# Baseline Report on Data Collection and Management Practices in Higher Education Institutions in East Africa

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# Abbreviations

| | |
|---|---|
| **COSTECH** | Tanzania Commission for Science and Technology |
| **DAF EAC** | Demographics of African Faculty in the East Africa Community |
| **DHET** | Department of Higher Education and Training |
| **DPP** | Data Protection and Privacy |
| **DRC** | Democratic Republic of Congo |
| **EAC** | East Africa Community |
| **GPA** | Grade Point Average |
| **HE** | Higher Education |
| **HEIs** | Higher Education Institutions |
| **HEMIS** | Higher Education Management Information System |
| **ICT** | Information and Communication Technology |
| **ISTEEBU** | Institute of Statistics and Economic Studies (Institut de Statistiques et d'etudes Economiques du Burundi) |
| **IUCEA** | Inter-University Council for East Africa |
| **NCHE** | National Council for Higher Education |

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# Executive Summary

This report presents the findings of a study conducted to provide a baseline on higher education data collection tools and management practices within higher education institutions (HEIs) in East Africa. The study is a follow-up of Phase I of the Demographics of African Faculty in the East African Community (DAF EAC) Project, which revealed that data issues vary among countries in East Africa with an overall weak culture for higher education data collection and management in the region.

The study methodology entailed a desktop review, a survey, and a benchmarking exercise. The desktop review focused on the national data governance structure in East African countries. A survey questionnaire was then distributed to member universities of IUCEA across the EAC to gather insights on data collection tools and management practices in HEIs in the region. A benchmarking exercise was conducted in South Africa to learn the best practices for higher education data management.

The report findings focus on data governance, data collection and management tools, data access and security, and institutional capacity and structure. Twenty-five (25) HEIs from the region participated in the survey. Their feedback confirmed that weak data structures generally characterise the varying data governance landscape across the HEIs in the East African countries, lack of awareness and non-existence of guiding institutional data policies, and lack of standardised process for data collection across different departments within the institution, among other gaps. Of the 25 respondents, 52% indicated that their institutions do not have a centralised data policy, and 56% showed a lack of a standardised process for data collection across different departments in their institutions.

Most HEIs collect more than four types of data using different collection processes. Enrolment, academic performance, and graduation data were the most popular data collected by HEIs, with 96% of respondents indicating that they had collected these data in their institutions. Administrative records and registration were the most used primary data collection processes, with 92% of respondents indicating using these processes. 88% of the respondents cited financial management systems as the most highly used tool in HEIs in the region.

To safeguard the collected data, HEIs have in place some data access and security measures, which include access controls (e.g. passwords, encryption), regular data backups, data security training for staff, incident response protocols, antimalware programmes, physical security of infrastructure, controlled access, surveillance, and environmental controls. However, there are key gaps in data governance, as respondents highlighted a lack of guiding policy frameworks on data access and security. On institutional capacity and structure, 44% of the respondents indicated that their institutions do not have a data management unit/department. Besides, even with 56% having a data management unit/department in place, the majority highlighted

challenges of inadequate staffing levels, weak data governance and procedures, limited resources, inadequate capacity, data sharing issues within institutions, inconsistent data formats, data silos and lack of integration, data quality issues and privacy concerns issues.

Building on the lessons learnt from Phase I of the DAF EAC project, which was assessing the status of HE faculty in the East African region, and considering the insights and key learnings gathered from the survey and the benchmarking exercise, some recommendations are provided for implementation at national and institutional levels to address the noted gaps and challenges. The **national level** recommendations include: (i) development and alignment of higher education data policy with national data governance and standards; (ii) provision of supportive statutory measures to promote effective data collection and management in HEIs and improve data sharing for policy, planning, quality assurance, and institutional development; (iii) gradually building a linkage of statutory HE data collection compliance with relevant reward initiatives for HEIs; and (iv) development of guiding frameworks to facilitate voluntary and statutory data audits in the HEIs to ensure data management credibility at national and institutional levels.

At **institutional level**, the key recommendations to enhance the data management landscape in HEIs and support in building a positive culture include: (i) conducting institutional data management needs assessment to identify the status and gaps; (ii) development of institutional data policy to strengthen institutional data governance structure; (iii) awareness creation on data management practices among all staff in the HEIs; (iv) integration of data management into the overall institutional strategy; (v) provision of targeted training on data management to improve institutional capacity; (vi) establishment of dedicated data management unit/ department with adequate resources including staffing and infrastructure; (vii) supporting and nurturing active engagement with private sector to develop customised solutions for institutional data management; and (viii) continuous monitoring and evaluation of data management practices and adjusting strategies in alignment with the learnt lessons, emerging issues and technologies.

The way forward for IUCEA is to ensure effective higher education data collection and management practices across the region by facilitating targeted initiatives, which include: (i) development of a guiding harmonised framework for data collection and management across the region; (ii) development of unified higher education data indicators and standards that are relevant to the region and are aligned to the international standards; (iii) establishment of a regional higher education data working group that will bring together key stakeholders from the different partner countries to share knowledge, best practices, experiences, and opportunities; (iv) organising capacity building forums on data collection, management, and utilisation for HEIs; and (v) facilitating engagement with policymakers and stakeholders to raise awareness and enhance regional policy dialogue and advocacy on higher education data management for regional development.

# 1. Introduction

Most of the countries in East Africa contend with diverse higher education (HE) data gaps and challenges, which vary from fragmented collection to inadequate capacity for analysis and administration of the data. The report from Phase I of the Demographics of African Faculty in the East African Community (DAF EAC) project found that there is an overall weak culture for higher education data collection and management in the region. Among the key challenges noted in the DAF EAC report-2023 were unavailability of data, lack of disaggregated institutional data on student enrolment by gender and discipline, poor documentation, lack of centralised data collection and sharing systems within countries, lack of current/up to date data, and lack of official national policy norms for key higher education measures.

The collection and management of HE data is a complex process that requires dynamic tools, systems, strategies, and dedicated human resources to ensure effective data gathering, organisation, and utilisation. The DAF EAC Phase II project aims to cultivate a data collection and management culture for relevant planning and decision making in the EAC partner states and Higher Education Institutions (HEIs). Specifically, the project seeks to establish a baseline for HE data collection tools and management practices in the region, develop harmonised data collection and management guidelines in the EAC region, and create awareness and advocacy on the harmonised guidelines in the region and beyond.

The establishment of a baseline and development of harmonised data collection and management guidelines requires primary knowledge of the existing status and practices in the EAC region as well as the incorporation of benchmarked best practices beyond the region. A survey was conducted to gather information on the status of data collection tools and management practices in HEIs in the EAC. In addition, a benchmarking study visit to South Africa was done to gather experiences and good practices on higher education data collection and management, including the Higher Education Management Information System (HEMIS).

This baseline report, therefore, highlights the data collection and management practices in the region's HEIs. It also provides recommendations on best practices gathered from valuable insights from the region's stakeholders and a benchmarking exercise in South Africa. The report provides components for awareness creation and advocacy to contribute to establishing a strong higher education data collection and management foundation in the region.

