Towards Contestable AI: Embedding Accountability in Indonesia's National AI Strategy

A Global South Perspective

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From Stem to Stern: Contestability Along AI Value Chains - ACM CSCW 2024

Introduction

- **Contestable AI:** Systems designed to preserve human agency, enable recourse, and provide meaningful explanations
- Critical for the Global South, especially Indonesia:
  - 4th most populous country, over 270 million people
  - Ambitious national AI strategy (Stranas KA)

Research Objectives:

1. Map contestability provisions in Indonesia's AI strategy
2. Identify opportunities to enhance contestability
3. Examine challenges for implementing contestable AI reforms

Alfrink et al. (2022), World Bank (2024), Sekretariat Nasional KA Indonesia (2020)

Context: Indonesia's AI Landscape

Key points from Indonesia's National AI Strategy (Stranas KA)

- Vision: Leading AI power in Southeast Asia by 2045
  Ambitious timeline may pressure rapid AI adoption
- Focus on "human-centered AI" aligned with Pancasila values
  Potential foundation for contestability, but lacks specificity
- Four key pillars: ethics, talent, infrastructure, innovation
  Intending on holistic approach
- Proposal for AI Ethics Commission
  Awareness of the need for oversight and standardization but mandate and powers unclear.

Sekretariat Nasional KA Indonesia (2020)

Context: Indonesia's AI Landscape

Unique challenges and opportunities as a developing nation

- Emerging tech hub in Southeast Asia, rapid AI adoption
  Risk of overlooking contestability in rush to adopt AI
- Vast regional, cultural, and linguistic diversity
  Diverse perspectives can inform inclusive contestability mechanisms
- Recent progress: Cyber Security and Resilience Bill (2019) and Personal Data Protection Law (2022)
  Foundation for data rights

Yusriadi et al. (2023), World Bank (2024), DPR Republik Indonesia

Methodology

1. Document Analysis

- Examined key Indonesian AI strategy and policy documents
- Focus on Stranas KA and related regulations
- Analyzed through contestability lens

2. Comparative Review

Analyzed contestable AI practices in leading jurisdictions:

- EU's draft AI Act
- Canada's Algorithmic Impact Assessment tool
- UK's guidance on explaining AI decisions

3. Contestable AI by Design

- Applied framework by Alfrink et al. (2022)
- Examined 4 key stages of AI lifecycle:
    1. Design
    2. Development
    3. Deployment
    4. Deprovisioning

European Commission (2021), Government of Canada (2023), The Information Commissioner's Office (2024), Alfrink et al. (2022)

Current State of Contestability in Indonesia

Promising Foundations

- "Human-centered AI" principle
  Aligns with contestability, but lacks concrete mechanisms
- Proposed AI Ethics Commission
  Potential oversight body, but mandate unclear
- Personal Data Protection Law
  Foundational for data rights, yet AI-specific provisions absent

Critical Gaps

- Lack of explicit contestability provisions
  Risks AI systems becoming 'black boxes' to citizens
- Absence of transparency and explainability guidelines
  Hinders meaningful contestation of AI decisions
- No framework for human oversight in high-stakes AI
  Potential for unchecked AI influence in critical domains

Dewan Perwakilan Rakyat RI (2019), Sekretariat Nasional KA Indonesia (2020)

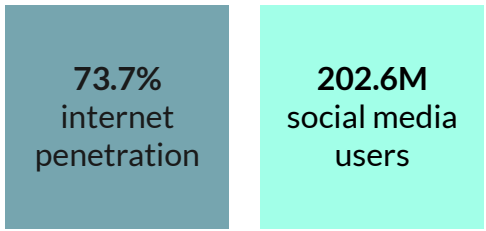
Opportunities for Incorporating Contestability

1. Leverage Existing Ethical Foundations

Build on "human-centered AI" principle and Pancasila values in current strategy.

2. Harness High Digital Engagement

Engage young people in shaping contestable AI policies and solutions.



