The Nepal 2013 Enterprise Surveys Data Set

I. Introduction

1.   This document provides additional information on the data collected in Nepal between 4th February 2013 and 14th June 2013. The objective of the enterprise survey is to gain an understanding of what firms experience in the private sector.

The Enterprise Surveys, through interviews with firms in the manufacturing and service sectors, capture data covering measures of firm performance, firm structure as well as business perceptions on the biggest obstacles to enterprise growth, and the business environment in general. They are used to create statistically important business environment indicators that are comparable across countries.

The report outlines and describes the sampling design of the data, the data set structure as well as additional information that may be useful when using the data, such as information on non-response cases and the appropriate use of the weights.

II. Sampling Structure

2.   The sample for Nepal was selected using stratified random sampling, following the methodology explained in the *Sampling Manual*[1]. Stratified random sampling[2] was preferred over simple random sampling for several reasons[3]:

a. To obtain unbiased estimates for different subdivisions of the population with some known level of precision.

b. To obtain unbiased estimates for the whole population. The whole population, or universe of the study, is the non-agricultural economy. It comprises: all manufacturing sectors according to the group classification of ISIC Revision 3.1: (group D), construction sector (group F), services sector (groups G and H), and transport, storage, and communications sector (group I). Note that this definition excludes the following sectors: financial intermediation (group J), real estate and renting activities (group K, except sub-sector 72, IT, which was added to the population), and all public or utilities-sectors.

c. To ensure that the final total sample includes establishments from all different sectors and that it is not concentrated in one or two of industries/sizes/regions.

d. To exploit the benefits of stratified sampling where population estimates, in most cases, will be more precise than using a simple random sampling method (i.e., lower standard errors, other things being equal.)

e. Stratification may produce a smaller bound on the error of estimation than would be produced by a simple random sample of the same size. This result is particularly true if measurements within strata are homogeneous.

f. The cost per observation in the survey may be reduced by stratification of the population elements into convenient groupings.

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[1] The complete text can be found at http://www.enterprisesurveys.org/Methodology
[2] A stratified random sample is one obtained by separating the population elements into non-overlapping groups, called strata, and then selecting a simple random sample from each stratum. (Richard L. Scheaffer; Mendenhall, W.; Lyman, R., "Elementary Survey Sampling", Fifth Edition).
[3] Cochran, W., 1977, pp. 89; Lohr, Sharon, 1999, pp. 95

3.   Three levels of stratification were used in this country: industry, establishment size, and region. The original sample design with specific information of the industries and regions chosen is described in Appendix E.

4.   Industry stratification was designed in the way that follows: the universe was stratified into manufacturing, retail, and other Services..

5.   Size stratification was defined following the standardized definition for the rollout: small (5 to 19 employees), medium (20 to 99 employees), and large (more than 99 employees). For stratification purposes, the number of employees was defined on the basis of reported permanent full-time workers. This seems to be an appropriate definition of the labor force since seasonal/casual/part-time employment is not common practice, apart from the construction and agriculture sectors which are not included in the survey.

6.   Regional stratification was defined in 3 regions (city and the surrounding business area) throughout Nepal. The regions are Western, Central, and Eastern Nepal. Western Nepal included Butwal, Dhangadhi, Nepalgunj, and Pokhara; Central Nepal included Banepa, Bhaktapur, Bharatpur, Birgunj, Hetauda, Kathmandu, Lalitpur, and Simara; Eastern Nepal included Bhadrapur, Biratnagar, and Itahari.

III. Sampling implementation

7.   Solutions Consultant Pvt. Ltd was hired to implement the Nepal 2013 enterprise survey.

8.   Given the stratified design, sample frames containing a complete and updated list of establishments as well as information on all stratification variables (firm size, industry, and region) are required to draw the sample for the Enterprise Surveys. However, in the absence of a government list or database which allows categorizing firms as per their level of employment and under the relevant ISIC categories, the earlier list used in Nepal Enterprise Survey 2009 was used to sample out the respondents. Additionally, prior to the commencement of the Nepal ES 2012, all the firms interviewed in the 2009 survey were re-contacted via. telephone to verify their current status (whether they were in business or not) and information regarding the firms' employee size was updated assuming it could have changed in last 3 years. Attempts were made to physically visit the firms which couldn't be contacted over the phone. Over 85% of the firms were re-contacted and deemed eligible for interviews for the Panel survey. The firms were informed that they would be visited by someone to conduct the interviews again.

9.   Since there isn't any government list or database in Nepal (as per the current understanding) which allows categorizing firms as per their level of employment and under the relevant ISIC categories, the earlier list generated from the block enumeration for conducting Nepal Enterprise Survey 2009 was used again to sample out the respondents. The list contained the following information

- Coverage;
- Up to datedness;
- Availability of detailed stratification variables;
- Electronic format availability;
- Contact name(s).

Counts from sample frame are shown below.

Sample Frame

SAMPLE FRAME FRESH FIRMS

	Manufacturing	Retail	Other services	Grand Total
Central	**307**	**98**	**240**	**645**
small	202	97	234	533
medium	59	1	5	65
large	46	0	1	47
Eastern	**31**	**23**	**66**	**120**
small	26	23	66	115
medium	5	0	0	5
large	0	0	0	0
Western	**117**	**23**	**105**	**245**
small	112	23	104	239
medium	5	0	1	6
large	0	0	0	0
Grand Total	**455**	**144**	**411**	**1010**

SAMPLE FRAME PANEL FIRMS

	Manufacturing	Retail	Other services	Grand Total
Central	**67**	**74**	**81**	**222**
small	10	63	29	102
medium	43	11	49	103
large	14		3	17
Eastern	**8**	**8**	**9**	**25**
small	0	7	4	11
medium	6	1	5	12
large	2	0	0	2
Western	**35**	**14**	**14**	**63**
small	3	14	8	25
medium	28	0	6	34
large	4	0	0	4

Grand Total	**110**	**96**	**104**	**310**

10. The enumerated establishments were then used as the frame for the selection of a sample with the aim of obtaining interviews at 482 establishments with five or more employee, of which 242 are fresh firms and 240 are panel firms.

