

Trucking Survey in Uganda

Sample Survey Design and Data Quality Control

1. Survey coverage

The Trucking Survey in Uganda targeted trucking companies and companies conducting their own transportation. A trucking company is defined as a company that conducts trucking as its main operation and that has five or more full-time paid employees. A company conducting its own transportation is a company for whom trucking is not its main operation, that conducts the majority of its own transportation and that has five or more full-time paid employees. The companies surveyed serve at least one of the following routes:

- Kampala – Nairobi
- Kampala – Eldoret
- Kampala – Dar es salaam
- Kampala – Mombassa
- Kampala – Entebbe
- Kampala – Malaba
- Kampala – Mwanza
- Kampala – Kigali

The survey also sampled a selection of truckers (trucking operators with less than five full-time permanent paid employees) that serve the main roads listed above.

Companies with five or more full-time paid permanent employees

A list of Ugandan trucking operators was obtained from the Statistical Office. This list was completed and updated during the pilot survey. Following the results of the validation process, a sample frame consisting of a population of 47 establishments was drawn.

An attempt was made to contact each of these establishments. During the survey, it resulted that 4 establishments were closed, 14 establishments were out of scope or were unreachable despite repeated attempts by phone, 8 establishments refused to participate, and 21 establishments agreed to participate resulting in 21 completed trucking questionnaires, among which 4 trucking companies conducting their own transportation.

Truckers

In this survey, the trucker's stratum covers all establishments of the trucking industry with less than 5 employees. For many reasons, including the small size of establishments, their expected high rate of turnovers, the high level of "informality" of establishments and consequently the difficulty to obtain trustworthy information from official sources, EEC Canada selected an aerial sampling approach to estimate the population of establishments and select the sample in this stratum according to the roads to be covered.

First, to randomly select individual truckers establishments for surveying, the following procedure was followed: i) select *districts and specific zones* of each district where there are lorry parks or where truckers usually off-loading; ii) *count all truckers* which generally stop in these specific lorry parks; iii) based on this count, create a virtual list and select establishments at random from that virtual list; and iv) based on the ratio between the number selected in each specific zone and the total population in that zone, create and apply a skip rule for selecting establishments in that zone.

The districts and the specific zones were selected at first according to our national sources. The EEC team then went in the field to verify these national sources and to count truckers. Once the count for each zone was completed, the numbers were sent back to EEC head office in Montreal.

At head office the following procedure was followed: the count by zone was converted into one list of sequential numbers for the whole survey region, and a computer program performed a random selection of the determined number of establishments from the list. Then, based on the number that the computer selected in each specific zone, a skip rule was defined to select truckers to survey in that zone. The skip rule for each zone was sent back to the EEC field team.

In Uganda, enumerators were sent to each zone with instructions as to how to apply the skip rule defined for that zone as well as how to select replacements in the event of a refusal or other cause of non-participation.

2. Population and sample size

Table 1
Population of main trucking operators in Uganda by headquarters location

| Location | Size |
|-----------------|-------------|
| Arua | 1 |
| Entebbe | 2 |
| Goma | 1 |
| Kampala | 35 |
| Koboko | 6 |
| Mukono | 1 |
| Nairobi | 1 |
| Total | 47 |

Table 2
Population of truckers by specific zone in Kampala

| Location | Size |
|-------------------------------------|-------------|
| Arua park | 70 |
| Ben Kiwanuka street | 40 |
| Gulu-lira stage | 10 |
| Kitgum stage | 10 |
| Lorry park opposite railway station | 20 |
| Makulaby park | 20 |
| Najjankumbi park | 10 |
| Nakawa park | 25 |
| Nakesero market area park | 15 |
| Ndeeba park | 10 |
| New Taxi park | 25 |
| Wandegeya park | 15 |
| William street | 20 |
| Total | 290 |

Table 3
Final sample size by stratum

| | Kampala |
|--------------------|----------------|
| Trucking companies | 21 |
| | |
| Truckers | 57 |
| | |
| Total | 78 |

