

Enhancing Quality and Performance in Statistical Production

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Abstract

Quality is the foundation for building and maintaining the integrity of official statistics. It ensures that the statistics produced are accurate, reliable, and fit for their intended purposes, supporting the effective functioning of the society and economy. Total Quality Management (TQM) strategy is being employed and several initiatives have been undertaken by the Albanian Institute of Statistics in order to enhance the efficiency and quality of statistical processes. An institutional Performance Assessment Framework (PAF) has been developed and improved over the years to support organizational effectiveness, and continuous improvement, while working on standardisation of statistical processes and production.

This paper will provide information on the development and challenges to further improve quality management. The use of Generic Statistical Business Process Model (GSBPM) as well as the steps taken towards integrating the Performance Assessment Framework (PAF) with GSBPM and Generic Activity Model for Statistical Organizations (GAMSO) will be described.

This integration will ensure the quality and efficiency of the statistical processes but as well as help to systematically evaluate and enhance the overall performance in delivering reliable statistics. This integration contributes to a holistic approach to statistical management, encompassing both process optimization and performance excellence, guaranteeing alignment with the established principles outlined in the European Code of Practice for official statistics.

Keywords: INSTAT, Quality, Total Quality Management, Performance Assessment Framework, Generic Models

1. Introduction

The Institute of Statistics has been producing data for a number of years while adhering to the finest practices and standards of statistical quality. Utilising the European Code of Practice, which has expanded in new directions over the past few years, has allowed for this. These procedures are applied not only at INSTAT but also at a few other organisations that make up Albania's National Statistical System.

Quality concepts have been started as a concept of realizing a “good statistic” which in the meantime is understood as realizing a precise indicator. Now a day quality is not only seen as a multi dimension concept which have in its main objective fulfilling the user needs within time,

accurate, comparable and relevant and reliable statistics, but in the meantime, it is foreseen as a general concept of TQM – total quality management including management process like process and production but also staff manage.

Ensuring the accuracy and dependability of data at all stages of statistical production has been the main focus of a persistent effort to improve the quality of statistics. The adoption of the European Code of Practise has raised awareness of the significance of high-quality statistical data and fostered strong collaboration between albanian statistical agencies, data producers and users.

So, we will focus on some INSTAT improvements in that area. TQM strategy, already applied in INSTAT is based on many areas of statistical work, like staff management, process management, user satisfactions. It needs a cooperative way to realize the main objective producing statistics leaded by CODE of practice.

Statistical production process is managed throw very standardized concepts and procedures mirroring Eurostat approach – GSBPM. Many fields of knowledge are brought together to produce a qualitative statistical indicator.. So, establishing a good quality statistic in line with EU–requirement and manage it in time is our daily work.

Extend the quality issues to GAMS0 system – is studied and will be a challenge on the area of quality on the future. An overview of those concept and the plans on in INSTAT will be describe on this paper.

2. Institutional frameworks on quality management

The National Statistical System (NSS) in Albania, is leaded by the National Statistics Institute (INSTAT) and is composed by INSTAT and two statistical agencies: Bank of Albania (BoA) and the Ministry of Finance (MoF). The NSS is producing official statistics based on the law No.17/2018 on Official Statistics and the five years Official Statistics Program. Also, every year there is a PSZ – yearly programme on official statistics approved on the parliament that is mandatory to be applied.

INSTAT, along with statistical agencies, have the duty to produce statistics in a transparent, impartial and timely manner, helping users to judge the performance of the transformation processes towards EU integration (article 70 of the SAA). As part of the fulfilment of the SAA, and the implementation of the recommendations of the EU for Albania alignment with the acquits under Chapter 18, "Statistics", INSTAT tries to create a culture of statistical development among other agencies, monitoring efforts to carry out the obligations of the SAA by these agencies.

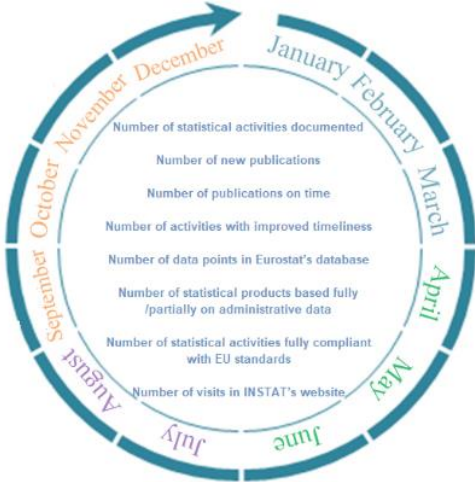
2016 we have created the quality unit in Instate which have the commitment to attend all the quality processes throw quality instruments to realize and monitor them.

