

Report on El Salvador Gallup Data: 1993 and 1994 National Surveys

Introduction

This report presents findings from pertinent sections of two nationwide omnibus surveys conducted by Gallup/El Salvador, one in 1993 and the other in 1994. These surveys, conducted in the first quarter of each year, gathered diverse information using a sampling frame that is designed to provide a country representative sample. The sampling framework used is an updated census data base. Segments were selected in urban and rural areas and a mean of 15 households per segment were visited. One person per household is interviewed. The person selected is that individual 18 years of age or older who most recently celebrated a birthday. The quality control measures used in data collection are not known.

Information from questions on socio-demographic characteristics as well as several questions pertaining to the environment and other perceived problems in El Salvador were provided by Gallup to the Academy for Educational Development (AED) for analysis. These data were originally gathered for USAID/El Salvador.

The present analysis was undertaken for the following reasons:

- ▶ to assess the potential use of the data as a baseline survey for planned environmental interventions in El Salvador, particularly if the samples were comparable and the data seemed of high quality;
- ▶ to determine whether change had taken place over time with respect to respondents' attitudes toward the environment;

AED is currently under contract from USAID/El Salvador to implement the environmental education and communication component of the PROMESA (Proyecto del Medio Ambiente Salvadoreño) Project. The Gallup data may be used as a baseline to measure the accomplishments of several proposed communication interventions. Contractually, AED is required by GreenCOM to monitor the impact of communication interventions including general public awareness and concern about environmental problems.

The viability of adding questions to the omnibus survey in the future depends on whether the measurements planned by Gallup for 1995 fall prior to and immediately after AED's planned "Relevance Campaign."

Comparability of the 1993 and 1994 Gallup/El Salvador Samples

The data were analyzed to determine if the samples from 1993 and 1994 were comparable. The samples were compared using the socio-demographic information available: age, sex, place of

residence (urban vs. rural), profession and income levels. To test whether the El Salvador samples were comparable, cross tabulations of these variables by year were run using the Chi-square statistic to determine whether the proportions of responses between the two samples were significantly different. If the El Salvador samples were comparable, we would not expect to see significant differences on such variables.

A. Comparison of Sample Demographics

A national sample of 1260 respondents was taken in 1993, and 1568 in 1994. The following four tables present a summary of the demographic characteristics of gender, urban/rural residence, age, and occupation.

Respondents from 1993 and 1994 did not differ significantly with respect to division by gender. **Table 1** below provides the distribution of respondents for both years by gender:

Table 1: Gender			
Gender	1993 (n = 1260)	1994 (n = 1568)	<i>p</i>
Males	50%	52.9%	Not Significant
Females	50%	47.1%	

The 1993 sample was 50% male, compared to approximately 53% male in 1994 ($p > .12$).

The numbers of respondents identifying their place of residence as rural versus urban was also fairly similar for both 1993 and 1994, with no statistical significance over time, as indicated in **Table 2**:

Table 2: Urban/Rural Residence			
Residence	1993 (n=1260)	1994 (n=1568)	<i>p</i>
Urban	61.9%	59.4%	Not Significant
Rural	39.9%	40.6%	

Approximately 62% of 1993 respondents reported living in urban areas compared to 59% in 1994 ($p > .17$).

Among all respondents, ages ranged from 18 to 60+, divided into eight distinct categories for sampling purposes. The complete breakdown by category is given in **Table 3** below:

Table 3: Ages of Respondents			
Age Category	1993 (n=1260)	1994 (n = 1568)	<i>p</i>

18-19	9.6%	8%	Not Significant
20-24	18.6%	18%	
25-29	14.8%	13.4%	
30-34	11.7%	12.5%	
35-39	9.4%	9.9%	
40-44	8.4%	8.3%	
45-59	16.2%	16.7%	
60+	11.3%	13.1%	

Differences by age group over time were not statistically significant . The most common age group for both samples was 20-24 year olds, with 18.6% and 18.0% for 1993 and 1994, respectively. The variance between categories was always less than 2% for all eight possible categories ($p > .58$). The second most common age group for both years was 45-59 year olds.

