

Integration of Registers Matching Problems and Privacy Concern

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2011 Population Census and Administrative Records

Administrative records maintained by other government departments were used in the 2011 Population Census in editing, imputation and estimation purpose.

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Privacy Concern

Legal advice was sought from the Department of Justice (DoJ) in each linkage exercise to ensure it did not fall into the Personal Data (Privacy) Ordinance (PDPO)

More about the PDPO will be discussed in later part of this presentation.

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Matching Problems

Problems encountered in linkage of registers

1. Addresses in the Register of Quarters are structured and stored in separate data fields at the time of creation of records
2. Addresses in administrative records from other government departments are not structured

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Matching Problems

3. Abbreviations are used, e.g. “ st.” for “street”, “ rd.” for “road”
4. Typos
5. Not one-to-one correspondence

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Solutions

Standardisation

1. Abbreviations were converted to long form before linkage
2. Addresses from WSD were separated into components as far as possible by computer

Manual screening

For non-match or partially matched cases, manual screening is necessary

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Matching Results

Matching results are different among different type of buildings

- Subsidised sale flats (High, almost 100%)
- Quarters in private residential high-rise buildings (around 80-90%)
- Quarters in other private residential buildings (Low)

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Example

Example to illustrate the difficulty encountered in record linkage

Register of Quarters	Other Administrative Register
District: Central Street: Belcher's Street Street no.: 177-185 Building name: Sai Wan New Apartments Floor: 10 Flat: A	Room A, 10/F, 179 Belcher St. Central, Hong Kong

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Personal Data (Privacy) Ordinance

- Definition of “personal data” in Hong Kong
 1. relating directly or indirectly to a living individual
 2. from which it is practicable for the identity of the individual to be directly or indirectly ascertained
 3. in a form in which access to or processing of the data is practicable



Personal Data (Privacy) Ordinance

- Data protection principle 3
Personal data shall not, without the prescribed consent of the data subject, be used for a new purpose
- Exemption to the above principle
 1. the data is to be used for preparing statistics or carrying out research
 2. the data is not to be used for any other purpose
 3. the resulting statistics or results of the research are not made available in a form which identifies the data subjects or any of them



Population Estimates of Hong Kong

- The “resident population” method for compiling population estimates was introduced in 2000 to replace the “extended de facto” method previously used

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Population Estimates of Hong Kong

- Technical definition of resident population:
 - Usual resident – (1) Hong Kong Permanent Residents who have stayed in Hong Kong for at least three months during the six months before or for at least three months during the six months after the reference time-point and (2) Hong Kong Non-permanent Residents who are in Hong Kong at the reference time-point

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Population Estimates of Hong Kong

- Mobile resident – Hong Kong Permanent Residents who have stayed in Hong Kong for at least one month but less than three months during the six months before or for at least three months during the six months after the reference time-point

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Passenger Movement Records

- For identifying duration of stay of Hong Kong Permanent Residents, passenger movement records from the Immigration Department (ImmD) are used
- Each record is an outbound / inbound trip of a person; all the trips of a person are linked together to calculate the duration of stay in Hong Kong

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Passenger Movement Records

- In the administrative records maintained by Immigration Department, the unique identifier of a person is Hong Kong Identity (HKID) Card number, which is an important personal data item in Hong Kong
- Before passing the records to Census and Statistics Department, HKID card numbers are converted to unique and anonymous code according to legal advice of Department of Justice

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Passenger Movement Records

- To further safeguard data privacy, top coding of information is made, e.g. only the month and date of birth are provided

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Thank you!

