

GSBPM as a backbone of the internal documentation system

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Abstract

Good documentation of the statistical surveys is one of the challenges that national statistical offices have been facing in recent years. The widely accepted Generic Statistical Business Process Model (GSBPM) provides a very useful tool to accomplish this task in a standardized manner. The Statistical Office of the Republic of Slovenia accepted the adjusted GSBPM model as the general process model in 2012 and updated it in 2017. Based on this model, detailed quality guidelines for implementing each of the phases were prepared. The guidelines were the basis for preparing the standardized framework of the internal Documentation System of Statistical Surveys, called STATDOK. This system is a response to the needs that arise from the desire for more effective management, transparency of the statistical survey implementation, comparison of surveys and the needs of employees for continuous learning. The STATDOK system provides a knowledge database that helps other employees to understand the data, allow somebody else to run the survey (e.g. the survey manager is ill or they are new and do not know the survey very good at the beginning) and help others to improve their surveys. The paper describes the conceptual framework of the internal Documentation System of Statistical Surveys – STATDOK and the STATDOK application (technical implementation of the system and its functionalities).

1. Background

Good documentation of statistical surveys is one of the challenges that the Statistical Office of the Republic of Slovenia (SURS) has been facing for many years. It improves the quality of data and allows for repeatability of the survey. The widely accepted Generic Statistical Business Process Model (GSBPM) provides a very useful tool to accomplish this task in a standardized manner.

The first attempt to standardise documenting statistical surveys was in 2003 (called PC-DOC), but the situation did not change very much in practice. Management of the documents was still very diverse. They were stored in different locations, they did not always follow the standard structures and they were not regularly updated. The consequences of the unregulated state of statistical survey documentation at SURS were lack of transparency and poor accessibility, the possibility of losing documentation, and very different quality (inconsistent content, very different detail).

In 2011, the report about the usage of standard PC-DOC was prepared for the management. For this purpose, we launched a survey where we collected the information if and where the standard is used and if there exists other documentation. A review of past practices of the document management showed that the key reasons for the failure of the system were the vague responsibility for preparing documentation and the poor usability of the whole system (mainly because of the incomparable structure between surveys, different quality and fragmentation, and different locations of storage).

The response to this report was the establishment of the working group whose main tasks were preparation of a meaningful content structure of the documentation of statistical surveys, and preparation of a proposal for further organization of the management of the documentation of statistical surveys at SURS. The first phase was to prepare a proposal to transfer existing documentation to one place and the second phase was to prepare a proposal for further management of the documentation of statistical surveys at SURS. The objective was that the solution must be reasonable in terms of the input of work and maintenance of the system. It must also ensure the optimization of the current practice of preparing different parts of the documentation (as much as possible to avoid duplication of entering the same information in different ways). This proposal specified more precisely what should be included in the documentation and aligned the structure with the process model.

After the management confirmed the proposal, the working group first started to prepare the content of the standardized structure for documenting statistical surveys and the organizational aspects of the new system called STATDOK. The structure of the system's content follows SURS's process model based on the GSBPM model, since it provides a comparable structure between different surveys. The final solution was prepared in 2015 and implemented by 2017. At the same time, the organizational aspect of the system was implemented. The responsibility of preparing and maintaining documentation involves the whole organization, so the working group defined the roles of all SURS's employees. This is the only way that the STATDOK system will survive and that the history will not repeat itself. In 2018, the IT Section built the technical solution – the STATDOK application for preparing and maintaining STATDOK documentation, which has been in production since 2019.

