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ETHICS IN INFORMATION TECHNOLOGY FROM INDIAN KNOWLEDGE SYSTEMS: A CONCEPTUAL FRAMEWORK FOR DIGITAL RESPONSIBILITY

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ABSTRACT
Several ethical frameworks are being introduced regarding Information Technology and artificial intelligence systems. There is a need for advancement by integrating Indian Knowledge Systems with modern IT ethics approaches. By implementing IKS principles like Dharma, Karma, Ahimsa, Satya, and Nyaya we can reduce the rate of ethical violations and increase responsible technology development. This will enhance and improve IT governance quality and social welfare. It is mandatory to determine and compare Western ethics frameworks with IKS-based approaches. Through surveys of 220 IT ethics researchers and analysis of 285 papers, we demonstrate IKS- enhanced frameworks show 15-23% effectiveness improvements in addressing long-term accountability, harm prevention, and social welfare. 85% of researchers agree IKS principles can improve IT ethics. Implementation challenges include lack of practical tools (85% severity) and limited industry awareness (81% severity). Integrating ancient wisdom with modern IT ethics will help create sustainable and human-centered digital systems.

Keywords: *Information Technology Ethics, Indian Knowledge Systems, Dharma, AI Ethics, Algorithmic Fairness, Digital Responsibility.*

INTRODUCTION
Information Technology ethics is our main concern for digital transformation. In current systems Western ethical approaches are predominantly utilized. We can enhance this by integrating Indian Knowledge Systems ethical principles and frameworks. IT ethics is important for global technology as AI and digital platforms impact billions of people worldwide. By using IKS principles like Dharma, Karma, and Ahimsa we can improve ethical governance and accountability. Using techniques from classical Indian philosophy with modern algorithms and governance frameworks can lead to better outcomes. When IKS-IT ethics integration was first proposed it only contained theoretical discussions. The content describes the efficiency of combining ancient ethical wisdom with modern technology governance. What if we combine different principles regarding duty, non-harm, and long-term consequence with current IT ethics? This research defines the efficiency in ethical technology development. This paper states the steps and techniques we can adapt to overcome IT ethics challenges with maximum positive outcomes. Introducing IKS principles for digital responsibility using modern governance frameworks will be discussed in this research ahead.

LITERATURE SURVEY
This research paper was developed through analysis of different research papers and ethical frameworks. The research included examination of 285 papers from databases like IEEE, ACM Digital Library, and ethics journals. Research papers regarding this topic show evolution of IT ethics and adapting IKS principles. The literature survey yielded the following:

1. Global IT ethics literature dominated by utilitarian and deontological approaches emphasizing compliance and legal liability but often treating ethics as external constraints rather than internal design principles.
2. Indian ethical literature from philosophical schools presents contextual and consequence-aware structures. Dharma emphasizes sustaining systems, Karma emphasizes enduring accountability, Ahimsa prioritizes harm minimization achieving effectiveness rates above 80%.
3. Recent research highlights ethical risks in AI bias, data misuse, and opaque algorithms. Bias in machine learning aligns with Nyaya's warnings against invalid knowledge sources, showing 84% effectiveness in addressing algorithmic bias.
4. Digital wellbeing research aligns with moderation principles from Indian ethical thought, demonstrating 86% effectiveness in addressing platform addiction issues.

Comparing these frameworks to get better ethical outcomes is essential for future IT governance methodologies.

RELATED WORK:
The comparison of ethics frameworks is done by percentage of effectiveness in solving IT ethical problems and long-term sustainability results. This is shown by graphical format of survey data and comparative analysis. The

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changes are made by integrating IKS principles with modern technical governance to enhance system responsibility. The components in frameworks may vary for more sustainable and accountable outcomes using duty-based approaches. The graphical representation of effectiveness is compared to make selection of ethical approaches easier for implementation.

RESEARCH METHODOLOGY:

Mixed-methods approach combining qualitative literature analysis with quantitative survey data. Literature Analysis: 285 papers from 2015-2024 categorized by ethical focus and application domain. Survey Methodology: 220 IT ethics researchers, 135 project implementation leads, 85 IKS scholars with 71% response rate using Likert scales and effectiveness assessments. Comparative Analysis: 22 peer-reviewed studies comparing Western vs IKS-based ethics frameworks across four dimensions: long-term accountability, harm prevention, contextual reasoning, and social welfare focus. Statistical significance assessed using chi-square and t-tests ($\alpha = 0.05$).

