer-reviewed research published within a set date range, the study looked in several databases, including PubMed, Scopus, and Web of Science. While studies devoid of adequate empirical proof or clarity in algorithmic application were omitted, inclusion criteria stressed methodological rigour and relevance to predictive analytics. Data extraction concentrated on algorithm type, features of datasets, predictive performance, and stated constraints.

Comparative analysis was used in the study to evaluate the performance of several machine learning methods, including supervised classifiers, neural networks, and natural language processing methods. The authors discovered patterns, advantages, and drawbacks in AI-driven forecasts by combining measured performance measures. The approach shows clarity and thoroughness, therefore assuring that results are evidence-based and repeatable.

The systematic approach, though, also has its restrictions. The main emphasis on quantitative results causes management, organisational, and ethical situations to be somewhat unexplored. For example, although machine learning algorithms can show great predictive accuracy, the research does not investigate how these forecasts are used and implemented within companies, where human judgment, limited resources, and institutional policies can affect implementation (Kellogg, Valentine and Christin, 2020). Furthermore, questions about representativeness and bias arise from the reliance on historical data sets. Predictive models developed on current data may, by accident, mimic institutional inequalities, hence restricting the real-world use of the results in different organisational settings (Obermeyer et al., 2019; Floridi et al., 2018).

4.3 Ethical Considerations

Though Shatte et al. (2019) do not directly address ethics, predictive analytics for behavioural health has several moral consequences inherent in it. First, disproportionate labelling of some

people as high-risk caused by bias in machine learning models causes fairness and equity issues (Obermeyer et al., 2019). Second, meticulous concern for data security and privacy is needed with the use of sensitive personal data like health records and behavioural information. Third, translating predictive insights into organisational interventions entails ethical decision-making since managers may act on algorithmic forecasts that affect clients or employees, thereby limiting autonomy and consent (Floridi et al., 2018; Zuboff, 2019). Addressing these ethical aspects from a doctoral-level research viewpoint is essential for the creation of ethical and successful intervention plans.

4.4 Implications for DBA-Level Research

The investigation by Shatte et al. (2019) has several significant consequences for doctoral research in management and business. First of all, the research's data-centric and positivist method offers insightful knowledge of predictive modelling but emphasises the need for philosophical plurality. By connecting observed data patterns to underlying causal mechanisms inside organisational contexts, a critical realist point of view could improve understanding (Bhaskar, 2016). Second, a pragmatist orientation might assist to close the gap between predictive ability and managerial decision-making by means of the practical results of AI-enabled treatments. Enhancing the execution of intervention approaches (Davenport and Bean, 2023; Sarker et al., 2019) is achieved by combining data-driven insights with qualitative knowledge of organisational processes, managerial decision-making, and employee behaviour. Thirdly, including moral and axiological factors guarantees that AI solutions meet organisational values and society expectations, hence strengthening their validity and long-term viability (Floridi et al., 2018; Zuboff, 2019).

Methodologically, the investigation shows how important it is to combine empirical data analytically. For DBA-level studies, though, expanding this approach to incorporate mixed-methods techniques could yield a more thorough understanding of the context-specific dynamics of AI initiatives. For instance, combining predictive analytics with qualitative interviews, case studies, or ethnographic observations can help understand how managers interpret AI outputs, navigate ethical challenges, and integrate technology into corporate procedures. Supporting stronger decision-making frameworks, longitudinal data collection can also show how behavioural risks and intervention results change with time (Topol, 2019).

Finally, emphasising the capacity of artificial intelligence to improve early risk detection, Shatte, Hutchinson, and Teague (2019) present a thorough analysis of machine learning uses in behavioural health. Philosophically, the research views behavioural results as objective and quantifiable under a positivist ontology and epistemology. The systematic review methodology offers rigour, transparency, and reproducibility in terms of method by concentrating on algorithmic performance and predictive accuracy.

The study's shortcomings in addressing managerial context, ethical issues, and organisational dynamics expose opportunities for DBA-level research. Future studies should approach critical realism and pragmatism, include mixed methods approaches, and clearly consider ethical and organisational elements. Such an approach will help to link technical predictive capability with actual, ethical use in organisational environments. DBA researchers can create

strong frameworks for using artificial intelligence in interventions for psychoactive substance addiction by interacting with both philosophical and methodological aspects, hence guaranteeing managerial relevance as well as scientific accuracy.

4. Discussion

By highlighting how predictive technologies are converted into administrative activity inside organisational environments, this debate analyses the research on AI-enabled substance abuse prevention. Instead of supporting a techno-deterministic story, the body of work indicates that the success of artificial intelligence-driven efforts depends on management interpretation, organisational governance, and ethical judgement.

