تعداد قطر ٢٠٢٠
QATAR CENSUS 2020

General Census of Population, Housing and Establishments 2020

Introduction

The General Census of Population, Housing and Establishments 2020 is one of the most important statistical projects in the Planning and Statistics Authority (PSA). Law No. 2 of 2011 on Official Statistics and its amendments states in Article 2 that "The General Population Census shall be conducted at least once every (10) years and whenever necessary according to the Council of Ministers' resolution. The Council of Ministers at its ordinary meeting No. 18 of 2017 held on 10/05/2017 have endoreced to conduct the General Census of Population, Housing and Establishments 2020.

The 2020 Census will be based mainly on the administrative records of various government agencies in the State, which represent the source bodies for census data. This represents a quantum leap in conducting censuses, in line with international statistical development and global trends in the use of administrative records in statistical processes and the production of indicators and statistical data in real time.

May God grant us success …

(Chapter One)

Importance, Objectives, Methodology and Use of Census Data

Vision:

Comprehensive and up-to-date data for individuals, households, buildings and establishments.

Mission:

The 2020 Census project seeks to provide a comprehensive database through the extensive use of administrative records in statistical processes.

• Importance of Census

The importance of census stems from the fact that it is the only statistical process that is conducted through an all-inclusive survey. It is an integrated image of the community at a specified moment. The census data represents a key base for population, housing and establishments statistics that concern planners, researchers and decision makers.

In general, the importance of census data is highlighted in the following areas:

- ✓ Development Plans: They serve as a basis for all planning levels related to population, housing and establsihments.
- ✓ The assessment of the availability of basic services for families, to identify areas in need of such services and to prioritize plans.
- ✓ The census is considered to be the main source of information related to the size of labor force and its characteristics, as well aspects of education and training, current and projected levels of population, and national policies in this area.
- ✓ Census provides an integrated framework for the families of the community, since sampling allows to conduct specialized field research.

• Objectives Of Census Project:

The main aim of the census is to create a high quality central register of population, housing and establishments data, with more comprehensive coverage and connected to a system for the continuous and simultaneous updating of this data.

In order to ensure the success of the census, further evaluations are required to determine the validity of the administrative records available for use in the census stages, as well as the testing and technical analysis of the electronic systems for information systems.

Sound planning for the implementation of this link through the quality control of data from its sources and the development of mechanisms and procedures necessary to ensure their safety and compliance with the conditions and continuous update, ensure the implementation of the 2020 census as fully as possible.

Methodology

This census is the first of its kind to be conducted through administrative records of the country's data source. The methodology is based on the implementation of a comprehensive online link with a number of data sources related to population, housing and establishments data and linking them with the data received from the field work.

There is no doubt that such a methodology needs the provision of requirements by the statistical data sources, the development of databases and linking them automatically with the Planning and Statistics Authority (as an initial preparatory stage), in addition to other actions in the preparatory stage, and then carrying out the operational stages of the census, leading to the implementation of the census and the announcement of the results.

The methodology used in implementing the census can be summarized as follows:

1. Identification of the variables required for the census, making an initial assessment to define user needs for data that can be provided through data sources, and those that may need to be aggregated using traditional methods.
2. Identification of census data sources and to meet and coordinate with such source sources; in order to study, analyze and evaluate the availability of required data, and to study and determine the mechanism for updating such data and providing the missing ones.
3. Preparation of evidence, concepts and terminology to be used in coding census data, and examining and identifying the consistency of evidence and concepts used in the census with the data received from data sources.
4. Working through joint committees with census data sources to provide statistical methodologies that are tested to enable data linking, processing of missing data and inconsistent data.
5. Preparation and processing of the systems and programs for electronic linking process between the data sources, and follow-up programs, auditing and coding.
6. Implementation of electronic linking, testing of data received from data sources, and ensuring their integrity, consistency and quality.
7. Conducting the Pilot Census and evaluating its results, to determine and assess the extent to which it achieves the desired goals.
8. Conducting the census according to the plan in March 2020.
9. Declaration of main results, and then the detailed results and analytical reports of the census results.
10. Preparation of the main tables to be published annually after 2020 through the latest data received from data sources.

