# Recruitment and Training of Field Personnel

## Introduction

Carrying out census field enumeration will require many personnel who cannot be raised from the NSO employees alone. Thousands of people will have to be engaged for a short period of time, in various roles such as enumerators, supervisors, and IT support staff. These short-term staff may have limited experience in statistical operations. Therefore, it is crucial that sufficient training is undertaken so that all personnel fully understand their duties; how their efforts fit into overall census goals; and their obligations with regards to confidentiality, security and accuracy of data.

### Recruitment and training of field staff during the non-digital vs digital era

In a digital census additional personnel will be required to handle the ICT component. This will include a team to undertake data quality checks, and a team to provide IT support to the supervisors and enumerators including trouble shooting of both hardware and software IT issues.

The effective use of digital tools in a census necessitates a workforce of IT-literate enumerators. Enumerators must possess a range of digital skills, including:

* Proficiency in using tablets or other data collection devices.
* Navigating data collection applications (CAPI).
* Understanding data security protocols.
* Basic troubleshooting.

Comprehensive training programs are essential to equip enumerators with these skills and ensure they are comfortable using the technology. Employing IT-literate enumerators contributes significantly to data quality by:

* Reducing errors in data collection and entry.
* Ensuring accurate and complete data capture.
* Adhering to data collection protocols and standards

Whilst it can be challenging to recruit sufficient numbers of field staff with good IT skills, supervisors should be IT literate and enumerators should at least have experience of using smartphones. Training will differ from a non-digital census in that additional efforts will be required to train the census personnel on using the CAPI application. This may include basic IT skills, security of the device and data held within, navigation and use of the various tablet/phone applications and digital map reading. It is therefore essential that the training is planned to incorporate practical sessions on use of the CAPI devices.

An automated e-recruitment system may be used for recruitment of enumerators and other temporary staff, for example enabling candidates to apply, carry out initial sifting and complete tests online (see **Botswana** for an example of carrying out online recruitment tests). Essential information such as identification numbers and banking details can also be collected via the e-recruitment system.

Adequate testing and piloting of the e-recruitment approach should be carried out and the following factors must be considered:

* Capacity of the ICT infrastructure to handle millions of applications, with peaks expected to occur as deadlines approach
* Nationwide network coverage
* Experience in using and ability to access the e-recruitment system
* How to recruit in areas that lack network coverage
* How to provide adequate information about the recruitment campaign in all areas of the country

The main advantage of using e-recruitment is the time saved. For example, if tests are automatically graded, the results can be shown instantly after finishing the assessment. Experience from countries using e-recruitment shows that setting up an online assessment for 1,000 people took almost the same amount of effort as to set up a manual assessment for ten people. There are also reduced costs relating to printing of test papers as well as costs for purchasing printing paper, toner, time taken to print, manpower/resource personnel, binding etc. The assessments are more secure and there are less exam malpractices because there were fewer chances of leaks since there were no physical papers that can go missing during the printing and logistics processes. See **Tanzania** for a comprehensive example of a successful implementation of an e-recruitment system.

Training can be carried out online or in a hybrid fashion with a mixture of online and in-person training sessions. Countries who carried out their training during the covid pandemic often found innovative ways of carrying out more online training. Depending on how online training is delivered, this can have advantages in that the same training can be delivered to many people at the same time improving consistency and reducing costs. However, online training may not be perceived as being as thorough as face-to-face training, and it is important to ensure that the quality of the training is maintained. Note that there is a difference between ***online virtual training*** which is similar to teacher led classroom training but delivered over Zoom or a similar online platform, and ***e-learning*** whereby students self-study pre-prepared modules. Most African countries used online virtual training but had issues with engagement and assessment using this mode. However, see **England and Wales**  for an example of e-learning which could be applied as part of a hybrid training model in the African context for delivery of standard training modules which could be completed prior to the commencement of face-to-face classroom training.

