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E.

Methodology

Two methodological tools were adopted and applied in this study, including (a) sampling approach and (b) sample correction. The sampling approach, developed in section 3.1 below, was implemented in order to obtain a representative sample of enterprises, taking into account several variables such as the size of the enterprise (number of employees), geographical distribution (Mohafazats), and gender (of the entrepreneur). The sample correction, developed in section 3.2, was used in order to generate results at the national level.

Sampling Methodology

A. Evaluation of the existing data

The target population of the study is the MSEs (i.e. Micro and Small Enterprises -enterprises with less than fifty employees). In accordance with the terms of reference of the study, the scope of work excluded the following activities:

- Agricultural activities
- Non-market activities
- Illegal activities
- Production for own use
- Mobile vendors
- Domestic services
- Professional services (doctors, lawyers and accountants)
- Enterprises employing more than 50 workers.

Table 1 outlines the geographic distribution of the target population as follows:

Table 1: MSEs Distribution per Mohafazat[1]

Mohafazat	Number of MSEs	% of total
Beirut	23,415	12%
Mount Lebanon	67,325	36%
North Lebanon	42,742	23%
Bekaa	26,328	14%
South Lebanon	18,318	10%
Nabatieh	9,943	5%
Total	188,071	100%

The selection of the representative sample faced three main constraints:

a. The lack of reliable gender-disaggregated data that could be used as a base for the gender distribution of the sample, as this dimension has not been addressed by the 1996 census;

b. The lack of updated data since 1996, which effectively did not take into consideration the significant changes that occurred in the sector over the period 1996-2004;

c. The absence of an exhaustive list of MSEs' addresses, which made it impossible to apply a full randomization approach in selecting the sample MSEs.

The above necessitated conducting a preliminary field survey to address the above constraints and obtain the exact list of addresses, as well as the needed data that would allow the determining of

[1] Census of Establishments and Buildings, Central Administration for Statistics- 1996

sampling rates pertaining to gender distribution, updated geographical distribution, and size distribution (number of employees).

B. Sampling methodology of the preliminary field survey

A representative sample of clusters ("ilots" or Primary Sampling Unit) was selected. In each of the selected clusters a census of all existing MSEs was undertaken and a database was established. The data gathered through a small questionnaire included the following variables:

a. Name, address and phone number of the MSE
b. Name and gender of the entrepreneur
c. Detailed sector of activity
d. Number of employees

The selection of clusters sample was constructed as follows:

Lebanon is administratively divided into six major administrative units (Mohafazats) and twenty six districts or smaller administrative units (Caza). Each Caza is also composed of smaller administrative units called "Circonscription Foncière" (CF) with a total number of 1403 CFs all over Lebanon. Furthermore, each CF is divided into smaller geographic units called "îlots", or clusters or primary sampling unit, bordered by streets and/or natural barriers, each enclosing around 40 buildings. Hence, Lebanon was divided into around 13,000 clusters representing around 518,000 buildings.

The sampling methodology used for the selection of the sample of clusters was implemented as per the following four phases:

a. **Phase 1:** The preliminary field survey selected a sample of 100 CFs based on MSE's distribution per Mohafazat. For example, Beirut represents 12% of total MSEs, therefore the preliminary study selected 12 CF in Beirut. In Mount-Lebanon the study selected 36 CF knowing that Mount-Lebanon represents 36% of total MSEs in Lebanon.

b. **Phase 2:** In each Mohafazat, CFs were sorted by the number of MSEs included in each CF (based on the results of the "Census of establishments and buildings, Central Administration of Statistics-1996"). The study selected CFs with high density of MSEs.

c. **Phase 3:** The study then listed all clusters included in each selected CF. Taking into account time and budget constraints, 200 clusters were selected, based on a randomized process. All clusters had the same probability to be selected in each selected CF. The study selected 2 clusters in each CF of the sample.

d. **Phase 4:** Finally, a national sample of 200 clusters was prepared. A technical team prepared GIS maps for each selected cluster. Maps included the following information: CF boundaries, cluster boundaries, layer representing main and secondary roads, and topography map.

The following table illustrates the selection of the clusters for obtaining a representative sample within available budget and time.

Table 2: Cluster Sample per Mohafazat

Mohafazat	Number of CF	Number of Selected CF	Number of Clusters in Selected CF	Number of Selected Clusters
Beirut	12	12	474	24
Mount Lebanon	494	36	1,571	72
North Lebanon	392	23	399	46
Bekaa	181	14	323	28
South Lebanon	211	10	309	20
Nabatieh	113	5	79	10
Total	1,403	100	3,155	200

C. Results of the preliminary field survey

A team of 55 trained surveyors listed all MSEs included in the 200 selected clusters over a period of two months. The following tables illustrate the results of the field survey, outlining the sample distribution per Mohafazat, gender and size.