3. Participation

Table 4

Approached, closed, refused, unavailable, and surveyed

| | Kampala | | | | |
|---------------------------|---------|-------|------|----------|-------|
| | App. | clos. | Ref. | Unavail. | Surv. |
| Trucking companies | 47 | 4 | 8 | 14 | 21 |
| Truckers | 100 | 0 | 20 | 23 | 57 |
| Total | 147 | 4 | 28 | 27 | 78 |

Table 5

Approached, closed, refused, unavailable, and surveyed as percentage of approached

| | Kampala | | | | |
|---------------------------|---------|--------|--------|-----------|--------|
| | App. | %clos. | %Ref. | %Unavail. | %Surv. |
| Trucking companies | 47 | 8.51% | 17.02% | 29.79% | 44.68% |
| Truckers | 100 | 0.00% | 20.00% | 23.00% | 57.00% |
| Total | 147 | 2.72% | 19.05% | 18.37% | 53.06% |

4. Data quality control

A management policy for the interviewers was established and the procedures during the execution of the survey were the following:

- A) Daily meetings with each interviewer at the end of the day for the first revision of their questionnaire(s). The objectives of this first pass through the questionnaire were:
- 1) to verify that all of the questions had been answered and that basic constraints had been respected. If the questionnaire fails this aspect of the review badly, it was returned to the enumerator for him to complete (through a return visit if necessary). The basic checks here include:
 - (i) that no fields had been left empty (other than explicitly skipped fields),
 - (ii) that no fields had been filled in ambiguously (i.e. with a dash, slash, or squiggle),
 - (iii) that coded responses of DK (Don't Know), NA (Not Applicable), and R (refused to answer) seemed plausible for the field in question
 - (iv) that percentages, where required, added up to 100%, and
 - (v) that fields with known relationships to adjacent fields respected those relationships (e.g. the year of manufacturing a vehicle is smaller than the year of purchasing that vehicle).
 - 2) to take the opportunity to reinforce the enumerators awareness of the logical links between questions, by quickly checking the more obvious ones, demonstrating what they are doing, highlighting any inconsistencies and asking for explanations. Some of the consistency checks that might be done quickly at this stage included:
 - (i) if the establishment did or did not perform cross border operation (i.e. yes or no but not NA), therefore the main point of exit that the establishment use should be listed;
 - (ii) if the establishment owned light weight vehicles, it should have the total cost of maintenance and the average fuel consumption for this type of vehicle;
 - (iii) if there were some trips with overload fines in certain routes respondents should also have the amount of overload fines per trip .However, the full consistency checks were carried out using an SPSS script once the data had been entered. The results of which were reviewed during a second meeting with the enumerator (see C below).
 - 3) to assess the interviewer's ability to correctly fill out the questionnaire and to clarify any concerns regarding their understanding of the questionnaire, if necessary.
- B) Following this review, the questionnaire was retained by EEC for data entry and the administration of coherence tests, unless it badly failed the first basic tests listed in A1) above. Within a short time frame (one or two days after the first meeting), the questionnaire was entered, and the coherence and completion tests for each questionnaire run.

C) There was a second meeting with the interviewer in order to go over the results of the coherence and completion tests and if necessary return the questionnaire for further completion/verification.

D) Data entry and consistency check

1) When data entry was finished for the day, for each type of questionnaire for which additional cases were entered or existing cases were updated, that data file were exported to SPSS format using the provided export utility.

2) The resulting SPSS script was run to open the data in SPSS.

3) The consistency and completion tests script was run in order to generate data regarding the completion status of each case with respect to the consistency checks, and to generate a report detailing these results as well as the completion status of the whole sample with respect to sales.

E) Completion Tests

A questionnaire was considered “final” when it has answers from respondents to at least 85% of the questions in each section. In addition, across the entire set of completed questionnaires, each variable was submitted to an 85% completion test. Finally, all information pertaining to the screener portion of the questionnaire had to be completed.