### Considerations for recruitment and training of field staff for a digital census

Prior to embarking on recruitment, calculate the number of required census personnel who need to be recruited by role and geographic region. It is sensible to recruit and train sufficient reserves of people, to take care of any attrition that may occur in the process (P&R 2.194). In the 2020 round, according to the survey completed at the 2024 Expert Group Meeting of African Census Managers, the average number of enumerators recruited was 1.15 enumerators for every estimation area. The number of reserves recruited varied from 0% to 5%. The modal number of number of enumerators per supervisor was 5 and the median number of enumerators per supervisor was 6.5. Some countries reported a much higher number of enumerators per supervisor, with the range being 2 to 227, however this large range may be due to differences in definitions of roles. See also [Geospatial mapping and EA database management](#_CHAPTER_THREE:_Geospatial) and [pre-enumeration listing of households](#_Pre-enumeration_listing_of) for more information on defining EA boundaries.

Decide whether your recruitment campaign will be carried out manually using written applications, manual sifting, testing and interviewing; or whether you can make use of online interviews and applications and an e-recruitment system that can automatically sift applications and grade applicants’ tests. Consider which approach best fits your country – all e-recruitment or a blended approach?

During the job advertisement campaign, a clear communication and publicity programme should be in place to attract suitably qualified personnel. Consider which digital platforms you can leverage to widen the reach of the campaign. However, also consider how to get your message to those from hard-to-reach areas, especially areas without good network coverage.

During recruitment, consider the place of residence and language(s) spoken by the applicants. Preferably, enumerators should be residents from the EA in which they will work. This makes logistics and administration easier and generally leads to good reception of enumerators during the field work. (P&R 2.192–2.202, 3.25). The capability of the field personnel to use the devices and technology needs to be evaluated prior to deployment. What is your contingency strategy if you cannot recruit enough computer literate enumerators in some areas?

Some roles, such as supervisors, may be filled through direct appointment by people from special groups, for example schoolteachers. This should ensure that supervisors have both local knowledge and good levels of literacy and computer literacy.

Training may be carried out in-person or online or in a hybrid manner that makes use of both in-person and online sessions. (P&R 2.196.)

## Key implementation areas for recruitment and training for a digital census

### Development of guidelines

Such guidelines should lay out details regarding the recruitment campaign and publicity, selection/vetting criteria, hiring, performance evaluation and payments procedures. See P&R 2.165, 2.174

### Development and testing of e-recruitment system

The e-recruitment system for online applications, sifting and grading of tests needs to be thoroughly tested before use. Ensure that the IT experts developing the system are in close communication with the HR and census experts in charge of recruitment to make sure that their requirements are met and not misinterpreted. Test your e-recruitment system thoroughly for ease of use by both applicants and recruiters. Bear in mind that when your recruitment campaign goes live there may be millions of applications with peak periods of demand as application deadlines approach. Stress test your system to ensure that it can handle the expected volume of traffic.

### Development of integrated systems

Human resource information systems can greatly assist the management of the large temporary workforce of a full field enumeration census. These systems can help streamline and optimize recruitment and deployment of new staff and can help identify personnel with relevant skills who can be cross trained for additional tasks, or for redeployment for other non‐census activities. (P&R 2.193.). Information such as bank details and ID numbers that are needed for human resource purposes can be collected as part of the e-recruitment system to maximize efficiency.

### Deployment of recruitment advertisement campaign

The recruitment campaign should leverage digital media to maximize coverage. See chapter on [Advocacy, Publicity and Resource Mobilization](#_Advocacy,_Publicity_and).

### Development of Training programme

The training programme should utilize an online approach for basic generic modules where possible. For example, all enumerators may be required to complete mandatory courses in basic computer skills, general knowledge about the census, data security and data protection, before attending any in-person training. Ensure that there is sufficient time allowed to let enumerators become familiar with the CAPI application, navigation maps, etc. Ideally at least two days field practice should be incorporated into the training programme, covering both urban and rural areas, so that enumerators are not using the devices for the first time when they start enumeration. This means that tablets/smartphones etc. that will be used for enumeration need to be available for training – allow sufficient time for procurement and setting up of the CAPI applications to enable this.

### Pilot of recruitment and training

The [census pilot](#_CHAPTER_SIX:_Census) should include thorough testing of the recruitment and training technology and methodology to ensure that the systems are working as expected. For example, during the pilot, Namibia found that it’s e-recruitment system was unable to handle the large volumes of applications made. This issue was resolved by the time of the census recruitment.