Table 3: MSE Distribution per Mohafazat and Gender (preliminary field survey)

Mohafazat	Total	Total Male	Total Female
Beirut	548	490	58
Mount Lebanon	2,229	2,004	225
North Lebanon	2,112	2,015	97
Bekaa	2,002	1,933	69
South Lebanon	1,514	1,354	160
Nabatieh	771	712	59
Total	9,176	8,508	668

Table 4: Male Entrepreneurs–MSE Distribution per Mohafazat and Size (preliminary survey)

Mohafazat	Total Male	1 Empl.	[2-4] Empl.	[5-9] Empl.	[10-49] Empl.
Beirut	490	171	241	54	24
Mount Lebanon	2,004	801	975	143	85
North Lebanon	2,015	1121	811	61	22
Bekaa	1,933	907	912	69	45
South Lebanon	1,354	598	692	49	15
Nabatieh	712	306	373	27	6
Total	8,508	3,904	4,004	403	197

Table 5: Female Entrepreneurs–MSE Distribution per Mohafazat and Size (preliminary survey)

Mohafazat	Total Female	1 Empl.	[2-4] Empl.	[5-9] Empl.	[10-49] Empl.
Beirut	58	8	36	11	3
Mount Lebanon	225	118	92	10	5
North Lebanon	97	61	35	1	0
Bekaa	69	33	34	1	1
South Lebanon	160	80	77	3	0
Nabatieh	59	42	15	2	0
Total	668	342	289	28	9

It is important to note that the above-mentioned results are representative at the Mohafazat level only, but not at the national level. In fact, the sampling methodology was used to create a database that includes information about gender and size in each Mohafazat. Therefore, all the results obtained should be read in a horizontal approach, i.e. per Mohafazat. As such, the preliminary field survey provides missing information on the real addresses of the enterprises and the distribution of MSEs per gender and size (in each Mohafazat).

The following table shows how figures should be analyzed.

Table 6: MSE Distribution per Gender and Size in each Mohafazat (preliminary field survey)

Mohafazat	Male				Female				Total
Size	1	[2-4]	[5-9]	[10-49]	1	[2-4]	[5-9]	[10-49]	
Beirut	31%	44%	10%	4%	1%	7%	2%	1%	100%
Mount Lebanon	36%	44%	6%	4%	5%	4%	0%	0%	100%
North Lebanon	53%	38%	3%	1%	3%	2%	0%	0%	100%
Bekaa	45%	46%	3%	2%	2%	2%	0%	0%	100%
South Lebanon	39%	46%	3%	1%	5%	5%	0%	0%	100%
Nabatieh	40%	48%	4%	1%	5%	2%	0%	0%	100%

The combination between these statistics and the statistics obtained from the Central Administration of Statistics (CAS) related to Mohafazat distribution, allows us to create a final table which represents the MSEs distribution (per Mohafazat, size and gender) at the national level.
In other terms, the study takes the results related to gender and size distribution in each Mohafazat from the preliminary field survey, and the results related to the Mohafazat distribution from CAS. The combination of these two sources of statistics leads us to the matrix detailed in Table 8.

This matrix is essential for the sample correction. In fact, whatever sampling rates will be used during the final field survey, corrections will be done according to this matrix in order to get significant results at the national level. The real use of this matrix is developed in section 3 of the report.

On the other hand, it is important to note that the results of the preliminary field survey (cluster census of MSEs) were cross-checked with national results published by CAS. This cross-testing was applied to the size distribution per Mohafazat in both studies, as the only variable in

common in both studies, and no significant differences appeared. The following table shows the comparison between CAS results and the preliminary field survey results related to the size of the enterprise as follows:

Table 7: Size Distribution of MSEs per Mohafazat (comparison between CAS and CRI results)

Mohafazat	Preliminary field survey results				CAS results			
Size	<5	5-9	10-49	Total	<5	5-9	10-49	Total
Beirut	83%	12%	5%	100%	85%	9%	6%	100%
Mount-Lebanon	89%	7%	4%	100%	90%	6%	4%	100%
North	96%	3%	1%	100%	94%	4%	2%	100%
Bekaa	94%	3%	2%	100%	95%	3%	2%	100%
South	96%	3%	1%	100%	94%	4%	2%	100%
Nabatieh	95%	4%	1%	100%	95%	3%	1%	100%
Total	93%	5%	2%	100%	92%	5%	3%	100%

Table 8 describes the final distribution of MSEs in Lebanon per Mohafazat, gender, and size. To recap, the Mohafazat distribution was adopted from the CAS distribution, while the gender distribution and the size distribution were obtained from the preliminary field survey.