# 2. Methodology

## 2.1 Desktop Review

A desktop review was conducted to understand East African countries' national data governance structure. The review focused on the existing specific legal and policy frameworks governing data collection and management at the national level.

## 2.2 Survey

A survey questionnaire was distributed to member universities of the Inter-university Council for East Africa (IUCEA) across the EAC region to gather insights on data collection tools and management practices in HEIs. The distribution was through an official letter to the Vice Chancellors, who were requested to assign a relevant staff responsible for institutional data management to take part in the survey and fill in the online questionnaire on behalf of the institution. The survey was online from June 10, 2024, to July 05, 2024. The questionnaire had 29 questions, which covered a component of the institution's general information and four key areas, namely:

- Data governance,
- Data collection and management tools,
- Data access and security, and
- Institutional capacity and structure.

## 2.3 Benchmarking Exercise

A team from IUCEA conducted a benchmarking study tour in South Africa from March 18 to 22, 2024, to gather experiences and best practices in higher education data collection and management.

The benchmarking exercise aimed to engage with and learn from some key institutions and personnel in South African institutions on the experiences and practices of higher education data collection and management, including the HEMIS. Specifically, the areas of interest included but were not limited to understanding the processes and practices concerning:

- Governance and Supportive policies – National & Institutional;
- Institutional coordination;
- Data sources;
- Data access;
- Data security and privacy measures; and
- Engagement with the private sector in data management, among others.

The participating team visited and engaged with personnel of four (4) institutions, including two (2) universities, a government department, and a private sector data company that majorly facilitates and collaborates with the universities in South Africa on higher education data technologies. Specifically, the visited institutions are the University of Pretoria, Tshwane University of Technology, Department of Higher

Education and Training (DHET), and Adapt IT, a private company working in collaboration with most HEIs to develop data management solutions customised to institutional needs.

The team gathered key learnings and insights, which were noted to contribute to the reference points and building blocks for creating awareness, guiding, and building capacity for effective higher education data collection and management in the EAC region.

## 3. Limitation of the Study

i. **Limited Institutional Participation**: IUCEA has over 150 member universities across the region. However, a total of twenty-five (25) universities participated in the survey, with the breakdown as follows: Burundi - 2, Democratic Republic of Congo - 1, Kenya - 9, Rwanda - 2, South Sudan – 1, United Republic of Tanzania – 3, and Uganda -7. Of these, 14 (56%) were public universities, and the rest were private. The participating institutions may not necessarily be representative of the entire population of HEIs in the region.

ii. **Differences in Context:** The Benchmarking was carried out in South Africa, where the setting of the HE sector is not necessarily the same as that of the institutions in East Africa. However, South Africa was chosen because it offers some good practices of HE data collection and management in the continent, which countries in the East African region could adopt and improve on while avoiding some common mistakes gathered from the learnt experiences.

To mitigate these limitations, the survey data is combined with desktop review and learnings from Phase I of the DAF EAC project to better understand higher education data collection tools and management practices in the region. The benchmarking exercise focused on learning the best practices for improvement and not merely copying the South African context into East Africa. In addition, a stakeholder engagement was organised, and the draft report was presented to East African HE stakeholders, who provided additional information and more insights on HE data collection tools and management practices in the region.

## 4. Findings

### 4.1 Desktop Review Findings

The desktop review has shown that the data governance landscape is still evolving, with the structure varying among East African countries. Kenya, Rwanda, Uganda and Tanzania have recently enacted country-specific comprehensive legislation to govern data issues, with an in-depth focus on enhancing the protection and privacy of data. The recently enacted data laws have key areas of similarity, with emphasis on the rights of data subjects, lawful and fair processing, individual consent, data sharing and security, among others.

In Kenya, the Data Protection Act (DPA) was enacted in 2019, establishing the Office of the Data Protection Commissioner. The implementation of Kenya's DPA is supported by four key regulations, namely Data Protection (Civil Registration) Regulations, 2020; Data Protection (General) Regulations, 2021; Data Protection (Registration of Data Controllers and Data Processors) Regulations, 2021; and Data Protection (Complaints Handling and Enforcement Procedures) Regulations, 2021. The Office of the Data Protection Commissioner has also provided various guidelines including the Guidance Note for The Education Sector, 2023[1]. Other laws and policies in Kenya that contribute to the national data governance structure include the Statistics Act, 2006 [Rev. 2019], which establishes the Kenya National Bureau of Statistics as the government's principal agency for collecting, analysing and disseminating statistical data in Kenya and the custodian of official statistical information. The Commission for University Education publishes university data reports. However, the publication of university statistics reports has not been up to date, with the most recent publicly available report being from 2018.

Uganda enacted the Data Protection and Privacy Act in 2019 and passed the Data Protection and Privacy Regulations in 2021 to support the implementation of the Act. The Uganda Bureau of Statistics Act of 1998 also established the bureau as the principal data-collecting and disseminating agency responsible for coordinating, monitoring and supervising the national statistical system. The National Council for Higher Education (NCHE) regulates and coordinates higher education matters and thus publishes guiding documents and statutory regulatory instruments for universities. However, NCHE does not publicly provide up to date detailed university statistics reports.

The United Republic of Tanzania enacted the Personal Data Protection Act in 2022. The Statistics Act of 2015 also established the National Bureau of Statistics as an autonomous public office mandated to provide official statistics to the government, business community and the public. The Tanzania Commission for Universities collects, analyses and annually publishes vital statistics on university education in Tanzania. The latest publication is *Vitalstats* on University Education in Tanzania, 2023[2]. Additionally, the Tanzania Commission for Science and Technology (COSTECH), in collaboration with other stakeholders, has developed the national data sharing framework for science, technology and innovation, 2024[3].

In Rwanda, the Data Protection and Privacy Office is in place under Law No 058/2021 relating to the Protection of Personal Data and Privacy (DPP Law). Other policies and laws that contribute to the data governance in Rwanda include the National Data Revolution Policy, 2017, the Law on the Organisation of Statistical Activities in Rwanda, 2013 (Organic Law No.45/2013) and Law No. 18/2010 relating to electronic messages, electronic signatures and electronic transactions. In addition, Law No 53 bis/2013 established the National Institute of Statistics of Rwanda. Key education data is annually

[1]ODPC, Guidance Note for The Education Sector, 2023, https://www.odpc.go.ke/wp-content/uploads/2024/02/ODPC-Guidance-Note-for-the-Education-Sector.pdf

[2] TCU, VitalStats, 2023, https://www.tcu.go.tz/sites/default/files/file_uploads/2024-06/VitalStats%202023.pdf

[3] COSTECH, National data sharing framework for science, technology and innovation, 2024, https://www.costech.or.tz/Files/Documents/1728287181.pdf

published by the Ministry of Education in the Rwanda Education Statistical Yearbook, with the recent publication being the Rwanda Education Statistical Yearbook for 2022/23[4].

In Burundi, some sector-specific frameworks and initiatives support the management of specific data, including laws and regulations relating to telecommunication, national statistics, and some sector-specific data collected by institutions or ministries. For example, Law No. 1/10 of March 16, 2022, provides for data protection or confidentiality obligations to prevent and repress cyber criminality. The Burundi Institute of Statistics and Economic Studies (ISTEEBU) and the National Council for Statistical Information are, according to the statistical law of 2007, the entities responsible for developing statistical data placed within ministries, departments and agencies, and national schools and institutions for statistical and demographic training.