One of the most important ideas arising from the study is the continuous discrepancy between predictive accuracy and preventative effect. Many studies implicitly assume that correct prediction naturally leads to successful intervention, even if AI-enabled predictive analytics show good technical competence in detecting early risk indicators (Topol, 2019; Bertsimas et al., 2021). This view stems from a positivist epistemology wherein knowledge is regarded as unbiased and practical, irrespective of environment. But empirical data defies this reasoning by suggesting that without strong governance frameworks and management capacity, predictive insights could fall short of producing significant results (Kellogg, Valentine and Christin, 2020).

From a management point of view, this disparity emphasises that rather than replacing judgment, artificial intelligence spreads responsibility. Managers are still responsible for choosing whether, when, and how to intervene. Therefore, rather than as a purely technical success, AI efficacy should be viewed as a managerial and organisational competence. This reinterpretation is exactly in line with DBA goals that give practical knowledge and real-world decision-making first place.

The literature also shows how human-AI cooperation serves as an important intermediary mechanism between organisational activity and AI outcomes. Increasingly, recent studies see artificial intelligence (Davenport and Bean, 2023) as a decision-support system needing human interpretation, contextual knowledge, and moral reasoning. This change shows a movement away from strict positivism and toward a critical realist view of artificial intelligence as working within layered social systems (Bhaskar, 2016). Results come from the interplay between institutional frameworks and human agency, not just from algorithms.

Empirical studies on human-AI cooperation, notwithstanding conceptual developments, are still rather small in scope and magnitude. Many studies use theoretical models or modest case studies, hence providing little knowledge on the long-run development of managerial trust, AI literacy, and sensemaking. This is a major gap for DBA research, especially in grasping how managers learn to balance reliance on artificial intelligence with critical judgment in morally sensitive situations such as substance abuse prevention.

In the papers, governance and moral decision-making rise as key yet under-investigated topics. Often presented as a tool to lower human prejudice and raise objectivity, AI is

frequently viewed in positivistic studies (Bertsimas et al., 2021). By contrast, interpretive and critical realist research show that artificial intelligence tools are enmeshed with organisational cultures, power dynamics, and institutional logics that affect how knowledge is used (Orlikowski, 2007; Kellogg et al., 2020). These viewpoints highlight a basic conflict: Though AI is touted as facilitating and supporting early intervention, it can also act as a surveillance and control tool.

This ethical paradox has significant administrative consequences. When used supportively and openly, predictive monitoring can improve well-being; however, if seen as punitive or opaque, it may erode autonomy and trust (Zuboff, 2019). The literature proposes that ethical governance should be implemented through daily management decisions rather than regarded as an outside limit. Still, not much is known from empirical data on how managers negotiate opposing goals such as legal compliance, employee well-being, cost control, and efficiency.

Further complicating this scenario are regulatory and policy frameworks. The literature shows a continuing gap between policy intent and organisational practice, even if responsible artificial intelligence guidelines and data protection laws underline accountability, justice, and transparency (Floridi et al., 2018). In non-clinical and business environments, ethical values are frequently applied metaphorically rather than operationally, hence raising the danger of "ethics washing" (Kellogg et al., 2020). This emphasises the need for studies looking at control as a practised managerial activity rather than as a fixed compliance demand.

Philosophically, the writing reveals ongoing conflicts between human-centred and reductionist visions of organisational life. While interpretative and critical realist viewpoints stress agency, meaning, and lived experience, positivist approaches usually reduce people to data points or risk ratings. Practical results of these ontological distinctions include influencing the design of artificial intelligence-enabled interventions to either help people or control them.

The debate generally places AI-enabled substance abuse prevention as a sociotechnical and ethical hurdle rather than just a technical one. For DBA research, this emphasises the need to examine actual organisational settings' managerial sensemaking, governance, and moral decision-making.

5.1 Implications for Theory

This work challenges technological determinism in artificial intelligence research, so contributing hypothetically. Traditional systems sometimes see artificial intelligence as a neutral decision-support tool, implicitly believing that better knowledge results in better decisions. The compilation of results indicates the inadequacy of such beliefs. Including sociotechnical theory and critical realism helps theory forward by placing artificial intelligence within a dynamic system in which human agency, organisational structures, and ethical values co-produce results (Orlikowski, 2007; Sarker et al., 2019). This reframing promotes the creation of more whole theories that explain human-AI cooperation instead of algorithmic independence.