For sampling purposes, Gallup divided occupations into ten general categories (e.g., skilled workers), including “retired/unemployed” and “other.” **Table 4** below provides complete information on occupation for the two samples:

Table 4: Reported Occupation by Year		
Occupation	Percentage 1993 Responses	Percentage 1994 Responses
Professional	46.2%	6.8%
Administrator	29.8%	9.9%
Office Worker	0%	10.7%
Farmer/Rancher	0%	5.3%
Skilled Worker	0%	9.2%
Laborer	0%	12.1%
Homemaker	0%	26.5%
Student	0%	10.5%
Other	0%	2.2%
Retired/Unemployed	24.0%	26.5%

Unlike the information on gender, urban/rural residence and age, which was relatively similar for the samples from 1993 and 1994, data on primary occupation varied greatly between the two years. In 1993, all 1260 respondents answered the occupation question, but only three of

the possible 10 categories--retired/unemployed, professionals, and administrators--contained any responses, led by professionals at 46.2 percent. In contrast, 1994 respondents included reported members of all 10 groups, led by homemakers at 26.5 percent, then laborers at 12.1 percent. Only 6.8 percent of 1994 respondents reported themselves as "professionals." The second most common response in 1993, "administrator/director/salesperson" at 30%, was only 10% in 1994. The overall proportional differences were highly significant ($p < .01$).

Surprisingly, only three categories of income were reported in 1993 from a list of ten categories, including a "do not know" option. Moreover, the highest income category was 600-999 per year, reported by 24.9 percent of respondents; 40.8 percent, the highest percentage group, reported making less than 600 per year. This is clearly at odds with the high percentage of professionals reported. By contrast, 1994 data show a more predictable distribution of income, with 58.5 percent reporting less than 1500 in annual income and some 6.2 percent reporting 3500 or more.

Although there are no obvious discrepancies to account for these differences (e.g., a major shift in urban/rural or male/female sampling), the small variance in 1993 occupations reported and high percentage of reported professionals raises questions about sampling procedures and survey administration. One possible explanation is the administration of questions regarding work. Some 23.9 percent of 1993 and 44.5 percent of 1994 respondents reported being unemployed at the time of the survey. In 1993, 43.6 percent of respondents reported owning their own business, compared with only 25.7 percent of 1994 respondents. This large difference, combined with the above anomalies, suggests that respondents may well have understood questions about both occupation and work differently in the two surveys.

B. Conclusions of Comparability Analysis

Although the analysis of age, gender, and urban status data revealed no significant differences between the samples from 1993 and 1994, a significant difference was found for occupation. Differences in occupation and income variables, among others, suggest either that very different sub-populations were sampled; survey administration somehow differed greatly between the two years; or that the file contains data entry errors. Overall, the 1994 data on occupation, work, and income appear much more representative of El Salvador's society and economy. This is even more obvious given differences in reported unemployment.

Opinions About Social and Environmental Issues

Respondents answers to several environmental questions included in the 1993 and 1994 Gallup surveys were analyzed to determine their attitudes toward environmental problems as well as any changes in attitudes over time.

A. Rankings of Seriousness of Social and Environmental Problems

The 1993 and 1994 national surveys prompted answers to a list of questions of the form,

“How serious are the following problems for El Salvador?” A five-point scale ranging from “very serious” to “not serious”, including a “not sure” option, was used. A higher mean score indicates the respondents felt the problem was more serious. **Table 5** gives the mean responses for each year and significance for the differences detected between the two years:

Table 5: Total Sample, 1993-1994 Data (N = 2828)			
Problem	1993 Mean	1994 Mean	<i>p</i>
Hunger and homelessness	4.06	4.64	< .001***
Crime and violence	2.99	4.77	< .001***
Environment	1.39	4.41	< .001***
Inadequate medical care	4.80	4.45	< .001***
Cost of living	4.86	4.63	< .001***
Racial/religious discrimination	4.41	3.26	< .001***
Quality of education	1.57	1.29	< .001***

*** Highly significant

These results indicate that all the observed differences are statistically significant. Substantial changes in opinion, meaning an overall change in mean response category, were present for the crime and violence, environment, discrimination, and hunger and homelessness categories. The other two reflect no such change in opinion. Crime and violence moved from a “not at all serious” to a “very serious” problem, while the environment moved from indifference to being perceived as a “very serious” problem. Discrimination decreased in seriousness from borderline “very serious” to near indifference.