11. The quality of the frame was assessed at the onset of the project through visits to a random subset of firms and local contractor knowledge. The sample frame was not immune from the typical problems found in establishment surveys: positive rates of non-eligibility, repetition, non-existent units, etc.

12. Given the impact that non-eligible units included in the sample universe may have on the results, adjustments may be needed when computing the appropriate weights for individual observations. The percentage of confirmed non-eligible units as a proportion of the total number of sampled establishments contacted for the survey was 0%[4]. Breaking down by stratified industries, the following sample targets were achieved (using a4a and a6a):

TARGET FRESH FIRMS

	Manufacturing	Retail	Other services	Grand Total
Central	**104**	**22**	**52**	**178**
Small	53	21	48	122
Medium	5	1	3	9
Large	46	0	1	47
Eastern	**6**	**17**	**2**	**25**
Small	1	17	2	20
Medium	5	0	0	5
Large	0	0	0	0
Western	**26**	**5**	**8**	**39**
Small	25	5	7	37
Medium	1	0	1	2
Large	0	0	0	0
Grand Total	**136**	**44**	**62**	**242**

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[4] Based on out of target contacts and impossible to contact establishments

TARGET PANEL FIRMS

	Manufacturing	Retail	Other services	Grand Total
Central	**67**	**54**	**41**	**162**
Small	10	43	22	75
Medium	43	11	16	70
Large	14	0	3	17
Eastern	**8**	**8**	**9**	**25**
Small	0	7	4	11
Medium	6	1	5	12
Large	2	0	0	2
Western	**30**	**14**	**9**	**53**
Small	3	14	8	25
Medium	23	2	1	24
Large	4	0	0	4
Grand Total	**105**	**76**	**59**	**240**

13.   A minimum quota of 60 female-managed businesses was provided as a part of the requirement of DFID who was co-funding this project. However, out of the total 482 establishments, only 56 of them were female managed, therefore, additional four female-managed businesses were interviewed, that was selected from the internal database (of personal contacts) of Solutions Consultant after gaining the approval of the World Bank team. Additionally, to capture relatively larger firms that employ more people, it was ensured that the additional female-managed businesses fell under the manufacturing sector and had at least 20 permanent employees working in their firm. These additional 4 interviews with female-managed businesses are un-weighted and appear as a separate dataset in the ES website data portal.

IV. Data Base Structure:

14.   The structure of the data base reflects the fact that 3 different versions of the questionnaire were used. The basic questionnaire, the Core Module, includes all common questions asked to all establishments from all sectors. The second expanded variation, the Manufacturing Questionnaire, is built upon the Core Module and adds some specific questions relevant to manufacturing sectors. The third expanded variation, the Retail Questionnaire, is also built upon the Core Module and adds to the core specific questions relevant to retail firms. Each variation of the questionnaire is identified by the index variable, *a0*.

15.   All variables are named using, first, the letter of each section and, second, the number of the variable within the section, i.e. *a1* denotes section *A*, question *1*. Variable

names proceeded by a prefix *"NPL"* indicate questions specific to Nepal while variable names preceded by a prefix "*SAR*" indicate questions specific to the South Asia region. t All other suffixed variables are global and are present in all country surveys over the world. All variables are numeric with the exception of those variables with an "x" at the end of their names. The suffix "x" denotes that the variable is alpha-numeric.

16.   There are 2 establishment identifiers, *idstd* and *id*. The first is a global unique identifier. The second is a country unique identifier. The variables *a2* (sampling region), *a6a* (sampling establishment's size), and *a4a* (sampling sector) contain the establishment's classification into the strata chosen for each country using information from the sample frame. The strata were defined according to the guidelines described above.

17.   There are three levels of stratification: industry, size and region. Different combinations of these variables generate the strata cells for each industry/region/size combination. A distinction should be made between the variable a4a and d1a2 (industry expressed as ISIC rev. 3.1 code). The former gives the establishment's classification into one of the chosen industry-strata, whereas the latter gives the actual establishment's industry classification (four digit code) in the sample frame.

18.   All of the following variables contain information from the sampling frame. They may not coincide with the reality of individual establishments as sample frames may contain inaccurate information. The variables containing the sample frame information are included in the data set for researchers who may want to further investigate statistical features of the survey and the effect of the survey design on their results.
      -*a2* is the variable describing sampling regions
      -*a6a*: coded using the same standard for small, medium, and large establishments as defined above. The code -*9* was used to indicate units for which size was undetermined in the sample frame.
      -*a4a*: coded using ISIC Rev 3.1 codes for the chosen industries for stratification. These codes include most manufacturing industries (15 to 37), retail (52), and (45, 50, 51, 55, 60-64, 72) for other services.

19.   The surveys were implemented following a 2 stage procedure. Typically first a screener questionnaire is applied over the phone to determine eligibility and to make appointments. Then a face-to-face interview takes place with the Manager/Owner/Director of each establishment. The variables *a4b* and *a6b* contain the industry and size of the establishment from the screener questionnaire. Variables *a8* to *a11* contain additional information and were also collected in the screening phase.

20.   Note that there are additional variables for location (*a3x*) and size (*l1*, *l6* and *l8*) that reflect more accurately the reality of each establishment. Advanced users are advised to use these variables for analytical purposes.