But the developments on the quality are so rapidly during the last decade. This development is drowned by the EU-integration process in which Albania is involved. In INSTAT we can see that INSTAT have a commitment to fulfil Eurostat recommendations on peer – reviews done and continue the work on moderations of the NSS (National Statistical System). This process has a huge range of covering but here we will focus on improvements of the quality in the statistical production system, a general overview of GAMSO as a general standard decided to be apply in INSTAT, instruments to establish and monitor the statistical management and statistical processes work in INSTAT.

2.1 GAMSO System as future developments on quality management

INSTAT have work to measure the performance of the Institution throw an assessment framework. At the beginning 2024, INSTAT has worked to refresh indicators that will serve to measure and evaluate the performance of the institution. PAF -structure is in place as an

Fig1. PAF wheel for 2024



an instrument for controlling INSTAT activities, to improve effectiveness of statistical processes. It will enable a clear line between planning, measuring and assessing performance. PAF and GSPBM already used in INSTAT will be integrated on GAMSO structure.

The Quality Committee have taken decision on GAMS0 implementation. INSTAT continue the work on quality management by introducing GAMS0 model. INSTAT has started the work on translation into Albanian language of the GAMS0 model version 1.2 and the mapping of it with PAF and GSBPM is done in connection with the activities that INSTAT currently carries out. The mapping was based on the evidence of each of the activities according to GAMS0 as well as the implementing activities. The mapping of GAMS0 was carried out based on the activity areas of GAMS0, implementation activities suggested in GAMS0 and current implementation activities in INSTAT.

During the year 2024, INSTAT will once again carry out a mapping of GAMS0 based on the new organizational structure of INSTAT and on the new activities that have been added during the last years. GAMS0 will be the future development system to control and promote the all INSTAT Management procedures.

3 Milestones on the Total Quality Model use in statistical production in INSTAT.

To ensure the attainment of top-notch quality standards, INSTAT devised a management framework aligned with the principles of Total Quality Management (TQM). Within this framework, the process of quality management encompasses several key components:

- 3 Quality assessment: The comprehensive evaluation of data quality relies on standardized quality criteria, and assessments can take either qualitative or quantitative forms.
- 4 Quality assurance: This involves implementing pre-planned and systematic activities aimed at monitoring, evaluating, and ensuring the quality of processes to meet the requirements set for statistical products.
- 5 Quality documentation is based on: Activities are outlined in accordance with the GSBPM model, and quality reports encompass a detailed explanation of the methodology employed, as well as the scope and quality of the statistical data provided. These reports meticulously assess various quality components, including relevance, accuracy, timeliness, accessibility, clarity, comparability, and coherence.

Legal basis where INSTAT relies for the process of quality management are:

- European Statistical System
- EC Regulation no. 223/2009 on European statistics;
- European Statistics Code of Practice, 2017;
- Quality regulations in the field of statistics.