• Requirements of Administrative Record-Based Census :

Administrative records can be defined as a set of data that arise as a result of administrative processes by the various entities; especially government entities, to individuals, institutions and society.

Developing a system for data quality assurance and quality control for administrative records is an essential component to use them as one of the key sources of official statistics. This census is also considered to be the beginning of the establishment of a comprehensive system of statistical quality of the data of administrative records and statistical indicators in Qatar, and to achieve the objectives required for the sustainability and modernization of this rule through:

- ✓ Ensure the continuity of the data flow from sources.
- ✓ The adequacy and well coverage of census source data.
- ✓ Integrity of data collection systems and their relevance to census requirements.
- ✓ Consistency of administrative records data with statistical definitions and classifications based on international principle guideline.
- ✓ Maintain a reasonable periodical update of data to ensure updateness and representativeness.
- ✓ Having editing and processing mechanisms for administrative records data consistent with international best practices.
- ✓ Conduct a periodic assessment and review administrative records for statistical usage purpose.
- ✓ Identify gaps and improvement opportunities for administrative records data with regard to their content and coverage and setting methodology for treatment.

• Development of an Electronic Register-Based Statistical System

This means that all statistical registers, in principle, are regarded as being a part of the same system and not as single registers. Such a view has implications for all stages of statistical production: data collection, data processing, quality control and dissemination. A register-based statistical system should never be regarded as completed once and for all. As new user needs arise and new administrative registers are established, new information should be integrated in the system.

• Usage of Census Data

The general census is an important and essential source of all comprehensive data and information on population, housing and establishments in a country. The general framework for the use of census data can be summarized as follows:

1. Usage of Population Census Data:

The most important data provided by the census are the size, distribution and characteristics of a country's population and characteristics of the population at the level of all the administrative units in the State in order to describe and evaluate their economic, social and demographic conditions and to develop sound policies and programs aimed at fostering the welfare of a country and its population.

One of the most important administrative uses of census data is the demarcation of electoral districts and the distribution of the percentage of representation of the population in those constituencies.

It is also used to identify the distribution of services, according to population numbers and characteristics. For example, schools are established depending on the numbers and ages of male and female children. Hospitals are also established in areas that need more hospitals according to the population growth in those areas. The same applies to determining the need to establish new markets or malls.

The importance of census data is also highlighted in shedding the light on the current characteristics of the members of this society, comparing them with the characteristics of the results of previous censuses, and identifying the extent of change in different socio-economic and demographic conditions; such as educational status, marital status and people of special needs, as well as computer and Internet use, for both males and females .... and other comprehensive data.

It is also important to study the demographic structure of the society, to know the numbers and percentage of the citizens and expatriates, to study the growth of their numbers, their nationalities and different characteristics, to identify their needs of goods and services that suit them, and to take a large number of important strategic measures. This is because their large numbers represent a major cultural and social challenge.

Census is used for estimating sources of labor force, numbers of workers, and their distribution by occupation and economic activity, as well as providing an accurate picture of the extent of unemployment in society, and the numbers and proportion of unemployed in each age group, according to the educational situation.

The census provides important data on the houses conditions of households, such as: the number of rooms, their relation to the size of the household and the number of its members, the degree of

overcrowding in the house, as well as the house connection to public utilities such as water, electricity and sanitation and the identification of fuel used in cooking. Moreover, the census help figure out the availability of information and communication devices in households as well, with a view to measuring the growth of the standard of living.

The census provides a comprehensive and updated framework for the names of households' heads, whether Qatari or non-Qatari, as well as the names of small and big labor camps in order to be taken as a basis for the implementation of sample household surveys and research in the future.

2. Usage of Buildings Census Data:

The census provides detailed data on the number of buildings and their types, present status, uses, ownership, construction year, connection with public utilities, and geographical distribution in all administrative units in the country.

The census provides sufficient data on the numbers, types, and components of buildings (residential units and establishments). These data can be compared with previous censuses, to see how much progress has been made in the country's recent urban development and to know the numbers, types and characteristics of all buildings; whether completed or under construction.

