

# TURKSTAT QUALITY ASSURANCE FRAMEWORK

2015

# TURKISH STATISTICAL INSTITUTE QUALITY ASSURANCE FRAMEWORK

## Introduction

In an age of rapid change, rapidly changing technology and rapidly changing social needs, it becomes necessary for countries to constantly renew and develop themselves to adapt to the changing world. Today, globalization can be defined as a process involving a comprehensive transformation in economic, political, technological and cultural fields. User needs increase and becomes more diverse as a result of globalization. At this point, the need for a more powerful and coherent statistical system is emerging as necessity for more timely, more detailed and more comprehensive statistics.

Statistics plays an important role in the information age concept. Determination of the national and international, social, economic and other development goals and the success of these goals depend on the timely and reliable statistics. Economic and social developments can be managed to the degree that they can be measured. This can be made possible with reliable statistical information.

TurkStat acts with the vision of "establishing a user-centered, sustainable statistical system based on the international standards", and constantly continues to increase the production of comprehensive and high quality statistics through the information collected from respondents.

In order to take its works forward, TurkStat constantly renews itself in corporate level as well as in areas of statistical methodology and its applications. TurkStat takes an approach to provide guidance to the statistical studies by sharing the acquired knowledge and experiences with national and international institutions and organizations.

Turkish Statistical Institute's Quality Assurance Framework is based on the European Statistics Code of Practice. Within the framework of these principles and the institutional strategic plan, the entire statistical business process from the production of data to the dissemination is configured on a quality axis. The quality of the statistical processes is closely related to the quality of the product/output as well as to the quality of all the activities carried out at each stage of the production, quality of the resources used, the human resources and the quality of the management involved in all these activities. Hence, quality requires a whole system that performs standardization and improvements in all goods and services produced.

## Institutional Background

In our country, administrative record systems and statistics occupied an important place throughout the history. In Ottoman Empire data collection activities performed for the purpose of determining the boundaries of land, collecting tax and allocating land have a long history going back to the 14th century. In Republic of Turkey period, the Central Statistical Office, predecessor of today's Turkish Statistical Institute (TurkStat), has been

established in 1926 to portrait the current situation and to collect the necessary information according to the requirements of the era.

As the producer and coordinator of official statistics, TurkStat has passed through important stages since 1926. Since its establishment, TurkStat is acting with a mission to produce and present high-quality, timely, reliable and impartial statistics by taking into account the needs and priorities of national and international users and following the international standards.

The Institute is structured as the Presidency of Turkish Statistical Institute and the Statistical Council, based on the Statistics Law of Turkey No 5429 which came into force in 2005. TurkStat consists of a central office and 26 regional offices. TurkStat has the roles of coordination and the production of official statistics. While the statistics production process is executed by the coordination of central office and 26 regional offices of TurkStat, the coordination of official statistics is performed via the Statistical Council and the Official Statistics Program (OSP).

The Statistical Council is established to advise on the preparation and implementation of the Official Statistics Programme (Article 3 of Law No. 5429) and to advise on functions and the development of the official statistics; to determine the areas where official statistics are needed to assess the needs and to provide opinions and suggestions for the future works to be carried out (Article 20 of Law No. 5429). The Statistical Council consists of 41 members and meets at least once a year headed by the TurkStat President.

After Statistics Law came into force, Turkish Statistical System has been restructured to include the quality principles accepted by the international organizations. A programmed period to ensure the efficiency in Turkish Statistical System has begun with the 2007-2011 OSP and the second five year programmed period began in 2012. During the second programmed period, 65 organizations and 3 associations were included in the statistical system; the number of statistics produced in 2015 has reached 2979. <sup>1</sup>

TurkStat is responsible for coordinating the OSP. OSP is prepared for a 5-year period in order to determine the basic principles and standards for the production and dissemination of official statistics and to produce reliable, timely, transparent and impartial data required at both the national and international level.

The Programme prevents repetitions in the production and dissemination of official statistics, decreases the burden on respondents, saves on labor force, resources and enhances the trust in official statistics. Furthermore, responsible institutions and related institutions are defined; data collection and compilation methodology and periodicity/schedule of publication of official statistics are defined by OSP.