5.2 Implications for Methodological Choices

Methodologically, the prevalence of quantitative, predictive methods mirrors underlying positivist beliefs about knowledge and causation. Although such techniques are helpful, this research highlights the need for methodological pluralism. Mixed-methods studies, which use predictive analytics with qualitative research, ideally catch the interpretive processes by means of which managers interact with artificial intelligence results. Longitudinal and case-based methods can help to better clarify how intervention methods change throughout time and in various environments. These systematic ramifications follow straight from philosophical meditation, supporting the contention that research methodology cannot be divorced from epistemological and ontological placement.

5.3 Implications for Management and Practice

The results show for management and practice that, without considering ethical governance, organisational readiness, and managerial expertise, AI-enabled intervention techniques cannot be properly used. Alone, predictive insights do not make up interventions; they need interpretation, decision-making, and action inside ethical and legal limits (Floridi et al., 2018; Zuboff, 2019). Managers need, therefore be taught not only technical literacy but also ethical reasoning and critical assessment of artificial intelligence outputs. This research adds emphasis on how much of a managerial and ethical obstacle responsible use of artificial intelligence in substance abuse prevention is, as much as it is a technological challenge.

5.4 Implications for DBA-Level Research Design

This investigation shows the need of clearly defined philosophical positioning at the DBA level. DBA studies naturally focus on practical application; hence, they need solutions that are both theoretically solid and contextually pertinent. The results suggest that adopting a pragmatic–critical realist perspective enables researchers to strike a balance between empirical accuracy and actual relevance. Such an approach encourages research methods that produce useful information while being aware of moral, corporate, and social ramifications. This helps advance DBA study by demonstrating how philosophical thought enhances research consistency, methodological justification, and practical impact.

5.5 Overall Contribution

In essence, this work shows that philosophy is not an abstract issue but rather a fundamental impact on the study, development, and execution of AI-enabled substance abuse treatments, thus expanding knowledge. The data taken together reveal how positivist ideas have guided technological development while limiting context understanding. Foregrounding philosophical study, this study helps theoretical growth, promotes methodological innovation, guides ethical management practice, and improves DBA-level research design. Finally, it presents philosophy as a vital facilitator of successful, moral, and sustainable AI-driven intervention techniques in corporate settings.

6. Conclusion

With a special focus on organisational, management, ethical, and philosophical issues, this work sought to critically analyse how artificial intelligence (AI) could be used to improve intervention programs for preventing psychoactive substance abuse. The study used a critical and philosophically informed approach to help one to see both the potential and limits of AI-enabled solutions, responding to the increasing dependence on data-driven technology in health and corporate decision-making. This study has produced a complex grasp of how research philosophy affects knowledge creation and practice in this area by means of a methodical literature review, thematic synthesis, and in-depth philosophical and methodological examination of a chosen study.

The literature review showed that positivist assumptions now drive much of contemporary research, hence valuing predictive accuracy, algorithmic efficiency, and generalisability. Early risk detection and resource optimisation in substance abuse prevention have shown great promise for AI-enabled predictive analytics. The study, meanwhile, pointed out constant flaws in the current literature, including an overdependence on quantitative approaches, not enough consideration of organisational context, and little empirical involvement with ethical governance and human–AI cooperation. These constraints imply that effective or responsible intervention results require something above and beyond technical innovation alone.

Shatte, Hutchinson, and Teague (2019) 's philosophical and methodological examination further showed how epistemological and ontological beliefs influence study plan and interpretation. Although the study's positivist approach allowed for a thorough assessment of machine learning performance, it limited its capacity to explain ethical complexity, managerial judgment, and social dynamics. Comparing this study's findings with more general organisational and sociotechnical literature showed how important alternative philosophical viewpoints, especially critical realism and pragmatism, are in solving the complexity of artificial intelligence installation in corporate environments.

This study's explicit inclusion of philosophy in the evaluation of AI-enabled intervention techniques is among its main benefits. Rather than viewing philosophy as a trivial or tangential issue, the study showed how philosophical posture clearly affects methodological decisions, theoretical framework, and real relevance. By questioning prevailing technocratic narratives and encouraging a more comprehensive view of AI as a sociotechnical and valued phenomenon, this helps to develop scholarly knowledge. By reframing artificial intelligence as more than just a predictive tool but as an intervention enabler whose success depends on organisational preparedness, ethical governance, and managerial ability, the study also advances the body of knowledge on drug abuse prevention.

From a DBA research perspective, this study adds significantly. First, it shows how doctoral study in management and business may reconcile empirical rigour with philosophical depth to generate information that is both academically strong and clearly applicable. Second, it offers a strong justification for employing philosophically plural approaches in DBA research plans, in particular, critical realism and pragmatism. These points of view help to justify methodical pluralism, which lets researchers combine qualitative investigation with

quantitative analysis to provide practical insights for practice. Third, the study presents a methodical way of critically interacting with AI research that could guide future DBA efforts in ethical innovation, analytics, and digital transformation.