### Deployment of training programme

Training in census is normally done in a cascaded manner starting with master trainers who are mostly subject area specialists, training of trainers, training of supervisors and lastly training of enumerators. For consistency in the training across the entire country, the training materials should be developed centrally and tested on non-expert users. During the training, it is good practice for trainers to meet at the end of the day to review progress and handle unresolved issues to improve the quality of training. Training centers managed by administrators may be set up in different locations around the country to facilitate in-person training.

## Selected Country experiences

In Africa, online training generally meant using Zoom or equivalent online meeting facilities to carry out training in a similar manner to classroom-based training. This did not always prove to be successful with concerns that learners were not fully engaged. There is therefore some reluctance to adopt online learning for training census enumerators in African NSOs. However, an alternative method of developing purpose-built on-line training modules that learners can self-study and which include assessments have proved to be successful and provides consistently and scalability. Hence the inclusion of the case study from England and Wales which gives an example of a successful online training model, and which could be adopted by African NSOs wishing to make better use of online training.

In **Tanzania and Zanzibar**, the 2022 Population and Housing Census marked a significant shift with the implementation of a nationwide e-recruitment system. Developed in-house by the Tanzania National Bureau of Statistics and the Office of Chief Government Statistician Zanzibar, the system allowed applicants to register and apply online, offering features like real-time updates, automated shortlisting, and geographic integration. Despite challenges such as limited internet access and digital literacy, the system proved efficient, inclusive, and environmentally sustainable. It reduced administrative workload by 70%, cut costs, and improved transparency. Security measures, user support, and real-time monitoring ensured the integrity and reliability of the recruitment process.

**Namibia** also adopted an e-recruitment system for both pilot and main census operations. Recruitment was conducted at the constituency level, with a preference for local applicants familiar with their communities. The process was advertised widely through various media and public institutions. A key challenge was the requirement for a Grade 12 education, which excluded some candidates in low-literacy areas. Training was conducted in three levels: master training, training of trainers (ToT), and regional training for field staff. Due to COVID-19 restrictions, training sessions were limited to small groups, and daily review sessions were held to address issues and improve training quality.

In **Kenya**, a manual recruitment process was used, guided by a standardized recruitment guideline. Applications were submitted to local administrative offices and shortlisted based on qualifications and legal requirements, including gender balance. The recruitment process was decentralized but standardized through uniform interview tests and centralized approval. Training followed a cascading model, starting with a central Training of Trainers, followed by regional training for ICT and content supervisors, and finally training for enumerators. Training was mostly non-residential, except in arid regions, and was supported with allowances for meals and materials.

**Botswana** utilized e-recruitment for its 2022 census, initially using Google Forms for assessments during the pilot phase. For the main census, a more robust system was developed using CSPro software, allowing offline assessments with online synchronization. The system was secure and required national ID registration. This approach streamlined the recruitment and assessment process, ensuring readiness and reducing logistical burdens.

**Sierra Leone** followed a traditional recruitment model similar to past censuses, with media advertisements and interviews. Digital literacy was an advantage in the selection process. Training included examinations to guide final selection, and extra personnel were recruited as reserves. Contracts and IDs were issued to ensure proper identification and accountability in the field.

**England and Wales** conducted their census during the COVID-19 pandemic, necessitating a fully digital training approach. Training was delivered through a Learning Management System (LMS) with interactive e-learning modules and virtual classroom sessions for managers. The training was comprehensive, with 32 modules, assessments, and strict completion timelines. Despite technical and operational challenges, such as LMS integration issues and the need for deadline extensions, the digital model proved effective. It reduced costs, ensured consistent training delivery, and allowed for flexible, self-paced learning. Quality assurance was embedded throughout the process, and the model demonstrated the potential for scalable, high-quality digital training.

