

Sample Answers Process for the production of RDD Samples.

1) Introduction:

Random Digit Dialling (RDD) is the process used to obtain a completely random sample of the population for telephone surveys. Taken literally, the random numbers that would be obtained from a ‘pure’ random list of digits would yield a majority of completely ineffective numbers – even if each number was of the required length in terms of the number of digits. Thus the process of ensuring a relatively efficient sample of random telephone numbers is subject to a number of disciplines and the purpose of this document is to detail the methods used by Sample Answers for the production of RDD sample.

Normally RDD telephone sample is used whenever the survey requires a ‘pure’ random sample of telephone numbers to cover the **total population** - with each member of the population having an **equal probability** of inclusion in the study. Occasionally, however, RDD is also used whenever there is no other source available for identifying potential respondents within a country.

In order that these objectives can be achieved Sample Answers provides 2 main RDD sample products solely for Market Research usage they are: *RDD for Landline and Mobile RDD*. These products are both available for most countries across the world and it should be noted that the objective of coverage of the total population would require the use of **both** mobile and landline RDD (indeed, in many of the underdeveloped countries Mobile telephones have far more coverage of the population than do landlines). Irrespective of that fact, coverage of both Landline and Mobile numbers does distort the objective of equal probability and we comment further on that aspect in section 5 below.

In any event, creation of a truly representative RDD sample is a **two** stage process. Firstly, we create a suitable **seed frame** and, secondly, we create the **RDD sample** from the seed frame, according to the requirement of the project as specified by the client.

2) Creation of the **seed frame** for Landline samples.

For each country where landline RDD is required, Sample Answers maintains a database of active, or recently active, telephone numbers meeting the criteria of the Standard Numbering Plans, using sufficient numbers to ensure coverage of ‘niche’ areas. These seeds are drawn from a wide variety of sources, including recent directory publications, service providers and commercial databases.

The individual source databases contain many shortcomings such as coding and scanning errors, as well as not containing all current listed numbers and ex-directory numbers. This is why straight ‘listed sample’ extracted from one or more directories will not provide a nationally representative sample. However, our seed frames do include as many providers as possible to ensure that any RDD sample produced from the seed frame will be representative (including ex-directory numbers).

In almost all countries, the first few digits of each element of the seed frame for Landline RDD will determine *area codes* that can be used to identify active blocks of telephone numbers ensuring that the resultant RDD samples are only created within those blocks of numbers that have been assigned or activated within that countries numbering plan.

The resultant seed frame is then used to generate the required samples of probable working residential numbers proportionate to, and representative of, the desired population.

3) Creation of the actual Landline *RDD Sample*

The final process of creating the landline RDD sample is designed to resolve any shortcomings within the seed frame.

An RDD sample can either be a ‘national’ file of numbers, produced to be representative of the total population by region and such other characteristics as may be required (e.g. urban versus rural) or may be limited to coverage of a more specific area or areas. In most countries Sample Answers can provide samples by region, county, town, postcode, Nielsen region and telephone area code with even more detail available in the US and the UK. *Please note that Sample Answers make no additional charge for appending any of these variables to the output file.*

Once the geographies have been determined according to the project requirement appropriate seeds are extracted from the seed frame, balanced across the actual geographical requirement. These seeds are then used to create the RDD sample matching the required number of sampling points by area and randomising the last N digits of the seed number, where N is 3 or less. This ensures that the resultant sample is retained within the known active blocks.

Resultant RDD samples are screened against lists of business telephone numbers where available to reduce the number of ineffective calls made. In most countries, RDD samples can be pulsed to reduce the number of inactive telephone numbers supplied in a sample. The cleaned sample is then matched back to the sampling points to ensure correct representation by area before being released to the client.

4) Creation of Mobile RDD.

In many countries Mobile telephone numbers are allocated to suppliers with the ‘leading’ digits of the telephone number identifying each supplier as *originally* licensed by the corresponding authorities. Then each supplier has issued blocks of numbers as being ‘active’ and information is normally available on which blocks may be expected to be active, however, in many cases that number may now have passed to a new supplier as a result of churn!

Thus, in most instances it is not possible to identify different geographies within the country and, therefore the geographical precision available with landline RDD is not available with mobile numbers. The US is a major exception to this rule, but elsewhere it is necessary to apply quotas by geography to be sure that the resultant sample will be representative geographically.

Indeed, in many countries it is only possible to ensure that the seed frame for Mobile RDD will be representative of the suppliers published brand shares and, as with the landline process, the resultant seeds are then used to create the RDD sample by matching the required number of sampling points by supplier, randomising the last N digits of the seed number, where N is 3 or less.

Notes:

- A) Sample Answers can ensure that all RDD samples are de-duped against previously supplied/dialled sample whether supplied by us or through other sources.*
- B) In many countries we are able to pulse (aka 'ping') the telephone numbers (either mobiles or landlines) to screen out any not working numbers.*
- C) Optionally, when requested, we can also pass them through DNC/Robinson/Telephone preference service files to increase potential response rates.*

5) A note on equal probability.

It is well known that the use of landline RDD does not, of itself, yield an equal probability for a sample of adults within a population because of the fact that there may be more than one adult present at the location identified by the telephone number. Therefore, to ensure that an equal probability sample is actually achieved, there needs to be a random selection process of one adult from the total number of adults present at that location. Moreover, that probability needs to be corrected if, in fact, there were (are) 2 landlines covering the same location.

When combining both Landline and Mobile RDD it is therefore also necessary to understand the probability of selecting an individual who may be accessed through one or more landlines and mobile numbers. This fact may, of course, influence your 'screening' questionnaire structure accordingly. In truth this relatively small differential probability of selection is not a significant influence on the results for most studies but is *crucial* in any study which may involve researching the use of media and communications within the sampled population.