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<sup>1</sup> Official Statistics Portal, <http://www.officialstatistics.gov.tr/?q=en>

## Quality Policy

TurkStat's Strategic Plan (2012-2016)<sup>2</sup> was prepared based on the principles of quality by knowing the vital role played by statistics in this information era and in line with the developments in international arena. The vision stated in the Strategic Plan is "to establish a user-centered, sustainable statistical system based on the international standards". The vision is not only focused on statistical system of TurkStat itself but it is also focused on the Turkish Statistical System as a whole.

The concept of quality is not only considered as statistical product quality nowadays but also considered as the whole process quality from the specification of data/information needs to the dissemination of statistics. This approach can be expressed as "integrated quality in statistics" which requires the development of a robust infrastructure based on national and international standards and building of the systems on this foundation. TurkStat implements various studies in order to ensure integrated quality within its organizational structure as well as in its production processes. The quality policy of TurkStat is based on European Statistics Code of Practice and Quality Assurance Framework. The main elements of TurkStat's quality policy aimed at improving the quality of all products and services are as follows:

### Structural quality

- Professional independence
- Mandate for data collection
- Adequacy of resources
- Commitment to quality
- Statistical confidentiality
- Impartiality and objectivity

### Process quality

- Sound methodology
- Appropriate statistical procedures
- Non-excessive burden on respondents
- Cost effectiveness

### Product quality

- Relevance
- Accuracy and reliability
- Timeliness and punctuality
- Coherence and comparability
- Accessibility and clarity

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<sup>2</sup> TurkStat Strategic Plan (2012-2016), [http://www.turkstat.gov.tr/jsp/duyuru/upload/stratejik-plan-2012-2016\\_ENG.pdf](http://www.turkstat.gov.tr/jsp/duyuru/upload/stratejik-plan-2012-2016_ENG.pdf)

## Compliance with the Code of Practice

TurkStat provides outputs and services in compliance with the Code of Practice (CoP). The principles of the CoP and TurkStat's compliance with the CoP are explained below.

### 1. Professional independence

Professional independence assures the trust on statistics. Professional independence of TurkStat is guaranteed by law and regulations. TurkStat acts independently in the selection of data sources, statistical methods and procedures, the type, content and time of dissemination and the application of statistical confidentiality. The scientific and technical autonomy of TurkStat from external interference in producing and disseminating official statistics is clearly stated in the Statistics Law (Article 17).

Official Statistics Programme is prepared for a 5-year period in order to determine the basic principles and standards for the production and dissemination of official statistics and to produce reliable, timely, transparent and impartial data required at the national and international level. The Statistics Law (Article 3) gives coordination role to TurkStat in the planning process of the 5-year Statistical Programme and its annual revisions.

The President is appointed by the Council of Ministers' decision for a term of five years. After the completion of a five year term, the President may be re-appointed to the same position for one more term. Before the expiry of the official term, the President cannot be removed from his post. The removal of the President before the expiration of the official duty term is possible only in case of a disruption to carry on the duty because of a health problem testified by an official medical report or upon the loss of any qualification required for this post (Article 22, 23).

TurkStat shall act in accordance with the "The Directive on Principles and Procedures Related to the Misuse and Misinterpretation of Official Statistics"<sup>3</sup> in case of misuse or misinterpretation of TurkStat's statistics in the media. Public intervention is applied in those cases if necessary.

### 2. Mandate for data collection

TurkStat has a clear legal mandate to collect the data needed for the implementation of the Official Statistical Programme. TurkStat is entitled to collect data directly from statistical units and can access administrative records for statistical purposes. The obligation to reply to all surveys or censuses is stipulated by the Statistics Law, Article 7.

Article 54 of the Statistics Law states that the reporting units can be fined if they fail to submit requested data to TurkStat within the time frame specified, or if they submit incomplete or incorrect information. TurkStat has the legal right to access administrative data.

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<sup>3</sup> "The Directive on Principles and Procedures Related to the Misuse and Misinterpretation of Official Statistics, <http://www.tuik.gov.tr/UstMenu/yonetmelikler/ResmilstatistiklerinYanlisKullanilmasi.pdf>

According to Article 9 of the Statistics Law, the institutions and organizations are under the obligation to submit or open their records and other data files they compile, process and store related to their work to the Presidency to be used in the production of official statistics.

### **3. Adequacy of resources**

Most of the activities and services implemented by TurkStat are financed from the general government budget and the Revolving Fund of TurkStat. In addition, funding from EU projects and other international projects supports the variety and the content of TurkStat's activities. TurkStat overviews its activities during the preparation of its multi-annual budget by regarding the financial requirements, human resources and IT resources.