Table 8: MSE Distribution per Gender, Size, and Mohafazat

Mohafazat	Male				Female				Total
Size	1	[2-4]	[5-9]	[10-49]	1	[2-4]	[5-9]	[10-49]	
Beirut	3.9%	5.5%	1.2%	0.5%	0.2%	0.8%	0.2%	0.1%	12.5%
Mount Lebanon	12.9%	15.7%	2.3%	1.4%	1.9%	1.5%	0.2%	0.1%	35.8%
North Lebanon	12.1%	8.7%	0.7%	0.2%	0.7%	0.4%	0.0%	0.0%	22.7%
Bekaa	6.3%	6.4%	0.5%	0.3%	0.2%	0.2%	0.0%	0.0%	14.0%
South Lebanon	3.8%	4.5%	0.3%	0.1%	0.5%	0.5%	0.0%	0.0%	9.7%
Nabatieh	2.1%	2.6%	0.2%	0.0%	0.3%	0.1%	0.0%	0.0%	5.3%
Total	41.1%	43.2%	5.2%	2.6%	3.8%	3.5%	0.5%	0.2%	100.0%

D. Sampling ratios and "target" vs. "effective" analysis

At this stage of the study, all the necessary data was available for the implementation of the field survey and the constitution of the final sample. The terms of reference stressed on the following:

- A sample size of around 3,000 MSEs
- Different sampling ratios should be applied based on three main variables (size, gender, and Mohafazat)
    - Over-sampling females and large enterprises
    - Under-sampling males and small enterprises.

Table 9 details the different sampling ratios used for the preparation of the final sample.

Table 9: Sampling Ratios per Gender, Size, and Mohafazat

Mohafazat	Male			Female		
Size	1	2-9	10-49	1	2-9	10-49
Beirut	2/3	2/3	1/1	1/1	1/1	1/1
Mount-Lebanon	1/4	1/2	1/1	1/1	1/1	1/1
North	1/9	1/2	1/1	1/1	1/1	1/1
Bekaa	1/10	1/4	1/1	1/5	1/1	1/1
South	1/10	1/6	1/1	1/5	1/1	1/1
Nabatieh	1/10	1/4	1/1	1/5	1/1	1/1

Table 10 shows how the target sample is distributed, taking into account the abovementioned sampling ratios.

Table 10: Target Sample Distribution per Gender, Size, and Mohafazat

Mohafazat	Total	Male			Total	Female			Total
Size	Lebanon	1	2-9	10-49	Male	1	2-9	10-49	Female
Beirut	393	114	197	24	335	8	47	3	58
Mount-Lebanon	1,069	200	559	85	844	118	102	5	225
North	680	125	436	22	583	61	36	0	97
Bekaa	424	91	245	45	381	7	35	1	43
South	295	60	124	15	199	16	80	0	96
Nabatieh	162	31	100	6	137	8	17	0	25
Total Lebanon	3,021	620	1,660	197	2,477	218	317	9	544

The sample size was composed of 3,021 MSEs. The field survey completed 2,948 questionnaires. Table 11 shows the effective sample distribution of these questionnaires.

Table 11: Effective Sample Distribution per Gender, Size, and Mohafazat

Mohafazat	Total	Male			Total	Female			Total
Size	Lebanon	1	2-9	10-49	Male	1	2-9	10-49	Female
Beirut	382	144	153	12	309	31	40	2	73
Mount-Lebanon	1,020	378	412	28	818	115	85	2	202
North	667	200	350	14	564	71	31	1	103
Bekaa	422	140	206	28	374	25	22	1	48
South	293	75	123	8	206	44	42	1	87
Nabatieh	164	69	66	3	138	14	11	1	26
Total Lebanon	2,948	1,006	1,310	93	2,409	300	231	8	539

The distribution of the completed questionnaire (feccetive sample distribution) shows some discrepancy when compared to the target sample distribution. The comparison between Table 11 and Table 12 shows the following:

a. The completed questionnaires amounted to 2,948 compared to 3,021 previously selected. Therefore, the study had a non-respondent ratio of 2.4%.

b. There are no significant differences between the target and the effective distributions per Mohafazat (382 completed questionnaires in Beirut versus 393 "to be completed", 1020 in Mount-Lebanon versus 1069, 667 in North-Lebanon versus 680, 422 in the Bekaa versus 424, 293 in South-Lebanon versus 295 and 164 in Nabatieh versus 162).

c. There are no significant differences between the target and the effective distribution per gender. There are 2409 completed questionnaires for males compared to 2477, and 539 compared to 544 for female.

d. Discrepancies appear in the per size distribution. Mainly, the "effective" results show a net decrease in the number of employees. Categories (2 to 9) and (10 to 49) witnessed a decrease in the number of MSEs (passing from 1660 to 1310 and from 197 to 93 for males, and passing from 317 to 231 and from 9 to 8 for females). While category one (one employee) witnessed an important increase in terms of the number of MSEs (passing from 620 to 1006 for males and from 218 to 300 for females). This is mainly due to the following factors:
   - Under reporting the number of employees by the entrepreneur during the second visit due to an intrinsic mistrust of labor related government agencies caused by the detailed nature of the questionnaire used.
   - The answers given during the first visit are likely true for the following reasons:
     i. The distribution of the sample matches the national known distribution.
     ii. During the first phase it was not necessarily the entrepreneur who gave the answers thus reducing the mistrust factor.
     iii. Due to the quick nature of the first enumeration, the entrepreneur was less intimidated by the questionnaire (the enumeration was done orally).