In DRC, there is a National Institute of Statistics which was established by Presidential Order 78-397 on October 3, 1978[5]. Its mission is to gather and analyse the statistical information necessary for demographic, economic and social policy. The Law No. 20/017 of November 25, 2020, guarantees the right to respect for private life and the protection of personal data.[6] There is also an Ordinance-Law N°23-010 of March 13, 2023, relating to Digital Code, which provides for the protection of personal data, however several implementing decrees referred to in the Digital Code have not yet been issued.

In South Sudan, although there is no comprehensive law on data protection, a law on national statistics was enacted, the National Bureau of Statistics Act, 2024[7]. The law establishes the Bureau that is mandated to collect, analyse and disseminate all official economic, social and demographic statistics.

Somalia has Law No 005 of 2023, Data Protection Act[8], which has established the Data Protection Authority (DPA) as an independent nationwide authority dedicated to safeguarding individual privacy and focusing on responsible data management and the protection of personal information of Somali people in the digital age. For national statistics, the Somali Statistics Law No. 24 of 2020[9] establishes the Somali National

[4] Republic of Rwanda, Ministry of Education, The Rwanda Education Statistical Yearbook for 2022/23, https://www.mineduc.gov.rw/index.php?eID=dumpFile&t=f&f=99472&token=a77954c7ba4e20d300bc0de5ef3d2ad6e4772a58

[5] ORDONNANCE No. 78-397 du 3 octobre 1978 portant création et statuts d'un établissement public dénommé Institut national de la statistique, en abrégé «I.N.S.», https://www.leganet.cd/Legislation/Droit%20administratif/Urbanismevoiries/Div/O.78.397.03.10.1978.htm

[6] Loi n° 20/017 du 25 novembre 2020 relative aux télécommunications et aux technologies de l'information et de la communication, https://www.primature.cd/public/wp-content/uploads/2022/04/Loi-N%C2%B020-017-du-25-novembre-relative-aux-Te%CC%81le%CC%81com_08-12-020.pdf

[7] National Bureau of Statistics Act, 2024, https://nbs.gov.ss/wp-content/uploads/2024/11/National-Bureau-of-Statistics-Act-2024.pdf

[8] The Data Protection Act, 2023, https://dpa.gov.so/act

[9] Somali Statistics Law No: 24, 2020, https://nbs.gov.so/wp-content/uploads/2023/07/Somali-Statistics-Law.pdf

Bureau of Statistics, which is mandated to collect, compile, coordinate, analyse, evaluate, and disseminate National Statistical Information.

## 4.2 Survey Results

### 4.2.1 Data Governance

The challenge of national data governance frameworks for HE data management in the region was evident from the survey feedback, which showed a lack of awareness of existing national data frameworks in HEIs. On the question of whether institutions are aware of a national legal and policy framework (law, regulation, policy, and/or guidelines) for HE data management in their country, 36% of the respondents indicated that they are not aware (**Figure 1**).

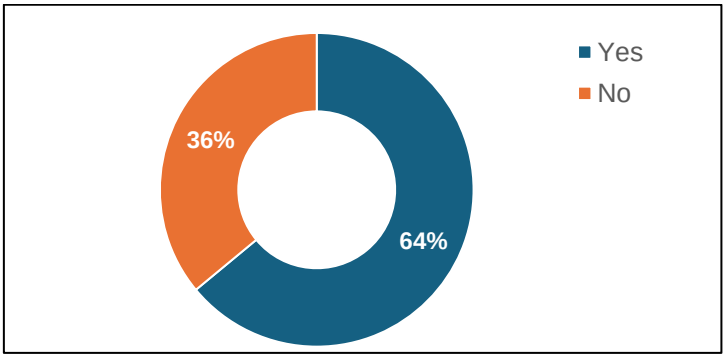


**Figure 1: Aware of Existing National Data Governance Framework (Total N =25).**

At the institutional level, the weak data governance in HEIs is characterised by a lack of guiding institutional data policy and a standardised process for data collection across different departments within the institution, among other gaps. This was also implied by 52% of the respondents indicating that their institutions do not have a centralised data policy, and 56% indicated a lack of a standardised process for data collection across different departments in their institution (**Figure 2**).

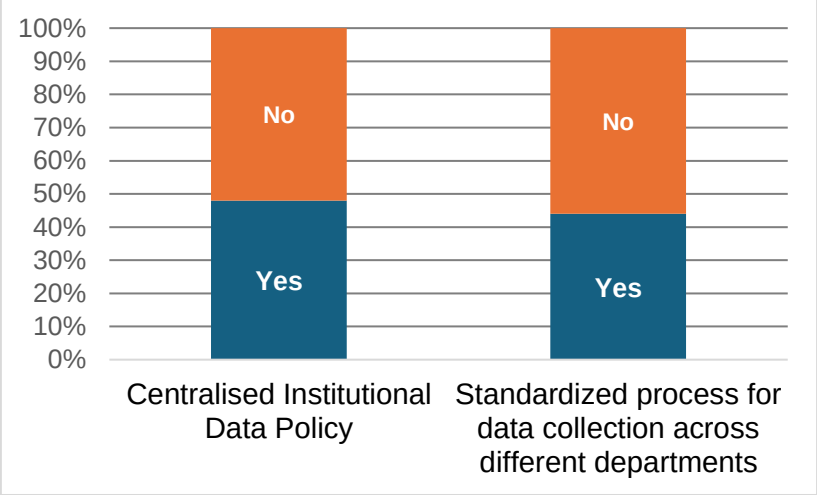


**Figure 2: Existence of Institutional Data Policy and Standardised Process for Data Collection across Departments (Total N =25).**

Institutional data policies were noted to be in different categories and serve diverse roles in HEIs. The respondents from institutions in Kenya, Rwanda, Uganda, and the United Republic of Tanzania provided different data policy titles. Table 1 provides the list of different data policy titles in HEIs across the region.

**Table 1: List of Different Data Policy Titles in HEIs Across the Region**

| Category | HEIs Data Policy Titles |
|---|---|
| i. Data Access and Security | • University Information Communication Technology (ICT) Policy<br>• Data Protection Policy<br>• Security & Privacy Policy<br>• Data Security Policy |
| ii. Research and Innovation Management | • Research Policy<br>• Intellectual Property Management Policy<br>• Research Data Management Policy and Operational Procedures |
| iii. Retention and Record Management | • Data retention and disposal policy<br>• Archive management policy<br>• Records Management, Rendition and Disposal Schedule<br>• Records Management Policy |
| iv. Student Operations | • Student Admission Policy |

Implementation of data collection processes across different departments within HEIs requires improvement, as none of the institutions indicated that the data collection process was done exceptionally well across departments. Whereas 28% of the respondents indicated that data collection processes were very well implemented across departments in their institutions, 20% indicated that the implementation was not done well at all (**Figure 3**).

