Survey Techniques for Coastal Livelihood Studies

SANTADAS GHOSH
Associate Professor in Economics
Visva-Bharati; Santiniketan (India)

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General Issues in Primary Survey

- Unit of analysis
- Availability of secondary information
- Sample size and sampling frame
- Simple random sampling or stratification
- Stratification across time
- Equal proportionate sampling (?)
- Multistage sampling
- Selection at different stages

Cautions: Code of Conduct in Field

- Appearance / Dress
- Your image/position that you would like to project
- Your motivation/intention you would like to convey
- Talk in a language that locals understand clearly

Survey Logistics

- Taking local leaders / stakeholders into confidence
- Caution about period/season of survey
- Manpower planning
- Least cost logistical plan (accommodation and stay for enumerators)
- Knowledge of local prices and wages
- Innovative payment structure for hired personnel

Practical Way Sample Selection: Example-1

Study objective: **Valuation of Tiger Reserve through TCM**

Study Period: **2005-2006**

Investigators: **Indrila Guha** (Vidyasagar College for Women, Kolkata)
&
Santadas Ghosh (Visva-Bharati, Santiniketan)

Sponsor: SANDEE Host: GCP-JU

Travel Cost Method (TCM): The Theory

Step1:

Estimate a Trip Generating Function (TGF) for a recreational site based on actual data from visitors *(regression analysis)*

Visitation rate = f (Travel cost, other variables of interest)

Step 2: (Based on the estimated TGF)

- Estimate the recreational demand function
- Calculate recreational value (Consumer Surplus)
- Make projections on revenue and visitors for possible variations in entry-fee level

I(ndividual) TCM & Z(onal) TCM

ITCM

Visitation rate (individual) = Number of trips by a visitor within a specified time period

Other variables of interest = Age, sex, edu, income…of the visitor

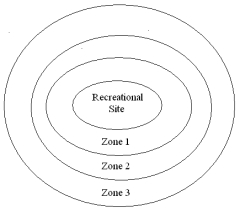
ZTCM

Visitation rate (zonal) = Number of visitors (per 'XXXX' population) visiting the site within a specified time and originating from a particular 'zone'

Other variables of interest = zonal socio-economic characteristics

'Zoning' in ZTCM

Theory:



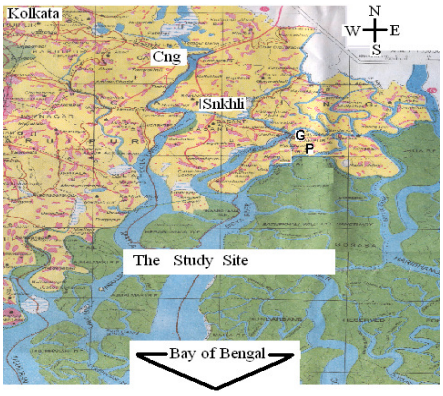
Practice: Decide on zones objectively, depending on the visitors' originating points and availability of socio-economic data from secondary sources.

Further Estimation challenges in ZTCM

- Number of zones: (degrees of freedom and zero visitation)
- Multi-point tourists
- Foreign tourists
- Variable duration of stay
- Market segmentation

Sundarban as a recreational site

- A travel on Boat / Launch through rivers: stop on few Watch Towers
- Under exclusive control of the Dept. of Forest
- Visitor's entry-permits are priced
- Not in a circular (multi-point) tour circuit
- Poor infrastructure and remoteness of the site
- Repeat visitations are rare (case for ZTCM)



Data Sources

- On-site stratified random selection of returning visitors
- Stratification according to tour 'package'
- Zonal data from secondary sources (census)
- 'Visitation rate' and 'travel costs' are calculated from **two different data sets**

Survey data: Set - I

Record of visitors' from entry-permit

- Place of origin
- Group size

➢ Record size: 46,886 (73% of annual visitors)
(used to calculate zonal visitation rate)

(Collected during Nov, 2005 – March, 2006)

Survey data: Set - II

Returning tourists surveyed for

- Travel cost information
- Place of origin
- Other relevant socio-economic information (personal & HH)

➢ Data size: 1,948 (3% of annual visitors)
(used to calculate average zonal travel cost)

(Collected during Nov, 2005 – March, 2006)

Possibility of stratification

Tour types / packages identified in Pilot Survey

1. Self-made trip (individual or group)
2. Canning Package
3. Sonakhali Package
4. Kolkata package I (WBTDC)
5. Kolkata package II (Help Tourism)
6. Kolkata package III (Sundarban Tiger Camp)
7. Custom-made package

Challenges

- To set target sample size from each strata
- To decide on the points of intercepting the respondent
- To decide on the time to approach a respondent
- To take the tour operators/hoteliers into confidence
- To arrange for logistical support of urban enumerators
- To arrange for local transport for urban enumerators

Practical Way Sample Selection: Example-2

Study objective: **Livelihood coping after cyclone Aila**

Study Period: **2010-2012**

Investigator: **Santadas Ghosh** (Visva-Bharati, Santiniketan)

Sponsor: SANDEE

Host: **SHODH** (Nagpur)

Research Questions

RQ#1:

What were the immediate coping strategies of households after the cyclone? What determined their choice of immediate coping strategies?