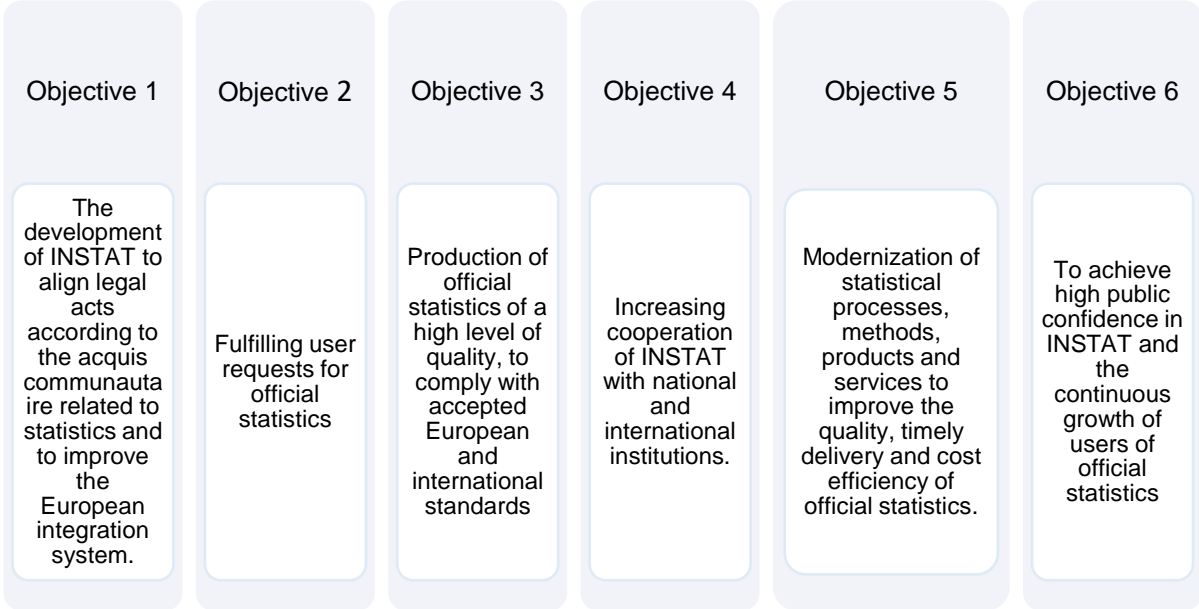
Adapted on our National Statistical System:

- Law No.17/2018 on official statistics;
- National Strategy for Development of Statistics;
- Official Statistics National Program, 2022 – 2026 (5 years program);
- Quality policy of INSTAT;
- Commitment to Quality.

The adaption of TQM is a basic framework for the on-going work of INSTAT for evaluation of the statistical products and processes for internal and external users. Quality Committee¹ in INSTAT is a place of decision making towards total quality management achievements and towards standardizations of all the statistical process.

In the figure below are presented the five principles with their strategic objectives of INSTAT Total Quality Management.

Figure 1. Total Quality Management (TQM) at INSTAT



Based on those objectives, INSTAT has in place measurement indicators to monitor realizing of them in time.

¹ https://www.instat.gov.al/media/2938/commitment_to_quality.pdf

INSTAT uses MetaPlus system - Structural metadata are used to define the data structures. SIMS system - Reference metadata and Quality reports² – in which are held the SIMS-based metadata, both in AL and EN language.

Metadata Handler is used by subject matters experts for Eurostat purposes.

INSTAT has increased the cooperation with Academic Institutions to invite them to take part in statistical activities planification as users of statistics but also to assist in exploring new technologies on statistical production process. They are also invited to use micro data for scientific research throw "SIMONA" – system for online access in micro data from inside or outside the country.

INSTAT is offering "Statistical database" tool - that enable the users selecting the parameters to define the quantity and format of presenting statistical data they need through INSTAT web.

3.1 GSBPM and documentation

At the beginning of 2017, INSTAT made an important decision to use, the General Statistical Business Process Model (GSBPM) to monitor the timeline of all statistical processes. This selection showed a strong commitment to ensure that the statistical processes remain relevant over time and to improve their efficiency. In 2018, INSTAT advanced the use of GSBPM by applying it directly to the description and documentation of statistical processes. This was an important step towards increasing the transparency and quality of statistical data, allowing the institution to focus on improving methodologies and documentation to ensure that statistical information is accurate and reliable. Sense, May 2021, INSTAT went a step further by updating the GSBPM to its latest version, v5.1.³ This step deepened INSTAT's commitment to use the latest standards and ensure that processes remain in line with international best practices.

Within INSTAT, the meticulous documentation of statistical activities is not just a procedural formality but a cornerstone of operational efficiency and data integrity. Every individual tasked

² <https://www.instat.gov.al/en/documentation/quality-in-statistics/quality-reports/>

³ <https://www.instat.gov.al/media/10674/quality-guidelines-version-20.pdf>

with overseeing a statistical endeavour is bound by the mandate to meticulously document each step of the process, adhering strictly to a prescribed documentation calendar. This commitment to documentation isn't merely about record-keeping; it's about ensuring transparency, accountability, and the ability to reproduce and verify results.

To streamline and standardize this critical process, the Quality and Metadata sector within INSTAT has undertaken the development of a comprehensive and robust standardized documentation model. This model serves as a universal framework, applicable across all statistical activities carried out within the institution, regardless of their nature, scope, or complexity.