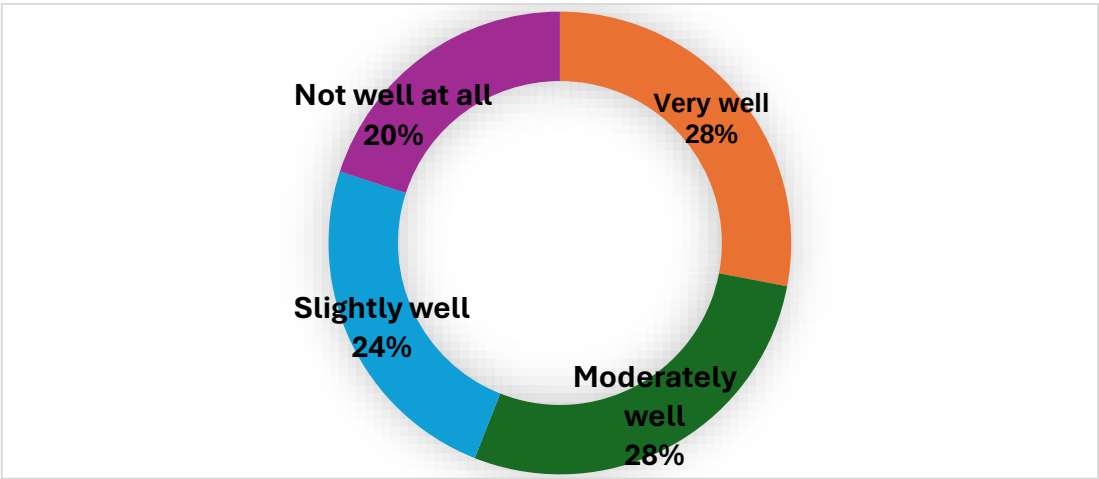


**Figure 3: Implementation of data collection process across departments in HEIs (Total N = 25).**

### 4.2.2 Data Collection and Management Tools in HEIs

#### 4.2.2.1 Type of Data Collected by HEIs

All institutions collect and manage some form of data in different categories. On the question of what types of data the HEIs collect, it was noted that most HEIs collect more than four data types. Enrolment, academic performance, and graduation data topped as the key data collected by most institutions, and they were listed by 24 out of 25 (96%) respondents. These were followed by financial and staff data, with 88% of the respondents, followed by research and innovations, partnerships, collaborations, and alumni data, at 80%. It was noted that comparatively fewer institutions 76% of respondents, collected data on grants and awards. In addition, 8% of the respondents highlighted examination monitoring data and access and attendance data as other data types collected in HEIs. **Figure 4** presents the most to least collected data types as indicated by the respondents.

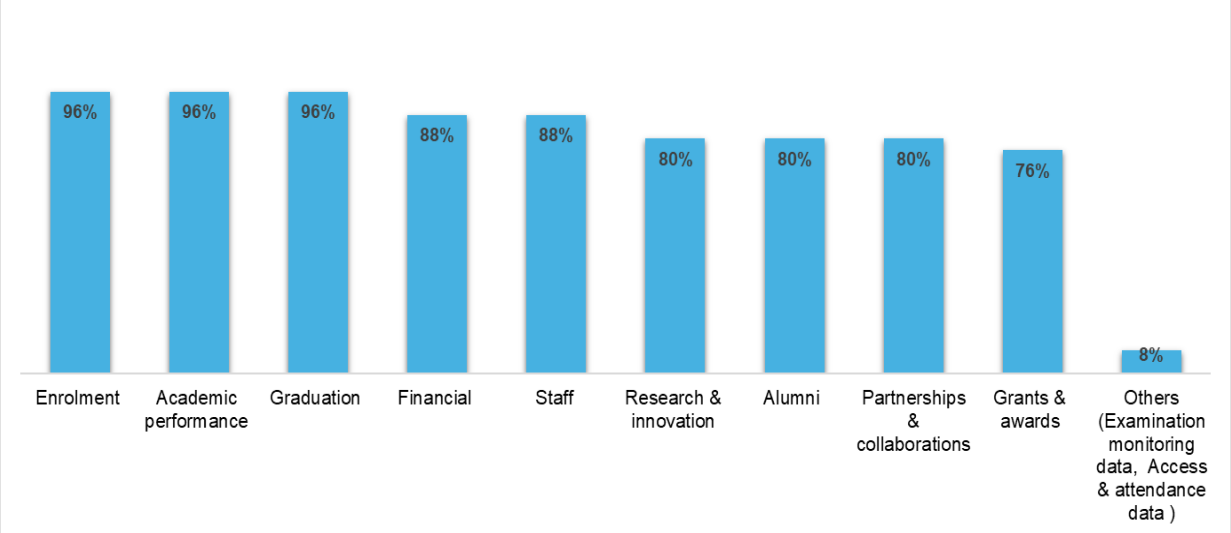


**Figure 4: Types of data collected by HEIs (Total N = 25).**

During the stakeholders' engagement, participants provided an additional wide range of data types, which include:

- International relations data;
- Data on employers' satisfaction for those who are employing graduates;
- Students' facilities (Academics and Non-Academics);
- Student project Inventory;
- Resource planning,
- Teaching & Learning evaluation (Weekly, modular and end-of-semester),
- Financial related data (investing in HE);
- Data on the state of infrastructure -physical and equipment;
- Student funding level;
- Scholarships data;
- Assets;
- Employability/Entrepreneurial ventures through tracer studies;
- Progression rate;
- Referencing material data (books);

- Infrastructure data (lectures hall and their capacity, laboratories and their capacity and other facilities);
- Student placement data;
- Student satisfaction data, including sexual harassment cases;
- Data on Pension per year;
- Infrastructural Data, Agricultural Data;
- Engagement Indicators: Data on participation in extracurricular activities, clubs, and other campus events;
- Programmes /course data;
- Estates data;
- Intellectual property data;
- Programmes offered;
- Staff qualification;
- Staff workload data;
- Capacity building and training data;
- Library resources;
- Disability data (staff and Students);
- Region and country of origin for students;
- Student extracurricular activity - sports;
- Data from Staff Mobility and Students;
- Annual performance contracting;
- Evaluation of teaching & learning;
- Student support and counselling data

#### 4.2.2.2 Processes Used for Data Collection in HEIs

For data collection in the institutions, it was observed that most institutions use more than three primary processes. It was further noted that the primary processes used to collect data are registration and administrative records, with 23 out of 25 respondents (92%) indicating using these two processes. These are followed by learning management system data exports at 76% of the respondents, assessments and standardised tests, and surveys at 68%. Focus groups and interviews were among the least used processes for data collection in HEIs. Compilation of digital collection of academic works was noted as other processes used for data collection in HEIs. **Figure 5** represents the different primary processes for data collection in HEIs, depicting the proportionate ways in which they are commonly used.