2. System for managing documentation of statistical surveys at SURS (STATDOK)

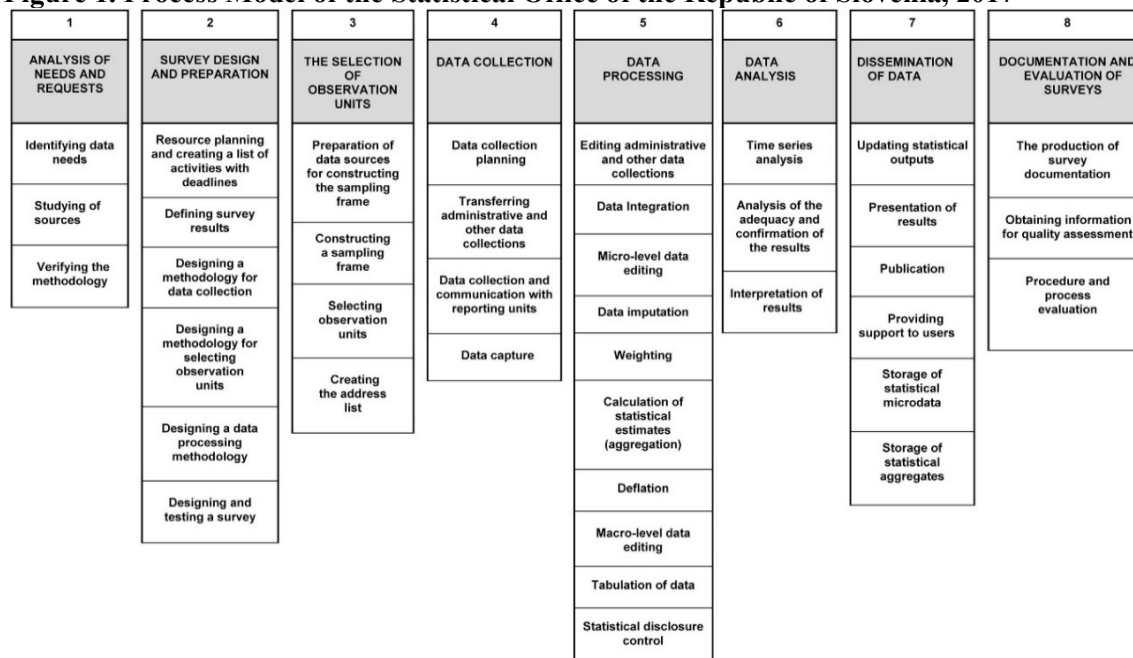
The STATDOK system represents the information base as a basis for continuous learning and is the single entry point to the documentation of statistical survey implementation. The main purposes of the system are documentation of statistical surveys is part of conducting the survey, easy access to all documentation for all employees, systematic management, monitoring and updating of documentation, transparency of documentation, one storage location, standardized structure allows comparability between surveys, and the possibility of carrying out analyses.

The STATDOK system has three aspects: content, organisational and technical.

Content aspect of the STATDOK system

The general framework for the STATDOK system is SURS's Process Model, which is an adapted version of the GSBPM model (Figure 1). The bases for the structure are SURS's Guidelines for Quality Assurance from 2017 and an internal document that, in addition to guidelines, for each sub-process includes also detailed implementation steps to follow to successfully implement this part of the process. We used this document and prepared the structure with instructions that follows the phases, sub-processes and important steps.

Figure 1. Process Model of the Statistical Office of the Republic of Slovenia, 2017



Source: SURS

The content of the STATDOK system is a multi-level structure of related documents and other information (Figure 2).

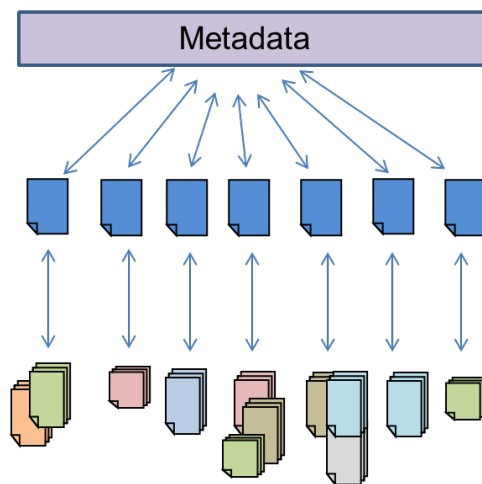
The first level is metadata - short information about conducting the survey, the structure is standardized, and many of them are a choice from the code list that provides analytical value and quick overview of the survey implementation.

The second level is seven standardized documents describing in more detail the survey implementation. The structure of documents follows the sub-processes and steps for each phase of the process model and is consistent with the metadata structure. For each phase, there is only one document with basic information about the survey. In these documents are also general instructions for the steps.

The third level consists of implementation documents describing a specific sub-process or a step. For now, there are only a few documents standardized, but the plan is that we standardize more of them in the future. Other documents should have a standardized cover where possible (word, pdf... format). In second level documents, there is a chapter “Other documentation” with listed third level documents. Mandatory document is a step-by-step implementation document (receipt), which describes the steps of carrying out the survey from the beginning to the end.

Figure 2. Multi-level STATDOK system

Level I	Key metadata – short information on the implementation of the steps for each sub-process. Possibility of comparing information between surveys.	Standardized structure which follows phases and sub-processes.
Level II	It contains a detailed description of the implementation of phases, sub-processes and important steps.	1 standardized document for each phase (7). The structure is consistent with the structure of the metadata on the Level I.
Level III	It contains a set of implementation documents that belong to a specific sub-process of the survey.	For each phase possible more files/documents (in different formats). Some documents are standardized, some not.



