# Outlines of SCAD's Pilot Test for the 2020 Register Based Census

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**Abstract:**
Countries, including developed countries, tend to use administrative registers to identify their population count, and to identify its characteristics, so that many countries use administrative registers data as an alternative to a field enumeration census, and this saves time, effort and money. As well as using administrative registers data contributes to periodically identifying the population count without waiting for a long period of time to conduct the field enumeration. This is useful for communities that undergo rapid population changes, as is the case in the UAE in general, and the Emirate of Abu Dhabi in particular.

Based on the Abu Dhabi Government's interest in development, and its role in the community's well-being, using administrative registers is important in deriving statistical indicators that monitor and analyse population and social changes, and providing them to decision-makers, and this will contribute to developing programs and policies that will benefit the community. This requires building a database and maintaining its sustainability and populating it with data on a continuous basis.

For this purpose, coordination has been established with the entities owning the administrative registers, and with support from senior management in the Statistics Centre – Abu Dhabi (the Centre) and senior management in those data providing agencies, the efforts have resulted in the signing of service level agreements, and data have begun to flow to the Centre by virtue of these agreements, and the Centre has established specialized registers such as, population register, employees register, unemployed register, education register, and people with disabilities register.

Establishing administrative registers at the Centre aims to:
◄ Conducting register-based census
◄ Creating a framework for designing samples for demographic and social surveys, etc.
◄ Providing statistical information and data that support planning and decision makers
◄ Producing statistical indicators
◄ Predicting future needs of social care services for the population.
◄ Preparing detailed analytical reports to assist decision makers in developing policies.

**Introduction:**

    1. **Overview of Register-Based Census Project :**

1.1 **Description**: Register-based census project is a census project based on utilizing administrative registers data that are collected by government agencies for their own purposes, as an alternative to a traditional census based on collecting data from field.

1.2 **Objective**: Creating a detailed database on Abu Dhabi population's characteristics to support policy makers and decision makers in developing and monitoring social and economic policies and infrastructure programs in the Emirate.

1.3 **Project Framework**: The Centre's scope of responsibility is the Emirate of Abu Dhabi, and the project is linked to the Centre's strategic objective related to increasing reliance on administrative registers data and reducing field surveys.

    2. **Project Phases:**

2.1 **Preparatory Phase:** It was conducted from the second quarter of 2015 until the third quarter of 2017.

2.2 **Pilot Test 2017:** A pilot test on administrative registers data has been conducted, and this work paper will include a presentation of the challenges, and how to overcome them.

2.3 **Pilot Census 2019:** It will be carried out in the second quarter of 2019 to measure the extent to which the challenges of the 2017 pilot test experience have been overcome, and the effectiveness of the solutions provided.

2.4 **Actual Register-based Census 2020:** All lessons learned from pilot test and pilot census will be applied in this phase.

**Methodology for Identifying Population Count of the Emirate of Abu Dhabi:**

A methodology has been developed to identify the concept of Abu Dhabi residents, and they have been defined as individuals who are habitual residents of the Emirate, and are individuals who usually reside in the Emirate of Abu Dhabi, whether UAE nationals or non-UAE nationals. The definition covers citizens, who are habitual residents of the Emirate, as well as those who are from outside of the Emirate or the United Arab Emirates and habitually live in the Emirate of Abu Dhabi. It also covers all non-UAE nationals who intend to permanently and continuously reside in the Emirate, or for at least six months, regardless of visa status, or spent six consecutive months in the Emirate prior the census benchmark. It should be noted that periods of temporary absence due to annual leave or work assignments are not considered to be an interruption within the consecutive six-month period.

Following are the most important points upon which Abu Dhabi residents are identified:
- The concept of Abu Dhabi residents includes all citizens holding family book issued from the Emirate of Abu Dhabi, regardless of their habitual residence.
- The concept of Abu Dhabi residents includes all GCC nationals who habitually reside in the Emirate of Abu Dhabi.
- The concept of Abu Dhabi residents includes all foreign residents who habitually reside in the Emirate of Abu Dhabi.
- The concept of Abu Dhabi residents includes all newly born children for Abu Dhabi UAE nationals as well as newly born children for non-UAE nationals who habitually reside in the Emirate of Abu Dhabi.

- The concept of Abu Dhabi residents excludes UAE nationals or non-UAE nationals who passed away prior to the benchmark of administrative register data.
- The concept of Abu Dhabi residents excludes foreign residents, whose residence permits have been cancelled, and who left the Emirate of Abu Dhabi prior to the benchmark of administrative register data.
- The individual shall be counted once in the population count regardless of the number of times of renewing residency or identity card.