In order to produce high-quality outputs, TurkStat gives special importance to the human resources. TurkStat has a management approach recognizing the employees and encouraging them to take their own responsibilities, providing guidance in their works and open to different ideas. The management structure is flexible to easily adapt to the changing conditions. Training programs are implemented to increase the knowledge and competency of staff and improve efficiency.

The information received by the interviewers involved in the data collection activities has an undeniable impact on the quality of data. Interviewers (Level 4) National Occupational Standards and Interviewers (Level 4)<sup>4</sup> National Competence Standards are prepared to determine the interviewer's competence whether they have a sufficient qualification to succeed in the profession and to allow them to prove their competence with a valid and a reliable document.

TurkStat continuously reviews the information technology needs both qualitatively and quantitatively to ensure product quality and service quality. Also uses information technologies as an enabler for production and presentation of high quality statistics. TurkStat develops in house IT applications for institutional needs, provides technical support to internal and external stakeholders according to the user needs.

### **4. Quality Commitment**

TurkStat works in line with the code of practice and quality assurance framework. Article 4 of the Statistics Law No. 5429 covers the principles on quality. Data Quality Control Board is established with the Law (Article 41) to evaluate and examine statistical works in terms of scientific quality and compliance with international standards and to perform quality control studies when needed.

Product quality reports for all outputs are prepared regularly by TurkStat. Internal audits self-assessments and quality reports are used to monitor the quality for all stages of the statistical production process. Quality reports<sup>5</sup> based on international quality principles are prepared and published in the TurkStat website for public use.

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<sup>4</sup> Interviewer (Level 4) National Competence, [http://portal.myk.gov.tr/index.php?option=com\\_yeterlilik\\_arq&Itemid=450](http://portal.myk.gov.tr/index.php?option=com_yeterlilik_arq&Itemid=450)

<sup>5</sup> Institutional Quality Reports, <http://www.tuik.gov.tr/jsp/duyuru/upload/kaliterapor/kurumsalkalite.html>

Production Process Schedule is created according to the business processes, and it is monitored and reported regularly. Performance evaluations for the regional offices are done regularly to detect problems and the defects in the production process. In order to increase the quality of data collected from the field, regular quality controls, monitoring and measuring of the quality are done through the Computer Assisted Telephone Interviewing (CATI) <sup>6</sup> and the results are reported.

TurkStat adopts a process-oriented production system to ensure the quality. TurkStat standardizes business processes within the framework of Generic Statistical Business Process Model (GSBPM). TurkStat aims to perform process improvements by finding the common processes and standardizing these processes, configuring and rebuilding the metadata management system. TurkStat conducts self-assessments in accordance with quality principles, identifies the shortcomings and reflects the results to the quality action plan.

## **5. Statistical Confidentiality**

TurkStat is committed to maintain the confidentiality of information collected from the statistical units and observes statistical confidentiality strictly. Article 13, 14 and 15 of the Statistics Law establishes a confidentiality framework covering the protection of confidential data, disclosure, sharing and the use of confidential data. Legal provisions on penalties are included in the Article 53 of Statistics Law.

The procedures and principles about confidentiality are specified in the regulation of "Procedures and Principles of Data Confidentiality and Confidential Data Security in Official Statistics"<sup>7</sup>. Data Confidentiality Specialized Commission is established according to the Article 13 of Statistics Law and the Commission conducts studies to track the new developments in data confidentiality and security, specifies institutional strategies on data confidentiality and security, and provides feedback to determine which data is confidential in the context of official statistical studies.

TurkStat grants access to micro-data in accordance with the provisions of Article 14 ("use of individual data") of the Statistics Law. Micro data are made available after all identifying information is removed from the data and on the condition that they will be used only for scientific purposes. Micro data users sign a protocol to use the data. They are strictly supervised, work on stand-alone computers, and their outputs are checked by TurkStat experts before they take copies away. The Directive on the Access and Use of Micro Data of TurkStat"<sup>8</sup> sets out procedures for micro data access and usage.