The census provides data on the number of building floors, which helps study the phenomenon of vertical expansion, the optimum use of lands, knowledge of the agricultural, industrial and residential lands in different regions of the country or with high density of population and the impact of that on the efficiency of facilities , roads and services. This helps draw development plans, and all planning levels.

Sorting out the number and type of housing units, how they are occupied (whether for housing, work, closed or vacant) and geographical distribution. This helps making a housing policy on a sound basis to know the future population's needs for these units.

3. Usage of Establishments Census Data:

The Census provides precise and up-to-date data on the number of establishments in each administrative unit and their status (operating, closed permanently, temporarily or seasonally or under processing or even empty).

The census provides sufficient data on the operating establishments, in terms of their sector or economic activity, nationality and legal status.

Moerover, the census provides sufficient data on the numbers of male and female workers, whether Qatari or non-Qatari, which helps estimate the needs of the labor market from expatriate labor, and determine their numbers and characteristics.

The census provides a comprehensive and modern framework for all establishments operating in the country, which will be the basis for the implementation of economic surveys in the future, in order to serve the economic development plans associated with the national accounts.

In fact, these are not all the uses of census. Census data are the cornerstone of the statistical system. So, the Planning and Statistics Authority provides these data in different forms. It has published a number of the main census tables on the Authority's website, and stored many of these tables on magnetic disks. However, paper publications in the form of volumes are still the preferred option for documenting census results, and for many researchers in some countries.

4. Improving the Role and Economic and Social Status of Women:

In recent decades, more attention has also been paid to the role and status of women in society. This question has become a fundamental issue for the role of half the population in society. Governments have become interested in all statistics on women to formulate programs and identify policies to improve and develop women's social and economic role and prestige in society. One such studies is the gender study adopted by the United Nations.

5. Identification of Special Population Groups:

More attention has been paid to certain special population groups such as children, youth, older persons and persons with special needs, to obtain adequate data on these groups to plan programs and policies that serve their interests.

6. Use of Census Data for Research & Study Purposes:

The Population, Housing and Establishments Census data constitutes a rich source of data necessary for demographic, social and economic research.

(Chapter Two)

Census Fields and Data Sources

- **Data Sources of Census 2020:**

Data fields of the census were studied and a preliminary scenario was drawn up to shortlist the government agencies in the country that can possess such data. The number of data sources was 15, including the Planning and Statistics Authority. The fields were distributed among such sources as per the type of the required statement and the status of each group within the list of competent authority for that type of data.

- **Data Fields Required From Data Sources:**

After analyzing and enlisting the census fields, they reached 88 fields. However, when distributing such fields to the data sources based on the type of the statement required and placing each group of fields within the list of the authority tasked with this type of data, it has been found that a large number of fields are required by more than one source, especially the administrative data fields. Appendix (1) shows the required fields from each source and their response pertaining the availability of fields.

(Chapter Three)

Census Implementation Schedule

Census Implementation Plan:

1. Status Quo Analysis Phase (study and analysis of census forms and enlisting data requirements):

The variables required for the census were identified, 15 data sources were enlisted and addressed for electronic connection of data, and data exchange agreements were signed with 12 out of the 15 sources. In addition, the budget of the census project was approved, and all directories and concepts of the census were provided.

The availability of data on buildings, housing units and establishments has been evaluated and the data of households and individuals will be followed. Currently, we are working on meeting the rest of the requirements of this stage, including access to and evaluation of the systems and programs required for the census by consulting a company specialized in this field.

2. Database Configuration:

The shortage of data on buildings, housing units and establishments has been solved. Once completed, data will be processed on households and individuals. In addition, geographical data was updated by linking building data with the geographical locations. Then, data of housing units and establishments will be linked to the geographical locations of the buildings. On the other hand, a workshop on the 2020 census was held for the producers and users of data. The study and analysis of the quality of data available in the records will be conducted, and a comprehensive electronic system for all stages of the census will be established.

3. Pilot Census:

The electronic system of the census will be tested to ensure that all stages are complete and will be preceded by a census data test. Upon completion, the pilot census will be evaluated and the necessary treatments will be conducted based on the test outputs. Second phase of the pilot census is the field collection of the data of housing units, families and establishments.

4. Census Data Processing:

The census will be carried out in the time frame set; 17 March 2020 and then the main results will be announced through a press conference.

