

**UNIVERSITY OF CAPE COAST**

**SCHOOL OF ECONOMICS**



**DEPARTMENT OF DATA SCIENCE AND ECONOMIC POLICY**

**COURSE: DATA CURATION AND MANAGEMENT**

**COURSE TITLE: DMA820**

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## ANSWERS TO THE QUESTIONS

### Q1. Outlining six data quality performance indicators recommendable for meeting the vision of NaSIA.”

The National Schools Inspectorate Authority (NaSIA) envisions “***being a Regulator that generates and utilizes evidence to improve learning outcomes in all Pre-tertiary educational institutions and further helps to create a purpose-driven pre-tertiary education system in Ghana***”.

To realize this vision and effectively regulate and uplifts standards across Ghana’s pre-tertiary education sector, there is a critical need for high-quality, reliable, timely and actionable data. This underscores the importance of adopting strong data quality performance indicators. The following six data quality performance indicators are crucial to achieving NaSIA’s vision:

#### 1. Data Accuracy

Data Accuracy refers to how well data collected reflects the true conditions of pre-tertiary schools. For instance, accurate information on school leadership bio-data, enrollment figures, teacher qualification, infrastructure availability and conditions, teaching and learning resources, and learner performance is essential for producing reliable inspection reports. Inaccuracies in data can lead to flawed evaluations, misinformed policy decisions, and ineffective interventions. While NaSIA currently contracts experienced retirees as Inspectors, many of them face challenges with digital data capture tools, which impacts data. To enhance accuracy, the Authority should consider recruiting younger, tech-savvy individuals and providing continuous training on digital tools and Inspection protocols.

#### 2. Data timelines

Timelines measure how quickly data is collected, processed, and made available for use. For NaSIA to function effectively as a regulator, inspections and licensing data must be submitted, processed and analyzed to generate reports for dissemination within the stipulated timeframes. Timely data enables prompt interventions, whether a school has an issue that bothers on health and safety and needs urgent attention, or a school needs an urgent infrastructure support or a support for institutions lagging in compliance. To enhance timeliness, tools such as real-time dashboards, automated systems like School Licensing and Inspections Management System (SLIMS), and adherence to regular data submission deadlines must be enforced. Any Delays compromise the relevance of Inspection outcomes.

#### 3. Data Completeness

This indicator evaluates whether all required data fields are filled and submitted. Incomplete inspection reports or missing fields on school registration forms compromise the quality of analysis. NaSIA can promote completeness by designing user-friendly forms, offering training for inspectors, and enforcing mandatory fields in digital systems.

#### **4. Data Consistency**

Consistency ensures that data remains uniform across multiple sources and systems. For instance, a school's inspection rating should align across both the SLIMS database and the reports submitted to the Ministry of Education. Inconsistencies reduce trust in the system and complicate data aggregation. Standardized definitions, codebooks, and regular reconciliation between departments are key practices for maintaining consistency. Robust validation systems such as automated cross-checks and field data confirmations should also be implemented to ensure consistency.

#### **5. Data Accessibility**

Accessibility pertains to how easily authorised users (Inspectors, IT, data analyst, administrators and policy makers) can retrieve and use relevant data. Easy access to reports, dashboards, and performance metrics allows for informed decision-making. NaSIA can improve accessibility through secure cloud-based platforms, categorized data portals, and role-based access right to protect sensitive information.

#### **6. Data Relevance**

Relevance focuses on whether the data collected meets the actual information needs of the users. NaSIA must ensure that the Inspection Evaluation Framework (IEF) indicators align with its regulatory goals, such as school infrastructure, learner achievement, teacher quality, and inclusivity. Stakeholder consultations, periodic reviews of data collection tools, and alignment with educational policies will help maintain relevance.

**Q2. Identifying and justifying five administrative data points NaSIA should prioritize for archiving for the next five years.**

##### **1. School Licensing and Registration Records**

NaSIA school licensing and registration records datasets includes detailed information on all pre-tertiary schools that have been processed for registration and licensed annually. Archiving this data is essential for ensuring traceability and supporting regulatory oversights. It helps track schools operating without Licence, those whose Licences have expired, and institutions that have consistently failed to renew their Licences. Given that NaSIA is mandated to maintain a comprehensive register on all registered and licensed pre-tertiary schools in Ghana, archiving this dataset is critical for compliance verification, historical reference, and future policy planning.

##### **2. Inspection Data and Reports**

NaSIA's Inspections data and reports provides critical insights into teaching quality, school infrastructure, leadership effectiveness, and learner performance across pre-tertiary institutions. Archiving these records enables the Authority to track progress and trends over time, evaluate the impact of interventions, and provide evidenced-based recommendations

to the Ministry of Education and other stakeholders. Long-term storage of these data and reports ensures that decision-making on policy, resource allocation, and regulatory actions is informed by reliable historical data.

### **3. Payment Data of Schools**

Payment data includes records of all fees paid by schools for registration, licensing, renewals, and other administrative fees for services requested by the schools. Archiving this dataset is essential because these payments constitute a major portion of the Authority's internally generated funds (IGF), which are used to cover administrative and operational costs. Maintaining an archive of this data ensures financial accountability, enables tracking of school compliance with payment obligations, and promote transparency in NaSIA's revenue streams. It enables the Authority to identify patterns of late or non-payment, inform enforcement actions, and prepare accurate financial projections to support regulatory planning and decision-making over time.

### **4. Learner Enrolment and Demographic Data**

This dataset includes information on the total number of learners enrolled, disaggregated by gender, age, region, and education level (KG, Primary, JHS, SHS). Archiving this data over multiple years allows NaSIA to monitor changes in enrolment patterns, identify regional or gender disparities, and assess the impact of national education policies such as Free SHS or Girl Child Education initiatives. The data also helps inform decisions on resource allocation such as teacher deployment, classroom construction, and the distribution of learning materials. Consistent archiving of learner demographic data supports efforts to promote inclusiveness, address equity gaps, and ensure that every child has access to quality education, aligning with NaSIA's vision.

### **5. School Infrastructure and Resource Availability Data**

NaSIA collects data on the availability and condition of infrastructure and resources across all inspected schools. This includes details on classrooms, staff accommodation, toilet facilities, water sources, ICT labs, libraries, electricity access, furniture (e.g., desks and chairs), and teaching and learning materials. Archiving this data over the years helps track progress in improving the learning environment, identify infrastructure deficits in underserved communities, and support advocacy for targeted investments. For example, consistent data on desk-to-learner ratios or the condition of school buildings informs timely interventions by government or development partners. Preserving this dataset is crucial for strategic planning, compliance assessment, and ensuring that all schools meet the minimum standards required for effective teaching and learning.