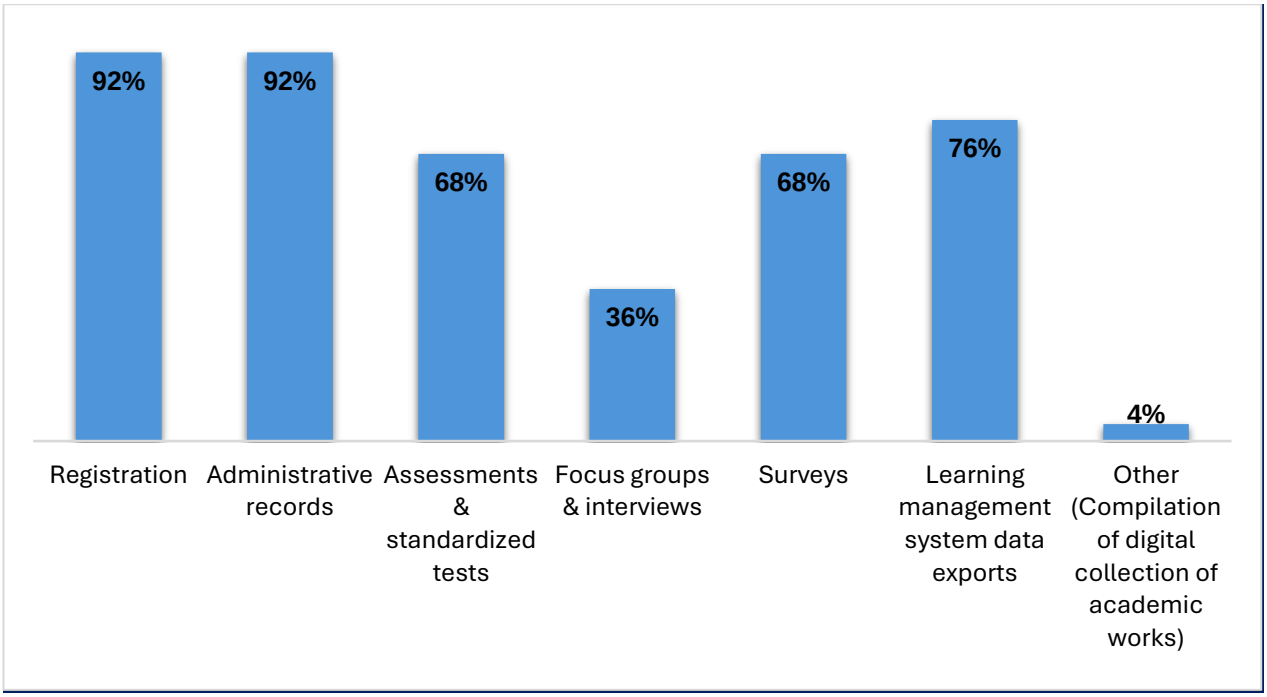


**Figure 5: Primary processes used to collect data in HEIs, (Total N = 25).**

### 4.2.2.3 Data Management Tools in HEIs

The majority of respondent institutions (22 out of 25) reported utilising three or more data management tools.

The most widely used tool across HEIs was the Financial Management System, with 88% of respondents indicating its use. This was followed closely by Admissions, Student Information, and Learning Management Systems, each utilised by 80% of respondents.

Conversely, Research Information Management Systems demonstrated lower adoption rates, with only 32% (8 out of 25) of institutions reporting their use. Other data management tools identified included software for managing academic records, Quality Assurance tools, and integrated library management systems.

**Figure 6** visually represents the data management tools used in HEIs, ranked from most to least frequent.

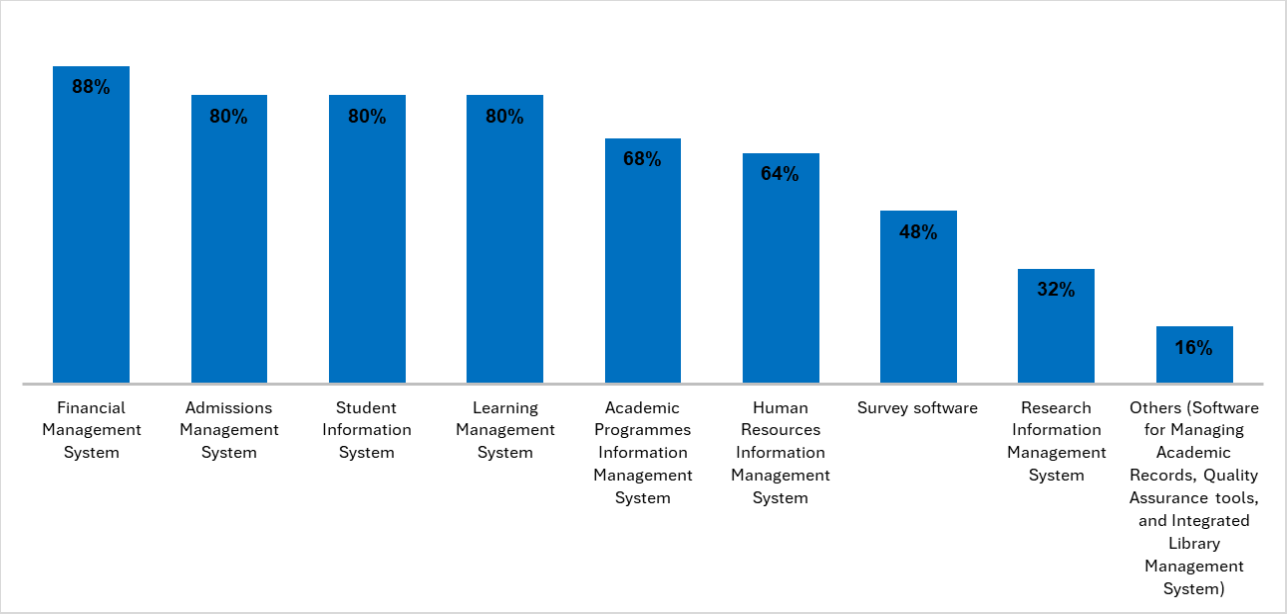


**Figure 6: Data management tools used in HEIs, (Total N = 25).**

### 4.2.3 Data Access and Security

While some measures are in place to ensure the security of data collected in HEIs, concerns were raised regarding the lack of consistent governance frameworks. Some institutions reported a reliance on individual officials' discretion, rather than established policies. Key measures identified to enhance data security include:

- Access controls (e.g., passwords, encryption);
- Regular data backups,
- Data security training for staff,
- Incident response protocols,
- Antimalware programmes
- Physical Security of the infrastructure locations,
- Controlled access,
- Surveillance, and
- Environmental controls

The HEIs data is accessible to various stakeholders at different levels. These were noted to include;

- Authorised faculty and staff
- Students (their own data)
- Third-party service providers (with consent)
- Regulatory bodies

Respondents expressed varying levels of confidence in their institution's ability to protect collected data. While 24% were highly confident and 32% were very confident, 4% of respondents indicated they were not confident in their institution's data protection measures (**Figure 7**).

