Advancement in Statistical Processes from Census 2005 to Census 2011

Presented by:

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Agenda

Introduction (Abu Dhabi and **SCAD**)

Census 2005

Abu Dhabi Census 2011

Results for Census 2005 & 2011
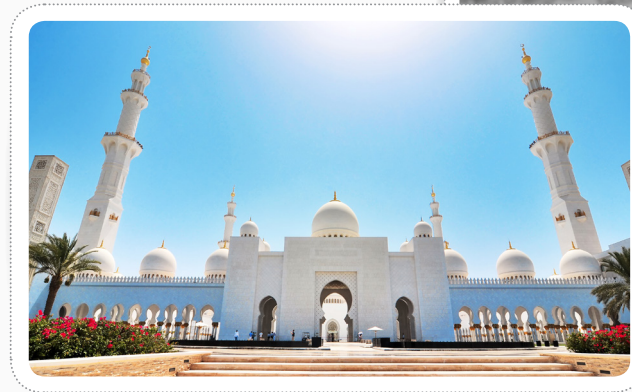
Conclusion

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Introduction (Abu Dhabi and **SCAD**)

Introduction

Abu Dhabi and SCAD

- Abu Dhabi is the federal capital of the United Arab Emirates (UAE).

- Area of Abu Dhabi Emirates is 67,340 KM2 equivalent to about %87 of the total area of the country and located in the southern part of the United Arab Emirates

Introduction

○ **SCAD has four main functions:**
- Develop and organize a statistical system for Abu Dhabi.
- Contribute to the UAE's national statistical system.
- Provide official statistics related to the conditions of the Abu Dhabi society.
- Support decision makers in Abu Dhabi.

○ **First official census in UAE conducted in 1968.**
- Subsequent censuses in Abu Dhabi 2001 ,1995 ,1985 ,1980 ,1975 and 2005.
- Census 2011 - first census conducted by SCAD (October 2011).

○ **SCAD continuously strives for accuracy and consistency in collecting, processing, storing and disseminating official statistics.**

○ **This presentation is a brief detail on the advancement in usage of technologies and methodologies in Census 2005 and Census 2011.**

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Census 2005

Census 2005

2005

Data Collection

- Led by Department Of Planning, the census 2005 project presented technical advancements.

- Collected main information through the use of PDAs while the geographical location details were collected using handheld GPS devices.

- That was the "then" technical advancement in comparison with collecting data by using paper questionnaires in Census 2001.

- There were 30 data collection centers across Abu Dhabi Emirate and data synchronized daily to the main centre at night.

- A small number of administrative records were collected from sites such as oil company facilities.

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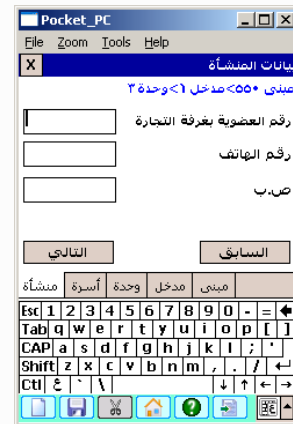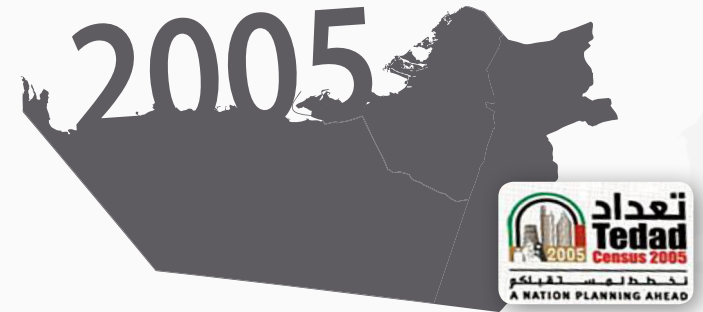
Census 2005

Data Analysis

- Data loaded into Oracle databases and then analysed by statisticians with guidance and support from IT staff (validation, coding, imputation).