RQ#2:

What coping strategies are being used in the medium and long term and what are the outcomes of different coping strategies?

RQ#3:

To what extent do natural resources (forest/river) provided 'natural insurance'? Who gains from these resources?

Study Design

- Field survey: 800 household's - repeat visitation of three rounds over two years
- Households chosen from (i) 2 administrative blocks
  (ii) 20 villages from each block
  (total=40 villages)
- Selection of blocks : purposive
- Selection of villages: purposive
- Selection of households : 20 from each village, stratified random, based on landholding (total = 800 HH)

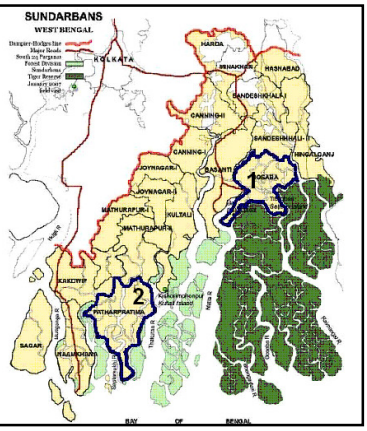
Stage-I: Choice of Blocks

Objectives

- Most damaged
- Differential remoteness
- Differential exposure to natural resources

The Two Sample Blocks

1. GOSABA
   (in north-east, adjacent to reserve forest).
2. PATHARPRATIMA
   (in south, facing the sea, away from the reserve forest)



Local Administrative structure

- A block is subdivided into several Gram Panchayets (GP)
- Each GP has several 'Booths area' (typically 10-15)
- 'Booth's are the lowest administrative units (=villages)
- There is one elected representative for every 'booth' (Panchayet Elections)
- One among such elected representatives of booths in a GP area is elected as a 'Panchayet Pradhan' (Panchayet Head)

Two blocks at a glance

(Source: District Census Handbook of South 24 Parganas, 2008)

	1. Block Gosaba	2. Block Patharpratima
Total number of Gram Panchayets (GP: local administrative bodies)	14	15
Total number of villages (polling booths)	147	187
Total number of Households	37,042	40,753

Stage-II: Selection of 40 villages

- Village = polling booth area (one elected Panchayet member)
- Variation ensured following three independent criteria

1. Extent of damage to agriculture
   Indicator: % of area left uncultivated after Aila

2. Remoteness:
   Indicator: time taken from the village to travel to the Block administrative office by usual mode of transport

3. Endowment of natural resources:
   Indicator: length of embankment in the village (for proximity of river)

Village (booth) selection)

Each of the 334 elected booth (village) representatives were asked to provide the following information:

1. (on Aila damage):

In what percentage of cultivable area in the village, in your opinion, cultivation was possible after Aila? (please put √)

0% (code=1)	Less than 25% (code=2)	25% - 50% (code=3)	50%-75% (code=4)	More than 75% (code=5)	100% (code=6)

Booth selection (continued)

2. (on remoteness)

What in your opinion is the average time taken to reach the BDO office from the village by usual mode of transport? (please put √)

Less than 1 Hour (code=1)	1-2 hours (code=2)	2-3 hours (code=3)	More than 3 hours (code=4)

3. (for river proximity)

(a) The length of embankment within your booth area:

_____km_____mt

(b) Number of voters in your booth area following the latest electoral roll: _____(No.)

Ensuring variation

• For each block, number of possible combinations of these three independent indicators is=

6 (damage) x 4 (remoteness) x 5 (river proximity) = 120

• Number of booths to be selected = 20

• So, selection was purposive, looking at the indicator codes.

• Also, it was ensured that:

(i) Each GP has at least one booth selected (29 GPs)

(ii) Each island has at least one selected booth on it (18 islands)

Stage-III: Selection of HHs

Stratification:

Sampling frame:

Building up a sampling frame:

Selection of Sample Households

- For each of the 40 selected booths, all households were listed (sampling frame) with information on their

(i) Current landholding
(ii) Number of family members
(iii) Primary and secondary occupation

- Number of listed households:
  7,626 (Gosaba) + 6,341 (Patharpratima) = 13,967 (Total)
- Stratified random sample of 20 HHs from each booth was selected. (with A list and B list)
- Stratification was done purely on the basis of landholding

Distribution of households' landholding across blocks

(bigha=local unit for landholding=0.33 acre)

Household Landholding	**% of HHs in Gosaba Block**	**% of HHs in Pathar-pratima Block**	**No. of selected hhs per booth (Gosaba)**	**No. of selected hhs per booth (Patharpratima)**
Nil (landless)	28%	21%	6	4
0-2 bigha	41%	50%	8	10
2 -5 bigha	22%	21%	4	4
More than 5 bigha	9%	8%	2	2

Thank You!