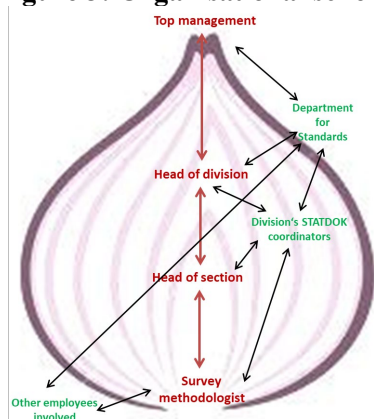
Source: SURS

Organizational aspect of the STATDOK system

In the first phase of establishing the new documentation system, the main goals were to change the attitude towards documentation at SURS and to emphasise not only the value of data production but also the value of accompanying metadata. To follow these goals, the organisational structure has to be simple and efficient. The entire SURS is responsible for the success of the STATDOK system that offers transparency and easier communication between different groups of employees. In order to keep the system sustainable and to keep the documentation up to date and thus improve its quality, SURS appointed STATDOK coordinators for divisions. The structure of responsibility and communication goes in various directions (Figure 3):

- Hierarchically from the **survey methodologist** (who is responsible for preparing documentation in time and its quality, its frequent updating and publishing) to **head of section** (who is responsible for content validation, for monitoring of updating documentation and encourages the improvement of the quality of documentation), to **head of division** and finally to the **top management**.
- **Infrastructure Section**, i.e. methodologists and programmers (offer support to survey methodologists concerning documentation of the specific phases and sub-processes, preparing of the standardized structures for implementation documents).
- **STATDOK coordinators for divisions** (offer support to survey methodologists, monitor the implementation of documentation updates, prepare quarterly reports for heads of divisions, participate in the development of the system and training).
- **Standards Section** (responsibility for the system and its development, coordinate upgrading and updating it, offer support to users, survey methodologists, coordinators, training, etc.).
- **IT** (administrators for the technical solution).

Figure 3: Organisational scheme – communicating between different groups of employees



Source: SURS

In order to keep documentation regularly up to date and improve its quality, we developed a monitoring system:

- End of the year, survey methodologists plan the deadlines for updating STATDOK for the next year.
- STATDOK coordinators monitor quarterly the realisation of the timeline of updates, send reminders to heads of sections and report the status to heads of divisions.
- Standards Section every year prepares a report on the activities and realisation of updates for the previous year for the top management.
- Once a year a meeting with heads of sections is held (report on the activities for that year, highlighting common mistakes and deficiencies, and feedback from users).
- Standards Section performs documentation reviews of the STATDOK (7–10 a year).

Technical aspect of the STATDOK system

After the preparation of the content for all surveys, temporary technical environment for uploading the documentation was made on the intranet site in the Share Point environment, where more than 180 STATDOK documents were uploaded. Documents (with the exception of confidential) in this system were stored in the same way and accessible to all employees. However, this environment did not meet all purposes of the system such as analytical value.

Extensive research and feedback of survey methodologists and other users was taken into account in preparing a new technical solution - the STATDOK application. It justifies all the initial purposes of this system and has been in production since 2019.

The application is prepared in a more stable environment, reading / writing / editing rights are arranged according to different users. First level - metadata are not in a file anymore, survey methodologists fulfil them directly in the application (Figure 4). The second and third level documents are loaded according to the structure of SURS's process model (Figure 5).

Figure 4: Metadata in the application, one sub-process – one mask with metadata

Regionalni računi (NR-REGIJE)
Ime skrbnika

0. Splošno o STATDOK

3. NAČRT RAZISKOVANJA

Enota opazovanja
LEU (Pravna enota) × LKAU (Lokalna enota enovrstne dejavnosti) ×
Oseba × Gospodinjstvo ×

Periodika
letna

Tip referenčnega obdobja
koledarsko leto

Ključne spremenljivke
sredstva za zaposlene, neto razpoložljivi dohodek investicije v osnovna sredstva, bruto dodana vrednost, zaposlenost in zaposleni, opravljene delovne ure

Ključne statistike
vrednost v mio. EUR (fiksni tečaj 2007), vrednost na prebivalca, indeksi ravni (struktura), število preb., zaposlenih v mio.

Vir podatkov
Primarni in sek.

Navedite samo ključne spremenljivke, kot so v SPK. V primeru, da se korak ne izvaja, zapišite "se ne izvaja".

Source: SURS

Figure 5: Level 2 and level 3 documents – structure by processes and sub-processes

Regionalni računi (NR-REGIJE)
Ime skrbnika

Dokumenti

0. SPLOŠNO O STATDOK

SPLOŠNI DOKUMENT

Datoteka	Nalagalec	Datum nalaganja	Status	Vrsta	Urejanje
0_NR-REGIJE_V2.docx	MILENA JANKOVIČ	03. 07. 2018	Interno - SURS	Splošni dokument procesa	

0.1 OPIS RAZISKOVANJA

Datoteka	Nalagalec	Datum nalaganja	Status	Vrsta	Urejanje
inventory_manual.zip	MILENA JANKOVIČ	03. 07. 2018	Javno	Metodologija (povezave do metodologije na internih straneh, če obstajajo)	

0.2 PRAVNA PODLAGA RAZISKOVANJA

Datoteka	Nalagalec	Datum nalaganja	Status	Vrsta	Urejanje
esa-2010	MILENA JANKOVIČ	04. 07. 2018	Javno	Povezava na zakonodajo	

0.3 NAČRT RAZISKOVANJA

Podproces še nima naloženih podrobnih dokumentov.

