

Quality Framework and Implementation Aspects In TurkStat

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Abstract

Quality frameworks and quality management have become important topics for the National Statistical Institutes (NSIs) of the enlargement countries. The main objective is to provide high-quality products and services to meet user needs. Quality is, however, not only needed and valued for products and services; it also relates to the institutions as a whole as well as to the institutional environment. Hence, it requires actions for the overall management, organization, and governance.

Turkish Statistical Institute (TurkStat) has declared to apply the European Statistics Code of Practice (ES-CoP), the European Statistical System Quality Assurance Framework (ESS-QAF), and the ISO 9001:2015 Quality Management System in the implementation of quality frameworks. TurkStat is aware of the necessity of continuous improvement within the national statistical system to elevate the quality of statistics. The PDCA cycle (Plan-Do-Check-Act) is taken as the basic philosophy for ensuring continuous improvement. In line with those aspects, it is aimed at producing high-quality statistics and ensuring user needs.

TurkStat carries out quality assessments under the name of Quality Logo for the official statistics produced by the institutions and organizations within the scope of Official Statistics Program (OSP) and under the name of Quality Monitoring and Assessment Tool (QMAT) for the official statistics produced by TurkStat. In addition, TurkStat has "ISO 9001:2015 Quality Management System" certification. To implement systematic quality management, quality-related tasks are consolidated under the ISO 9001:2015 Quality Management System.

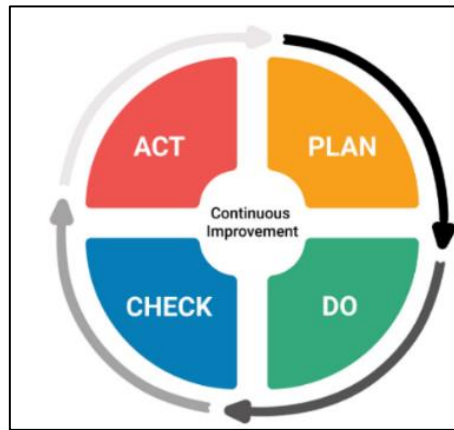
In this study, as TurkStat, which has been serving as the producer and coordinator of the Turkish Statistical System since its foundation, it is discussed in detail how the quality framework and quality management are implemented and what the good practices are.

Keywords: quality management, quality framework, coordination, quality assessment

1. Introduction

In a multi-actor system like the Turkish Statistical System, the concept of sustainability plays a crucial role in achieving successful large-scale cooperation and interoperability. The development of a value-driven approach, rather than a benefit-driven one, is emphasized in creating a sustainable statistical system. This involves maintaining constant collaboration with users and stakeholders, as well as increasing confidence in official statistics. These issues take center stage in this context. The quality assurance framework in official statistics serves as a vital infrastructure task that not only ensures the reliability of official statistics but also of the institutions producing them.

Figure 1: The PDCA cycle



The PDCA cycle is known as the Shewhart and Deming cycle. In light of the philosophy the cycle aims at, it is also called the continuous improvement cycle. Although the PDCA cycle seems to be an easy cycle consisting of 4 stages, internalizing this cycle and making it a lifestyle requires serious dedication (Figure 1).

The principle of continuous improvement is embraced in all official statistics produced within the Turkish Statistical System, and quality is approached through this perspective. The establishment of a quality assurance framework becomes imperative when implementing the principle of continuous improvement in official statistics. The quality principles formulated to ensure quality assurance in official statistics are structured across the dimensions of the producer, data provider, and user, which form the foundations of the production process. Therefore, in the production processes of official statistics, principles are in place that consider data collection, processing, analysis, and dissemination.

Quality in TurkStat are handled with two main elements. The first element is the quality of official statistics. The quality of official statistics is assessed by taking international quality principles and standards into consideration. Action plans are created and monitored to ensure

the sustainability of strengths and the improvement of weaknesses. The second element is ISO 9001:2015 Quality Management System. Quality management is a holistic system that handles all corporate work with the participation of senior management and employees.