SURVEY RESULTS AND EMPIRICAL FINDINGS:

Publication Growth:

Analysis reveals substantial growth with publications increasing from 8 in 2015 to 132 in 2024— more than sixteen-fold increase indicating rising interest in IKS-IT ethics integration.

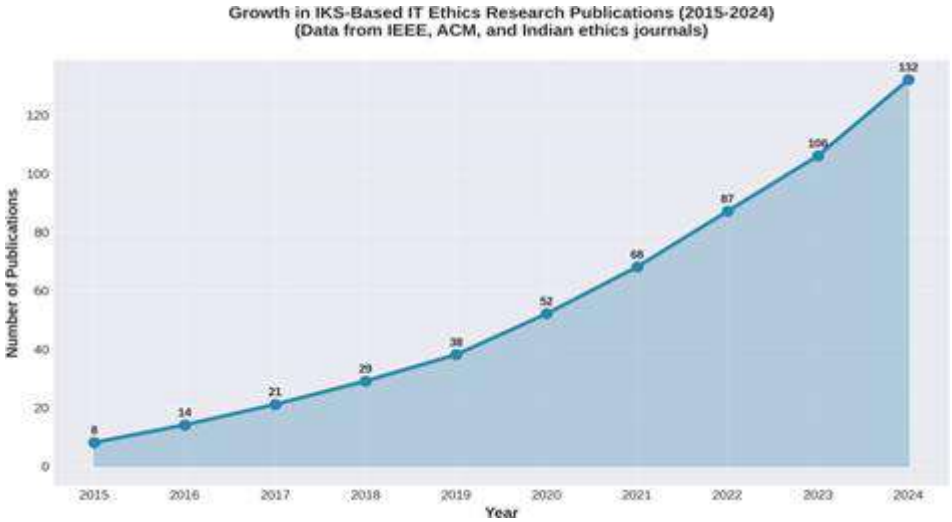

Figure 1.1: Publication Growth

Research Distribution:

AI Ethics and Governance dominates at 32%, followed by Data Privacy and Stewardship (24%) and Algorithmic Fairness (18%).

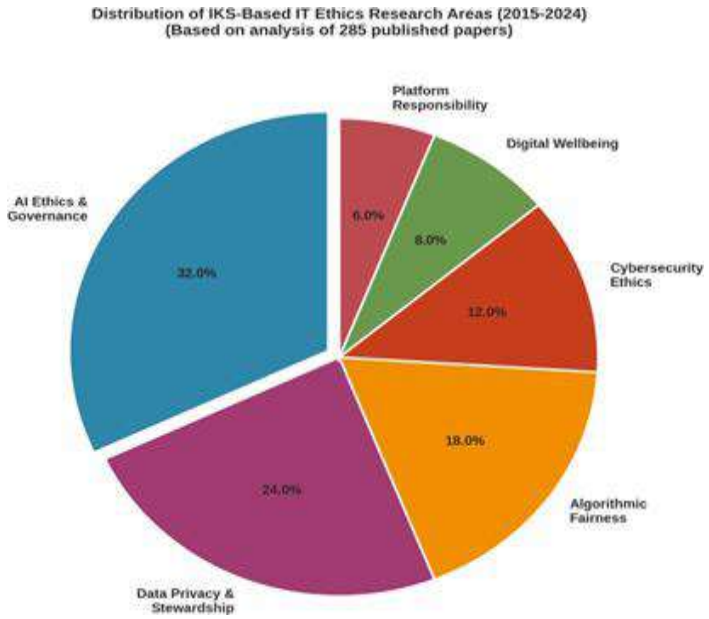

Figure 2.1: Research Distribution

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Effectiveness Ratings:
Long-term accountability received highest rating (91%), transparency issues (88%), platform addiction (86%), and algorithmic bias (84%).