21.   Variable *a3x* indicates the actual location of the establishment. There may be divergences between the location in the sampling frame and the actual location, as

establishments may be listed in one place but the actual physical location is in another place.

22. Variables *l1*, *l6* and *l8* were designed to obtain a more accurate measure of employment accounting for permanent and temporary employment. Special efforts were made to make sure that this information was not missing for most establishments.

23. Variables *a17x* gives interviewer comments, including problems that occurred during an interview and extraordinary circumstances which could influence results. Please note that sometimes this variable is removed due to privacy issues.

V. Universe Estimates

24. Universe estimates for the number of establishments in each cell in Nepal were produced for the strict, median and weak eligibility definitions. The estimates were the multiple of the relative eligible proportions.

25. Appendix B shows the overall estimates of the numbers of establishments in Nepal based on the sample frame.

26. For some establishments where contact was not successfully completed during the screening process (because the firm has moved and it is not possible to locate the new location, for example), it is not possible to directly determine eligibility. Thus, different assumptions about the eligibility of establishments result in different adjustments to the universe cells and thus different sampling weights.

27. Three sets of assumptions on establishment eligibility are used to construct sample adjustments using the status code information.

28. Strict assumption: eligible establishments are only those for which it was possible to directly determine eligibility. The resulting weights are included in the variable *wstrict*.

Strict eligibility = (Sum of the firms with codes 1,2,3,4,&16) / Total

29. Median assumption: eligible establishments are those for which it was possible to directly determine eligibility and those that rejected the screener questionnaire or an answering machine or fax was the only response. The resulting weights are included in the variable *wmedian*.

*Median eligibility = (Sum of the firms with codes 1,2,3,4,16,10,11, & 13) / Total*

30. Weak assumption: in addition to the establishments included in points a and b, all establishments for which it was not possible to contact or that refused the screening questionnaire are assumed eligible. This definition includes as eligible establishments

with dead or out of service phone lines, establishments that never answered the phone, and establishments with incorrect addresses for which it was impossible to find a new address. Under the weak assumption only observed non-eligible units are excluded from universe projections. The resulting weights are included in the variable *wweak*.

Weak eligibility= (Sum of the firms with codes 1,2,3,4,16,91,92,93,10,11,12,&13) / Total

31. The indicators computed for the Enterprise Survey website use the median weights. The following graph shows the different eligibility rates calculated for firms in the sample frame under each set of assumptions.

Eligibility Rates According to Assumptions
Percent Eligible
Nepal, 2013

	Strict Assumption	Median Assumption	Weak Assumption
Percent Eligible	91.3%	92.2%	100.0%
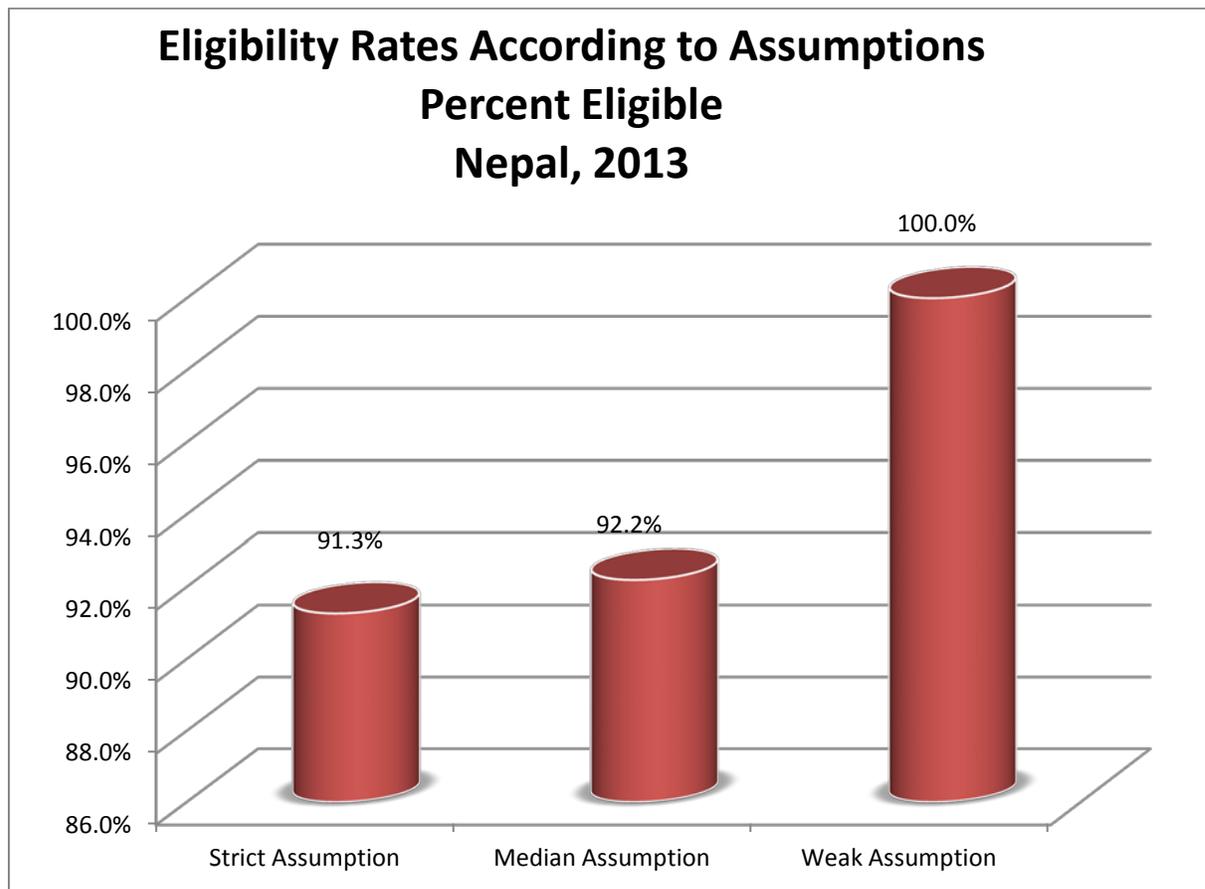
32. Universe estimates for the number of establishments in each industry-region-size cell in Nepal were produced for the strict, weak and median eligibility definitions. Appendix D shows the universe estimates of the numbers of registered establishments that fit the criteria of the Enterprise Surveys.