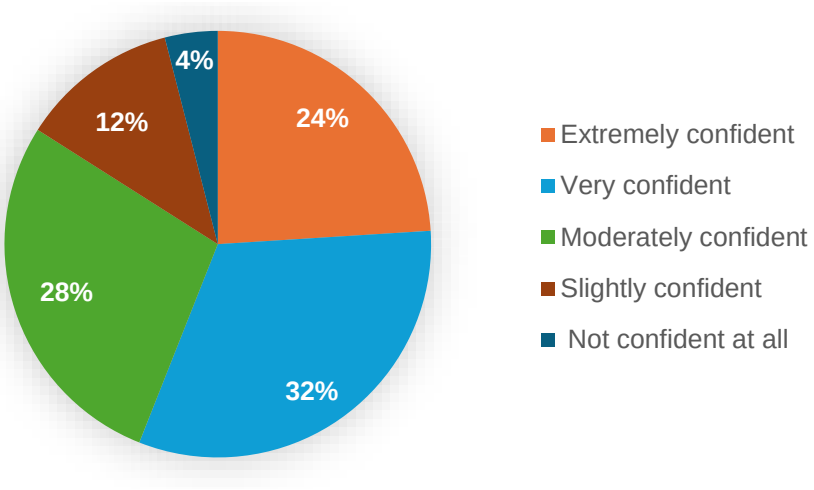


**Figure 7: Level of confidence in institutional data protection measures in HEIs**

### 4.2.4 Data Sharing

Data sharing is a common practice within HEIs, with all respondents indicating that their institutions engage in some form of data sharing internally. Administrative purposes constitute the primary driver of data sharing, reported by 100% of respondents. This is followed by research purposes (88%), student support services (84%), and statutory compliance (76%). Notably, data sharing for fundraising/resource mobilisation was reported less frequently. Other identified circumstances for data sharing within HEIs include internal meetings and discussions. **Figure 8** represents the circumstances under which data is shared in HEIs, from the most cited purpose to the least.

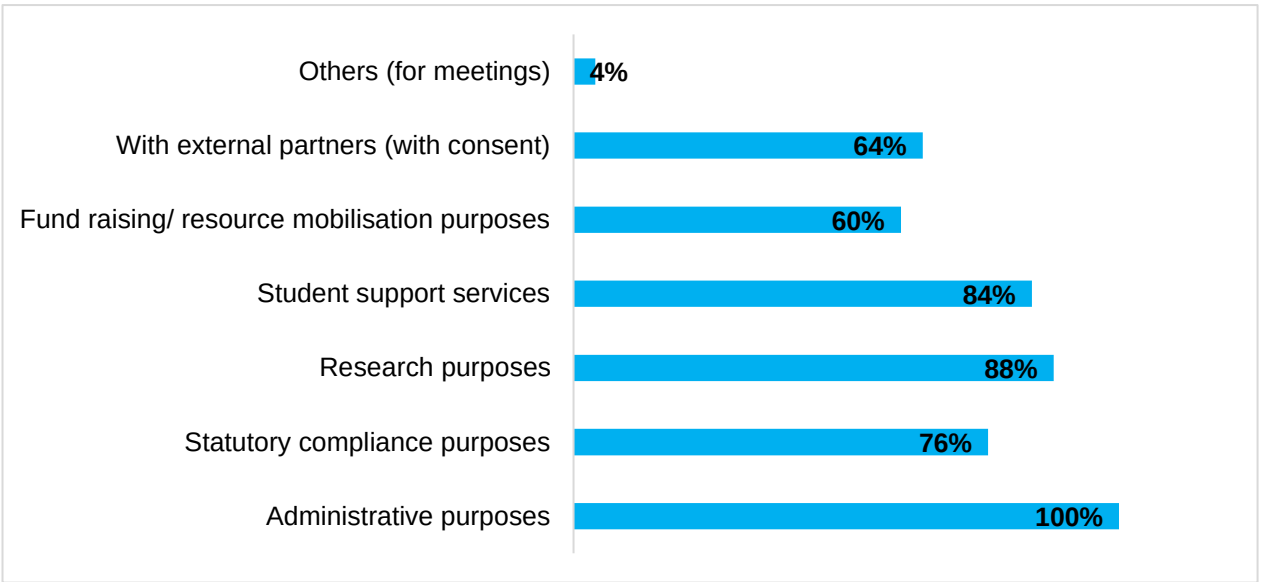


**Figure 8: Circumstances under which data is typically shared within HEIs (N=25).**

### 4.2.5 Institutional Capacity and Structure

#### 4.2.5.1 Data Management Unit/Department

It is widely recognised that HEIs exhibit varying infrastructural, institutional, and data management capacity levels. This study revealed significant disparities among institutions, with 44% lacking a dedicated data management unit/department. Among institutions with a data management unit/department (56%), key challenges identified included inadequate staffing levels and a lack of regular training on data management best practices

#### 4.2.5.2 Use of Collected Data

There are diverse primary purposes for the use of collected data in HEIs. However, 96% of the respondents indicated that HEIs consider annual reports to be the primary purpose for using the collected data. Assessing institutional growth was also identified as a key purpose, cited by 64% of respondents. Other primary uses include university ranking, generating various reports, and ensuring the quality, integrity, and adherence to examination standards and procedures. **Figure 9** presents the primary purposes for using the collected data in HEIs in the order of highly to least cited purposes.

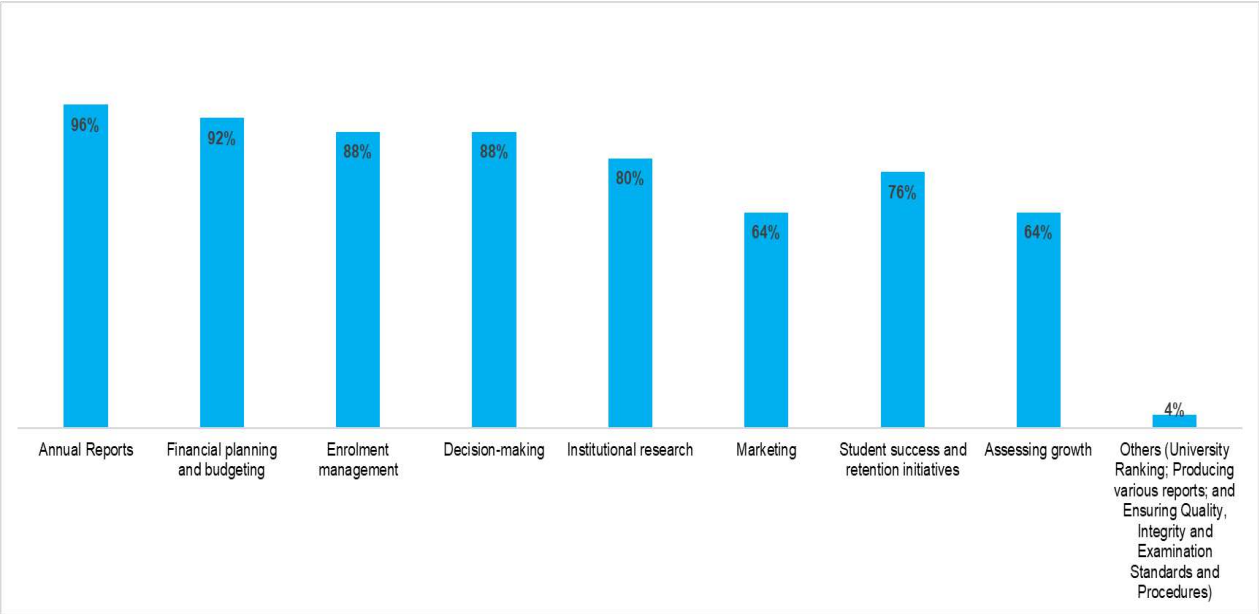


**Figure 9: Primary purposes for use of collected data in HEIs (N = 25).**

Beyond the primary uses of collected data, respondents identified various future applications. These potential uses are detailed in **Table 2**. This suggests a desire among HEIs to expand the utilisation of their collected data beyond current practices.