- Oracle Discoverer used the Business Intelligence tool for ad hoc requests.

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Census 2005

Data Dissemination

- Oracle Report Builder was used to generate the final statistics in tabular formats as PDF files.

- The final results were printed on hard copies and/or delivered in PDF formats.

جدول **1**- إجمالي المباني حسب شكل المبنى والمنطقة
Table 1- Buildings by type and district

Type of Building	المجموع Total	جزر الإمارة Emirate Islands	المنطقة الغربية Western Region	المجموع Total	ريف Rural	حضر Urban	المجموع Total	ريف Rural	حضر Urban	شكل المبنى
				منطقة العين AL Ain			منطقة أبو ظبي Abu Dhabi			المنطقة
Palace	215	42	21	84	15	69	68	19	49	قصر
Multi-storey building	4271	2	118	519	2	517	3632	179	3453	مبنى متكرر
Two-storey building	3614	44	339	2229	206	2023	1002	227	775	مبنى من طابقين
One-storey building	26771	817	7753	13599	8144	5455	4602	3171	1431	مبنى من طابق
Villa	22345	67	1910	9565	738	8827	10803	457	10346	فيلا
Low-cost house	31008	595	2734	14245	7056	7189	13434	12747	687	بيت شعبي
Shed	13124	67	1727	8065	6460	1605	3265	880	2385	شبره
Caravan	6296	338	2456	2137	933	1204	1365	1016	349	كرفان
Shack	5651	27	1039	4292	3389	903	293	293	0	عشة،خيمة،صندقة
Others	4174	80	593	1889	581	1308	1612	651	961	آخرى
Total	117469	2079	18690	56624	27524	29100	40076	19640	20436	المجموع

Population, Housing and Establishments Census 2005   1   تعداد المساكن والسكان والمنشآت 2005 - إمارة أبوظبي

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Abu Dhabi Census 2011

Census 2011

Data Collection

- SCAD implemented Generic Statistical Business Process Model (GSBPM) across all departments/ teams.

- The census 2011 project has highlighted the use of advanced IT and Geographical Information Systems (GIS) technologies across multiple business processes.

- Spatial data delivered to SCAD through use of Abu Dhabi government standard tools - web services and map services from Abu Dhabi Spatial Data Infrastructure (ADSDI) provided through Abu Dhabi Systems and Information Centre (ADSIC) that was established in 2008 to propose policies and technology standards for government and relevant entities to achieve a comprehensive quality in reaching the highest levels of efficiency, confidentiality, and safety in the e-Government project.

Census 2011

Data Collection

- Bespoke data collection software was developed using spatially enabled web services and geo-enabled iPads with implemented validation rules.

- Oracle BI dashboards were used to monitor the progress of the field work providing daily reports and real-time monitoring.

- The use of administrative records was expanded to ease respondent and enumerator burden. All large labor camps (housing more than 100 persons) were asked to send administrative records via a fixed template as an excel sheet.
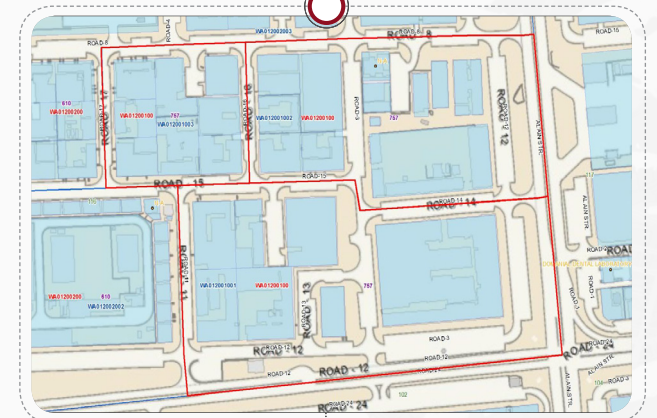
Census 2011

Data Analysis

◎ **Use of statistical applications (SAS) resulted in simplifying statistical analysis through donor imputation, deterministic imputation, aggregation, validation and variables derivation methods and presenting better and reliable statistic results.**

◎ **Data processing was handled by methodology team with guidance from Population and Demography section.**

◎ **Disclosure controls were defined and applied for all output.**

- As part of Census 2011, a statistical geography was defined and boundaries were drawn for statistical districts and statistical sectors with a minimum of 500 persons and 5 households (based on municipality sectors).
- Controlled random rounding methods were applied to all outputs.