Table 6 below reports male and female differences in mean score for seriousness within the same year:

Table 6: Male/Female Differences Within Year (Males n = 1459, Females n = 1369)						
Problem	Males 1993	Females 1993	<i>p</i>	Males 1994	Females 1994	<i>p</i>
Hunger and homelessness	4.31	3.82	< .001***	4.68	4.60	< .006***
Crime and violence	3.12	2.87	< .001***	4.82	4.71	< .001***
Environment	1.69	1.09	< .001***	4.45	4.37	< .033*
Inadequate medical care	4.78	4.82	> .066	4.49	4.42	< .013*
Cost of living	4.83	4.88	< .001***	4.65	4.60	> .086
Racial/religious discrimination	4.48	4.33	< .001***	3.23	3.29	> .135
Quality of education	1.52	1.61	< .020*	1.33	1.24	> .136

*** Highly significant; ** Very significant; * Significant

Most within year differences in mean seriousness of the problems for men versus women were significant. The exceptions were opinions on inadequate medical care in 1993, and opinions on cost of living, discrimination, and quality of education in 1994. Those changes in opinion which were not significant are designated in bold.

Male and female mean scores for seriousness compared separately across the two years are listed in **Table 7** which follows:

Table 7: Male/Female 1993-1994 Data (Males n = 1459, Females n = 1369)						
Problem	Males 1993	Males 1994	<i>p</i>	Females 1993	Females 1994	<i>p</i>
Hunger and homelessness	4.31	4.68	< .001***	3.82	4.60	< .001***
Crime and violence	3.12	4.82	< .001***	2.87	4.71	< .001***
Environment	1.69	4.45	< .001***	1.09	4.37	< .001***
Inadequate medical care	4.78	4.49	< .001***	4.82	4.42	< .001***
Cost of living	4.83	4.65	< .001***	4.88	4.60	< .001***
Racial/religious discrimination	4.48	3.23	< .001***	4.33	3.29	< .001***
Quality of education	1.52	1.33	< .01**	1.61	1.24	< .001***

*** Highly significant; ** Very significant; * Significant

The results for male and female change in opinion over time are similar to those for the total sample and are all statistically significant. There was a substantial change in both female and male opinion about the seriousness of crime and violence. Women and men upgraded this problem from “not sure” to “very serious”. The large increase in female concern about environmental problems is especially striking.

Comparisons for respondents from 1993 versus 1994 based on urban or rural residence are provided in **Table 8**:

Table 8: Urban/Rural 1993-1994 Data (Urban n = 1711, Rural n = 1117)						
Problem	Urban 1993 n=780	Urban 1994 n=931	<i>p</i>	Rural 1993 n=480	Rural 1994 n=637	<i>p</i>
Hunger and homelessness	4.17	4.69	< .001***	3.88	4.58	< .001***
Crime and violence	3.21	4.83	< .001***	2.65	4.67	< .001***
Environment	1.60	4.55	< .001***	1.04	4.20	< .001***
Inadequate medical care	4.78	4.49	< .001***	4.83	4.41	< .001***
Cost of living	4.90	4.64	< .001***	4.79	4.61	< .001***
Racial/religious discrimination	4.47	3.21	< .001***	4.30	3.32	< .001***
Quality of education	1.54	1.39	>.072	1.60	1.14	<.001***

*** Highly significant; ** Very significant; * Significant

The urban/rural data generally reflect the same trends as the male/female and total sample data: a substantial increase in concern about crime and violence and the environment, and lessening concern about discrimination. No significant change in quality of education opinions among urban respondents in 1993 were noted in this comparison.

B. Identification of the Three Most Serious Environmental Problems In El Salvador

The surveys contained three open-ended questions which asked respondents to name the first, second and third most serious environmental problems in El Salvador. Answers to these questions were aggregated to create a total count of specific problems mentioned by respondents in any of the three questions. Cross tabulations of these problems, or variables, by year were run using the Chi-square statistic to determine whether the proportions of responses between the two samples were significantly different.

