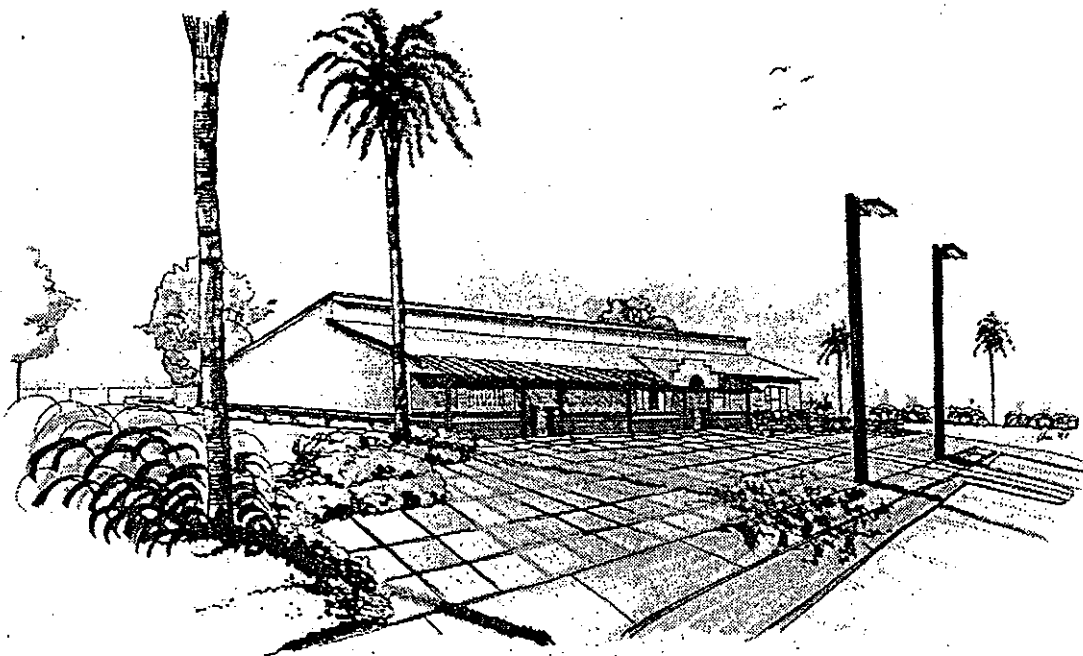


Cinco Colonia Areas :
Baseline Conditions in the Lower Rio Grande Valley



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Abstract

This paper reports on the first phase of an ongoing project to evaluate the physical, organizational and policy efforts to improve living conditions in two colonias in South Texas. The first phase of the research seeks to establish a baseline of data in two colonias where efforts are planned and three comparable colonias where no programs are currently planned. The first phase of the research involves the collection of data regarding current conditions in the five locations. The research reported summarizes the baseline data collected through personal interviews. These social surveys of colonia residents will determine existing conditions and service delivery levels; this baseline information will be used to assess current conditions and to compare with conditions after the interventions are underway.

The second phase of the research will continue to monitor data that may become available, visit the key-informants, and re-interview residents after programs are underway. The objective of the second phase of this research is to determine the extent of changes in: service delivery in the colonias, overall social welfare of the communities, and living conditions. This paper summarizes these data in a preliminary documentation of existing conditions in the five selected colonias.

- Employment problems are severe in the five colonias studied herein. While the proportion of households without adults working is high (20 to 60%), residents in these five areas also report that they tend to work less than full time and less than year-round.
- Signs of institutional assimilation that are legally mandated, enforced through monetary fines, and logistically grounded in daily activities (i.e., driver's license and vehicle registration) are relatively high; however, institutional connections that are more easily tied to legal residency, without compliance standards, and loosely tied to daily routines (i.e., voter registration and bank accounts) are relatively low.
- Colonia residents are willing to help each other meet specific needs when they arise. The data indicate that the amount of social support is more related to the nature of the community than to the nature of the specific need.
- Economic factors tend to dominate the reasons people choose to live in colonias. Lower cost of land and lack of affordable housing in nearby cities are frequently cited reasons for choice of residence in the colonias. Other frequently mentioned reasons for settling in the colonias include: overall quality of life in the colonias being better than where they used to live, freedom in terms of no one telling residents what they can and cannot do, and lower building costs associated with homes.
- Recognized health care professionals provide most health care to colonia residents. Moreover, United States providers of health care are mentioned more often than sources of health care in Mexico.
- Most skill development classes attain nearly universal approval from residents in the five colonia areas. Nearly all classes are recognized as being needed by 4 out of 5 respondents; only classes on effective parenting, classes to help prepare residents for driver's license exams and prenatal care classes failed to reach 80% approval in all areas.
- Travel to and from work is not concentrated in the morning and evening rush-hour pattern typical of metropolitan life in the United States, but rather spread out over the entire day.