0.4 REVIZIJA RAZISKOVANJA

Podproces še nima naloženih podrobnih dokumentov.

3. IZBOR ENOT OPAZOVANJA

Source: SURS

The STATDOK application enables automatic versioning of files, historical overview and functionalities such as the search engine and different pre-prepared standardised views of the metadata. There is a possibility to output the metadata in excel files for the analytical purposes and printouts and exports of documents uploaded. In addition to the user manual for the application, the manual for fulfilment of the content of STATDOK was prepared with frequently asked questions with answers and is regularly updated.

The database for the new technical solution was created on Microsoft Sql Server. There are more than a hundred data tables in the database (186), about 90 of them are code lists for metadata. The STATDOK application was created in the C # programming language, and with the help of the Asp.Net MVC 5 framework. Libraries JQuery and Bootstrap were also used. Domain authentication is used to log into the system.

The implementation of the new STATDOK system required presentations and workshops for the employees using and preparing documentation as well as for management staff. Advantages of the STATDOK system, its

main functionalities and the new technical solution were presented to all employees. Survey methodologists responsible for the preparation of documentation participated in user workshops, where they fulfilled metadata from excel files and uploaded all documents in the application. They were actively involved in these workshops, as there were possibilities of expressing main issues and main questions regarding STATDOK and specific cases in different statistical surveys. The result of these workshops was important feedback for further development of a user-friendly documentation system at SURS. Every year there is a training for the STATDOK application for new employees.

3. Conclusions

To avoid the consequences of unregulated conditions of the documentation of statistical surveys, lack of transparency, poor accessibility, the possibility of losing important information and a very different quality, it is necessary to standardize the management and content of the documentation and to regulate the uniform location for the storage of documentation of statistical surveys.

SURS developed the solution, the new internal Documentation System of Statistical Surveys, called STATDOK. The structure of documentation is based on SURS's Process Model that is the adapted version of the GSBPM model. A standardized description of the process is the basis for such actions and the GSBPM is the right tool for achieving that. If we did not follow the Process Model such as GSBPM, it would make our work much more difficult and less efficient. This system provides one place for storing documentation of all statistical surveys, environment and management that prevents the loss of documents, and comparability between surveys that provides analytical value. The documentation became a planned part of the survey implementation and gained its wider internally usable value through the guaranteed functionalities of the new system.

The main benefits of STATDOK for survey methodologists are the availability of centralised platform to gather all metadata needed for the survey, easier planning and knowledge transfer to new colleagues as well as the possibility to compare their own survey to other similar surveys. The latter is of great significance as it means that the system of documentation offers transparency along with the exchange of good practices and thus improves the survey process.

The second level to benefit from the use of the STATDOK system is the heads of individual organisational units (e.g. sections). With comprehensive information on the statistical surveys within their units, they can effectively manage the work of their employees and have a tool to help them replace or compensate for the missing employee (e.g. due to annual, sick or family leave) and to compare their procedures to others.

Finally, the STATDOK system serves the decision-makers or the top management of the organisation as well as those who are responsible for the individual phases or sub-processes (according to the Process Model). It offers the coherent and standardised insight into the organisation of phases and statistical surveys. Therefore, the comparative aspect of the STATDOK system can be used to further standardise and optimise sub-processes.

SURS made a big step forward in the area of internal documentation. So far documentation for more than 200 surveys has been prepared in the STATDOK system and, most importantly, the documentation is regularly updated as the preparation and updating of the documentation have become part of the regular survey planning process.

Main challenges of the STATDOK system are promoting the use of STATDOK by employees, improvement and content supplementation of some implementation documents, and standardizing implementation documents for certain sub-processes. SURS is aware of the need to monitor the needs of users and thus adapt or develop functionalities that are meaningful and necessary for them.

4. References

SURS (2017), Guidelines for Quality Assurance. Available at:

<http://www.stat.si/StatWeb/File/DocSysFile/9694/guidelines-for-quality-assurance-2nd.docx>

SURS (2018), Documentation System STATDOK – a cornerstone for efficient management of statistical surveys. Available at: [https://www.q2018.pl/wp-](https://www.q2018.pl/wp-content/uploads/Sessions/Session%2001/Petra%20Blazi%20C5%BEi%20C4%8D/Session%2001_Petra%20Blazi%20C4%87.docx)

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