

## Summary of main proposed changes from 2020 Recommendations

This section was previously part of the chapter on Technology. However, given its relevance to other areas not pertaining to technology, it has been proposed to remove it from that chapter and include it in the chapter containing assorted topics on operational and other issues.

1. A summary of the section's content has been added at the start.
2. The main points have been maintained, with some simplification and reduction of text.
3. Emphasis has been added on the fact that there is almost no need for outsourcing in the case of register-based censuses.
4. The orders in the list of potential services for outsourcing have been changed in accordance with the results of the survey for the 2020 census round.
5. The term 'contracting-out' has been replaced with the term 'outsourcing' throughout the text to simplify and harmonize.
6. A footnote has been added to clarify the reference to the ISO standard on information security management.
7. Further examples of possible requirements in the area of data protection in case of outsourcing have been added.
8. Text has been simplified and repetitive or especially self-evident parts removed throughout the text.

## Outsourcing

This section deals with census activities that are or might be outsourced: that is, performed or provided by a supplier or organization other than the NSO or census office. While countries conducting a fully register-based census generally have little or no need to outsource any census services, those countries employing any form of direct enumeration for their census generally have a greater need to outsource some activities. A list of potential candidates for outsourcing is given in this section, along with recommendations for factors that should be considered when outsourcing any of these. In particular, important recommendations are given relating to data confidentiality and quality requirements when outsourcing.

The complexity of much of the software and infrastructure required for many new and emerging technologies used for censuses may exceed the current technical capabilities of a census agency. It may therefore be necessary to outsource significant components of such technical elements, as well as non-technical activities such as large-scale recruitment of field staff. The advantages of doing so are:

- (a) external suppliers possess technical experience and expertise which would otherwise be unavailable within the NSO. Using this experience allows NSOs to focus on their

main task of carrying out the census rather than on developing in-house procedures and skills that are not part of their core competencies.

- (b) the decennial or quinquennial cycle of many census activities means that some activities only need to take place once every ten years, by which time the pace of technological change may imply that the nature of the activity has changed. By outsourcing, the NSO does not have to invest in the infrastructure or knowhow required for something that happens very infrequently.
- (c) some census activities, such as enumeration with field staff or data processing, must take place within a short period, often requiring a concentrated period of peak staffing levels or the use of many electronic devices for data collection. Outsourcing can facilitate the management of these brief but intensive periods.

The appropriateness of outsourcing should be determined after subdividing the overall census operation into separate stages. Candidate activities for outsourcing might include (among others):

- (a) printing of questionnaires and other documents/materials
- (b) translations
- (c) transportation of questionnaires and/or field materials before and/or after enumeration
- (d) call centre/telephone help line
- (e) publicity campaign, public relations, social media or other communication services
- (f) design and/or provision of online response technology
- (g) design and web functionality for online outputs
- (h) recruitment and training of field staff
- (i) primary data capture and coding
- (j) post-processing questionnaire destruction
- (k) design and provision of questionnaire tracking systems
- (l) provision of mapping services
- (m) data storage
- (n) data editing and/or imputation
- (o) quality assurance
- (p) evaluation.

Many of these activities will, of course, be less relevant to those countries that carry out a fully register-based census, in which the opportunities for effective outsourcing are clearly much reduced. (The creation and maintenance by external agencies of the registers from which the census information is extracted, is not 'outsourcing' in the generally-accepted meaning of the term.)

The decision to outsource will depend on the requirements of the census agency, the availability of skills in-house and the ability of the agency to manage complex systems

development projects. Total outsourcing might at first seem to be a simpler process to manage. However, it is unlikely that a census agency will choose to outsource the total solution to the census operation, but rather that components of the system will involve a combination of outsourced elements, different external service providers working as contractors on specific projects, and in-house developments. There can be advantages to having several linked activities provided by a single contractor.

A clear understanding of the NSO's requirements is needed before any contracts can be tendered so that these can be specified unambiguously to the contractor. These include understanding the objectives of the project, the outputs to be achieved and the standards these outputs must meet (quality, timeliness, cost), and confidentiality and public sensitivity issues. Specifications must allow for the possibility of requirements and objectives changing over the lifetime of the project. How these changes will be agreed to and approved by the census agency and the provider needs to be determined from the outset.