TurkStat staff sign a confidentiality commitment document which indicates that the staff will not disclose any confidential data within their responsibility to anyone other than the authorized personnel during or after their duty, and will not allow access to confidential and

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<sup>6</sup> Quality Control Activities Methodology with CATI, [http://www.tuik.gov.tr/jsp/duyuru/upload/kaliterapor/CATI\\_Uygulama\\_Metodolojisi.pdf](http://www.tuik.gov.tr/jsp/duyuru/upload/kaliterapor/CATI_Uygulama_Metodolojisi.pdf)

<sup>7</sup> Regulation of Procedure and Principles of Data Confidentiality and Confidential Data Security in Official Statistics", <http://www.turkstat.gov.tr/UstMenu/yonetmelikler/Regulations.pdf>

<sup>8</sup> Directive on the Access and Use of Micro Data of TurkStat, [http://www.tuik.gov.tr/UstMenu/yonetmelikler/Yonerge\\_MikroVeri.pdf](http://www.tuik.gov.tr/UstMenu/yonetmelikler/Yonerge_MikroVeri.pdf)

individual data by third parties. Penalties specified in Article 53 of Law No. 5429 are imposed on people who fail to comply with these obligations.

TurkStat takes data security measures in the context of TurkStat Information Strategy. To ensure the security of databases, flow of data in the production processes is controlled and disciplined in terms of which data will be used at which stage. Access to the databases is provided through the applications developed in-house and user's access is managed in a role-based system tool. TurkStat supports ISO 27001 certification studies.

## **6. Impartiality and objectivity**

TurkStat respects scientific independence in producing and disseminating official statistics and carries out its tasks in an objective manner. Decisions on the selection of statistical methods and distribution of statistics are taken according to the methodology and reliability of the relevant statistics.

The data are produced by TurkStat on a strictly objective and impartial basis. Advance release calendar for all official statistics of Turkey are released on TurkStat's web site <sup>9</sup> and official statistics portal <sup>10</sup> at the end of each year.

TurkStat ensures equal access to the new data released. The data is not given to anyone beforehand in any way. Equal access is explicitly laid down in Article 12 of the Statistics Law of Turkey. Any changes in the pre-announced publication dates in the release calendar are announced in advance for reasons of transparency. Procedures and principles on this subject are stated in the "Directive on the Procedures and Principles of the Work Calendars of TurkStat" <sup>11</sup>.

TurkStat is in close contact with the international organizations such as the Eurostat, UNECE, OECD, ILO, IMF and World Bank about its methodological studies. Use of internationally accepted standards and methodological recommendations is a part of the institutional culture.

Metadata is presented to the users to help them to understand and interpret the data correctly. The users are informed about the revisions and methodological changes in accordance with the "Instructive on Methods and Principles Regarding Revisions on Statistical Data Produced by TurkStat"<sup>12</sup>. If errors are identified in published statistics, the errors are corrected and the users are informed immediately according to the "Directive on Principles and Procedures Related to Correction of Errors of the Statistical Data and Information Published by TurkStat"<sup>13</sup>.

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<sup>9</sup>National Data Release Calendar, <http://www.turkstat.gov.tr/ingtakvim/tkvim.zul#tb1>

<sup>10</sup> Official Statistics Portal, <http://www.officialstatistics.gov.tr/?q=en>

<sup>11</sup> Directive on the Procedures and Principles of the Work Calendars of TurkStat, [http://www.tuik.gov.tr/UstMenu/yonetmelikler/DokYonerge\\_20150512.pdf](http://www.tuik.gov.tr/UstMenu/yonetmelikler/DokYonerge_20150512.pdf)

<sup>12</sup> Instruction on Methods and Principles Regarding Revisions on Statistical Data Produced by Turkish Statistical Institute, [http://www.turkstat.gov.tr/UstMenu/yonetmelikler/Rev\\_Yonerge\\_Yayim\\_27.02.2014\\_ENG.pdf](http://www.turkstat.gov.tr/UstMenu/yonetmelikler/Rev_Yonerge_Yayim_27.02.2014_ENG.pdf)

<sup>13</sup> Directive on Principles and Procedures Related to Correction of Errors of the Statistical Data and Information Published by Turkish Statistical Institute, [http://www.tuik.gov.tr/UstMenu/yonetmelikler/Yonerge\\_IstatistikselVeriBilgi.pdf](http://www.tuik.gov.tr/UstMenu/yonetmelikler/Yonerge_IstatistikselVeriBilgi.pdf)

## 7. Sound Methodology

International standard classifications ensure comparability of statistical data both in national and international arena. Knowing the importance of using internationally recognized classifications, TurkStat gives priority and importance to data harmonization, and works in line with the international standards and follows the respective guidelines. The provisions on the use of classifications are clearly defined in the Article 12 of Statistics Law.

