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TITLE: Module on Availability and Use of Information and Communication Technologies in Households

Module on Availability and Use of Information and Communication Technologies in Households

(MODUTIH by its acronym in Spanish)

December, 2013



Methodological issues

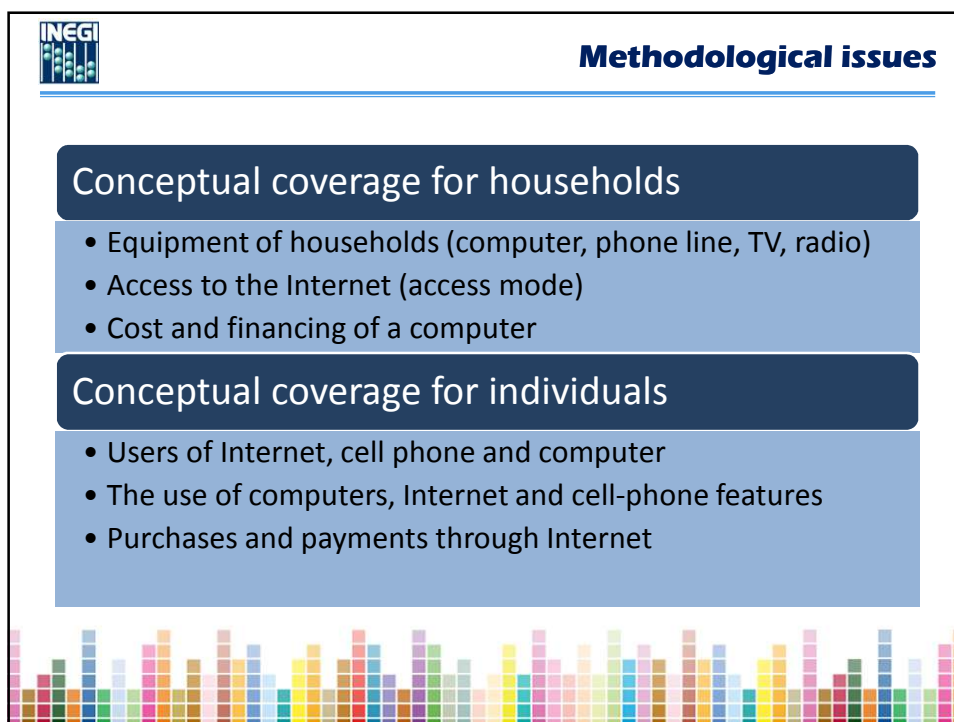
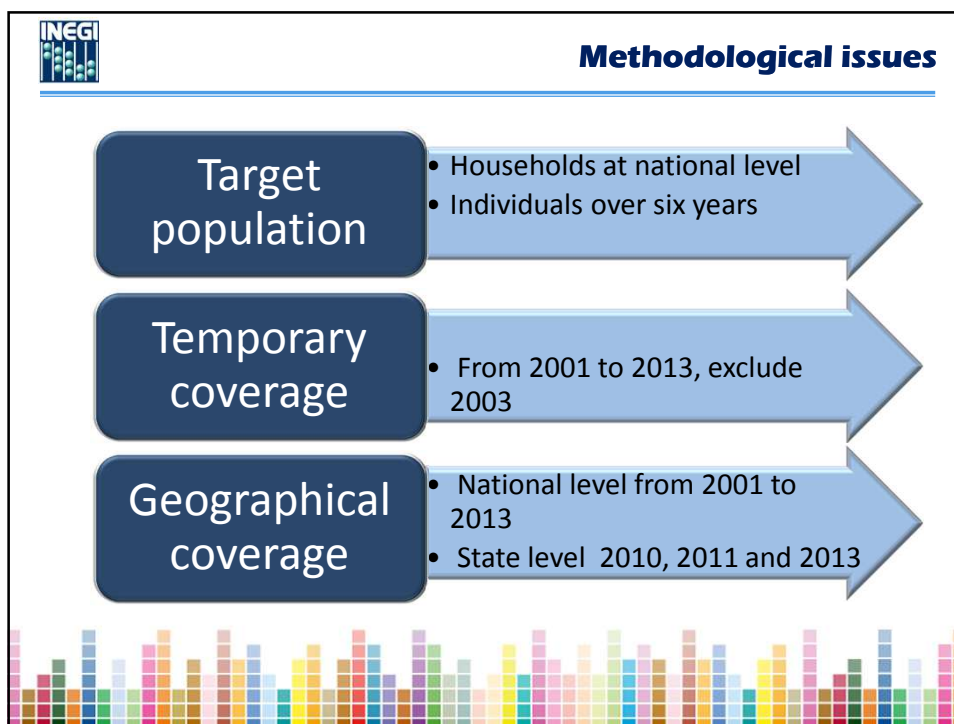
Objective: To get basic data about the availability of ICT in households, as well as its use by individuals, that allows to generate key indicators of access to ICT usage by individuals and households according to the best international outlined practices.