LINK TO CASE STUDIES BELOW IN SEPARATE SECTION

**Tanzania and Zanzibar**

In preparation for the 2022 Population and Housing Census, Tanzania implemented a nationwide e-recruitment system to hire approximately 205,000 enumerators, content supervisors and ICT supervisors. The task involved designing, deploying and managing a digital platform to streamline the recruitment process, replacing traditional methods. The system was developed in-house by the Tanzania National Bureau of Statistics (TNBS) [www.nbs.go.tz](http://www.nbs.go.tz/) and the Office of Chief Government Statistician Zanzibar (OCGS), with oversight from the Central Census Committee.

The e-recruitment system was a web-based platform, accessible via mobile devices and computers, enabling applicants from both urban and rural areas to register, upload documents, and apply for census roles. Key innovations included:

* **User-friendly interface**: Designed for ease of use across devices.
* **Real-time status updates**: Applicants received notifications on the progress of their application.
* **Automated Shortlisting**: Reduced human bias and manual errors.
* **Geographic Integration**: enabled location-based recruitment.
* **Scalability**: Handled thousands of concurrent users with robust server infrastructure
* **Security**: Employed encryption and secure authentication to protect personal data

The system also featured reporting tools, mobile/email alerts and technical support, ensuring a seamless experience for both applicants and administrators.

The digital approach yielded significant time and cost savings and improved overall efficiency:

* **Administrative Efficiency**: Reduced manual workload by up to 70%, saving thousands of hours.
* **Cost Reduction**: Eliminated expenses related to paper-based applications and physical logistics.
* **Inclusivity**: Enabled applicants from remote areas to participate, enhancing equity.
* **Transparency**: The automated process minimized bias and increased fairness.
* **Environmental Sustainability**: Paperless operations contributed to eco-friendly practices.
* Improved Communication: Real-time updates reduced applicant uncertainty and inquires.

Despite challenges such as limited internet access and digital literacy gaps, the system proved highly effective and scalable.

To maintain the integrity and quality of census data, several measures were implemented:

* **Data Security:** Advanced encryption and secure login protocols protected sensitive applicant information.
* **System Testing:** Rigorous testing ensured stability during peak usage.
* **User Support:** FAQs, help desks, and internet café technicians assisted users with low digital literacy.
* **Monitoring and Analytics:** Real-time dashboards enabled administrators to track progress and address issues promptly.
* **Fair Selection Criteria:** Automated shortlisting based on qualifications ensured merit-based recruitment.

These safeguards ensured that the digital recruitment process did not compromise the accuracy, security or reliability of the census data.

**Namibia**

Namibia used an e-recruitment system during implementation of pilot and main census enumeration. The NSO recruited enumerators, team supervisors and IT field technicians as per the planned field structure. The recruitment for the census pilot was mainly at constituency level and the most preferred people were those who live in the selected EAs and all the temporary census pilot positions were advertised externally i.e. on the NSA website, the Ministry of Labour, Industrial Relations and Employment Creation’s website, in the local newspapers, on the Radio and on the noticeboards of the following places: NSA Regional office, Regional council office, the Clinics, Schools, Police stations, Malls or Shopping centers. Any person interested in applying for the various positions was encouraged to apply online via the Ministry of Labour, Industrial Relations, and Employment Creation’s website.

One of the recruitment criteria was that applicants should have completed grade 12, which was a challenge for areas with low literacy rates. In addition, the following information of each applicant was considered as criteria for selection, namely educational qualifications, driver’s license, language proficiency, basic IT literacy and previous survey experience. Candidates were deployed within the same constituency of residence, because such people are already familiar with the people, places, and customs in their respective communities.

Due to COVID-19 regulations issued by the government when the census pilot was conducted, the training of enumerators was done in small groups with numbers of less than 30 per class. There were three levels of trainings conducted during the census pilot namely,

* **Level 1**: The master training was attended by around 20 qualified subject matter staff from the field operations, sampling, demographers, data processing and IT for 10 days in Windhoek. This training was facilitated by Managers and Executives from the subject matter area which included the census manager.
* **Level 2**: The Training of Trainers (ToT) was attended by around 50 qualified subject matter Statisticians, Assistant Statisticians, regional Statisticians including the IT field technical staff for a duration of 10 days (about 1 and a half weeks) in the capital city- Windhoek. This training was facilitated by all the staff that attended the master training.
* **Level 3**: The main training for all field staff was conducted at regional level. The highest number of trainees per classroom was 26 and the lowest was 12 and it proved to be well manageable. A total of 191 trainees were trained across the 14 regions and this level of training was facilitated by all the staff that attended the ToT for a duration of 10 days .