5. Data Dissemination:

Detailed results will be published and the final results of the census will be announced through a press conference accompanied by a forum, and then the analytical report of the census prepared for publication will be prepared and printed.

- **Census Implementation Plan Timeline:**

Year		2017												2018											
Quarter		Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
Month		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	Status Quo Analysis																								
Required variables for Census																									
Data sources																									
Directories, concepts and terminology																									
Meeting with data source coordinators																									
Evaluation of systems and programs																									
Preparation of financial and human needs of the census project																									
Review of successful practices in the field of register-based census																									
Evaluation of data availability																									
2	Databases Configuration																								
Study and analysis of data registers quality																									
A mechanism to fill data gaps																									
Workshop on the 2020 Census																									
Establishment of an electronic system for the census																									
Geographic Data Update (GIS)																									

Year		2019												2020								
Quarter		Q1			Q2			Q3			Q4			Q1			Q2			Q3		
Month		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
3	Pilot Census																					
Census electronic system test																						
Data Test before the Pilot Census																						
Pilot Census																						
Pilot Census Evaluation																						
Units, families and establishments Data Collection																						
4	Census Data Processing																					
Conducting the census: 17 March 2020																						
Main Results Announcement (press conference(																						
5	Data Dissemination																					
Detailed Results Announcement (forum + press conference)																						
Census Analysis Report Printing																						

(Chapter Four)

Quality Assurance

And

Census Quality Management

Introduction

The General Census of Population, Housing and Establishments is the only statistical process that is conducted through a comprehensive inventory once every five or ten years. The concept of "quality assurance" is of great importance to statisticians in general and to censors in particular, as it greatly impacts data quality and accuracy, which is the result of strenuous efforts and significant expenditures made towards a successful census.

The quality assurance of the census data requires specific quality management procedures that are of great importance to the relevant United Nations bodies, which pay particular attention to the management of the General Censuses of Population and Housing, with the aim of obtaining accurate data that is a valuable resource for any society to be able to achieve its objectives in the overall development of the State and the sustainable well-being of its inhabitants.

Therefore, the entities that conduct censuses are keen to achieve the highest quality, so as to ensure good, reliable and accurate results. However, the steps to achieve quality were based primarily on the experience gained, personal diligence and dedication to work, without being subject to a program properly written or documented by those incharge.

First: Quality Assurance

The concept of "Quality Assurance" applies to the proverb "prevention is better than cure." The “Quality Assurance” focuses on preventing errors from hapenning by taking the necessary measures to improve the implementation of census steps, and not to correct errors. There is a famous saying: (Emphasis should be placed on improving rather than correcting the process), ie avoiding errors before they occur. The correction process may introduce other data errors, and may add much to the cost of the process.

Therefore, the "Quality Assurance" process focuses on achieving the best possible results, rather than relying on subsequent data correction processes. There is a common agreement that census data should satisfy data users. To do so, such data must be of high quality which is primarily related to accuracy. However, there are other dimensions of quality, such as the production of results in a timely manner. To achieve data quality, the following terms must be provided:

1. Provide data that meets user needs.
2. Easy and timely access to data.
3. Highly accurate and reliable data.
4. Ability to make international benchmarking.
5. Clear and easy-to-understand data for specialized and non-specialized users.
6. Use of metadata to clarify basic definitions and terms.
7. Cost-effective provision of data.

The Quality Assurance plan aims to improve the results of the General Census 2020 and its outputs. The census outputs can be described as quality outputs when the above terms are met. Bear in mind that despite efforts to implement “Quality Management” to achieve maximum quality, it is not possible to ensure that census data are free of simple errors and impurities that are filtered by the so-called "data revision" after examination and review. Therefore, practical phases of quality management and measurement must be developed across all census processes. These measurements will show the limits of data strength and vulnerability, and the need to use them in decision-making.