33. Once an accurate estimate of the universe cell projection was made, weights for the probability of selection were computed using the number of completed interviews for each cell.

VI. Weights

34.   Since the sampling design was stratified and employed differential sampling, individual observations should be properly weighted when making inferences about the population. Under stratified random sampling, unweighted estimates are biased unless sample sizes are proportional to the size of each stratum. With stratification the probability of selection of each unit is, in general, not the same. Consequently, individual observations must be weighted by the inverse of their probability of selection (probability weights or *pw* in Stata).[5]

35.   Special care was given to the correct computation of the weights. It was imperative to accurately adjust the totals within each region/industry/size stratum to account for the presence of ineligible units (the firm discontinued businesses or was unattainable, education or government establishments, establishments with less than 5 employees, no reply after having called in different days of the week and in different business hours, no tone on the phone line, answering machine, or fax line[6], wrong address or moved away and could not get the new references). The information required for the adjustment was collected in the first stage of the implementation: the screening process. Using this information, each stratum cell of the universe was scaled down by the observed proportion of ineligible units within the cell. Once an accurate estimate of the universe cell (projections) was available, weights were computed using the number of completed interviews.

36. Appendix C shows the cell weights for registered establishments in Nepal.

VII. Appropriate use of the weights

37.   Under stratified random sampling weights should be used when making inferences about the population. Any estimate or indicator that aims at describing some feature of the population should take into account that individual observations may not represent equal shares of the population.

38.   However, there is some discussion as to the use of weights in regressions (see Deaton, 1997, pp.67; Lohr, 1999, chapter 11, Cochran, 1953, pp.150). There is not a strong large sample econometric argument in favor of using weighted estimation for a common population coefficient if the underlying model varies per stratum (stratum-specific coefficient): both simple OLS and weighted OLS are inconsistent under regular conditions. However, weighted OLS has the advantage of providing an estimate that is independent of the sample design. This latter point may be quite relevant for the Enterprise Surveys as in most cases the objective is not only to obtain model-unbiased

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5 This is equivalent to the weighted average of the estimates for each stratum, with weights equal to the population shares of each stratum.
6 For the surveys that implemented a screener over the phone.

estimates but also design-unbiased estimates (see also Cochran, 1977, pp 200 who favors the used of weighted OLS for a common population coefficient.)[7]

39.   From a more general approach, if the regressions are descriptive of the population then weights should be used. The estimated model can be thought of as the relationship that would be expected if the whole population were observed.[8] If the models are developed as structural relationships or behavioral models that may vary for different parts of the population, then, there is no reason to use weights.

VIII. Non-response

40.   Survey non-response must be differentiated from item non-response. The former refers to refusals to participate in the survey altogether whereas the latter refers to the refusals to answer some specific questions. Enterprise Surveys suffer from both problems and different strategies were used to address these issues.

41.   Item non-response was addressed by two strategies:
a- For sensitive questions that may generate negative reactions from the respondent, such as corruption or tax evasion, enumerators were instructed to collect the refusal to respond as a different option from don't know (-8).
b- Establishments with incomplete information were re-contacted in order to complete this information, whenever necessary. However, there were clear cases of low response. The following graph shows non-response rates for the sales variable, *d2*, by sector. Please, note that the coding utilized in this dataset does not allow us to differentiate between "Don't know" and "refuse to answer", thus the non-response in the chart below reflects both categories (DKs and NAs).

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7 Note that weighted OLS in Stata using the command regress with the option of weights will estimate wrong standard errors. Using the Stata survey specific commands *svy* will provide appropriate standard errors.

8 The use of weights in most model-assisted estimations using survey data is strongly recommended by the statisticians specialized on survey methodology of the JPSM of the University of Michigan and the University of Maryland.