TurkStat, as the coordinator of the statistical system, opened the Classification Server<sup>14</sup> for use in 2007 in order to increase the quality and comparability of the data. Classification Server includes translations and adaptations of international classifications. Also, national classifications and the correspondence tables as well as dictionaries for classifications are published on the classification server. Classification Server acts as a platform for all users.

In accordance with national requirements, national classifications are prepared in collaboration with stakeholders. TurkStat collaborates with its stakeholders and prepares national classifications. NACE Rev.2 Six Digit Economic Activities Classification derived from NACE Rev.2 and TAORBA 2008 (National Agriculture, Forestry and Fishing Products Classification) derived from CPA 2008 and PRODTR (an extended version of PRODCOM) are some of the specific examples of national classifications.

Registration systems based on administrative records are one of the main statistical data sources. Efficient use of administrative records in statistics is only possible if these records are kept according to the internationally accepted standards. The relevant provisions are stated in the Article 10 of the Statistics Law to ensure the compliance of the records kept by the institutions and organizations with the standards according to their areas of specialization.

TurkStat also provides support to other public institutions and bodies who keep administrative records and produce statistics for their own purposes. TurkStat organizes informative meetings about classifications and administrative records in Official Statistics Working Groups with the aim of promoting the use of sound methodologies in public institutions and organizations. In addition to this a strategic plan<sup>15</sup> was prepared in order to support and ensure the development of stakeholder institutions' methodologies.

TurkStat regularly analyses the Address Based Population Registration System and National Address Framework which provides framework to household surveys, and collaborates with the responsible institution, "General Directorate of Civil Registration and Nationality", to take the necessary measures. Business Registers Committee was formed under the Official Statistics Programme for monitoring and updating the business registers.

The real power of the Institution is the qualified human resources it employs. TurkStat adopts the development of competencies and capacities of its employees at all levels<sup>16</sup>. To improve the quality of human resources and to ensure the use of these resources in the most

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<sup>14</sup> Classification Server, <http://tuikapp.tuik.gov.tr/DIESS/>

<sup>15</sup> Strategy Document on the Development of Methodology of Institutions Involved in the Official Statistics Program

<sup>16</sup> Institutional Training Strategy Document (2012-2016)

efficient way, continuous education programs are applied in accordance with the "Directive on the Training and Assessment Meetings"<sup>17</sup>. The staff are informed about the new developments to increase their level of knowledge by participating in trainings, seminars, internship programs in an international level, also the staff has the opportunity to practice their information on the job. In addition, TurkStat gives special importance to increase the statistical knowledge of institutions and organizations under the Official Statistics Programme, and organizes regular trainings for these institutions each year.

## 8. Appropriate Statistical Procedures

The Article 9 of the Statistics Law covers the principles of access to administrative data. TurkStat has the legal right to access the administrative data. Also, regarding the national register systems Article 10 states that "Institutions and organizations are under the obligation to establish and update their national register systems in their areas of work in line with the standards as defined by the Presidency, and open these registers to the Presidency for the statistical use of them".

TurkStat makes assessments of official statistics regularly in line with the national quality principles, standards and indicators.

National Quality Principles and Standards are developed to ensure the production of official statistics in accordance with the quality principles, to create awareness about the national quality principles, standards and indicators, to enhance inter-agency cooperation, to ensure sharing of experiences and to identify the improvement areas in statistics. National Quality Principles and Standards comprise 10 quality principles, 16 quality standards and 41 indicators. Quality assessments are carried out by specifying the level of compliance with these principles. National quality principles, standards and indicators are explained in detail in the publication named "National Quality Principles and Standards of Official Statistics", the evaluation of statistics and the processes about the usage of quality logo are also mentioned in the publication<sup>18</sup>.