- **Objectives of Quality Assurance:**

Quality Assurance aims to achieve a successful Census within the time frame set in accordance with the allocated budget. The success criterion here comprises two main elements:

1. Producing high-accuracy data that meets the needs of users.
2. Producing census data on permanent basis.

A key decision in a census framework is to choose between timely dissemination and accuracy of data. Fortunately, the PSA officials have made an important decision based on the source administrative records of the implementation of the Census 2020, in order to keep abreast of the latest methodological developments in the implementation of modern censuses, which rely on administrative records. This represents a quantum leap in the implementation of censuses in the State of Qatar, achieving the two main elements mentioned above, namely, "producing accurate data on permanent basis".

It should be noted that census data users expect a high level of data accuracy provided by the Census Administration who should manage quality assurance and make every effort to achieve this goal.

- **Quality Assurance Terms:**

1. **Relevance**: The close connection to meet the needs of data users, national strategy and other statistical systems, ie relevance to the National Statistical System to serve the economic and social development of the State.
2. **Inclusion**: The degree achieved by the Census in terms of full coverage of all administrative units of the State at different levels.
3. **Accuracy**: The discrepancy between the expected value (statistically estimated) and the realized value (representing real life), ie the assessment of the compatibility of the results with the expectations, and the logical level and compatibility of Census data with the data obtained from other statistical sources.
4. **Timeliness**: The period that the Census is required to produce results about. It is expected that most Census data users will be satisfied with the extraction of statistical data in a timely manner.
5. **Comparability**: The capacity of the census outputs to achieve international comparability that will meet national needs in line with international recommendations. At the same time, results can be extracted according to the required reference periods.
6. **Raising Statistical Awareness**: PSA is primarily responsible for raising statistical awareness in the State. When disseminating the Census data, PSA shall interpret the meaning of the Census terms and explain the definitions and methods used to increase the understanding of specialized and non-specialized data users.
7. **Dissemination and Data Access**: The Census results are published in multiple formats and varying details as follows:-
   - Publications in the form of brochures and references.
   - CDs.
   - PSA website.

Second: Quality Management

Quality management procedures are implemented at each stage of the Census as follows:

- **Quality Management in the Preparatory Work:**

1. Setting the Date of Enumeration:

a- In line with the remarkable development witnessed by the State in the economic and urban aspects, the accompanying steady growth in the population and the changes reflected in the population structure, the Census 2020 is needed to measure the changes in the housing conditions and demography of the State.

b- The Council of Ministers' Decision No. 18 of 2017 at its ordinary meeting held on 10.05.2017, on conducting the General Census of Population, Housing and Establishments 2020.

c- PSA has decided that March 2020 period will be the reference period for the coming Census.

In line with the accuracy and quality management controls, this date will achieve the following terms:

a. The month of March 2020 achieves the term of stability of individuals avoiding holidays and vacations in the State.

b. The results of the Census 2020 will be extracted in April 2020.

6. Determining the Variables Required for the Census 2020:

After extensive consultation with the data sources of the administrative records, the data that will form the database will be agreed upon and will form the main components of the census as follows:

a. Data and information on buildings in the State.

b. Data and information on housing units.

c. Data and information on enterprises in the State.

d. Data and information on individuals, households and labor compounds.

7. Pilot Census:

In accordance with the UN recommendations, the pilot Census shall be carried out prior to the General Census of Population, Housing and Establishment to achieve the following objectives:

a. Testing the program design and technological systems and implement quality control procedures.

b. Ensuring the consistency of statistical data from different sources.

c. Ensuring that the data conforms to agreed statistical concepts and classifications.

d. Ensuring that the Census data collected from different sources is comprehensive.

e. Measuring the accuracy of data flow from its sources and tabulating it in the database.

f. The ability to extract census results easily and with high quality.

One of the key results expected from this experiment is to prove the efficiency of the administrative records to implement the Census.

The following are some important recommendations:

1. Allocate statistical, technological and technical support to source entities to assist them in applying the statistical concepts and classifications in force in PSA, as well as technological and technical support to standardize programs and systems to facilitate the process of linking with PSA.

2. Provide technical support in the operating room to facilitate follow-up and achievements.

3. Provide technical support to the call center to solve problems that may arise, fill in the missing data or verify the data by communicating with data sources, families or individuals.