for expediency in providing these data, and in part because the comparability of these data will have to be carefully analyzed to make such a comparison possible.

This report will review the research design and methods used to collect these baseline data. This will include a discussion of the sampling procedures, fieldwork, response rates, and estimated sampling error. Assuming that data collected after programs to improve conditions are underway have similar methodological character, the anticipated level of change able to be detected using these methods will be discussed. Finally, the univariate responses from the surveys will be presented in the order of the questionnaire. This does not constitute an in-depth analysis, but rather a simple descriptive reporting of the findings of these baseline data.

B. Methods

Because the long-term objective of this study is the evaluation of efforts to improve the quality of life in the colonias, a panel design was initiated with the baseline data being reported herein. A panel design involves before-after observation of critical variables to assess the magnitude of potential changes. This report will present the initial findings in raw univariate terms. This research is designed to assess conditions in the colonias prior to intervention. Over the course of the program additional phases of the research will re-evaluate conditions in the same households to determine the extent of change in living conditions in the selected communities.

In order to attribute any observed changes in living conditions to public policy or programs in the colonia, three conditions will have to be met: (1) a change will have to be observed, (2) alternative explanations for the change will have to be systematically eliminated, and (3) a relationship between interventions in the area and the change will have to be established. The first criteria can be established on the basis of a before-after design. By comparing data collected prior to the intervention with data collected after the intervention, significant changes can be observed. Significant changes will be identified that result in shifts beyond what would be expected by chance alone. Moreover, where impacts are anticipated as improving conditions, directional tests of significance will be conducted.

The second criteria can be established on the basis that similar changes have not occurred in similar colonias where no intervention has occurred. These control group communities provide direct evidence that relates the intervention to the impact. These data allow the evaluation to establish that a *prima facie* case of impact, rather than merely observed change. The case is substantially strengthened if alternative explanations are then individually examined and eliminated from consideration.

Finally, an observed change can only be considered an impact of the intervention if it can be reasonably associated with the activities of the intervention. Hence, if

Table 1. Selected colonia communities by household counts and associated areas.