TurkStat places emphasis on the importance and priority of the administrative records in statistics production. 25 Priority Transformation Program was designed to improve the applicability and effectiveness of the 10 th. Development Plan (2014-2018). "The Statistical Information Infrastructure Development Program"<sup>19</sup> is one of those Priority Transformation Programs, and it is primarily prepared to include the administrative records in the statistical production processes. The action plan prepared within the framework of this program includes 28 actions and TurkStat is responsible from the coordination of the program. On the other hand, the quality components related to administrative data and use of

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<sup>17</sup> Directive on the Training and Assessment Meetings, [http://www.tuik.gov.tr/UstMenu/yonetmelikler/Egitim\\_ve\\_Degerlendirme\\_Toplantilari\\_Uygulama\\_Yonergesi.pdf](http://www.tuik.gov.tr/UstMenu/yonetmelikler/Egitim_ve_Degerlendirme_Toplantilari_Uygulama_Yonergesi.pdf)

<sup>18</sup> Quality Assessments of Official Statistics, <http://www.resmiistatistik.gov.tr/?q=tr/content/kalite-0>

<sup>19</sup> "The Statistical Information Infrastructure Development Program Action Plan, <http://www.kalkinma.gov.tr/Pages/OncelikliDonusumProgramlariEylemPlanlari.aspx>

administrative data for statistics production are described in detail in the publication named as "The Role of Administrative Records in Statistics Production"<sup>20</sup>.

TurkStat makes assessments and evaluation of administrative records and surveys conducted under the responsibility of public institutions and organizations for classifications, coverage and timeliness of these data by using "Administrative Records, Surveys and Institutional Assessment" study. TurkStat also determines the usability of these records in the statistics production processes. National Registry System Standards work has been started to develop common definitions and standards, and to ensure the configuration of administrative records according to these standards. Therefore there will be no need to re-arrange the administrative records when they are used for statistics production purposes.

TurkStat performs survey designs, sample selection and estimation in accordance with the international literature. For this purpose, methodological documents and directions developed by European Union Statistical Office (Eurostat) and United Nations are followed. New developments and designs in accordance with data quality components are reviewed regularly.

Before the field work starts, questionnaires are examined and tested thoroughly. The publication of "Handbook of a Research in Good Quality"<sup>21</sup> is presented to the public to make the statistical procedures clearer by defining the stages and processes of survey design, by specifying the items that effects the data quality in each stage, by specifying which stages should be returned to at the critical control points.

Questionnaire development is very fundamental for the statistical measurements based on surveys. A well designed questionnaire facilitates effectiveness of data collection and improves the quality of produced data. In "How to Develop a Questionnaire? All Steps from Design to Testing"<sup>22</sup> guidebook, questionnaire development from conceptualization to data collection stages is handled using a process approach.

The "Field Application Checklist" was developed with the aim of ensuring and monitoring the completion of critical works and procedures in data collection process. The checklist is a commitment document indicating the data collection procedures according to defined criteria.

Most of the data collection activities are carried out through computer-assisted personal interviews (CAPI) in households and web-based surveys (WBS) in enterprises. In order to prevent errors in data entry, edit rules are embedded in the electronic questionnaires and data entry programs. Micro and macro analysis on data are done through statistical software.

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<sup>20</sup> Role of Administrative Records in Statistics Production,  
[http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT\\_ID=0&KITAP\\_ID=268](http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT_ID=0&KITAP_ID=268)

<sup>21</sup> The Handbook of a Research in Good Quality,  
[http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT\\_ID=18&KITAP\\_ID=291](http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT_ID=18&KITAP_ID=291)

<sup>22</sup> How to Develop a Questionnaire? All Steps from Design to Testing,  
[http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT\\_ID=18&KITAP\\_ID=293](http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT_ID=18&KITAP_ID=293)

Appropriate correction methods for missing data are determined depending on the data. The methods used in corrections or imputations are published as part of the institutional quality reports.

The revision policy of produced statistics is presented to the public on the web site. The general framework of which statistics to be revised for which reasons and in which detail the revisions will be done has been identified in the "Instruction on Methods and Principles Regarding Revisions on Statistical Data Produced by Turkish Statistical Institute"<sup>23</sup>.

## **9. Non-excessive burden on respondents**

As part of the Strategic Plan, TurkStat continuously measures and monitors the burden imposed on respondents and takes necessary measures to reduce the response burden. TurkStat has begun to measure the burden on respondents since 2013. The study of "Burden of Surveys on Respondents" is carried out every two years and the results are reported<sup>24</sup>.

In 2014, a decision was taken to move all business surveys to the web-based survey system to reduce the burden. In addition to this, electronic data transfer (e-VT)<sup>25</sup> platform where the data can be directly extracted from the accounting records of businesses has started to be used as an alternative data collection method for annual business surveys. TurkStat encourages the use of administrative records as much as possible to prevent the duplication of work in data collection. The main objective is to increase the use of data compiled from administrative records, where available and usable.