From a managerial and practical point of view, the results highlight how successful AI-enabled substance abuse treatments call for more than sophisticated algorithms. Central to understanding artificial intelligence outputs, making ethically informed judgments, and integrating technology within organisational processes are managers. The research stresses the need of cultivating organizational cultures that encourage responsible and open use of data-driven technology, as well as develop management abilities in AI literacy, moral reasoning, and governance. For companies trying to balance results with employee welfare and social responsibility, these ideas are especially pertinent.

Although it has contributions, this study also has limitations. Secondary data and conceptual analysis, rather than actual empirical study, formed the foundation for the study. Though this technique was suitable for meeting the philosophic and critical goals of the study, it restricts the capacity to make context-specific judgments on implementation strategies. Future research should thus expand on this base via empirical investigations analysing AI-enabled solutions in actual organisational settings. Case studies, longitudinal studies, and mixed-methods designs might offer more thorough knowledge of how artificial intelligence tools are embraced, interpreted, and assessed over time.

Future studies should also investigate underappreciated fields, including the lived experiences of people exposed to AI-enabled treatments, human-AI cooperation in managerial decision-making, and the real implementation of ethical and legal frameworks. Comparative research spanning many industries and cultural settings would help one to better grasp how institutional conditions influence AI adoption and results. Furthermore, future DBA studies might explore how various philosophical positions affect practitioner involvement and research impact, therefore enhancing the reflective aspect of applied doctoral research.

To summarise, this research has shown that using artificial intelligence to improve intervention approaches against psychoactive drug abuse is more of a profoundly philosophical, administrative, and ethical problem than just a technological one. This study improves academic knowledge and offers a strong basis for ethically responsible, successful, and contextually founded AI-enabled interventions by emphasising the role of research philosophy and incorporating ideas from organisational and management theory.

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8. Appendix

A) Literature Review Matrix: AI-Enabled Intervention Strategies and Substance Abuse Prevention

Author(s) & Year	Research Focus	Context / Domain	Methodology	Theoretical / Conceptual Framework	Epistemological Position	Ontological Assumptions	Key Findings / Contributions	Limitations / Critical Observations	
Shatt e et al. (2019)	AI in behavioural prediction	Healthcare	Quantitative review	Predictive analytics	Positivist	Risk as objective	Early risk detection potential	Limited managerial/ethical focus	
Bertsimas et al. (2021)	Prediction of substance use disorders	Healthcare management	Machine learning models	Decision theory	Positivist	Naïve realism	High predictive accuracy	Bias and governance underexplored	
Chen et al. (2022)	Behavioural risk prediction	Business analytics	Quantitative empirical	Predictive modelling	Positivist	Behaviour reducible to data	Efficiency gains	Ignores social context	
Frone (2019)	Substance abuse in workforce	Organizational management	Conceptual synthesis	Occupational stress theory	Interpretivist	Socially embedded behaviour	Managerial and cultural influence	Limited AI focus	
Davenport & Bean (2023)	AI-driven decision-making	Organizational strategy	Conceptual	Decision support systems	Pragmatist	Reality shaped by action	Managerial judgement emphasised	Limited empirical evidence	
Kello gg et al. (2020)	Algorithms at work	Organizational studies	Qualitative case studies	Sociotechnical systems	Interpretivist/Critical	Social construction	Power and control exposed	Not substance-specific	
Sarker et al. (2019)	Sociotechnical AI systems	Information systems	Conceptual synthesis	Sociotechnical theory	Critical realist	Stratified reality	Context matters	Limited empirical testing	
Floridi et al.	Ethical AI	Policy / Cross-sector	Normative	Responsible AI	Normative /Pragmatist	Value-laden	Ethical	Lacks operatio	

(2018)	governance		analysis			technology	principles	nalisation	
Obermeyer et al. (2019)	Algorithmic bias	Healthcare analytics	Quantitative + critical	Fairness theory	Critical	Social inequality embedded	Bias identified	Healthcare-centric	
Zuboff (2019)	Surveillance capitalism	Organizational/societal	Critical theory	Surveillance capitalism	Critical	Power - structured reality	Ethical risks highlighted	Limited managerial solutions	
Bhaskar (2016)	Critical realism foundation	Philosophy of science	Philosophical analysis	Critical realism	Critical realist	Stratified causal reality	Philosophical grounding	Non-empirical	