**Result:**

### Technical achievements:

Following are some of the most important technical achievements:
- ✓ At the level of variables: The following have been achieved:
  - Identifying variables and evaluating their coverage from administrative registers
  - Preparing itemized card for each variable
  - Identifying and designing output tables
- ✓ At the level of concepts: The following have been achieved:
  - Adopting methodology of Abu Dhabi population count
  - Defining concepts associated with methodology
  - Sharing methodology with key data sources
  - Defining register-based census variables
- ✓ At the level of classifications: The following have been achieved:
  - Developing classifications of each variable according to the classifications applied by the Centre
  - Sharing classifications with data sources
- ✓ At the level of Data: The following have been achieved:
  - Receiving, processing and analysing data from some key sources
  - Designing the population register database populating the register-based census
  - Preparing a methodology of collecting data from other administrative registers
  - Developing the rules to match the variables

### Technical Procedures:

Statistics Centre - Abu Dhabi (SCAD) conducted the statistical processing necessary on the data. The data was reviewed and validated at the Centre according to several stages and processes to prepare and process data to derive the statistical indicators. The procedures included the following:

**3.1 Corresponding Variables' Names in Different Data Sources (variables mapping)**

The variables' names received from each source have been reviewed, corresponded and matched with the variables' names in the approved database, so that the same data feed into one variable regardless of the column name in the entity owning data. For example, identity card number variable has taken several different names in the sources, but these names have been corresponded with the variable name approved in the Centre's database, and the names given to this variable include, but are not limited to, SPM_NATIONAL_ID, Emirates ID, and PUPIL_EMIRATES_ID.

The name of identity card number variable has been unified in all registers and it has been named as NATIONAL_ID, and it is the identification number through which the various registers' data have been linked.

**3.2 Coding**

The Centre gave specific codes for data and replaced text answers (sentences, words or codes) with specific codes and with specific connotations, giving each case a brief code for that case. For example,

the nationality variable has contained several words denoting UAE nationals such as UAE, 101, and United Arab Emirates. All words and codes denoting UAE nationals have been unified into the United Arab Emirates and they have been given the code 784 according to Country Code Classification issued by Statistics Division in United Nations 2014.

### 3.3 Classifications:
The Centre classified the raw data received from the entities in accordance with the international classifications.
The most important classifications used are as follows:
- o Classification of Education: International Standard Classification of Education has been used (ISCED 2013)
- o Classification of Occupations: International Standard Classification of Occupations 2008 has been used (ISCO-08)
- o Classification of Nationalities: Classification of Nationalities (countries) 2014

### 3.4 Data Validation
Data have been checked to detect some problems, errors, or inconsistencies between the data.

- Example: Age Variable

Problem (1): There are no available birth dates which hinder the process of age calculation
Problem (2): Ages presented in large numbers exceeding 300 years (For example, birth year 1365)
Problem (3): Ages presented in negative numbers (For example, birth year 2070)

Accordingly, the cause of this problem is due to data entry error and in this case, the birth date has been entered from registers data from other available sources. If the required data is not available, the birth year birth is entered from identity card number, where the digits from 4 – 7 in identity card number denote the birth year.

### 3.5 Updating Data
The Centre has updated the database through its administrative registers data, in accordance with clear procedures that identify the data to be updated, and identify the priority main source for each variable, and then the sub-source. For example, students' data have been used in the Department of Education and Knowledge's administrative registers to reflect grades that students have attained with an educational level variable, according to International Standard Classification of Education (ISCED 2013). Then the data from the remaining available registers have been used. For example, the educational levels of employees working for Abu Dhabi government have been updated using the Department of Finance register. For individuals, whose educational levels are not available in other registers, their educational levels have been adopted as indicated in Ministry of Interior's data.

### 3.6 Removing Duplicates
The data have been verified according to specific procedures to ensure duplicated cases are detected, and verifying that the same individual has been only registered once in the database, that has included checking duplicates in the same register, and checking duplicates between registers. This is an important issue in dealing with administrative registers data. For example, it is normal for a person to be found duplicated in Department of Health's registers, because he visits the hospitals more than once. Each time the patient may be suffering from a different disease, other than the disease diagnosed during the first visit, and/or the patient may be following up with a different specialist doctor (Internist, Ophthalmologist, …..). Therefore, no matter how many visitations made by the patient to hospitals, we shall ensure that this person is not included in the population count more than once.

### 3.7 Data Validation
The Centre provides an integrated system of procedures to ensure quality. This system ensures continuity of providing the required data to the Centre, continuity of updating the register data, consistency of data with statistical definitions and classifications, and a specific mechanism for periodically measuring data quality and revealing shortcomings or lack of coverage in the data. In

addition to placing the same codes for similar characteristics that share a particular feature, such as place of residence variable, and place of work variable.

**Conclusion:**

Pilot test for register based census has revealed several strengths that we are proud of in the United Arab Emirates, where administrative registers have been characterized by a large number of variables, as well as covering the UAE nationals through family books, and covering non- UAE nationals through residence permits issued to them. The data also has showed flexibility and ability to be classified according to international standard classifications, in addition to the possibility of deriving variables that are not available directly.

The population's addresses are considered one of the most important challenges faced by a register-based census 2020, due to lack of the accurate addresses with a particular entity for the entire population. Although this challenge has been addressed by the Centre according to the register data available by the Centre, such as documentation of leases, Owners' details, electricity and water details and school students' addresses, but the addresses issue remains a major challenge to the register-based census, which we hope to overcome, through enacting a legislation or administrative decision binding to register the address in detail according to the addressing project (Onwani) in Abu Dhabi, as well as binding to updating the address after a move The person, who fails to comply with such legislation or administrative decision, shall bear legal consequences.

**References:**

ILO. (2008). The International Standard Classification of Occupations (ISCO-08)

Statistics Centre - Abu Dhabi. (2014). Nationalities (Countries) Classifications.

UNESCO. (2013). International Standard Classification of Education.