In order to use administrative records in the statistical production process effectively, TurkStat has initiated the development of "National Register Systems Standards". At the end of this study, the common variables used in the administrative registers will be standardized; the integration of administrative registers will be done.

## **10. Cost effectiveness**

TurkStat generates generic applications for surveys for operational phases of GSBPM (Generic Statistical Business Process Model) which are defined as collection, processing, analyzing and dissemination.

In order to keep pace with constantly evolving technology and globalization, reducing the cost of labor and time to a minimum level and producing data in a timely manner, TurkStat has started to conduct all business surveys through Harzemli Web Application. Harzemli platform is a metadata driven software platform mainly depending on structural metadata and rule markup files. Harzemli has been developed and used since 2013 in order to increase the reliability, timeliness and consistency of the data collected through surveys.

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<sup>23</sup> Instruction on Methods and Principles Regarding Revisions on Statistical Data Produced by Turkish Statistical Institute,

[http://www.turkstat.gov.tr/UstMenu/yonetmelikler/Rev\\_Yonerge\\_Yayim\\_27.02.2014\\_ENG.pdf](http://www.turkstat.gov.tr/UstMenu/yonetmelikler/Rev_Yonerge_Yayim_27.02.2014_ENG.pdf)

<sup>24</sup> Measuring the Burden of Surveys on Respondents,

[http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT\\_ID=18&KITAP\\_ID=304](http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT_ID=18&KITAP_ID=304)

<sup>25</sup> Electronic Data Transfer, <http://www.tuik.gov.tr/evt/evt.html>

TurkStat reviews information technology infrastructure in order to ensure cost-effectiveness, identifies the IT needs and adopts a perspective for the standardization and automation of basic statistical processes. Before starting a new study, administrative records are reviewed and the compliance of the administrative data is analyzed.

In addition, TurkStat makes collaboration protocols with the stakeholders to increase the use of administrative data in statistical production processes, to ensure the efficiency of data production.

## **11. Relevance**

TurkStat gives importance to user needs and emphasizes user engagement. Data requirements are discussed regularly in the Official Statistics Programme Working Groups and also in Statistical Council Meetings. The objectives, roles and responsibilities of the Official Statistics Programme Working Groups are defined in the "Directive on the Formation of Official Statistics Programme Working Groups and Working Procedures" <sup>26</sup>. User requests are evaluated, analyzed and reported annually.

TurkStat overviews its activities during the preparation of the Official Statistics Programme and take into account the user needs. TurkStat conducts the "User Satisfaction Survey"<sup>27</sup> regularly. User requests are recorded regularly and evaluated to perform analysis of needs.

In this context, TurkStat acts in accordance with the "Directive on the Evaluation of User Requirements and Prioritization" <sup>28</sup>, prepared to meet the national and international user needs and include in Official Statistics Programme Working Groups to evaluate and add these needs to the Programme.

## **12. Accuracy and reliability**

TurkStat continuously monitors and validates the production processes to be able to represent the most accurate data. The Production Process Schedule created for this purpose, disciplines the data production processes keeps the working procedures under control by defining the steps of analysis. With the adoption of new technologies, TurkStat is able to instantly transmit the data collected in the regional offices after certain controls and error corrections were performed. This technology enables the performance of coherence analyses on the data right away.

In addition, generic micro analyses program developed by TurkStat is also used to perform consistency checks. This program does deterministic analysis on the micro data. The data mining application developed by establishing a link to the package programs is another analysis module in the field application.

Sampling and non-sampling error components are measured and presented in the institutional quality reports together with the sampling plan, estimation and notations. The

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<sup>26</sup> Directive on the Formation of Official Statistics Programme Working Groups and Working Procedures <http://www.turkstat.gov.tr/UstMenu.do?metod=yonergeler#>

<sup>27</sup> User Satisfaction Survey, <http://tuikapp.tuik.gov.tr/kulmem/>

<sup>28</sup> Directive on the Evaluation of User Requirements and Prioritization

two main components of the non-sampling error, "non-response" and "out of scope unit rate" are tracked on a yearly basis, and assessments of framework and data quality are done. These assessments are also monitored as a performance indicator for the regional offices.