Level 1 and 2 trainings were conducted back-to-back with no break in between, after level 2 was done a one-week break was taken for preparations and deployment for the main training. Daily training review sessions were conducted to discuss any unresolved issues during training to improve training quality.

**Kenya**

Kenya used a manual recruitment process, and a recruitment guideline was prepared to guide through the entire process. Prior to census enumeration, a job advertisement for enumerators, content supervisors and ICT Supervisors was published in the MyGov newspaper supplement of 11th June 2019 contained in all daily newspapers. The recruitment aimed to achieve a ratio of enumerators to content supervisors at five and of ICT supervisors at 50.

The recruitment processes were carried out in the counties by the County Census Committees. The County Statistical Officers received applications for ICT Supervisors while Content Supervisors and Enumerators submitted their applications to the Chief’s Office and Assistant Chief’s office, respectively. After receiving the applications, the County Census recruitment committee used the qualifications as they were in the advert to shortlist. The number to be shortlisted was guided by the number of applicants and the positions to be filled. The committee ranked those who qualified based on the strength of their qualifications and the roles to be undertaken and the one third gender rule as required by law. At the point of application, details of the applicants were summarized using a standard form that was provided. The summary details included: Name of the applicant, Identification Number, Mobile Phone Number, Age, Sex, Disability Status, Ethnicity, Sub- County of Residence, Kenya Certificate of Secondary Grade, and Highest level of Education completed. The filled forms were submitted to the County Census Committees.

To ensure uniformity in the recruitment, standard interview tests were developed and shared electronically with the County Census Committees in a password-protected document for integrity. The County Census Committee submitted the list of applicants shortlisted and selected candidates to the Director General for approval. The successful candidates were notified through public noticeboards, phone calls and text messages.

The training for the census enumeration personnel was implemented in a cascaded manner. The first training level was the Training of Trainers involving 500 participants in a central place. Thereafter, the Trainers trained the ICT supervisors at regional level. The ICT Supervisors then trained the Content Supervisors for 7 days. The trained census personnel were then deployed in their respective enumeration areas.

Training of enumerators was conducted on a non-residential basis in schools and churches for most of the regions except arid and semi-arid areas in which they were residential. In the non-residential training venues, payments were made to cater for meals and stationery. Training of trainers and supervisors (ICT and Content supervisors) was non-residential. Training of Trainers was held from 15th to 22nd July 2019, training of ICT supervisors was done from 25th to 1st August 2019 while training of content supervisors and enumerators were conducted from 4th to 11th August and 14th to 20th August 2019 respectively.

**Botswana**

Botswana used e-recruitment for the 2022 PHC for enumerators and supervisor’s testing and selection. The recruitment aimed to achieve a ratio of enumerators to content supervisors at four. During the Pilot census, the assessment was done using google forms which required internet access for the whole period of writing up to submitting the test and instant receipt of test scores.

For the main census, a team of system developers reviewed the assessment tool and developed it in CSPro software. The assessment was accessed through a CAPI system that could work offline but needed internet connection for synchronizing/submitting the assessment also backed up on tablets. The assessment was password protected and only made available when allowed and ready to take the test. All applicants taking the assessment were registered in the system by using their national identity card numbers (Omang). For those who were not Omang, the development team had to register them to access the test.

**Sierra Leone**

The recruitment procedures adopted for 2021 MTPHC followed a similar pattern of the past censuses in Sierra Leone. The recruitment aimed to achieve a ratio of enumerators to content supervisors at five and for ICT supervisors at 3,375. Job advertisements were put out over the media for the various categories of field staff needed for the cartography mapping, pilot census and the main census enumeration. Ability to handle an electronic instrument (phone, iPad, laptop, desktop etc.) was an advantage in the recruitment process for the Mid Term Census cartography and census. Shortlisted candidates were interviewed, the successful candidates went through training and examinations to guide the selection of field staff. Extra people were recruited to serve as a reserve in case of illness, bad performance or abandonment of positions. Contracts and picture IDs were provided to each successful participant at the end of training to aid field staff identification.