Sales Non-response Rates
Nepal, 2013
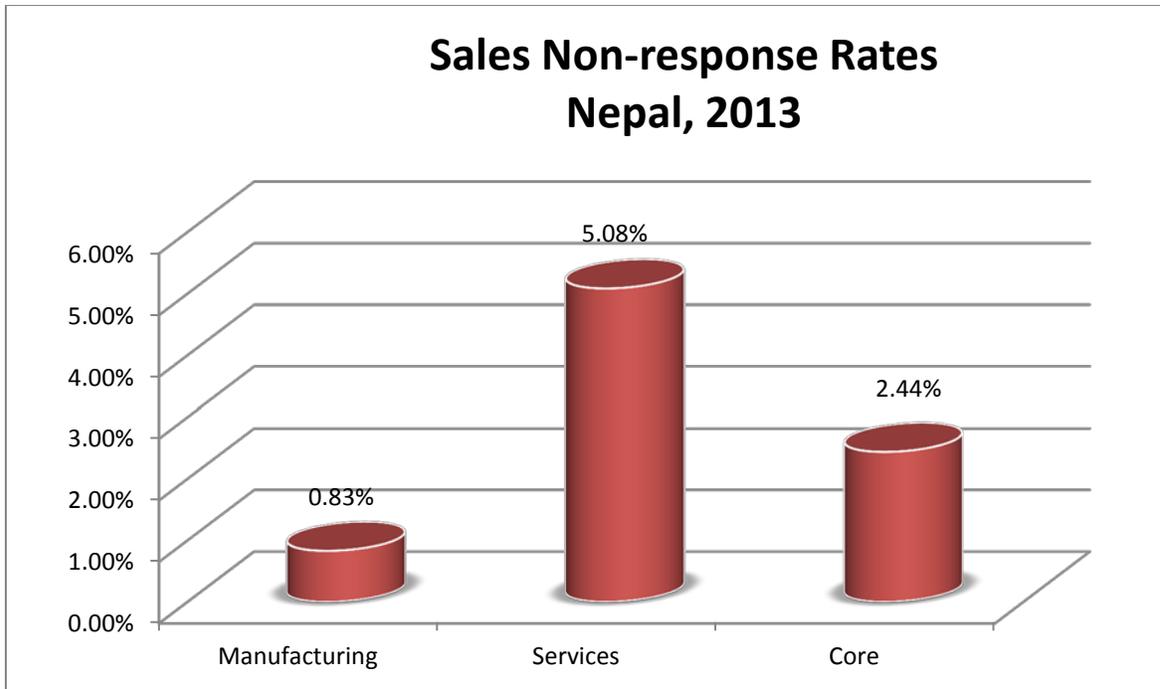
42.   Survey non-response was addressed by maximizing efforts to contact establishments that were initially selected for interview. Attempts were made to contact the establishment for interview at different times/days of the week before a replacement establishment (with similar strata characteristics) was suggested for interview. Survey non-response did occur but substitutions were made in order to potentially achieve strata-specific goals. Further research is needed on survey non-response in the Enterprise Surveys regarding potential introduction of bias. The overall response rate for the survey was 97%.

43.   As the following graph shows, the number of realized interviews per contacted establishment was 0.90[9]. This number is the result of two factors: explicit refusals to participate in the survey, as reflected by the rate of rejection (which includes rejections of the screener and the main survey) and the quality of the sample frame, as represented by the presence of ineligible units. The number of rejections per contact was 0.02.

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9 The estimate is based on the total number of firms contacted including ineligible establishments.

Rejection rate and Interviews per Contact Nepal, 2013
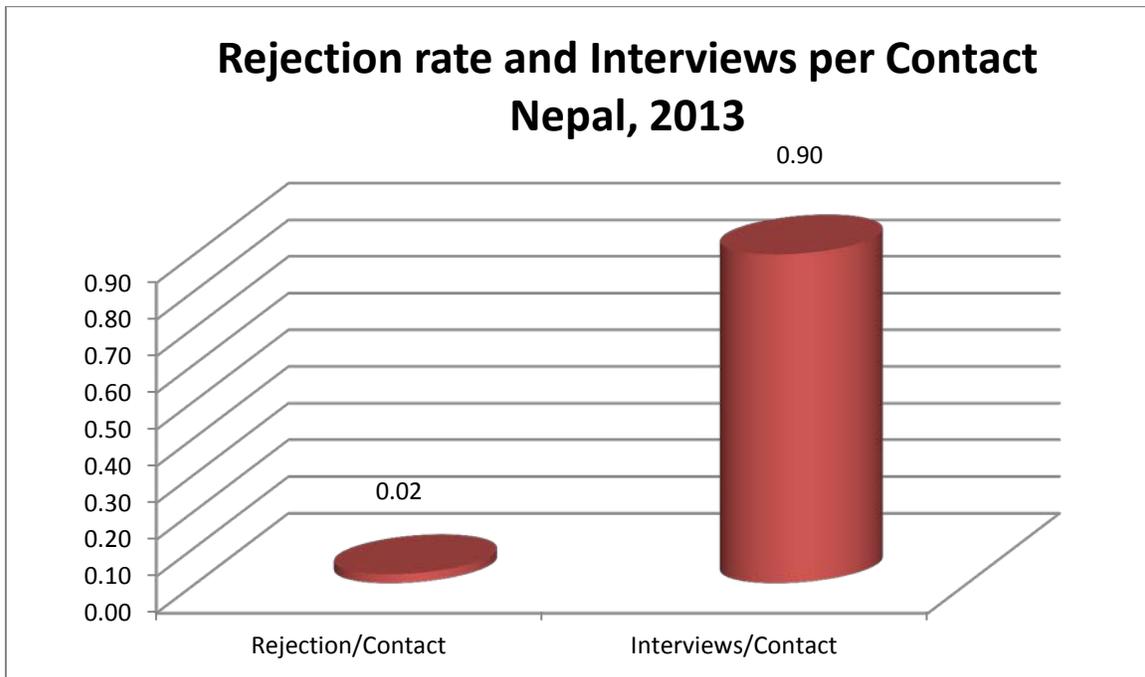
44.   Details on the rejection rate, eligibility rate, and item non-response are available at the strata level. This report summarizes these numbers to alert researchers of these issues when using the data and when making inferences. Item non-response, selection bias, and faulty sampling frames are not unique to Nepal. All Enterprise Surveys suffer from these shortcomings, but in very few cases they have been made explicit.

References:
Cochran, William G., Sampling Techniques, 1977.

Deaton, Angus, The Analysis of Household Surveys, 1998.

Levy, Paul S. and Stanley Lemeshow, Sampling of Populations: Methods and Applications, 1999.

Lohr, Sharon L. Samping: Design and Techniques, 1999.

Scheaffer, Richard L.; Mendenhall, W.; Lyman, R., Elementary Survey Sampling, Fifth Edition, 1996.