Table 9 provides counts for each item, regardless of whether it was mentioned as either the first, second, or third most serious problem in El Salvador, by year:

Table 9: Count of Environmental Problems Mentioned in 1993 & 1994 (N=2828)		
Problem	1993 (n=1260)	1994 (n=1568)
No Response	5	962
Deforestation	1,157	984
Garbage	417	439
Polluted Water	341	332
Polluted Rivers	422	166
Smoke and Smog	165	387
Burning of Fields	0	35
Hunting of Wildlife	0	92
Lack of Education	0	14
Other	1	319

Cross tabulations of the counts indicated that the changes over time between 1993 and 1994 in the mean number of people mentioning each of the problems on the questionnaire were all significant ($p < .01$). Overall, a significant decrease in the number of respondents mentioning “deforestation”, “garbage”, “polluted water” and “polluted rivers” was observed between 1993 and 1994. On the other hand, the number of respondents mentioning “smoke and smog”, “burning of fields”, “hunting of wildlife”, “lack of education” and “other” significantly increased between the two years.

The discrepancies between the counts by year for most problems mentioned are large both as a percentage and in absolute terms. For example, deforestation decreased in frequency of being mentioned as a problem from 1,157 in 1993 to 984 in 1994, a significant drop of 29 percent over time ($p < .01$). Given that the 1993 sample was only 1,260 compared to 1,568 in 1994, this difference is all the more salient. Also worth noting is the total absence of responses for three categories in 1993-- burning of fields, hunting of wildlife, and lack of education-- and subsequent appreciable response rate in 1994. This suggests differences in survey administration or understanding of this question on the part of respondents. It may also suggest the lack of sensitivity of the survey to detect thematic differences in the population reflected by the increase in the “other” response category from 1 to 319.

Significant questions about these data arise when the rate of “no response/do not know” answers given is considered. In 1993, less than 1 percent of respondents indicated “no response/do not know” for each of the three problems. However, in 1994, 17.9 percent gave no response on the first problem, 34.9 percent on the second problem, and 59.4 percent on the third problem. These results raise questions about survey administration and respondent

understanding.

When each of the problem response categories were cross tabulated to determine any differences due to the socio-demographic characteristics of age, occupation and gender, the general overall trends of significant differences between counts continued to appear but with some notable exceptions. Since only three occupational categories, “retired/unemployed”, “professional”, and “administrator” were comparable between the two years, the analysis was limited to these categories.

Table 10 provides a comparison of problems mentioned by gender by year:

Table 10: Environmental Problems Mentioned by Gender						
	Males (n=1459)			Females (n=1369)		
Problem	1993 n=630	1994 n=820	<i>p</i>	1993 n=630	1994 n=739	<i>p</i>
No Response	4	469	p<.01**	1	493	p<.01**
Deforestation	573	544	p<.01**	584	440	p<.01**
Garbage	217	237	p<.05*	200	202	p>.05
Polluted Water	173	165	p<.01**	168	167	p>.05
Polluted Rivers	211	102	p<.01**	174	62	p<.01**
Smoke & Smog	70	229	p<.01**	95	158	p<.01**
Burning of Fields	0	21	p<.01**	0	14	p<.01**
Hunting of Wildlife	0	55	p<.01**	0	37	p<.01**
Lack of Education	0	8	p<.01**	0	6	p<.05*
Other	0	190	p<.01**	1	129	p<.01**

** Highly significant; ** Very significant; * Significant

The table illustrates that, in contrast to the overall trends, garbage did not significantly increase and polluted water did not significantly decrease in being mentioned as a problem by females between 1993 and 1994.

Table 11 shows the number of respondents who reported a specific problem by employment category:

Table 11: Problems Mentioned by Employment Category									
	Retired/Unemployed n=411			Professional n=688			Administrator n=531		
Problem	1993 n=302	1994 n=109	<i>p</i>	1993 n=582	1994 n=106	<i>p</i>	1993 n=376	1994 n=155	<i>p</i>
No Response	1	71	p<.01**	4	43	p<.01**	0	95	p<.01**
Deforestation	265	67	p<.01**	540	84	p<.01**	352	96	p<.01**
Garbage	98	28	p>.05	200	33	p>.05	119	43	p>.05
Polluted Water	63	15	p>.05	159	23	p>.05	119	30	p<.01**
Polluted Rivers	83	7	p<.01**	172	16	p<.01**	130	17	p<.01**
Smoke and Smog	97	28	p>.05	46	31	p<.01**	22	32	p<.01**
Burning of Fields	0	4	p<.01**	0	5	p<.01**	0	4	p<.01**
Hunting Wildlife	0	9	p<.01**	0	7	p<.01**	0	12	p<.01**
Lack of Education	0	1	p>.05	0	2	p<.01**	0	2	p<.05*
Other	1	21	p<.01**	0	25	p<.01**	0	37	p<.01**