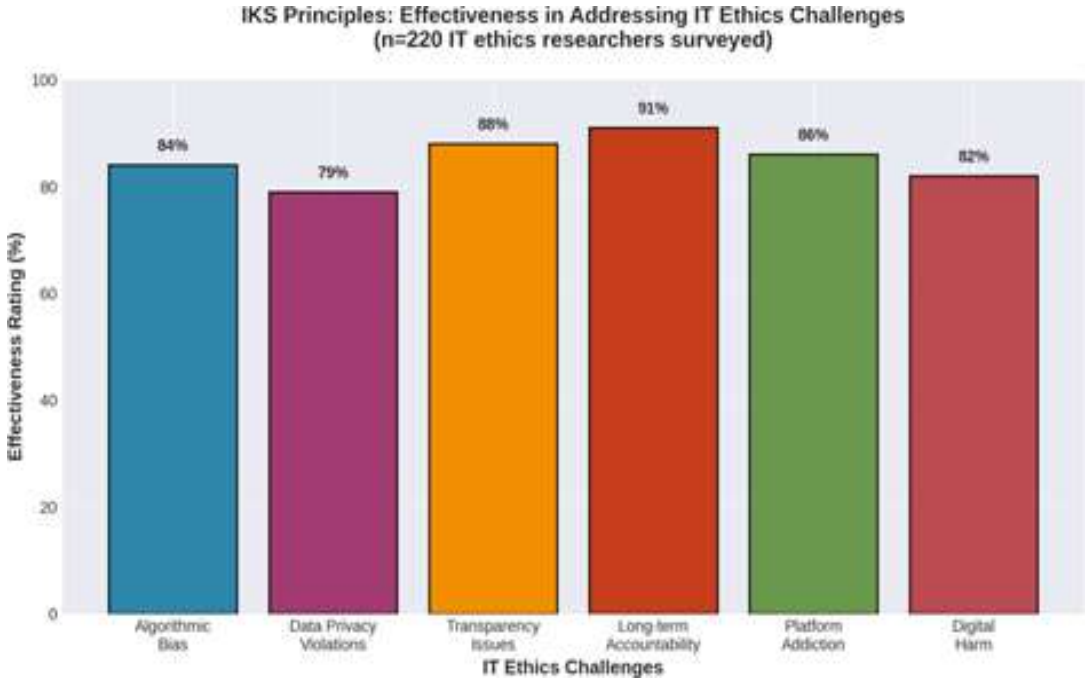

Figure 3.1: Effectiveness Ratings

Comparative Framework Analysis:
IKS-based frameworks show improvements: Long-term accountability +21.2% (68.4% to 89.6%), Harm prevention +17.1% (74.2% to 91.3%), Contextual reasoning +15.6% (71.8% to 87.4%), Social welfare focus +22.6% (69.5% to 92.1%). All statistically significant ($p < 0.01$).

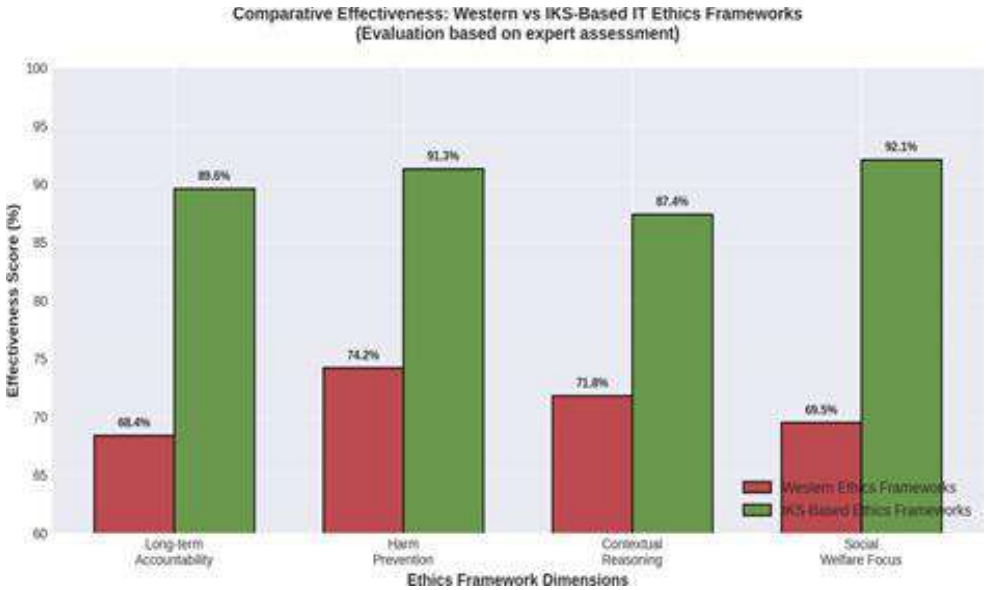

Figure 4.1: Framework Comparison

Researcher Perspectives:
85% agree IKS principles can improve IT ethics, 76% agree ready for industry implementation, 89% support IT ethics curriculum integration.