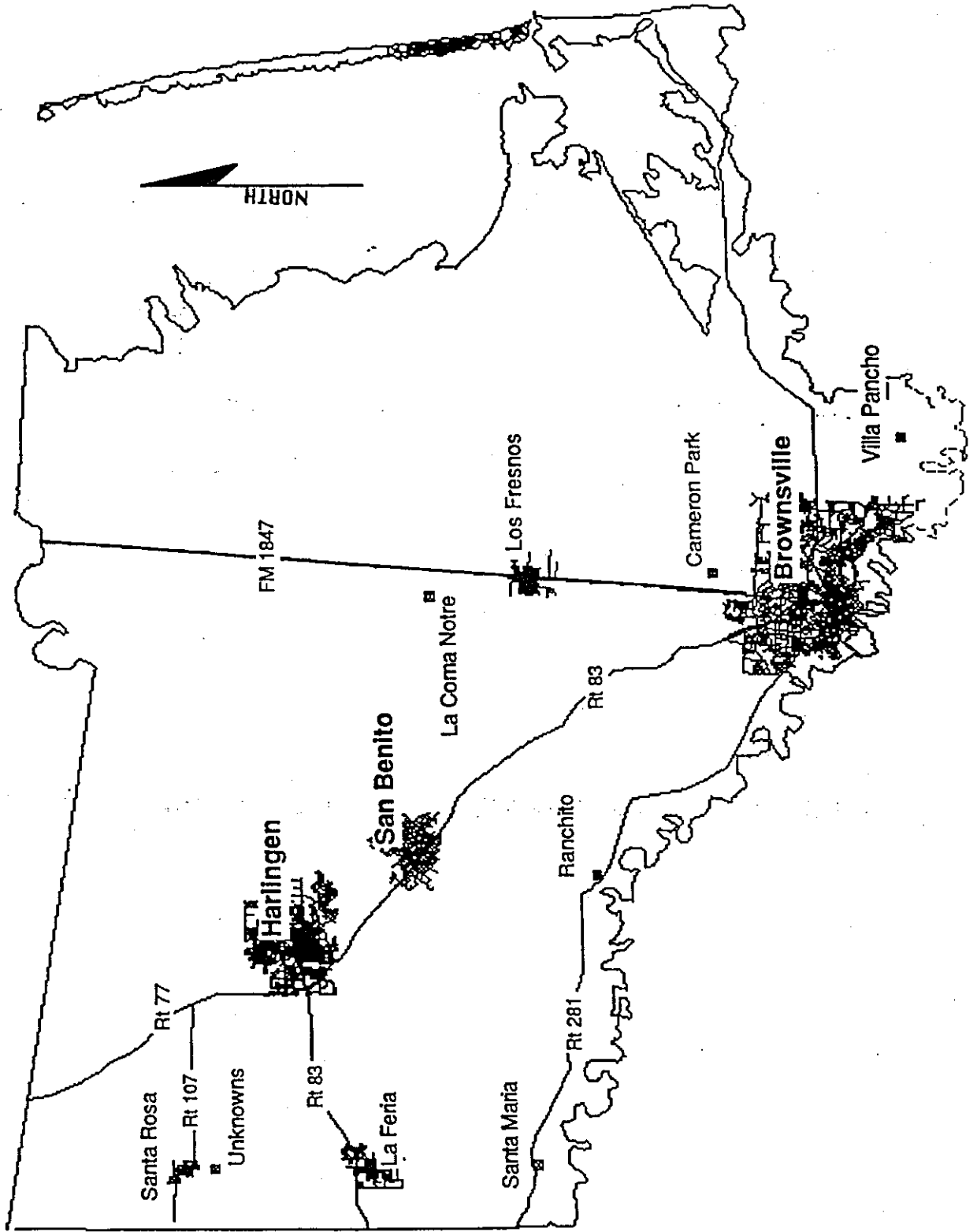
<u>Area Name</u>	<u>County</u>	<u>ID^a</u>	<u>Name</u>	<u>Housing Units</u>
Cameron Park	Cameron	1244	Cameron Park	500
Progreso	Hidalgo	920	Progreso	360
		3000	La Reina	50
		919	Los Palos ^b	33
		928	Colonia Capitallo ^b	30
		933	Colonia Jesus Maria ^b	30
		3006	Unknown	25
		Total in Progreso		564
Ranchito	Cameron	1119	Encantada	131
		1118	(El) Ranchito	113
		1095	Villa Cavazos	50
		1115	Montalvo	50
		1117	El Calaboz	36
		1297	Escamilla's	10
		Total in Ranchito		390
Lopezville	Hidalgo	81	Lopezville	198
		328	North Lopezville	80
		616	Arco Iris No. 2	57
		620	Aldamas & No. 2	48
		83	Villa del Mundo	41
		609	Villa del Sol	22
		615	Mesquite Acres	21
		614	El Castilleja	16
		610	Sevilla Park No. 1	12
		612	El Charro Sub No. 1	11
		622	Las Palmas	10
		Total in Lopezville		516
Lull	Hidalgo	11	Lull	222
		7	River Bend	8
		41	Crouse	8
		8	Floresta	15
		Total in Lull		253

a ID number is the identification number assigned by the TWDB.

b These colonias were eliminated at the sampling frame stage to achieve compact communities similar to others included in the study.

Source: Adopted from Texas Water Development Board. A Reconnaissance Level Study of Water Supply and Wastewater Disposal Needs of the Colonias of the Lower Rio Grande Valley (1987).

Figure 1a. Geographic location of potential colonia communities for intervention and control communities — Cameron County.