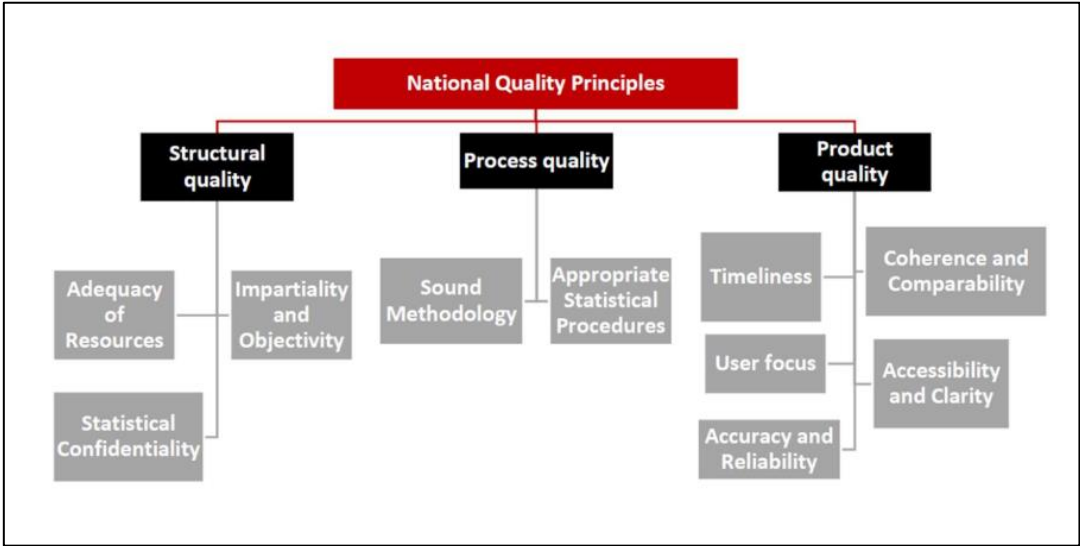
In this study, what kind of studies were carried out within the scope of both the quality of official statistics and quality management carried out by TurkStat. In addition, results and good practices are discussed.

2. Quality of Official Statistics in TurkStat

TurkStat carries out a series of studies to assess and improve the quality of official statistics in the Turkish Statistical System. It carries out these studies with the authority granted by the Turkish Statistical Law and the leadership role of the Data Quality Control Board (DQCB). The aim of the studies is to increase the satisfaction and trust of users to the highest level by improving the quality of statistical products.

TurkStat has two types of quality assessment systems: Quality Monitoring and Assessment Tool (QMAT) and Quality Logo. QMAT is for official statistics produced by TurkStat, and Quality Logo is for official statistics produced by Other National Authorities (ONAs). Both studies were based on compliance with national quality principles, which include the 10 principles of the ES-CoP below Figure 2 (Eurostat, 2017).

Figure 2: National Quality Principles



2.1 Data Quality Control Board (DQCB)

Data Quality Control Board (DQCB) is responsible for determining the data quality control principles to be applied in all processes in the production of official statistics, scientifically

examining the official statistics produced within the scope of the Official Statistical Program (OSP), and monitoring, examining and evaluating their compliance with the determined classification, standards and data quality principles. In addition, the Board is authorized to monitor, examine and evaluate all statistical studies in the OSP and, when necessary, to carry out on-site quality control studies or to have them carried out by working groups.

DQCB consists of 9 members, including 7 department heads and 1 statistical consultant, under the chairmanship of the Vice President determined by the President. The Board meets at least once a month.

DQCB, which can serve as an example of good practice in leadership in quality studies, plays a very important role in the assessment and improvement of official statistics. DQCB, which is the approval authority in many stages of QMAT and Quality Logo studies, allows quality processes to progress from the perspective of senior management.

2.2 Quality Monitoring and Assessment Tool (QMAT)

Quality Monitoring and Assessment Tool (QMAT) is designed to assess the quality of official statistics produced by TurkStat and to improve them with improvement actions. Official statistics are assessed using advanced methods according to many international quality methodologies.

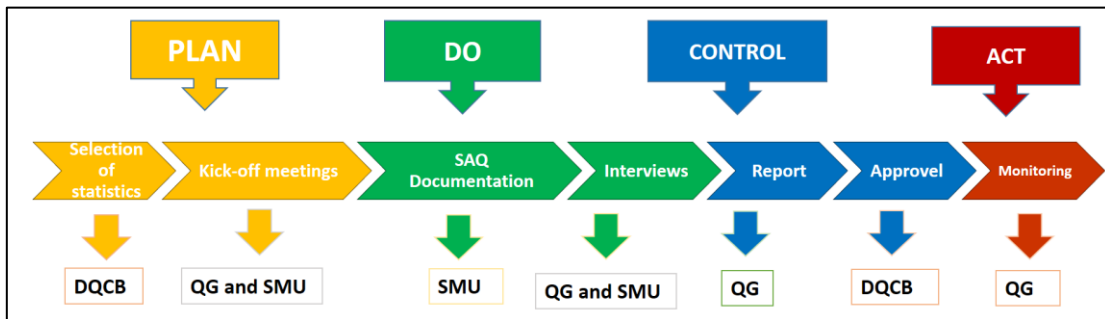
The design phase of QMAT started with a detailed examination of the UNECE Generic Statistical Business Process Model (GSBPM) quality indicators (UNECE, 2019). Quality indicators were analyzed in the breakdown of data source, ES-CoP principle, ES-CoP indicator, GSBPM process levels. A working group with broad participation was established by DQCB to select quality indicators that are applicable in TurkStat. With this working group, the implementation status of each quality indicator was discussed and an applicable quality indicator set was obtained. The resulting quality indicator set was converted into a self-assessment questionnaire.