At its core, the standardized documentation model aims to achieve several key objectives. Firstly, it provides clear guidelines and templates for documenting each stage of a statistical activity, from planning and data collection to analysis, interpretation, and dissemination of results. By following these standardized procedures, statisticians and researchers can ensure consistency and coherence in their documentation practices, facilitating easier cross-referencing and comparison between different projects and datasets.

Secondly, the model emphasizes the importance of metadata the contextual information that accompanies statistical data in enhancing its usefulness and interpretability. By systematically capturing and documenting metadata elements such as definitions, classifications, methodologies, and quality indicators, statisticians can enrich the understanding of the data and enable more informed decision-making by users.

Furthermore, the standardized documentation model incorporates provisions for quality assurance and control throughout the entire lifecycle of a statistical activity. By integrating quality checks and validation procedures at various stages, from data collection to final output, it helps identify and mitigate potential errors, biases, or inconsistencies, thus enhancing the overall reliability and credibility of the produced statistics.

By providing a common language and framework for documenting statistical activities, it enables smoother communication and collaboration among teams working on different projects or within different units of the institution.

Until 2022, INSTAT meticulously documented a total of 78 statistical activities in strict accordance with the GSBPM model, emblematic of their steadfast dedication to upholding this pivotal standard. By the close of 2023, this figure had risen to 83, signalling a discernible augmentation in capacities and notable advancements in the adoption and application of GSBPM within INSTAT's framework. This adept adaptation and effective utilization of GSBPM

underscore INSTAT's enduring commitment to enhancing the quality and precision of statistical data in Albania.

The increase from 78 to 83 meticulously documented statistical activities by the end of 2023 not only reflects quantitative growth but also signifies qualitative advancements within INSTAT's operations. It highlights the institution's proactive approach towards embracing best practices and continuously refining its processes to meet the evolving demands of data users.

INSTAT is the head of the National Statistics and during the years 2022 and 2023 it has changed for the systems of the statistical system not only in INSTAT but in the entire National Statistical System. During 2022 and 2023, a series of trainings and discussions regarding the implementation of the GSBPM were carried out in statistical agencies as well. In the framework of working together at the beginning of 2022, INSTAT together with the Bank of Albania carries out a plan for documenting all statistical activity according to GSBPM v5.1, carrying out a report according to SIMS v2 (ESMS/ESQRS). and for the year 2023 conducting an audit and self-assessment questionnaire (upgraded, October 2020) according to the INSTAT model and participation in the Staff Satisfaction Survey.

Based on the work plan created between the institutions and the close cooperation between them, they achieved one process of statistical documents in GSBPM, three reports according to SIMS v2. (ESMS / ESQRS), one self-assessment questionnaire and one in home Staff Satisfaction survey from the Bank of Albania.

Every year INSTAT implements its GSBPM for statistical activities. The GSBPM service provides the Identity and Metadata sector in cooperation with the persons responsible for the activities. In order to monitor all statistical processes, INSTAT performs control and creates monthly, 3-monthly, 6-monthly and 1-yearly reports for statistical activities and non-statistical activities. This monitoring is carried out in cooperation between the Sector of Quality and Metadata and the Sector of Coordination and Strategic Planning. These reports are for internal use.

Template for the Quality Audit report developed, November 2020 is approved to be applied.

INSTAT has established an internal system of staff education: INSTAT staff; ONAs staff; Data provider's staff. Also, INSTAT continuously invests for staff education through internal trainings and ESTP courses.

3.2 Cost versus effectiveness

Reduce the cost of statistical activities and increase the effectiveness of them is one of the main strategic objectives of the INSTAT.

The usage of administrative data for statistical production is on the list of the strategic objectives of the institute, as a good way towards cost effectiveness. Administrative data from tax – authority and social insurance are now used not only for producing directly statistics but also in different sampling processing steps like sampling design or combining different data collection modes.

Studies are done to distinguish differences between different data collection modes including also the combination with administrative data.

Administrative data taken from Ministry of Education, Ministry of Economy or many others are used successfully for producing many statistical indicators, as an obligation from the yearly statistical program.

Nowadays we continue the efforts to increase the cooperation with other institutions to get information they have for official statistics propose but also to influence on their system to increase the information that they should collect as an obligation to fulfil the Eurostat requirements.

In the mean time the combination of administrative data with survey data is seen as a way towards reduction of the response burden which nowadays is in a great focus.

"Open source" strategy is being explored as a development in statistics. This will be a challenge on the future.