**England and Wales**

In England and Wales, the census was conducted during the covid pandemic and face-to-face training was therefore not possible. A combination of digital e-learning modules and virtual classroom sessions (for managers only) were developed and delivered for training of Census Field Operations (CFO) staff. This training aimed to ensure that all field staff were adequately prepared to perform their roles effectively from day one of their employment.

The digital training was delivered through a Learning Management System (LMS), providing a structured and interactive learning environment. The modules were developed using an e-learning authoring tool designed to create engaging and interactive content. Virtual classroom sessions were facilitated through a web conferencing platform, enabling real-time interaction and scenario-based role play exercises. A total of 32 different modules were created, of which 22 were role specific and ten were generic such as health and safety, data protection, emphasizing the importance of safeguarding census data, and a general overview of the census.

All employees were required to sit an assessment at the end of each digital module and had to achieve a minimum pass mark of 80% over three attempts. All training had to be completed within the first week of employment and within a set number of contracted hours.  A total of 25,734 field staff completed their digital training, with 83% of learners completing the training within the allocated four days, and 92% completing in time for them to commence field work on the first day of the operational period.

Quality assurance processes were built into the design and development stages of the training. The content was reviewed and tested rigorously to ensure accuracy and relevance. The LMS provided secure access to the training materials, and the virtual classroom sessions were conducted in a controlled environment to maintain data security.  More than 5% of the classroom sessions were observed to assess the quality, and it was concluded that the use of virtual classroom as opposed to face-to-face classroom was effective and still imparted the necessary knowledge.

The digital approach significantly reduced the time and cost associated with traditional face-to-face training. It allowed for consistent delivery of training content to a large number of field staff across different locations. The use of digital modules enabled learners to complete their training at their own pace, resulting in an average completion time that was less than the time originally budgeted. This approach also facilitated the tracking of training progress and performance, ensuring that most field staff were operationally ready on time.

However, several challenges were encountered during both the development and operational stages of the training:

Development phase:

* **Quality Assurance:** The initial quality assurance process did not meet expectations, resulting in a high number of errors that required correction. To enhance future development, we would recommend developing the training in-house to ensure greater control over content and quality.

* **Content of the Training:** Balancing the level of detail required by subject matter experts with what was practically achievable for this type of training proved challenging. The process was further complicated by an evolving design, requiring late-stage adjustments where flexibility with the supplier was limited. In-house development may have allowed for greater adaptability in responding to these needs.

Operational phase:

* **Technical Issues:** Challenges with the LMS and system integration led to delays and required extra troubleshooting. In some cases, assessment failures were due to technical issues, which had to be resolved quickly by resetting the system and adjusting time allowances for affected trainees, impacting their overall user experience.

* **Chasing for Completion:** Despite the requirement to complete the training within a specific timeframe being clearly outlined during recruitment and onboarding, efforts were still required from both the supplier and LMS to ensure completion. In some cases, extensions needed to be granted, requiring operational teams to work additional hours to accommodate the extended period. Future improvements could include allowing more time for completion to ease the pressure on both learners and staff.