While designing the self-assessment questionnaire, some specific questions were added by using the European Self-Assessment Checklist for Survey Managers (DESAP) methodology for survey-based statistics and the Methodologies for an Integrated Use of Administrative Data (MIAD) methodology for administrative record-based statistics. The questionnaire, which can be applied to both data sources, went through pre-test and pilot study stages and began to be implemented as a result of various revisions. Each question in the questionnaire is linked to a GSBPM quality indicator and the ES-CoP quality principle.

The fact that quality processes are evidence-based makes the process effective and concrete. In this respect, a checklist of documents that must be submitted for some questions in the self-assessment questionnaire has also been created.

The main elements of QMAT are the self-assessment questionnaire, quality assessment report and improvement action plan. The main actors in QMAT are DQCB, Quality Group (QG) and Subject Matter Unit (SMU). QMAT enables the deployment of quality culture by increasing communication and cooperation between these actors. It is carried out based on the PDCA cycle. The implementation process of QMAT is shown in Figure 3.

Figure 3: The implementation process of QMAT



The improvement actions defined within the scope of QMAT, which has been officially implemented since 2020, are regularly monitored in the Microsoft Power BI application and reported in detail to the senior management. 94 improvement actions were defined for 8 statistics as a result of the QMAT process. The most number of improvement actions have been defined for quality principle “Accuracy and Reliability”

QMAT is a very important tool in terms of improving the quality of official statistics produced by TurkStat. QMAT stands out as a good practice for the indicators 4.2 and 4.3 in ES-CoP.

2.3 Quality Logo

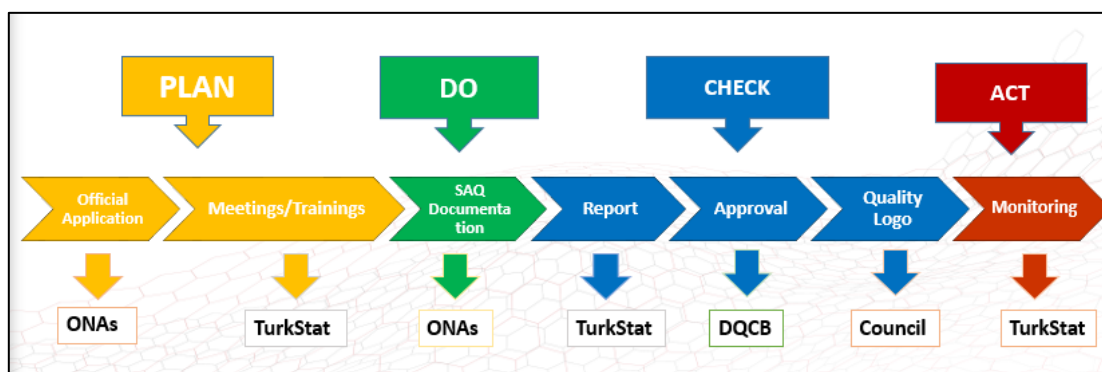
The Quality Logo is applied to increase and improve the quality of official statistics produced by ONAs that produce statistics within the scope of the OSP. Quality Logo is on a voluntary basis. ONAs carry out an official application to TurkStat to get a Quality Logo for their official statistics.

The main purposes of the Quality Logo are; compliance of the official statistics produced by ONAs with quality principles, raising awareness of quality in official statistics, increasing cooperation with ONAs, sharing experiences, increasing user trust and satisfaction.

The Quality Logo is given for 5 years. Official statistics, which receive a Quality Logo, can reapply at the end of the 5 year term. ONAs that are entitled to receive the Quality Logo are rewarded with the Quality Logo at the Statistics Council held every year.