8. Standarization of Statistical Classifications with Source Entities:

The preparation of new classifications to standardize the tabulation of Census data among all parties, including:

- National Disability Index
- Directory of Building Types in Qatar
- Scientific Disciplines Guide

In addition to the guides in force at PSA, namely:

- Economic Activity Guide ISCD4
- Occupation Guide
- Nationalities Guide

- **The 2020 Census Database Quality:**

There are a range of features and features that must be available in the 2020 census database:

1. Avoid Data Duplication

The implementation of database system will solve the duplication of data received from several sources, and can achieve the following:

- Storing data in a single file.
- Reducing multiple copies of the same data, and deleting redundant data.
- Saving large space for additional data.
- Sharing data with many users.

2. Seperate Application Programs from Data Files

With this feature, the data is stored in a base independently from the application programs, so that these programs are not affected by any changes in the organization of the raw data.

3. Centralized Data

The data is stored centrally so that it is managed and stored by one section rather than several sections, which helps to save the data in a standardized and unified format instead of several formats. It also protects data confidentiality, security and centralization to reduce duplication and achieve cost-effective storage and effective data operation.

4. Data Integration

Data integration is achieved with the availability of the natural and logical data structure in the database. Data integration has several important advantages:

- Data consistency, reducing the time needed to develop new systems or respond to any query.
- Avoid duplication of information, resulting in saving in parts of files.
- Better data management.

5. Data Confidentiality and Security

Data stored in the database must not be subject to loss, theft or unauthorized access. Therefore, it is necessary to ensure that only those who have approved access are entitled to use such data. This is one of the important routine programs included in the database management system.

6. Data Availability

The data availability features various capabilities that help database systems to meet the needs of different data users in a way that supports them in decision-making. Database management systems offer a range of high capabilities related to data availability and searchability. These capabilities include the following:

1. Concurrent access to database through multiple user programs.
2. Multiple data access with application programs providing more data than a single access.
3. Deadlock method which confirms that the method of continuous processing tries to process one or more application programs to close records that do not share the required data.
4. DB Scan facilitates the possibility of asking questions without the need to create application programs to do so.

5. Query language helps in producing answers and preparing the required reports without the need to provide unique specialized expertise to do so.

7. Data Quality

The DBMS method emphasizes the quality of its data by providing several capabilities including:

a. **Standardization of Data Classification and Tabulation**:

This would allow for the adoption of specific standards for data relations in a context of statistical consistency of all data.

b. **Relatability**:

It includes the ability to establish proper relations between records and components. Relatibility is important and can be standardized like any data and record feature.

c. **Recovery**:

The recovery facilities are conneced to the mechanism of recovery operator which is selected when the device hangs or an error appears in the application software used. This feature deals with the problems of saving the data on specific action.

8. Concurrency Control

This procedure deals with simultaneous actions, through which the problems can be observed in a synchronized manner.

9. Debugging and Tuning

This Interactive interface feature provides the ability to correct erroneous data in the database very quickly. It also helps in tuning database applications by using specific tests such as those that can be performed in an interactive mode.

10. Simplicity

Pointers are used in multiple systems to show relationships between data items, providing a logical view that facilitates arrangement, presentation and understanding.

11. Interrelation and Overlap with the Past.

When new database programs are introduced, they must be in line with existing programs and procedures and original data must be adaptable to new programs.

(Chapter Five)

Census Electronic Link System

- **System Requirements:**

  1. **Initial Review:**

     - ✓ Review screens (for each source separately)
     - ✓ Processing screens to produce standard-based data
     - ✓ Update monitoring screens
     - ✓ Input screens
     - ✓ Coding screen

2. **Final Review (after merging data from all sources)**

   - ✓ Review screen
   - ✓ Input screen
   - ✓ Coding screen
   - ✓ Output screen

- **Guides and Concepts Used in the Census:**

  1. Standard Education Guide (Education Guide).
  2. Occupation Classification Guide (Occupation Guide).
  3. National Classification of Economic Activities (Economic Activity Guide).
  4. Standard Classification of Buildings in Qatar (Building Guide).
  5. Nationalities Guide.
  6. Disability Guide.

- **Challenges :**

1. Lack of required data from some source entities.
2. Inaccuracy / non-updating of data from some source entities.
3. Incompatibility of data from some source entities with other source entities or with PSA standards.
4. Periodical updating of data by some source entities.