## Challenges and lessons learnt

* In Botswana’s pilot census, a challenge arose with google forms during assessment if the internet connection is poor/cut in some instances the test would reload leading to loss of the recorded answers, forcing applicants to start the assessment all over again. This posed a serious challenge for areas with poor internet connection.
* The manual recruitment process for the census enumeration requires a lot of time and therefore it needs to be planned to start as early as possible and allocated adequate resources to ensure that the recruitment process is completed in time, preferably online.
* In Namibia, during the pilot the e-recruitment system was unable to handle the large volume of applications. This demonstrates the value of carrying out a pilot and also the necessity to stress test the recruitment system assuming that there will be peaks of traffic just before application deadlines.
* In Tanzania, one of the main challenges was the limited internet access in rural areas. This restricted some potential applicants from easily assessing and using the system. Some applicants also faced difficulties in navigating the application system due to a lack of familiarity with digital platforms. This highlighted the need for user support and training. High volumes of traffic, especially near application deadlines sometimes caused the system to slowdown or crash, emphasizing the importance of robust server capacity and load balancing.
* Some countries trained their field staff online using Zoom. This posed challenges like divided attention, those attending training from home would sometimes do other tasks at the same time or would not give their full attention to the training. Sometimes, they would even delegate attendance to others. This at the end of the day compromises the quality of data. However, steps can be taken to ensure that people give their attention to the online training, such as requiring people to take and pass assessment tests based on the material – possibly at in-person sessions once basic online training has been completed.
* In Namibia, the high recruitment criteria (grade 12) resulted in many new trainees with limited experience in data collection (census/surveys). Thus, additional time was required for field practice during training. There is also likely to have been more attrition of staff since people in this category are typically seeking permanent jobs.
* Challenges in ensuring IT literacy among enumerators include varying levels of digital literacy in the population, and difficulties in recruiting individuals with the necessary IT skills. These challenges can be mitigated by using targeted recruitment campaigns, providing incentives for IT-skilled applicants, and creating accessible and effective training programs. For example, Burkina Faso faced challenges recruiting in areas with security concerns and as a result had to lower recruitment criteria, potentially impacting the IT literacy of enumerators. This highlights the need to balance security concerns with the need for qualified personnel.
* Internet connection was a challenge during training for some of the training centres due to network problems where certain training centres were located.
* It is desirous to utilize free training venues but there exists limited availability of public facilities for training in some parts of countries in Africa, and these should be properly planned and budgeted for.
* Data quality issues have been caused by inadequate training and enumerators not understanding the purpose of the data they are collection. For example enumerators not using standard values to record “unknown” causing data cleaning issues, enumerators adding a new record rather than editing an existing record to correct a mistake, causing duplication etc (see [also PES enumerator recruitment and training](#_Enumerator_recruitment_and)). This makes matching the data to other datasets, including the post-enumeration survey and administrative datasets more challenging and therefore limits potential further use of the data.

## Recommendations

* An e-recruitment system should be deployed to ease the process of receiving applications, shortlisting, and selection of personnel. This system needs to be tested to ensure it is easy for applicants to use and can cope with large volumes of applications. Ensure the IT experts who design the system have properly understood the requirements of the HR and census experts. Use the e-recruitment system to collect all information needed including bank details, ID numbers etc. Design the platform to be mobile-friendly and optimized for low-bandwidth areas to improve accessibility, especially in rural regions. Offering multilingual support and offline application alternatives, along with real-time technical assistance, will enhance inclusivity.
* Recruit enumerators and supervisors on merit incorporating an ethical approach and resisting political interference. Take IT literacy, language spoken and place of residence of the applicants into account. Recruit more people than you need to allow for attrition of staff. You will also need to recruit a team of IT support staff.
* Allow enough time for the recruitment process so that the census timelines can be adhered to. Have a back-up plan for recruitment in areas where you are unable to attract enough applicants. Public awareness campaigns and digital literacy training are crucial to help users navigate the system.
* Equipment such as tablets need to be ready for enumerators to use during training so that they can become familiar with the applications. Allow for at least two days in the field training, including both rural and urban settings.
* A mixture of online and in-person training can be used. On-line training modules provide a consistent approach ensuring that all trainees receive the same instructions. Digital data security awareness, basic skills and a general overview of the census should be included in the training.
* Ensure you have sufficient training centers with adequate network coverage, IT support staff and managers. If it is not possible to source these centers from existing government buildings then sufficient budget needs to be set aside to pay for suitable private venues.
* The recruitment and training procedures and systems should be piloted and any issues addressed and retested before the census operations begin. Errors in data collected during the pilot will high-light areas where better enumerator training is required. Hence analysis and quality assurance of the pilot data is essential to pick up any such errors.

## Resources

1. UN Principles and Recommendations for population and housing Census. Revision 4. <https://unstats.un.org/UNSDWebsite/statcom/session_56/documents/BG-3b-Draft_P&R_4th_Rev-E.pdf>