**Table 2: List of Different Purposes that HEIs would like to be able to use data for in the future**

| S/No | Purposes that HEIs would like to be able to use data | |
|---|---|---|
| 1. | Capacity Building and Educational Enhancement | To train Artificial Intelligence (AI) algorithms that would help improve processes |
| | | To tailor educational experiences to individual student needs |
| | | To use data for customised communication and to improve technology-enhanced learning |
| | | To enhance student experience by using data to improve campus services |
| 2. | Institutional Efficiency | To enhance institutional efficiency in resource allocation and operational efficiency |
| | | To optimise administrative efficiency |
| | | To improve productivity |
| | | To Boost Institutional Reputation and Rankings |
| 3. | Industry, Community and other external engagement | To foster Industry and Community Engagement |
| | | For university advancement |
| 4. | Resource mobilisation | For alumni relations and fundraising |
| | | For resource mobilisation |
| 5. | Quality Assurance | For quality assurance and accreditation |
| 6. | Research and Innovation | For the dissemination of information and technologies |
| | | For Intellectual Property (IP) projections and entrepreneurial rankings |

## 4.3 Key Challenges and Gaps

Respondents identified and highlighted various data gaps and challenges, which include:

- Weak data governance and procedures.
- Limited resources (staff, time, systems, budget)
- Lack of training for staff on handling data
- Difficulty obtaining data from different sources
- Inconsistent data formats
- Data silos and lack of integration
- Data quality issues (e.g., accuracy, completeness)
- Privacy concerns issues

The stakeholders ranked weak data governance and procedures as the region's HE data gaps and challenges of the highest level of concern (**Figure 10**).

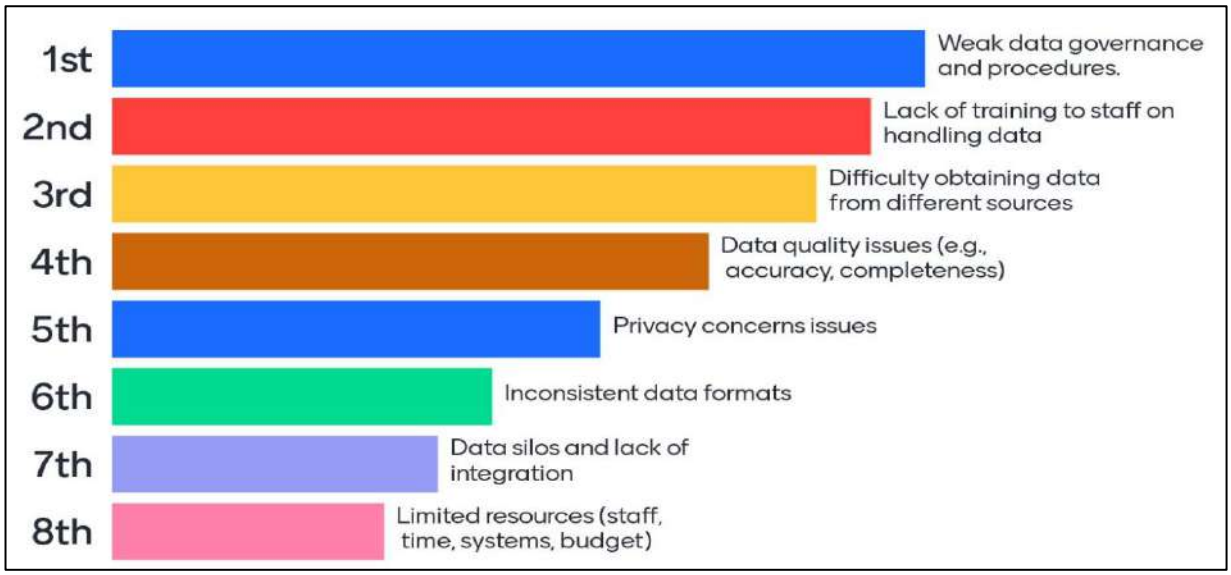


**Figure 10: Data Gaps and Challenges Level of Concern as Ranked by Stakeholders.**

## 4.4 Key Learnings and Practices from the Benchmarking Exercise

The South Africa study tour provided key learnings and insights on five (5) areas, as follows:

**i. National Governance and Policies**

- It was gathered that in South Africa's E, data is steered by government policies through the DHET at three levels: planning, quality assurance, and *funding*.

**ii. Linkage of Cultivating a Culture of HE Data to Statutory Compliance and Reward Initiative**

- It was noted that building a national data collection, analysis, and management culture requires capacity building, awareness creation and linkage to statutory compliance requirements and reward initiatives. In South Africa, HE data collection, analysis, and management have, with time, grown to become a strong culture, but it is also highly linked to:
  a. Adherence to mandatory national statutory directions/policies.
  b. Allocation of national funding to HE institutions, including the funding for research.
- There are strict and key requirements for university adherence and annual data submission to the HEMIS. The requirements and submission deadlines are also linked to the national development agenda, annual national plans, and university funding.
- There are statutory data audits for the HEIs in South Africa to ensure the credibility of the data management at the institutional level.

### iii. Institutional Data Management at the University Level

- The visiting IUCEA team learnt that a dedicated data management unit/department exists at the university level. This unit is the institutional data custodian for coordination and is considered the authoritative source of institutional data for internal use or sharing for statutory compliance and any stakeholders or partners.
- The data management unit/department is not confused with the university's IT services / information system department but comprises dedicated and diverse human resources who work closely with all other departments, including IT services, HR, finance, etc., to consolidate and analyse all institutional data.

### iv. Inhouse Collaboration with Private Sector

- It was gathered that in most HEIs in South Africa, capacity building on institutional HE data management and continuous improvement of customised information management systems and solutions is achieved through active collaboration with the private sector.
- It was noted that a one-off procurement of existing data management systems without capacity building, customisation and continuous improvement to align with institutional data needs and in collaboration with the private sector, is ineffective in HE data collection and management.

### v. Professional Networking and Capacity Strengthening

- It was noted that HE institutions and data management professionals have a network under the Association for Academic Administrators platform, where they engage to seek solutions for emerging challenges or share the best practices on academic and student administration matters.
- In addition, HEIs, through their data management units and the Association of HE data management professionals, continuously engage the private sector on individual university needs and in joint forums.

# 5. Recommendations and Way Forward

It is recognised that data collection and management practices within HEIs in East Africa are developing and need to be strengthened to ensure better decision making, enhanced efficiency, and improved institutional performance. This section provides the key recommendations to address the data management gaps identified and the challenges at the national and institutional levels. Recommendations are also provided regarding the way forward for IUCEA, at the regional level.

