TERMS OF REFERENCE (TOR) FOR THE DATA AND ARTIFICIAL INTELLIGENCE (AI) SCIENTIFIC PANEL

BACKGROUND AND RATIONALE

As African countries accelerate digital transformation, the integration of data science, artificial intelligence (AI), and computational social science into demographic and population research presents unprecedented opportunities. These technologies can enhance the efficiency, accuracy, and relevance of data collection, analysis, and dissemination, particularly in census and official statistics processes.

In a context where rapid demographic shifts and resource limitations pose significant challenges, AI and advanced data tools offer scalable solutions. They can support real-time analysis, automate routine processes, detect anomalies, and improve decision-making in public policy and development planning. However, alongside these benefits are critical concerns related to ethics, equity, data privacy, and algorithmic bias, which must be addressed to ensure responsible and inclusive adoption.

This Thematic Panel aims to convene experts from across disciplines to assess current and emerging applications of AI and computational methods in demographic research and national data systems in Africa. It will promote collaboration, build capacity, and develop actionable guidelines for ethical, impactful AI integration in population science.
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OBJECTIVES

The primary objectives of the Data and AI Scientific Panel are to:

- Explore the role of AI and data science in strengthening population data systems, including planning, enumeration, analysis, and dissemination census operations, surveys, and administrative data integration.
- Share cutting-edge tools, frameworks, and methodologies for applying machine learning, natural language processing, geospatial analysis, and other computational techniques to demographic research.
- Evaluate the opportunities and risks of adopting AI in official statistics and national data ecosystems
- Propose ethical and technical guidelines for responsible AI use, emphasizing transparency, fairness, and community trust.

- Promote capacity building and foster networks across academia, national statistics offices (NSOs), civil society, and the tech sector to drive locally relevant innovation.

SCOPE OF WORK

The Panel will focus on, but is not limited to, the following areas:

a) **AI in Census and Survey Methodology**
   i. Investigate the use of AI for survey design, automated data collection, quality assurance, and post-enumeration analysis.
   ii. Explore the use of AI tools for predictive modeling and real-time data validation.

b) **Data Governance and Ethics**
   i. Examine legal, ethical, and regulatory frameworks for AI use in demographic data, including data sovereignty, consent, and protection.
   ii. Recommend approaches for mitigating algorithmic bias and ensuring equitable outcomes.

c) **Data Integration and Innovation**
   i. Support interoperability across administrative data systems, satellite imagery, mobile phone data, and traditional datasets using AI-driven techniques.
   ii. Identify use cases for AI in improving disaggregation, forecasting, and spatial analysis of population trends.

d) **Capacity Building and Institutional Strengthening**
   i. Promote digital literacy, data science training, and AI readiness among African NSOs, universities, and research institutions.
   ii. Develop resources and partnerships to support sustainable AI adoption in data ecosystems.

e) **Policy Influence and Public Engagement**
   i. Translate insights into accessible policy briefs and guidelines for governments, regional bodies, and civil society organizations.
   ii. Encourage transparent public discourse on AI and data ethics, including community participation in shaping national data strategies.

DURATION OF THE PANEL

- **Start and End Dates**: The panel's work will officially commence upon the appointment of its members and the first organizational meeting. The panel will be active for 4 years.

- **Extension/Review**: If the panel needs more time to complete its objectives, an extension can be requested with agreement from the panel members and relevant stakeholders. The request should include a clear rationale and updated deliverables. A formal review will occur after **12**

months to assess progress, gather stakeholder input, and potentially adjust the panel's mandate, extend its duration, or revise its objectives.

MEMBERSHIP ELIGIBILITY AND COMPOSITION

The Data and AI Scientific Panel will consist of **experts** in the following areas:

- Data Science, Artificial Intelligence, and Machine Learning
- Demography and Population Studies
- Statistics and Official Data Systems
- Digital Governance and Ethics
- Public Policy and Development Planning
- Computational Social Science

Members should meet the following criteria:

- Demonstrated expertise in at least one of the relevant fields
- Paid-up member of UAPS
- Availability of at least 8 hours per week for panel responsibilities
- Fundraising experience or ability to mobilize resources
- Proficiency in English (French is an added advantage)

Members will be selected based on their expertise, experience, and contribution to the fields related to Data and AI and will serve for a **two-year renewable term**.

RESPONSIBILITIES OF PANEL MEMBERS

Panel members are expected to:

- Contribute to technical papers, policy briefs, and practical frameworks related to AI and data use in population science
- Actively participate in quarterly meetings, workshops, and collaborative research initiatives.
- Support interdisciplinary collaboration and innovation across sectors.
- Engage in outreach, including conferences, workshops, webinars, and stakeholder consultations.
- Review and provide input on draft reports, guidelines, and strategic recommendations.

STRUCTURE AND MEETINGS

The panel will consist of five members in addition to the Chair and Vice-chair. The panel will meet **regularly**, either virtually or in-person, to discuss progress, review research outputs, and provide strategic direction. Ad-hoc meetings may be convened as needed for special tasks or

consultations. A **Chair** and **Vice-Chair** will be elected from the panel members to oversee the activities of the group, with support from a **Secretariat** to oversee logistics and communication.

DELIVERABLES

The expected deliverables of the panel include:

- Policy briefs outlining key findings and actionable recommendations for governments, international organizations, and NGOs.

- Publications in peer-reviewed journals such as the Journal for African Population Studies (JAPS), conferences, and other forums to disseminate research outcomes.

- Ethical and operational guidelines for AI implementation in national statistical and population research contexts

- Capacity-building toolkits and learning resources

BUDGET AND RESOURCES

The Panel is expected to fundraise and operate with funding provided by the **sponsoring organizations**, including government agencies, international institutions, and private sector partners. The Secretariat will provide seed money for some activities of the panel. A detailed annul budget for panel activities, including meetings, research, publications, and outreach efforts, will be developed, and approved.

REPORTING

The panel will provide regular progress reports to the Secretariat detailing activities, achievements, and impact.

SUBMISSION INSTRUCTIONS:

Interested individuals who wish to join the **Data and Artificial Intelligence Scientific Panel** must submit the following:

1. **Curriculum Vitae (CV)**: A two-page CV detailing educational background, professional experience, and relevant publications showcasing work in AI, data science, demography, or related areas.

2. **Statement of Interest (1 page)**: A brief statement outlining interest in joining the panel, highlighting motivation and expertise AI, data science, demography, or related areas. Indicate the desired position (e.g., Chair, Vice-Chair, or Member).

3. **Relevant Publications or Research**: Copies or links to key publications or projects demonstrating expertise in AI, data science, demography, or related areas

4. **Letters of Recommendation (Optional)**: One or two letters from colleagues or supervisors that attest to qualifications and contributions in AI, data science, demography research or policy.

5. **Proposed Contribution**: A brief outline (1 page) detailing how the applicant envisions contributing to the panel's objectives, including specific areas of focus or unique skills (e.g., data analysis, policy development).

6. **Availability and Commitment**: A statement on availability for panel activities, including quarterly meetings, research, and outreach. Indicate willingness to commit to a two-year renewable term.

Submit your application as a single PDF file to: uaps@uaps-uepa.org
Deadline: Midnight (GMT), July 20, 2025
Note: Only shortlisted applicants will be contacted.

We welcome your interest in shaping the future of AI and data innovation for demographic research in Africa. For any inquiries, contact the Secretariat at uaps@uaps-uepa.org.