Date of the last survey

- April – May, 2013

Periodicity

- Annually base since 2001, with the exception of 2003.







Methodological issues

SAMPLE SCHEMA


- Inherits the characteristics of the probabilistic survey household employment (ENOE): *two-step* method, stratified and cluster.
- Funded and jointly with the CSIC, it was possible to extend the coverage of the study to provide figures of State level for the 2010, 2011 and 2013 exercises.

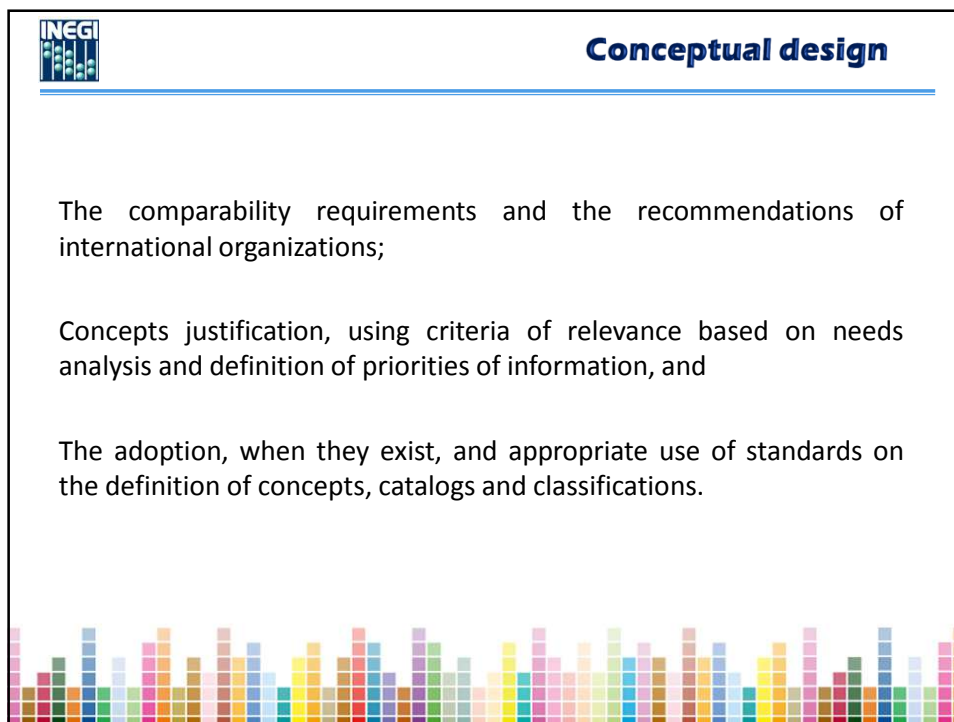
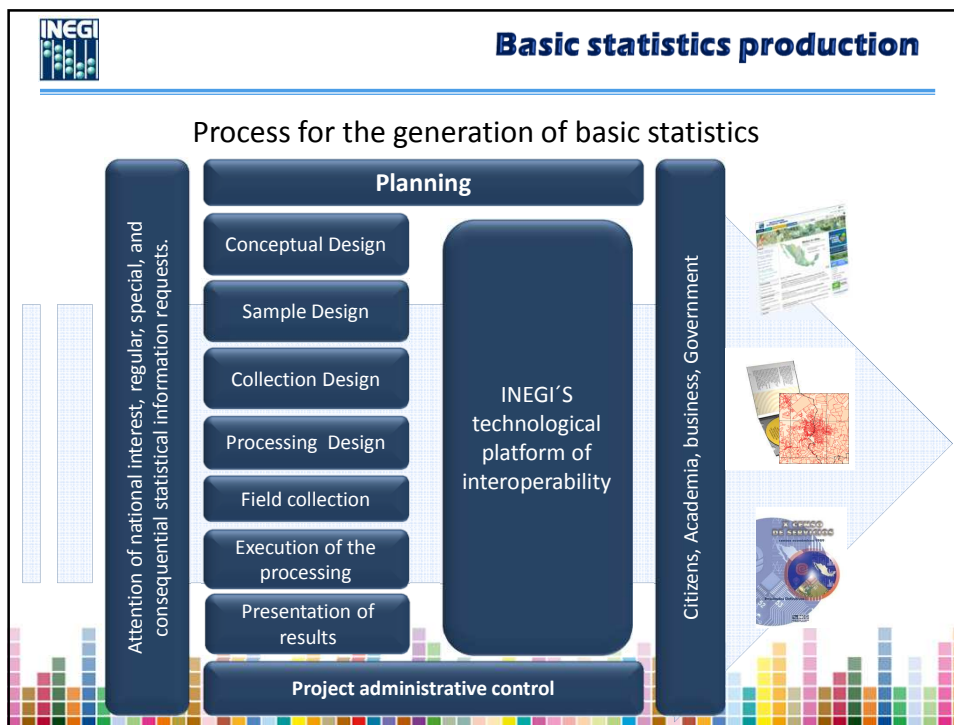
STATISTICAL ACCURACY