The main elements of the Quality Logo are the self-assessment questionnaire, quality assessment report and improvement action plan, as in QMAT. The main actors in the Quality Logo are ONAs, TurkStat, DQCB and Council. The Quality Logo seriously improves cooperation and coordination especially between TurkStat and ONAs. ONAs are an encouraging tool to improve the quality of the official statistics they produce. It is implemented based on the PDCA cycle. The implementation process of the Quality Logo is shown in Figure 4.

Figure 4: The implementation process of the Quality Logo



Improvement actions defined within the scope of the Quality Logo are regularly monitored in Microsoft Power BI application and reported in detail to senior management. 284 improvement actions were defined for 53 statistics that received the logo. The most number of improvement actions have been defined for quality principle “User Focus”.

There are many issues developed by ONAs within the scope of Quality Logo studies. Examples of these; standard metadata, a detailed definition of the statistical production process, revision and error policies, user satisfaction surveys, user focused website designs and user focused dissemination systems.

The Quality Logo is a very important tool in terms of improving the quality of official statistics produced by ONAs. This tool stands out as a good practice for the indicators 1bis.1, 1bis.2, 4.2 and 4.3 included in the ES-CoP.

3. ISO 9001:2015 Quality Management

ISO 9001:2015 is an internationally widely accepted quality management system standard determined by the International Organization for Standardization (ISO). ISO 9001:2015 certificate is a document that shows an institution's compliance with the quality management system requirements and standards set by ISO. Institutions and organizations that receive ISO 9001:2015 certification declare that they meet the quality standards determined by ISO.

ISO 9001:2015 has many contributions, including prioritizing user needs and expectations, providing better product and service delivery, increasing effectiveness by identifying risks, opportunities and targets, increasing employee performance and motivation, providing a systematic approach to possible problems and strengthening the corporate image at national and international levels.

ISO 9001:2015 studies at TurkStat started with meetings and trainings. In the preparation of the Quality Handbook, which includes institutional studies in accordance with the requirements of the standard, the documentation needed from the relevant units on process, risk, target, training, support services and human resources has been completed.

In the Quality Workshop held afterwards, the current situation of TurkStat within the framework of ISO 9001:2015 was evaluated with an external expert. ISO 9001:2015 "Quality Workshop Action Plan", consisting of the issues identified and improvement actions defined after the workshop. In addition, quality management representatives were appointed for each department. All actions determined within the scope of "Quality Workshop Action Plan" were successfully completed by the responsible departments before the internal audits. In this context; studies such as the quality handbook, process inventory, consolidated risk table, strategic documents, documentation for procedures and supplier evaluations have been completed. One of the most important stages in this process is undoubtedly the publication of the TurkStat Quality Policy on the website.

Afterwards, the internal audit plan was created. In accordance with the plan, together with the auditors holding the internal auditor certificate. Each unit was visited, the ISO Internal Audit Questionnaire was applied, the necessary information and documents were requested, and internal audit reports were prepared. A top management meeting was held to discuss and assess the studies carried out within the scope of ISO 9001:2015. The issues identified at the meeting were evaluated and the ISO Quality Action Plan was created. With external audits; the auditors visited the relevant units on-site, examined the information and documents on-site, and reported their evaluations. As a result of all assessments; TurkStat was entitled to receive the ISO 9001:2015 Quality Management System certification.

4. Result and Discussion

When TurkStat's experiences in the establishment and deployment of quality systems are considered, three main elements come to the fore. The first is leadership. One of the most important actors in quality systems is leadership. Leadership can be achieved by the institution's top management having a quality perspective and vision. It is much more effective to implement quality in business environments where leaders believe in it, internalize it and encourage it to be implemented. Because the leadership perspective spreads to all employees in succession. The second element is the participatory process. The participatory attitude of institutional employees in quality systems plays a major role in the establishment and dissemination of these systems. The fact that the employees of the institution believe in the quality philosophy and contribute to it makes the process holistic. It allows many studies to be done more efficiently and with higher quality. The third main element is user focus. Users are at the core of quality. Whatever the product you produce and offer, users are the actors who determine the quality of that product and, accordingly, the institutional quality. Users' needs, satisfaction and trust are what make quality essential.

Producing the statistics with strong leadership and a participatory process and presenting them to the users will enable their needs to be met to a greater extent. It will add value to the quality of statistics along with international quality standards and a continuous improvement philosophy. In this way, user satisfaction and trust will increase, and both product quality and institutional quality perception will improve.

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