*** Highly significant; ** Very significant; * Significant

Across all employment categories, there was no significant change in the number of respondents who mentioned garbage as a problem, indicating that these occupations do not influence the overall downward trend in the number of persons who mentioned garbage. Changes in “polluted water”, “smoke and smog” and “lack of education” also defied the overall trends and were not significant for respondents who were retired or unemployed. The drop in the number of times garbage was mentioned as a problem was also not significant among professional respondents.

Table 12 compares the number of problems mentioned by urban versus rural respondents.

Table 12: Problems Mentioned by Urban/Rural Residence						
	Urban (n= 1711)			Rural (n=1117)		
Problem	1993 n=780	1994 n=931	<i>p</i>	1993 n=480	1994 n=637	<i>p</i>
No Response	5	480	$p < .01^{**}$	0	482	$p < .01^{**}$
Deforestation	720	625	$p < .01^{**}$	437	359	$p < .01^{**}$
Garbage	263	322	$p > .05$	154	117	$p < .05^*$
Polluted Water	239	234	$p < .05^*$	102	98	$p < .05^*$
Polluted Rivers	249	111	$p < .01^{**}$	136	53	$p < .01^{**}$
Smoke & Smog	83	311	$p < .01^{**}$	82	76	$p < .05^*$
Burning of Fields	0	18	$p < .01^{**}$	0	17	$p < .01^{**}$
Hunting Wildlife	0	54	$p < .01^{**}$	0	38	$p < .01^{**}$
Lack of Education	0	11	$p < .01^{**}$	0	3	$p > .05$
Other	0	195	$p < .01^{**}$	1	124	$p < .01^{**}$

*** Highly significant; ** Very significant; * Significant

Interestingly, there was no significant change in the number of urban respondents who identified garbage as a problem. In addition, among rural respondents, there was no significant increase in the number of persons who mentioned lack of education as a problem.

C. Relationship Between Seriousness of Environmental Issues and Types of Problems Mentioned

An additional analysis was done on the 1994 data in order to investigate the relationship between respondents' overall perception of the seriousness of environmental issues as a whole and their answers to the question regarding the three most serious environmental problems in El Salvador. Specifically, questions arose regarding the reasons for the increase over time in respondents' ratings of the seriousness of the environmental issues overall in contrast to the decline in the number of specific problems they identified.

Cross tabulations using the Chi square statistic, with respondents stratified into those who rated environmental problems as a whole as "serious" or "very serious" and those who did not, were conducted for each of the specific environmental problems mentioned. **Table 13** shows, among those respondents who rated the environment overall as a serious or very serious problem,

which specific environmental problems they mentioned. The counts and percentages compare those who mentioned the problem with those who did not.

Table 13: Comparison of Problems Mentioned Among Those Who Rated the Environment a Serious or Very Serious Problem in 1994 (n=1568):			
Problem	Not mentioned	Mentioned	<i>p</i>
No Response	575 (41.6%)	807 (58.4%)	p<.001***
Deforestation	463 (33.5%)	919 (66.5%)	p<.001***
Garbage	978 (70.8%)	404 (29.25%)	p<.003**
Polluted Water	1066 (77.1%)	316 (22.9%)	p<.001***
Polluted Rivers	1232 (89.1%)	150 (10.9%)	p>.164
Smoke & Smog	1018 (73.7%)	364 (26.3%)	p<.001***
Burning of Fields	1349 (97.6%)	33 (2.4%)	p>.255
Hunting of Wildlife	1294 (93.6%)	88 (6.4%)	p<.05*
Lack of Education	1369 (99.1%)	13 (.9%)	p>.583
Other	1087 (78.7%)	295 (21.3%)	p<.01**

*** Highly significant; ** Very significant; * Significant

Those respondents who rated environmental issues overall as “serious” or “very serious” were more likely than not to mention “deforestation” or to give no response. No significant differences were detected for the two groups’ responses to three problems: “polluted rivers”, “burning of fields” and “lack of education”.