- No more than 15% sampling error.
- Confidence level of 90%.
- Rate of non expected response of 15%.
- Sample size: 7,000 housing units for national representation.
- 38,426 housing for State representative.



MODUTIH quality data







Conceptual design

To ensure the quality of statistical measurements, during the "**conceptual design**" gets attention in:

- Identification of the objectives or purposes that guide the statistical project.
- Definition and justification of the concepts of interest aligned to the objectives.
- Questionnaire design, whereas reliable information.
- Conducting field tests to ensure the suitability of questionnaires designed.
- Design coding criteria, validation and presentation of results, considering the objectives and needs initially raised.



Statistical Design

The sampling frame is the infrastructure for sample selection of the survey. It consists of a set of housing listing and mapping associated with them for its location.

The MODUTIH sample is obtained from the sample that rises for the ENOE. This is because the MODUTIH is an annex module to the ENOE questionnaire. That is way, the statistical design of the MODUTIH is aimed at the measurement of the rate of open unemployment (TDA).





How do we care the quality process of the statistical design?

Ensuring a quality frame

- Delivering mapping and support elements to the interviewer.
- Taking care that the listings are exhaustive in coverage.
- Carrying out a continuous updating of listings of homes.
- With an automated operation.
- Supervision.
- Construction and monitoring of indicators.




Statistical Design / Ensuring Quality Design

Review process guide:

For calculating
the sample size

- Is the magnitude of the error suited to the indicators of interest?
- Was considered the effect of design?
- Is the average number of inhabitants per house of the study population scope?
- Do was chosen the correct rate of anticipated non-response?
- Is the total sample size the sum of the sample in the domains?



 **Statistical Design / Ensuring Quality Design**


Review process guide:


Distribution

- Sample was allocated to all strata?
- In case of collapses, the collapsed stratum contains the sum of selection units strata?

Seleccion

- The sum of selected units per stratum, corresponding to the distribution?
- The total sum of units is fixed?
- In case of substitutions, there are all identified?
- The identification data of the selected units are complete?



 **Statistical Design / Ensuring Quality Design**


Review process guide:

Calculation of expansion factors

- The sum of natural expansion factors, does the total units level stratum and total level?
- The sum of factors assigned to individuals or economic units, is consistent with the sum of population or employed personnel totals, respectively?
- Were reviewed and atypical adjusted factors were adjusted where appropriate?