Data sources: Sekretariat Nasional KA Indonesia (2020), We Are Social & Hootsuite Digital 2024 Report

Opportunities for Incorporating Contestability

3. Harness Cultural Diversity for Inclusive AI

Incorporate diverse cultural perspectives into AI development and contestability mechanisms.

1,340+ ethnic groups

700+ languages

4. Utilize Emerging Tech Hub Status

Could position Indonesia as a leader in ethical and contestable AI in Southeast Asia and between developing nations.

29th in tech funding globally

15 unicorn startups

Data sources: BPS-Statistics Indonesia (2024), TNGlobal (2024), Tech in Asia (2023)

Challenges and Considerations

1. Institutional Capacity Constraints

Understaffed and under-resourced public institutions struggle to oversee AI systems effectively.

Limited AI expertise

0.24% of GDP on R&D

2. Balancing Innovation and Precaution

Tension between attracting AI investments and safeguarding public interests.

2045 vision AI leadership

Lack of and slow in applying AI-specific regulations

Data sources: Statista (2024), Sekretariat Nasional KA Indonesia (2020)

Challenges and Considerations

3. Regional and Cultural Diversity

One-size-fits-all solutions are unlikely to be effective across Indonesia's varied landscape.

17,000+ islands

61.7% urban population

4. Data Governance Gaps

Lack of robust data governance frameworks hinders transparency and auditing.

ongoing nationwide One Data Policy

Global rank by breached accounts: 13th

Recent nationwide data breach ↓ public trust

Data sources: World Bank (2024), BPS-Statistics Indonesia (2024), Republik Indonesia (2022), Surfshark (2024), Kompas.id (2023)

Recommendations

1. Integrate Contestability into AI Legislation

Ensure contestability principles are core to emerging AI regulations.

Draft AI Bill
in progress

2024-2044
AI roadmap period

2. Develop Localized Contestability Tools

Create mechanisms to evaluate and ensure AI systems' contestability.

AIA
from Canada

Risk-based
approach

4 priority
AI sectors identified

15+
AI research centers

References: Government of Canada (2023), European Commission (2021)

Recommendations

3. Foster Multi-stakeholder Collaboration

Create platforms for government, industry, academia, and civil society to co-develop contestable AI solutions.

KORIKA
AI ecosystem orchestrator

Quad-helix
collaboration model

4. Enhance Public AI Literacy

Develop campaigns and educational programs to improve understanding of AI and contestability rights.

73.7%
internet penetration

Digital Talent
Scholarship program

Data sources: Stranas KA (2020), We Are Social & Hootsuite Digital 2024 Report, Ministry of Communication and Information Technology (2024)

Future Research Directions

1. Socio-cultural Implementation

Examine how contestability principles manifest in Indonesia's diverse contexts.

Example RQ: "How do language barriers and digital literacy levels affect the accessibility of AI contestability mechanisms in rural Indonesia?"

2. Impact Assessment

Evaluate the effectiveness of contestability measures in building trust and mitigating harms.

Example RQ: "What are the measurable impacts of implementing AI contestability mechanisms on public trust and usage of e-government services in Indonesia?"

Future Research Directions

3. Policy Localization

Explore strategies to adapt global contestability practices to Indonesia's regulatory landscape.

Example RQ: "How can Indonesia's 'gotong royong' principle be operationalized in collaborative AI governance frameworks?"

4. Sector-Specific Requirements

Investigate domain-specific contestability needs in priority sectors.

Example RQ: "How might contestability requirements in Indonesia's Islamic banking sector differ from conventional finance?"

Conclusion

- Indonesia's AI strategy shows promise but lacks concrete contestability mechanisms
- Unique challenges include institutional capacity constraints and cultural diversity
- Opportunities exist to leverage Indonesia's tech hub status and multicultural landscape

Indonesia's approach to contestable AI exemplifies Global South nations' struggle to leverage AI while respecting developmental needs and cultural diversity.

Thank you

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