In this analysis, it can be expected that higher counts would be found for the number of people who mentioned a specific problem compared with those who did not mention the problem as there were a multitude of problems from which to choose. Nevertheless, nearly twice as many people who perceived the environment as a “serious” or “very serious” problem (66.5%) mentioned deforestation than those who did not mention deforestation. This finding strongly suggests that those people who are very concerned about the environment are similarly very concerned about deforestation.

Table 14 shows, among males and females who rated the environment as a whole as a “serious” or “very serious” problem, which specific problems they mentioned as well as significant differences between the two genders. The counts and percentages represent, among those who rated the environment as “serious” or “very serious”, the number of males or females who mentioned a specific problem and the percentage this count is of the total number of males or females.

Table 14: Comparison of Problems Mentioned Among Those Who Rated the Environment a Serious or Very Serious Problem in 1994: Males vs. Females (n=1382)			
Problem	Males (n=820)	Females (n=739)	p
No Response	399 (54.1%)	408 (63.3%)	p<.01
Deforestation	507 (68.8%)	412 (63.9%)	p<.05
Garbage	216 (29.3%)	188 (29.1%)	p>.05
Polluted Water	156 (21.2%)	160 (24.8%)	p>.05
Polluted Rivers	92 (12.5%)	58 (9.0%)	p<.05
Smoke & Smog	216 (29.3%)	148 (22.9%)	p<.01
Burning of Fields	19 (2.3%)	14 (1.9)	p>.05
Hunting of Wildlife	54 (6.6%)	34 (4.6)	p>.05
Lack of Education	7 (.90%)	6 (.81%)	p>.05
Other	174 (21.2%)	121 (16.4%)	p<.05

Among those respondents who rated the environment as a whole as a “serious” or “very serious” issue, males were consistently more likely to mention specific problems. For those problems where statistically significant differences in response rates for males and females were noted, including “deforestation”, “polluted rivers”, “smoke and smog”, and “other”, males were found to have mentioned the problem more frequently than females. Among both males (68.8%) and females (63.9%), deforestation was the most frequently mentioned problem.

Summary

The comparative data from the 1993 and 1994 surveys raise questions about differences in survey administration between the two years. Although there are no significant differences with respect to age, sex and place of residence, the samples differ significantly with respect to occupation and income levels, with a possible bias toward urban professionals in 1993.

In addition, opinion data on social and environmental problems from both 1993 and 1994 indicate that Salvadorans believed most of the problems listed were either “serious” or “very serious”. Exceptions in 1993 were “crime and violence”, “environment”, and “quality of education”, which were of lesser concern than other problems. In 1994, “racial and religious discrimination” and “quality of education” were not rated as serious as other problems. The problems of “hunger and homelessness”, “crime and violence” and “environment” stand out as having increased in perceived severity from 1993 to 1994.

The observed trend over time of an increase in the perception of the seriousness of

environmental issues as a whole contrasts sharply with the observed drop in the number of people mentioning specific problems, particularly “deforestation”, “garbage”, “polluted water” and “polluted rivers”. At the same time, the number of respondents mentioning “smoke and smog”, “burning of fields”, “hunting of wildlife” and “lack of education” and “other” or simply did not respond to the question significantly increased between the two years. These trends held true when analyzed separately by gender with the exception of “polluted water” and “garbage”: the decrease in frequency of being mentioned for these variables was not statistically significant for females.

Further analysis revealed an association between some respondents’ perception of the severity of environmental issues overall in El Salvador and specific environmental problems identified as being the first, second or third most serious in the country for the 1994 data. Respondents who rated environmental issues overall as “serious” or “very serious” were more likely to mention “deforestation” or give no response than those who did not consider the environment a “serious” or “very serious” problem. Females who rated environmental issues as “serious” or “very serious” responded differently than males with respect to “deforestation”, “polluted rivers”, “smoke and smog” and “other”. Males mentioned these problems more frequently than females. Overall, respondents who were very concerned about environmental issues in general were particularly concerned about deforestation.

In sum, in light of the discrepancies detected in the data, there is enough evidence to suggest the 1993 and 1994 samples are sufficiently different to be non-comparable, and to suggest important differences either in survey administration or respondent understanding or both. Thus, findings from the 1993 and 1994 Gallup surveys should be treated with a degree of caution.