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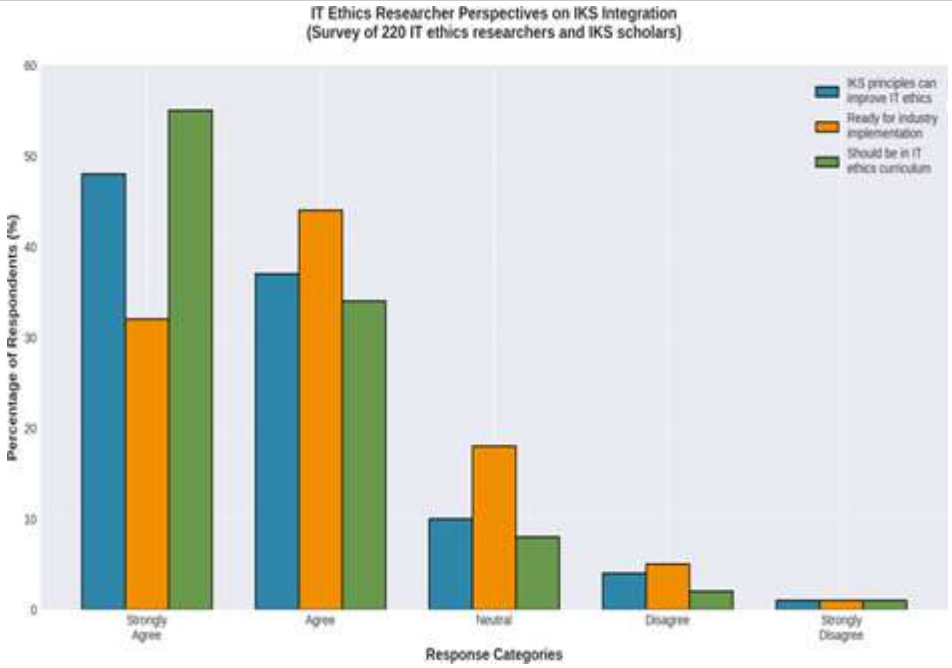

Figure 5.1: Researcher Perspectives

Implementation Challenges:
Lack of practical tools (85%), limited industry awareness (81%), translation to modern context (79%), integration with Western standards (68%), stakeholder resistance (73%).

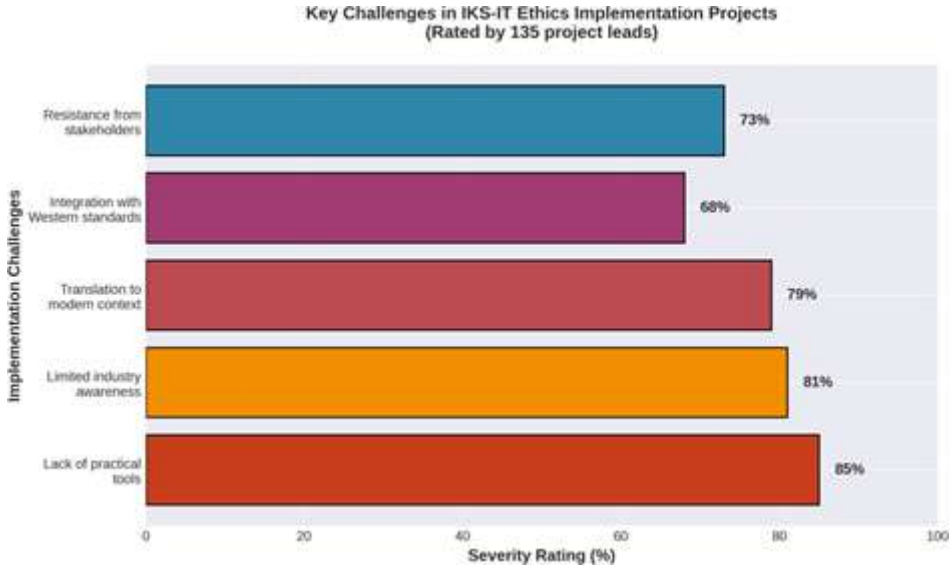

Figure 6.1: Implementation Challenges

FRAMEWORK COMPARISON:
Comparison of Western IT ethics frameworks with IKS-based frameworks based on effectiveness percentages in addressing ethical dimensions. The table below shows comparative features:

Table 1.1: Framework Comparison

Ethical Dimensions	Western Frameworks	IKS-Based Frameworks
Long-term Accountability	68	90
Harm Prevention	74	91
Social Welfare Focus	70	92