Appendix A

Status Codes Total:

Eligibles	1.Eligible establishment (Correct name and address)	462
	2. Eligible establishment (Different name but same address - the new firm/establishment bought the original firm/establishment)	12
	3. Eligible establishment (Different name but same address - the firm/establishment changed its name)	14
	4. Eligible establishment (Wrong address - the firm/establishment has changed address and the address could be found)	3
	16. Panel firm-now less than five employees	0
Ineligible	5. The establishment has less than 5 permanent full time employees	0
	6. The firm discontinued businesses	0
	7. Not a business: private household	0
	8. Ineligible activity: education, agriculture, finances, governments…	0
Unobtainable	91. No reply (after having called in different days of the week and in different business hours)	0
	92. Line out of order	0
	93. No tone	0
	94. Phone number does not exist	0
	10. Answering machine	0
	11. Fax line - data line	0
	12. Wrong address/ moved away and could not get the new references	42
	13. Refuses to answer the screener	5
	14. In process (the establishment is being called/ is being contacted - previous to ask the screener)	**0**
Out of target	151. Out of target - outside the covered regions, firm moved abroad	0
	152. Out of target - firm moved abroad	0
	153. Out of target - Not registered with statistical agency	0
	Total	**538**

Response Outcomes Total:

Complete interviews (Total)	482
Incomplete interviews	1
Eligible in process	0
Refusals	8
Ineligible	0
Impossible to contact	42
Ineligible - coop.	0
Refusal to the Screener	5
Total	**538**

Status Codes Fresh:

Eligibles	1.Eligible establishment (Correct name and address)	219
	2. Eligible establishment (Different name but same address - the new firm/establishment bought the original firm/establishment)	10
	3. Eligible establishment (Different name but same address - the firm/establishment changed its name)	13
	4. Eligible establishment (Wrong address - the firm/establishment has changed address and the address could be found)	1
	16. Panel firm-now less than five employees	0
Ineligible	5. The establishment has less than 5 permanent full time employees	0
	6. The firm discontinued businesses	0
	7. Not a business: private household	0
	8. Ineligible activity: education, agriculture, finances, governments…	0
Unobtainable	91. No reply *(after having called in different days of the week and in different business hours)*	0
	92. Line out of order	0
	93. No tone	0
	94. Phone number does not exist	0
	10. Answering machine	0
	11. Fax line - data line	0
	12. Wrong address/ moved away and could not get the new references	42
	13. Refuses to answer the screener	5
	14. In process *(the establishment is being called/ is being contacted - previous to ask the screener)*	**0**
Out of target	151. Out of target - outside the covered regions, firm moved abroad	0
	152. Out of target - firm moved abroad	0
	153. Out of target - Not registered with statistical agency	0
	Total	**290**

Response Outcomes Fresh:

Complete interviews **(Total)**	242
Incomplete interviews	0
Eligible in process	0
Refusals	1
Ineligible	0
Impossible to contact	42
Ineligible - coop.	0
Refusal to the Screener	5
Total	**290**

Status Codes Panel:

Eligibles	1.Eligible establishment (Correct name and address)	243
	2. Eligible establishment (Different name but same address - the new firm/establishment bought the original firm/establishment)	2
	3. Eligible establishment (Different name but same address - the firm/establishment changed its name)	1
	4. Eligible establishment (Wrong address - the firm/establishment has changed address and the address could be found)	2
	16. Panel firm-now less than five employees	0
Ineligible	5. The establishment has less than 5 permanent full time employees	0
	6. The firm discontinued businesses	0
	7. Not a business: private household	0
	8. Ineligible activity: education, agriculture, finances, governments…	0
Unobtainable	91. No reply *(after having called in different days of the week and in different business hours)*	0
	92. Line out of order	0
	93. No tone	0
	94. Phone number does not exist	0
	10. Answering machine	0
	11. Fax line - data line	0
	12. Wrong address/ moved away and could not get the new references	0
	13. Refuses to answer the screener	0
	14. In process *(the establishment is being called/ is being contacted - previous to ask the screener)*	**0**
Out of target	151. Out of target - outside the covered regions, firm moved abroad	0
	152. Out of target - firm moved abroad	0
	153. Out of target - Not registered with statistical agency	0
	Total	**248**

Response Outcomes Panel:

Complete interviews **(Total)**	240
Incomplete interviews	1
Eligible in process	0
Refusals	7
Ineligible	0
Impossible to contact	0
Ineligible - coop.	0
Refusal to the Screener	0
Total	**248**

Appendix B

Universe Estimates, Nepal:

	Manufacturing	**Retail**	**Other Services**	**Grand Total**
Central				
Small	2590	2139	3149	7878
Medium	114	123	563	800
Large	44	26	65	135
Total	2748	2288	3777	8813
Eastern				
Small	218	189	820	1227
Medium	88	3	44	135
Large	33	0	0	33
Total	339	192	864	1395
Western				
Small	897	158	1076	2131
Medium	23	0	151	174
Large	8	0	0	8
Total	928	158	1227	2313
Grand Total	4015	2638	5868	12521

Appendix C

Fresh Strict Cell Weights Nepal:

	Manufacturing	Retail	Other Services
Central			
Small	38.776	80.164	44.280
Medium	5.414	102.518	130.172
Large	0.903	0.000	48.590
Eastern			
Small	209.212	10.441	339.141
Medium	17.579	0.000	0.000
Large	0.000	0.000	0.000
Western			
Small	28.553	23.728	105.577
Medium	0.903	0.000	113.667
Large	0.000	0.000	0.000

Fresh Median Cell Weights Nepal:

	Manufacturing	Retail	Other Services
Central			
Small	39.343	85.033	47.102
Medium	5.344	105.790	134.704
Large	0.891	0.000	50.282
Eastern			
Small	206.472	10.773	350.894
Medium	16.878	0.000	0.000
Large	0.000	0.000	0.000
Western			
Small	28.179	24.482	109.236
Medium	0.867	0.000	114.411
Large	0.000	0.000	0.000

Fresh Weak Cell Weights Nepal:

	Manufacturing	Retail	Other Services
Central			
Small	45.753	98.171	64.894
Medium	5.361	105.356	160.090
Large	0.896	0.000	59.882
Eastern			
Small	212.549	11.009	427.946
Medium	14.987	0.000	0.000
Large	0.000	0.000	0.000
Western			
Small	34.169	29.470	156.921
Medium	0.907	0.000	141.775
Large	0.000	0.000	0.000

Panel Strict Cell Weights Nepal:

	Manufacturing	Retail	Other Services
Central			
Small	2.030	1.437	1.317
Medium	0.978	0.952	3.251
Large	0.904	0.000	0.860
Eastern			
Small	0.000	1.198	1.196
Medium	1.006	0.841	0.879
Large	1.219	0.000	0.000
Western			
Small	0.874	0.913	1.113
Medium	1.298	0.000	5.891
Large	1.135	0.000	0.000

Panel Median Cell Weights Nepal:

	Manufacturing	Retail	Other Services
Central			
Small	2.030	1.437	1.317
Medium	0.978	0.952	3.251
Large	0.904	0.000	0.860
Eastern			
Small	0.000	1.198	1.196
Medium	1.006	0.841	0.879
Large	1.219	0.000	0.000
Western			
Small	0.874	0.913	1.113
Medium	1.298	0.000	5.891
Large	1.135	0.000	0.000

Panel Weak Cell Weights Nepal:

	Manufacturing	Retail	Other Services
Central			
Small	2.493	1.850	1.596
Medium	1.057	1.079	3.465
Large	1.068	0.000	1.003
Eastern			
Small	0.000	1.614	1.515
Medium	1.137	0.996	0.980
Large	1.507	0.000	0.000
Western			
Small	0.961	1.053	1.209
Medium	1.257	0.000	5.627
Large	1.202	0.000	0.000

Appendix D

Strict Universe Estimates

	Manufacturing	Retail	Other Services	Grand Total
Central				
Small	2037	1715	2182	5934
Medium	102	118	426	646
Large	50	0	49	98
Total	2188	1833	2657	6678
Eastern				
Small	209	182	687	1078
Medium	94	4	1	99
Large	2	0	0	2
Total	306	186	688	1180
Western				
Small	716	126	755	1597
Medium	31	0	114	144
Large	5	0	0	5
Total	752	126	868	1746
Grand Total	3245	2145	4213	9603

Median Universe Estimates

	Manufacturing	Retail	Other Services	Grand Total
Central				
Small	2066	1847	2290	6203
Medium	101	116	456	673
Large	49	0	53	102
Total	2216	1964	2799	6979
Eastern				
Small	206	192	707	1105
Medium	90	1	4	96
Large	2	0	0	2
Total	299	192	711	1203
Western				
Small	707	135	774	1616
Medium	31	0	120	151
Large	5	0	0	5
Total	742	135	894	1771
Grand Total	3258	2291	4404	9953

Weak Universe Estimates

	Manufacturing	Retail	Other Services	Grand Total
Central				
Small	2404	2141	3150	7695
Medium	104	117	536	757
Large	52	0	63	115
Total	2560	2258	3749	8567
Eastern				
Small	213	198	862	1273
Medium	82	1	5	88
Large	3	0	0	3
Total	297	199	867	1364
Western				
Small	857	162	1108	2127
Medium	30	0	147	177
Large	5	0	0	5
Total	892	162	1256	2309
Grand Total	3749	2620	5871	12240

Appendix E

Original Sample Design, Nepal:

FRESH FIRMS DESIGN

		Manufacturing	Retail	Other Services	Grand Total
Central	Small	53	21	48	122
	Medium	5	1	3	9
	Large	46		1	47
	Total	104	22	52	178
Eastern	Small	1	17	2	20
	Medium	5			5
	Large	0	0	0	0
	Total	6	17	2	25
Western	Small	25	5	7	37
	Medium	1		1	2
	Large	0	0	0	0
	Total	26	5	8	39
	Grand Total	136	44	62	242

PANEL FIRMS DESIGN

		Manufacturing	Retail	Other Services	Grand Total
Central	Small	10	43	22	75
	Medium	43	11	16	70
	Large	14	0	3	17
	Total	67	54	41	162
Eastern	Small	0	7	4	11
	Medium	6	1	5	12
	Large	2	0	0	2
	Total	8	8	9	25
Western	Small	3	14	8	25
	Medium	23	0	1	24
	Large	4	0	0	4
	Total	30	14	9	53
	Grand Total	105	76	59	240

Completed Interviews, Nepal:

FRESH

	Manufacturing	Retail	Other Services	Grand Total
Central	**104**	**22**	**52**	**178**
Small	52	21	48	121
Medium	11	1	3	15
Large	41		1	42
Eastern	**6**	**17**	**2**	**25**
Small	1	17	2	20
Medium	5			5
Large				
Western	**26**	**5**	**8**	**39**
Small	25	5	7	37
Medium	1		1	2
Large				
Grand Total	**136**	**44**	**62**	**242**

PANEL

	Manufacturing	Retail	Other Services	Grand Total
Central	**67**	**54**	**41**	**162**
Small	10	43	22	75
Medium	43	11	16	70
Large	14		3	17
Eastern	**8**	**8**	**9**	**25**
Small		7	4	11
Medium	6	1	5	12
Large	2			2
Western	**30**	**14**	**9**	**53**
Small	3	14	8	25
Medium	23		1	24
Large	4			4
Grand Total	**105**	**76**	**59**	**240**

Local Agency team involved in the study:

Local Agency	Name: Solutions Consultant Pvt. Ltd Country: Nepal
Name of Contact Person	Suraj Pradhan
Enumerators involved:	28

Sample Frame:

Characteristic of sample frame used:	Variables: Name of establishment, address, activity, telephone number, number of employees, registration status
Source:	Sample frame was generated via blocks enumeration (conducted by Solutions Consultant). The Nepal 2009 Implementation Report has more detailed information regarding the blocks enumeration process for Nepal.
Year:	2009
Comments on the quality of sample frame:	Good quality and coverage although slightly out of date for the 2013 survey
Other sources for companies statistics	All the interviews were conducted with the sample frame obtained from the blocks enumeration and no other lists were used.