Census 2011

Data Dissemination

• Tabular data were refined along with defining database structure, metadata schema, standards and can support multilingual details (Arabic and English).

• Integration of Statistical Information Systems (SIS) data with GIS data was made possible through SAS BI applications and helped SCAD in producing thematic maps and a statistical atlas.

• Three online output tools were developed to produce and present the outputs: thematic maps, community tables and table builder.

• The development of these tools aims to allow the end users to generate standard or customized reports on their own instead of making requests through SCAD's customer support.

• All tools were developed to be accessible through most of internet browsers and operating system e.g., IE7, Samsung Galaxy and IPADs.
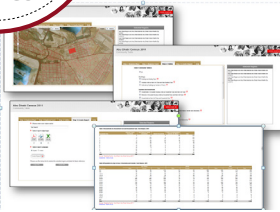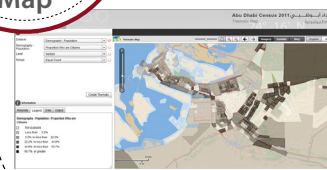
Data Dissemination

Census 2011 output tool Community Tables

Census 2011 output tool Thematic Map

Census 2011 output tools

Census 2011 Output Tool Table Builder

Data Dissemination

- The tools were made to be available through the SCAD website and are currently accessible to government entities through SCAD data portal.

- The same tools shall be made available to the public internet users.

- All tools are integrated with census metadata to present variable names and their definitions in both Arabic and English.

- Strict data confidentiality rules were applied, because of the highly sensitive nature of the data and the risks associated with the different types of online tools.

Agenda

Results for Census 2005 & 2011

Results

○ **The following marked improvements were seen in the Census 2011 project:**

1. Simplification in data collection processes from other government entities through use of web and map services.

2. Usage of spatial data from Abu Dhabi Systems and Information Centre (ADSIC) instead of producing duplicate/redundant datasets.

3. Standardisation of data structure, building data dictionary and multilingual metadata standards to serve SCAD's needs.

4. Enhancement and process improvement through use of SAS BI application.

5. Dissemination tools developed for Census 2011 are initiative tools and produce results highly relevant to user needs.

Results

⊙ **The following marked improvements were seen in the Census 2011 project:**

6. Generation of thematic maps output tool and statistical atlas to easily recognize spatial 'clusters' or 'hot spots' and tell a story about that place.

7. Implementing online strict data confidentiality and ISMS policies to safeguard the sensitive nature of the data.

8. "Table Builder" tool allows the users to design their own census output tables by accessing variables and by modifying the table structure to suit their own requirements.

9. Metadata of Census 2011 is integrated in all output tools in addition to a data dictionary report in both Arabic and English.

10. Statisticians performed coding in SAS instead of IT staff.

Conclusion

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Conclusion

As stated previously, one of SCAD's important functions is to support decision makers in Abu Dhabi as part of 2030 long-term plan for the transformation of the Emirate's economy, including a reduced reliance on the oil sector as a source of economic activity over time and a greater focus on knowledge-based industries in the future.

As part of this, SCAD provides official, reliable and timely statistics to various government entities.

It is imperative that SCAD must choose to define and adopt the best statistical approach and presentation in order to enhance the decision making processes.

With Census 2016, it is envisioned that SCAD will further improve upon the methodology adopted for Census 2011 and make optimum use of the advancement in technologies and the new trends applicable to SCAD's business needs.

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