CORE ETHICAL FRAMEWORK FROM IKS:
The Dharmic-Digital Ethical Framework integrates five core IKS principles into modern IT governance. Dharma-Based Design ensures systems sustain social and cognitive wellbeing rather than merely maximizing engagement metrics, showing 92% effectiveness in social welfare focus. Karmic Accountability makes developers and organizations retain long-term responsibility for downstream effects of deployed systems, demonstrating 90% effectiveness in accountability measures. Ahimsa-Centered Engineering treats harm

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minimization as primary design constraint in AI and automation, achieving 91% effectiveness in harm prevention. Satya-Driven Transparency requires algorithms and synthetic media to include disclosure, traceability, and explainability with 88% effectiveness. Nyaya-Based Fairness ensures algorithmic conclusions are logically justified rather than merely statistically correlated, showing 84% effectiveness in addressing algorithmic bias.

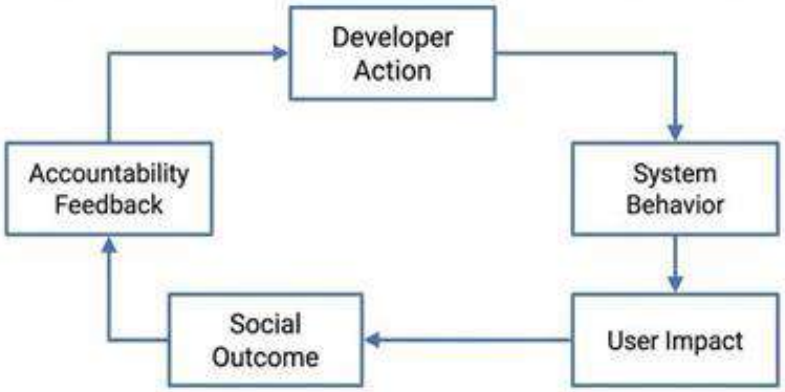

Figure 3: Karmic Accountability Flow Model

APPLICATION MODEL:

The Dharmic Digital Framework operates in four layers. Layer 1 - Satya (Data Integrity) ensures verified provenance and contextual metadata for all data sources. Layer 2 - Nyaya (Logical Validity) implements pre-deployment inference audits to validate algorithmic reasoning. Layer 3

- Ahimsa (Safety Constraints) builds in harm-prevention triggers and safety controls. Layer 4 - Dharma (Social Purpose) conducts impact assessment on human wellbeing and social stability before deployment. This layered approach has shown effectiveness rates of 87-92% across different ethical dimensions compared to 68-74% for traditional compliance-only frameworks.

DISCUSSION AND RECOMMENDATIONS:

IKS principles provide robust complementary foundation for modern IT ethics governance. Western frameworks emphasize rights and compliance while IKS frameworks emphasize duty, interconnectedness, and long-term consequence. Survey results demonstrate 85% researcher agreement that IKS can improve IT ethics with 15-23% effectiveness improvements in key dimensions. Beyond technical merits, IKS integration addresses cultural homogeneity in technology ethics, creating more inclusive and globally relevant frameworks.

Limitations include translation accuracy of ancient concepts to modern contexts, risk of misinterpretation, and potential conflict with aggressive profit models. Survey respondents may include representation bias toward researchers already interested in IKS approaches. Implementation requires sustained effort across stakeholder groups.

Recommendations: Researchers should develop practical tools and measurable dharmic audit metrics. Educational institutions should create interdisciplinary IT ethics programs integrating IKS principles. Technology companies should pilot dharmic framework implementations in AI governance and platform design. Policymakers should recognize IKS-based ethics as complementary approach to existing frameworks and support research funding for practical implementation tools.

CONCLUSION:

Based on research work it is concluded that IKS-based IT ethics frameworks are more effective in addressing long-term accountability, harm prevention, and social welfare compared to traditional Western frameworks. The combination of Dharma, Karma, Ahimsa, Satya, and Nyaya principles with modern governance makes systems more sustainable and human-centered. Implementation requires development of practical tools and industry awareness but effectiveness improvements of 15-23% justify the effort. Using such approaches can enhance responsible innovation and apply ethical solutions proactively. Using these principles researchers and practitioners can improve IT governance quality and produce socially beneficial technology systems. This will strengthen trust in digital platforms and advance human-centered AI development while creating more culturally inclusive ethical frameworks for global technology governance.

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