Revisions are regularly monitored and magnitude of revisions is measured. TurkStat aims to provide the size of revisions to the users by calculating them directly from a database.

### **13. Timeliness and punctuality**

TurkStat adopts a dissemination strategy in compliance with the international standards based on disseminating data as soon as the final data is ready. The principles and rules to be followed in the production process stages are stated in the "Directive on the Procedures and Principles of the Work Programme of TurkStat"<sup>29</sup>.

Advance release calendar<sup>30</sup> for all official statistics of Turkey is released on the statistical portal at the end of each year. Any change of a pre-announced publication date in the release calendar is published in advance for reasons of transparency. The press releases are disseminated at 10.00 am.

In the publication of statistics, the timeliness specification as defined in the international standards was tried to be met as much as possible. Significant progress has been made on many topics based on the improvement of administrative records.

### **14. Coherence and comparability**

TurkStat performs regular evaluations to ensure compliance of statistics with international standards.

Coherence reflects the degree to which it can be successfully brought together with other statistical information within a broad analytical framework and over the time. TurkStat promotes the use of common methodology across surveys as does the coherence of the usage of standard concepts and classifications.

The changes caused by time and space naturally leads to breaks in the time series. In order to deal with these breaks, model based micro and macro backcasting methods are used for time series data and the series are generated for a reasonable period of time.

To maintain the comparability of data, definitions, concepts, classifications and unit definitions are defined by TurkStat according to the international norms and standards and in line with the requirements of the survey. Also, in the design phase of the survey, definitions, concepts and classifications which do not comply with the existing international norms are determined. Administrative records are used as an external data source by separating them into sub-components and harmonizing them with the international definitions, concepts and

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<sup>29</sup> Directive on the Procedures and Principles of the Work Calendars of TurkStat, [http://www.tuik.gov.tr/UstMenu/yonetmelikler/Calisma\\_Takvimlerine\\_Iliskin\\_Usul\\_ve\\_EsaslarHakkinda\\_Yonerge.pdf](http://www.tuik.gov.tr/UstMenu/yonetmelikler/Calisma_Takvimlerine_Iliskin_Usul_ve_EsaslarHakkinda_Yonerge.pdf)

<sup>30</sup>National Data Release Calendar, <http://www.turkstat.gov.tr/ingtakvim/tkvim.zul#tbl>

classifications. This approach is important for the harmonization and comparability of different data sources; it contributes to the coherence and harmonization of data and allows the integration of external data.

DDI (Data Documentation Initiative) standards are used as basis in the production of statistical data. Categorical variables were specified and standard code lists for these variables were created to ensure the use of common standards in the statistics production. TurkStat embraces the use of these variables in design, build and collection phases of the production process. Classification Server<sup>31</sup> including national and international classifications, serves as a common platform in creating and building questionnaires and in data collection processes from the field. TurkStat promotes the use of the classification server by all institutions and organizations.

## **15. Accessibility and clarity**

TurkStat disseminates statistics through different channels like statistical releases, databases and tables. Statistics produced by TurkStat are disseminated primarily using the web site in Turkish and English free of charge. There is a charge for only tailor-made requests. All of TurkStat's statistical releases, tables and databases are made available via the internet first. Social media channels are also used to reach more users. All statistical releases are accompanied by metadata which is available on the website.

Metadata of all statistics are presented in the metadata structure specified according to the international standards. Users are informed about the methodology and quality of data through the metadata published on TurkStat's website. In case of any change in statistics the changes are announced at the time that the statistics are released.

Access to micro-data is only allowed for research purposes and strict protocols are signed with the users. TurkStat grants access to micro-data in line with the provisions of Article 14 of the Statistics Law and the provisions defined in the "Instructions for the Access and Use of Micro Data"<sup>32</sup>.

TurkStat makes public announcements and gives detailed information about the changes which occurs in the statistical processes and methodology. TurkStat also organizes user meetings with the members of the media, universities and civil society organizations, and informs users on the developments in statistical production.

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<sup>31</sup> Classification Server, <http://tuikapp.tuik.gov.tr/DIESS/ChangeLocaleAction.do?dil=en>

<sup>32</sup> Instructions for the Access and Use of Micro Data  
[http://www.tuik.gov.tr/UstMenu/yonetmelikler/Yonerge\\_MikroVeri.pdf](http://www.tuik.gov.tr/UstMenu/yonetmelikler/Yonerge_MikroVeri.pdf)