Fieldwork:

Date of Fieldwork	February 2013- June 2013
Country	Nepal
Interview Numbers	Total: 482 Manufacturing:241 Retail: 120 Other services:121

Appendix F: Challenges and Difficulties in Fieldwork

Although the response rate for the enterprise survey was quite high across all the locations, few respondents were initially quite reluctant to participate in the survey. The contemporary political situation of the country, the lack of a conducive environment for business activities, lack of fuel and electricity, strikes, forced donation were some of the major problems being faced by the business community and the society at large. During such a point in time, the field staff observed much of anger and frustration amongst the business community.

Hence the major challenge during the fieldwork was to collect genuine data without annoying the respondents in their limited time. In some cases, the respondents even expressed their anger (for examples when they were questioned about political instability, government business relations etc.); hence a lot of patience was needed in order to get the data amidst the negative mindset of the respondents.

However, compared to the Enterprise survey 2009, it was easier for the enumerators to administer the electricity and power outages questions this time around. This could have been due to the fact that the nation was facing lesser power outage during the fieldwork of Enterprise Survey 2013, in comparison to 2009 when the outages had increased up to 18 hours a day. Therefore, although electricity was still regarded as a major obstacle by the businesses, the issue relating to power outages didn't come out as strongly during the 2013 Enterprise Survey as in the case of the 2009 survey.

In general, the difficulties and challenges faced during fieldwork were as follows:

- *Universal applicability of the questionnaire -*

    o One of the major challenges faced during fieldwork was the issue of the universal applicability of the survey questions versus the local context which left some of the respondents confused and uninterested. The questions in the "Innovation" section in particular were quite difficult for the respondents from the smaller business (particularly service firms) to comprehend. A lot of patience and persuasion was required to constantly draw their attention to the main subject matter. Many questions did not apply for the smaller family owned enterprises particularly the questions related to labor.

- *Time lag between the block enumeration and the actual interview -*

o Although the study team had no major issues interviewing the panel respondents, it was observed that some of the firms that were enumerated four years back during block enumeration had shut down. Especially, the manufacturing enterprises located at the Industrial area of Kathmandu and the Bara/ Hetauda industrial corridor were closed due to numerous reasons such as inability to sustain due to losses, inadequate demand of produced goods, and problems with the labor union. Due to this, the enumerators had to identify alternative firms listed in the replacement quotas provided by the World Bank ensuring that the size and sector of the closed and the replacement firm was the same. Further, since there was no replacement for some of the larger firms in the central region, the replacement was made by interviewing medium firms after getting an approval from the World Bank.

o Similarly, in some cases, for the fresh firms, the block enumeration information was collected from a third party (neither employers nor employees but someone located closely to the enterprise). These responses were mostly assumptions or best guesses of the third party which again did not coincide with actual interview data of that enterprise. Due to the above mentioned mismatch in data, some of the smaller firms had to be shifted into larger categories and vice versa.

o In some cases it was later found that the establishments had either been closed in that particular location or completely closed. In such instances the appointment makers faced difficulty in tracking the respondents based on the enumeration data. Amongst the fresh firms, a total of 42 firms couldn't be contacted or located for which replacements had to be made.

- *Multiple Visit to the same organization*

  o Due to the unavailability of concerned person, field enumerators had to make multiple visits to the same organization. In the smaller retail firms, the length of the questionnaire was an issue with the stores having customers coming in at regular intervals because of which the enumerators had to wait for the respondent for a longer period of time.

  o In large firms with an organized structure, the enumerators had to meet the concerned persons in different departments in order to complete all sections of the questionnaire. As all concerned person were not available at the same time, hence the enumerators had to wait for a long time to complete a single interview in such cases.

- *Difficulty in Obtaining GPS Coordinates*

  o Obtaining exact GPS coordinates for few establishments/firms was difficult at narrow lanes and alleys within Kathmandu valley due to lack of open space. Because of this, the enumerators had to visit the same location multiple times to get the GPS readings at those places. This made the process time consuming.

- *Difficulty in Locating Places*

  o It was hard to locate the address especially for 'Fresh' firms as the location had either changed or the organization was not in existence. Since the enumeration was done four years before and was not recently updated, it was very difficult to locate those establishments. In some cases phone numbers had been changed so the contacts could not be established easily.

- *Interruptions, Delays and Refusal during Fieldwork*

  o One of the issues faced during the survey was the absence of replacement firms in the case of larger businesses in the central region. In such cases, the replacement was made by interviewing medium firms after getting an approval from the World Bank.

  o Labor-induced strikes at few of the large businesses also delayed the fieldwork.

  o Some of the firms were hesitant in managing time for interview although they did not refuse directly (particularly during the time when the appointments were being scheduled), mainly due to their busy schedule and the lengthy nature of the questionnaire. Some of the informants who agreed to participate during screening had been transferred or were out of town during the interviews which caused few delays in the survey process.

Although there weren't many firms who refused to participate in the survey, some of the issues that the respondents brought up to excuse themselves from the survey were as follows –

- Mentioned that they didn't believe their responses would make any difference and they were not interested in the subject matter

- Not interested in the fact that they had been chosen as samples for the survey

- Too busy to participate for the interviews

- Length of the questionnaire as a major issue