Timetabling, including milestones for key deliverables linked to payment schedules, needs to be agreed with the contractor. Regular monitoring needs to be undertaken at the operational level. Processes and escalation procedures should be established to allow senior staff to monitor progress and to deal with any major issues that cannot be resolved at this operational level.

A mixed approach to systems development is one in which the overall solution consists of outsourced systems, systems developed by external contractors working alongside census agency staff, and systems developed in-house. This approach can have many advantages, such as greater flexibility to adapt systems as more is learned through the systems development and testing programme, and during the actual census processing operations. This can lead to improved data quality and savings in processing costs as systems are optimized. However, census agencies should be aware that, for such an approach, management becomes much more complex. The census agency must be skilled in the management of complex projects, have a clear understanding of business processes and be able to manage carefully the integration of both the technological and clerical processes. It is important, therefore, to set up a dedicated team within the NSO to draft and manage contracts, deal with contractors, monitor processes, oversee quality, and liaise with statisticians. Such a team should also have sufficient familiarity with appropriate project management methods, both traditional and agile, since the latter are becoming prevalent in the IT world and beyond. Team-based working, where external contractors work very closely with census agency staff, is essential if this method of systems development is to be successful.

Throughout the overall process, activities should be conducted by a method that is tailored to meet the requirements of users (e.g. with respect to the accuracy and timeliness of the results), and that reassures the general public on matters relating to confidentiality and data protection. It is important that no part of the outsourced operations should be performed using a method that could result in loss of the trust of the general public. In judging the appropriateness of outsourcing, census agencies should therefore consider carefully the following factors:

- (a) strict protection of data confidentiality
- (b) a method of confidentiality assurance that satisfies the general public
- (c) relevant government policies and procedures

- (d) quality assurance measures
- (e) ability to manage and monitor the outsourced census tasks/activities
- (f) control over the core competencies of the NSO.

Assurance of confidentiality may be considered paramount among these, since it is both a Fundamental Principle in its own right [see Annex xx], and necessary as a means of maintaining the public support required for efficient and high-quality data collection. NSOs are responsible for data confidentiality, both in terms of reality and of perception. Consequently, outsourcing tasks that pose an actual or perceived risk to security or data confidentiality must be avoided. For all data collection or processing operations carried out by external suppliers, safeguards should be put in place to ensure that there is strict protection of confidentiality. This may be achieved, for example, by requiring external suppliers to encrypt data collected by them; by insisting upon intrusion tests into IT systems external to the NSO; by requiring evidence of data deletion after the project or mandate is completed; and by requiring companies providing IT services to demonstrate that they have the relevant certifications, e.g. the ISO-27001 certification<sup>1</sup>. The outsourcing of such services should be considered carefully so that public trust and confidence in the census is not eroded. Where, for example, temporary enumeration staff are engaged under contract, this should be done in such a way that they are subject to strict monitoring and control by the census agency. Such field staff should be engaged in a way that ensures that their activities are governed by the relevant statistical legislation to preserve the confidentiality of the data that they collect.

Another key issue to be considered in outsourcing is quality assurance. The census agency must be satisfied that the goods or services paid for are provided to an agreed and acceptable standard. In this respect, cost should not, ideally, be the first priority in considering and judging the successful bidder. Poor quality work, or any perceived risk to confidentiality posed by the lowest-priced bidder, could cause a significant loss of trust among users and the general public.

As part of any contract allocation process, potential contractors should be required to provide samples of their work, to give details of sites at which previous work can be inspected and/or to list referees who can verify their claims and credentials.

More detailed discussion of the issues to be considered in outsourcing, and in the evaluation of software and hardware can be found in the *Principles and Recommendations for Population and Housing Censuses: the 2020 Round, Revision 4*,<sup>2</sup> and the *Handbook on Census Management for Population and Housing Censuses*, United Nations, New York 2001.

---

<sup>1</sup> International Organization for Standardization (ISO) ISO/IEC 27001:2022, Information security, cybersecurity and privacy protection — Information security management systems — Requirements. Available from <https://www.iso.org/standard/27001>

<sup>2</sup> Principles and Recommendations for Population and Housing Censuses: the 2020 Round - Revision 4; United Nations, New York 2025, [forthcoming: specific section references to be added prior to publication].