The use of AI/ML are also discussed and there are some experimental tries to use them for the automatic codification procedure.

3.3 Continuations of the work on quality.

As a future task, I will emphasize the continuation of work on quality. The Quality System itself has the way of always thinking how to plan the process, to carry it out, to control the problem, to find the best solutions to the problems and to follow their improvement. So, this PDCA- (Plan-Do-Check-Act) is also an obligation towards always on improvements and effectiveness.

Planning a good survey and points to be discussed in the planning phase is a milestone of a "good quality statistic" in the meaning what we expect to have from this statistical activity at the end and at what precision we expect to have about main indicators. Planning is also the phase of decided about user need fulfilment versus cost.

Planning is also a phase of analysing the different data collection modes for both purposes. First analyse the administrative data for reducing the response burden, reduce the cost and also to ensure that the data could be collect only and only when they could not be ensuring other way. Also, with the aim of good quality of the information collected.

Dealing with the requirements, like precision of the estimate, looking for the use of administrative data in different phases of the survey process, calculating of the different quality indicators like stand errors, non-response rates and tried to use them on the improving of the statistics produced, fulfil documentation process and quality report part related with sampling, sampling design, weighting and calibration. So, this work continues and think of improvement in different dimensions like: process itself, software used, transmission of the knowledge to junior staff etc.

So, ensure that the PDA – cycle should be closed down in the sense that at the end of the activity we think what kind of lessons we have learned for the coming one.

3.4 Quality in official statistics and relations with external partners

The emphasis on quality is paramount in the production of official statistics at INSTAT. Recognizing this, INSTAT proactively established a dedicated organizational structure to oversee quality management, notably comprising a centralized unit specifically focused on quality assurance and improvement. This centralized unit served as a focal point for implementing and monitoring quality standards across all stages of statistical production.

Moreover, INSTAT took a proactive step by instituting a quality committee, tasked with convening regularly to deliberate on a spectrum of quality-related matters. As part of its mandate, the quality committee prioritized discussions on the development of comprehensive quality management guidelines. These guidelines served as a roadmap for ensuring consistency and excellence in statistical outputs.

In addition to guideline development, the quality committee spearheaded initiatives aimed at raising awareness of statistical quality issues among staff and other National Statistical Authorities (NSAs). Training programs were devised and executed to equip personnel with the requisite knowledge and skills to uphold stringent quality standards throughout the statistical production process. Furthermore, INSTAT's quality committee established clear and concise guidelines dictating the preparation of documentation at each stage of statistical production. These guidelines provided a framework for documenting methodologies, processes, and outcomes, ensuring transparency and reproducibility in statistical operations. Continual

monitoring and evaluation were integral components of INSTAT quality management framework. The quality committee diligently monitored the quality of documentation, utilizing feedback mechanisms to identify areas for improvement and implementing corrective measures as necessary.

By fostering a culture of quality and accountability, INSTAT aimed to bolster confidence in its official statistics, thereby enhancing their utility and reliability for decision-making purposes. This steadfast commitment to quality assurance and improvement underscored INSTAT dedication to producing accurate, timely, and credible statistical data to support evidence-based policymaking and foster socio-economic development in Albania.

4. Conclusions

INSTAT have been working hard on improvements of the quality. The work and improvements must continue to realize the statistical activities better and better to realize the statistical programme and Eurostat engagements. INSTAT realizes the official statistical program led by Statistical Law and ensuring the impartiality, timelines, accuracy, comparability and coherence.

GAMSO system will be the future development system to evaluate and to assist in the quality management processes in INSTAT. The process of mapping started, has served not only to build up manuals but also has engaged efforts to distinguish areas that could be improved.

INSTAT have done a great job on increasing the role of it as a leader of official statistics, but this work continues and is crucial on increasing the compliance with Eurostat requirements. Screening process have emphasized those needs and INSTAT is engaged to reduce those differences day to day.

Sustainable staff and transmitted the knowledge to the young staff remain important for the continuation on the work in INSTAT. Increasing the new staff engagement through trainings, working together, giving them all responsibilities and also learn from each other. This is the main method used until now and it will continue.

Increase the work on open source software to reduce the costs will be a priority.

The last lessons learned from the cybernetic attack have imposed plans to invest more on IT infrastructure including hardware, software, also review the guidelines and manuals on the use of them.

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