## 5.1 Recommendations

The key recommendations to address the identified data management gaps and challenges at the national and institutional levels include:

**At national level**

- Develop and align national HE data policy with national data governance and standards.
- Provide relevant statutory measures to promote effective data collection and management in HEIs and improve data sharing for policy, planning, quality assurance, and institutional development.
- Gradually allocate national HE funds and build a linkage of statutory HE data collection compliance with relevant reward initiatives for HEIs.
- Develop guiding frameworks to facilitate voluntary and statutory data audits in the HEIs to ensure data management credibility at national and institutional levels.

**At Institutional level**

- HEIs should conduct institutional data management needs assessment to identify the status and gaps regarding data types, processes used to collect data, purposes for data use, data access and security measures, data management tools, and data management skills.
- Establish a multi-sectoral data governance team to initiate data policy development and strengthen the institutional data governance structure.
- Create awareness of data management practices among all staff in HEIs.
- Integrate data management into the overall institutional strategy.
- Provide targeted training on data management to improve skills and institutional capacity.
- In the long term, establish a dedicated data management unit / department with adequate resources, including staffing and infrastructure.
- Support and nurture active engagement with the private sector to develop customised solutions for institutional data management.
- Continuously monitor and evaluate data management practices and adjust strategies in alignment with the lessons learnt, emerging issues, and technologies.

## 5.2 Way Forward

The focus of IUCEA is to ensure effective HE data collection and management across the region. This will be achieved by facilitating targeted initiatives to support the implementation of the national and institutional recommendations. Therefore, the recommended way forward for IUCEA is to:

- Develop a guiding harmonised framework for data collection and management across the region.
- Ensure unified HE data indicators and standards relevant to the region that are aligned to international standards. This would help to create a standardised framework for data collection and management in the region.
- Establish a regional HE data working group that will bring together key stakeholders from the different partner countries to share knowledge, best practices, experiences, and opportunities.
- Organise regional capacity building workshops for HEIs to enhance their capacity for effective data collection, management, and utilisation.
- Engage with policymakers and stakeholders to raise awareness and enhance regional policy dialogue and advocacy on HE data management for regional development.
- Advocate for gradual national funding to HE institutions and linkage of statutory HE data collection compliance with relevant reward initiatives for HEIs.

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# Appendix I: Questionnaire

**Survey on Higher Education Data Collection Tools and Management Practices in East Africa**

## Introduction

Reliable and up-to-date data is essential for effective planning, development, and retention within higher education institutions (HEIs). It empowers leaders to make informed decisions about faculty needs, improve the quality of education, and ultimately enhance student success.

This questionnaire aims to gather information on the current data collection tools and management practices in higher education institutions in the East Africa Community (EAC).

Your participation is highly valued and the information you provide will directly contribute to developing a unified approach for higher education data collection and management across the region. This initiative aims to streamline data collection processes, improve data quality and accessibility and enhance HEIs planning and development.

*Please note that:*

- *All responses will be kept confidential, and no filled questionnaire will be shared with any third party.*
- *This questionnaire should be completed by individuals responsible for data management at your institution.*
- *The Inter-University Council for East Africa will only use analysed information to document best practices and develop harmonised guidelines for higher Education data collection and management in the EAC.*

This questionnaire has 29 questions covering five areas: general information, data governance, data collection and management tools, data access and security, and institutional capacity and structure.

1. Institution Name: * ……
2. Country: *
    - Burundi
    - Democratic Republic of Congo
    - Kenya
    - Rwanda
    - Somalia
    - South Sudan
    - Uganda
    - United Republic of Tanzania
3. Institution Type*
    - Public
    - Private

4. Are you aware of a national legal and policy framework legal and policy framework (law, regulation, policy and/or guidelines) for higher education data management in your country? *
    - Yes
    - No
5. If yes, please list the titles of the existing legal and policy framework (law, regulation, policy, and/or guidelines) and the years of enactment. ……
6. Does your higher education institution have a centralized data policy? *
    - Yes
    - No
7. If yes, please indicate the title (s) of the policy…….
8. Does your institution have a standardized process for data collection across different departments? *
    - Yes
    - No
9. If yes, indicate if the standardised process is documented in a specific policy, guidelines, strategy and/or plan and list the title (s) of the policy, guidelines, strategy and /or plan ……..
10. In your experience, how well is the standardised data collection process implemented across departments?
11. Please list and elaborate on any challenges in implementing the standardized data collection process……..
12. Does your institution have a data retention and disposal policy? *
    - Yes
    - No
13. If yes, what is the title of the policy and the year of publication? …….
14. What types of data does your institution collect? (Select all that apply) *
    - Enrolment data
    - Academic performance data (e.g., grades, GPAs)
    - Graduation data
    - Financial data
    - Staff data
    - Research and innovation data
    - Alumni data

- Grants and awards data
- Partnerships and collaborations data
- Other (list)

**15.** What are the primary processes used for data collection in your institution? (Select all that apply) *

- Registration
- Administrative records
- Assessments and standardized tests
- Focus groups and interviews
- Surveys
- Learning management system data exports
- Other (list)

**16.** Which of the following data management tools are used at your institution? (Select all that apply) *

- Admissions Management System
- Student Information System
- Academic Programmes Information Management System
- Learning Management System
- Human Resources Information Management System
- Financial Management System
- Research Information Management System
- Survey software (e.g., SurveyMonkey, Qualtrics)
- Other

**17.** How does your institution ensure the security of collected data? (Select all that apply) *

- Access controls (e.g., passwords, encryption)
- Regular data backups
- Data security training for staff
- Incident response protocols
- Other (list)

**18.** Who typically has key data access at your institution? (Select all that apply) *

- Authorized faculty and staff
- Students (their own data)

- Third-party service providers (with consent)
- Other (list)

**19.** On a scale of 1 to 5, how confident are you that your institution takes adequate measures to protect data? (Select one) *Where 1 = Not confident at all; 2= Slightly confident; 3=Moderately confident; 4=Very confident and 5 = Extremely confident*

**20.** Under what circumstances is data typically shared within your institution? (Select all that apply) *

- For administrative purposes
- For statutory compliance purposes
- For research purposes
- For student support services
- For fund raising/ resource mobilisation purposes
- With external partners (with consent)
- Other (list)

**21.** Does your institution have a data management unit/department? *

- Yes
- No

**22.** If yes, list the number of full-time and part-time staff and the outlined key functions of the unit/department.

**23.** Does your institution provide regular training on data management practices? *

- Yes
- No

**24.** For what primary purposes does your institution use collected data? (Select all that apply) *

- Marketing
- Enrolment management
- Financial planning and budgeting
- Institutional research
- Decision-making
- Student success and retention initiatives
- Assessing growth
- Annual Reports
- Other (list)

25. What would your institution like to be able to use the data for in the future? (List all purposes) *

26. What are the major gaps and challenges in data collection and management in your institution? (Select all that apply)

    - Data silos and lack of integration
    - Inconsistent data formats
    - Data quality issues (e.g., accuracy, completeness)
    - Difficulty obtaining data from different sources
    - Limited resources (staff, time, budget)
    - Privacy concerns
    - Other (list)

27. What is your institution's biggest challenges in collecting and managing data? (Please elaborate)

28. What are the potential opportunities for improving faculty data collection and management at your institution? (Please elaborate)

29. Please share any additional comments or insights you have regarding data collection tools and management practices in your institution. *

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