Statistical accuracy calculation

- There are no inconsistencies in the allocation of strata to the PSU (Primary Sampling Units)?
- We checked the associations in the case of collapse of strata?
- Does the value of the indicator obtained by the calculation of precise details, match with the one obtained in the area of processing?
- Does the method of calculation to be used correspond to the design?





Training

- We establish a **training strategy** based on the number of people involved in the project, their profiles, or experiences and as the diversity of functions involving field work.
- Prior to the training instructors Central, regional, or State are prepared, according to the structure of the Institute.
- We produce educational materials such as manuals, didactic guides, books of exercises, presentations and checking activities.
- The courses are theoretical and practical in groups of maximum 30 participants, which favors the development and verification of learning.
- At the end of each course, are valued outcomes and are established improvements or adjustments required by the next process of training.



Data collection design

Data collection should be monitored, analysis of progress and attention to deviations and contingencies, with support in monitoring, implement timely corrective actions to comply with schedule.

Article 21 of the Mexican technical rules for the generation of basic statistics





Data collection design

Quality control at field work

Control, monitoring and supervision in the data collection contributes to improve the quality of the statistics to be provided:

- Ensures that the sample selected is equal to the currently sample collected.
- Ensures that the concepts set out in the conceptual design are understood correctly by the respondent and well captured by the survey.
- The number of visits is reduced to the respondent, as well as the consultations on a possible inconsistency of data.



Processing design

Enter-data quality/data capture

- Acceptance of valid codes for each of the variables.
- Verification of the sequences of the questions set out in the questionnaire.
- Integrity check to the inside of a questionnaire, housing, formation of households, population inside homes and the modules up to the target population of the survey.
- Verification of the integrity of the unit of processing, questionnaire, package, batch, municipality, entity, etc.
- Verification of integrity of the captured, caught against the selected sample.



INEGI

Processing design

Validation / Edition.

- Ensures **consistency and logical coherence of the questionnaire questions** and the interrelationship between them through a discovery process in data inconsistency.
- It consists of the verification of certain fields in each record to see if they are **consistent**, in the judgment of experts and **automatic debugging process**, consisting of a set of tasks for the **treatment of errors** and to provide information to measure the **quality data**.

Validation process

DB with auto validation

Validation

DB valided

Analysis reports

INEGI

Processing design

Results presentation.

Generate information that ensures the geographic coverage, ensure the consistency of the data for their release and final results.

Generated products:

- Microdata.
- Consultation Systems:
- Interactive queries
- Sociodemographic indicators.
- Basic Tabulated.



Lessons learned

The MODUTIH has taught us that investing time and financial resources in the process of design, collecting, monitoring and control of all and each one of the stages of the process for the generation of basic statistics, is the best investment that can be made to ensure the quality of the information.

This teaching is valid both for surveys related to economic issues, as for demographic issues and otherwise.

Apply this strategy to all exercises of the collection of information through surveys, necessarily gives us more solid National Information System.



Recommendations

Our experience in the survey for more than one decade of the MODUTIH allows us to make some recommendations:

- The institutional arrangements that are given with the ministries and institutions users of information on this subject, in the framework of the functioning of the specialized technical Committee on Statistics of the Information Society (CTEESI), ensures that the information generated have the quality required by the users.
- The selection of a suitable respondent in the home, and therefore the abandonment of the universal respondent, has direct impact on the quality of the data obtained. How much more, on this subject as dynamic and changing, and so associated with the individual use of the technologies involved.





Recommendations

- The definition of the collection instrument (questionnaire) clearly and solidly supported within a conceptual framework and international recommendations, is a relevant element to take into account to ensure the quality of the information.
- Control, monitoring and supervision of the operation of field involved in the capture of the MODUTIH information contributes substantially to the statistical quality of the information.



Challenges

What are the challenges posed by the MODUTIH for the future?

- The use of electronic means (CAPI) for data collection.
- That the MODUTIH not be anymore a module of the ENOE, to become a unique survey .
- Apply the survey to a direct respondent.