A sampling frame was established for each area by first attaining all available subdivision plats from the respective county clerk's office. Recent aerial photographs of each area were subsequently examined to establish the existence of non-platted subdivisions in the area. For each platted area, lots with buildings on them, as verified from the aerial photographs, were considered an element of the sample. In those relatively rare cases where sampled elements were comprised of more than one household in more than one structure on a given single lot, interviewers were given detailed instructions to implement a random selection process. For non-platted areas, maps were produced from the aerial photographs in enough detail to allow interviewers to find the sampled household. In one area, Ranchito, the available aerial photographs were taken on a partially cloudy day, making many portions of the photograph blocked out by clouds, or unreadable due to the dark shadows of clouds. In these areas, a research team was sent to the area to draw detailed maps of each subdivision for sampling purposes. The approximate age and household counts for each selected area are presented in Table 2a for colonias selected to receive community resource centers. Table 2b depicts comparative colonias.

Table 2a. Sampling frame of dwelling units for each colonia in Lower Rio Grande Valley by colonia area (Community Center Areas)

<u>Colonia</u>	<u>Dwelling Unit</u> ^a	<u>Inception</u> ^b
<u>Cameron Park</u> ^c	901	1960
<u>Progreso</u> ^c	480	
A&E Ramirez	23	1982
A&E Ramirez Sub. Sect. 2	15	1983
Colonia Las Palmas	61	1984
El Leon	36	d
La Frontera	51	1982
La Leona No. 1	41	1972
Lyons	18	1972
Mrs. Todd's Sub. Unit 1	23	1962
Mrs. Todd's Sub. Unit 2	13	1970
Orchard Homes No. 2	49	1983
Progreso	65	1928
The Shull Addition	27	1965
Unknown- S.W. Progreso	31	d
W.B. Rice Subdivision	27	1968

- a Potential dwelling units included in sampling frame if (1) platted lots had observed buildings on them, (2) buildings were identified in aerial photographs in non-platted areas, or (3) dwelling units were mapped and counted during field visits to the area.
- b Inception is the date on the plat filed with the county.
- c Selected by the Center for Housing and Urban Development in consultation with local authorities to receive a multipurpose community center.
- d Plat for this colonia/subdivision not available; area included in a metes and bounds description; colonia map created either from aerial photographs or by personal field observation.

2. Response Rates

The field work for the baseline data was completed with the assistance of the University of Texas--Pan American's Center of Entrepreneurship and Economic Development in the Spring and Summer of 1992 (April to August inclusive). All surveys were fully translated, to minimize interviewer bias. Training of interviewers was conducted in Spanish to assure sufficient comprehension of the language to be able to conduct the interview in Spanish. Training consisted of a complete read-through, and role-playing. Role-playing as a respondent and as an interviewer also provided assurance that interviewers were fully conversant and could read the translated questionnaires.

A complete disposition of each sample by area is presented in Table 3. Prior experience and research in the area suggested that a contact rate of 70% could be anticipated. Concern was voiced from a number of people having service provision experience in the colonias, that the interview schedule would be seriously jeopardized by residents that migrate to farms in the northern states throughout the summer. Informants were concerned that during this time migrant families leave their homes in the colonias vacant, and often boarded up, meaning that no one would be available to interview. The original schedule was adhered to under the provision that follow-up efforts might be required in the Fall of 1992 to complete interviews that were not completed due to seasonal migration. Interviewers were instructed to consider a household as "migrant" if the home was (1) boarded up, but clearly occupied (e.g., contained furnishings, outside well kept), (2) neighbors confirmed migration, or (3) community informants confirmed migrancy. Follow-up interviews were not needed as in every case less than 12% of the sample was failed to be completed due to migrancy. Moreover, Progreso was the only colonia area where the migrant rate was above 8%. Sufficient number of migrants (i.e., obtained from occupation of main wage earner) were included in the surveys to permit analysis from their point of view.

Response rates are most appropriately calculated as the ratio of completed to attempted interviews. It assesses the completion of an interview given the respondent was given a chance to respond. Hence, the response rate is calculated as the number of completed interviews divided by the number of attempted interviews, which is the number of completed interviews plus people refusing to participate in the study, plus the people terminating the interview partially completed. Response rates varied from just about 82% in Ranchito to nearly 93% in Lull.

3. Sampling Error

When estimating a population parameter from a sample with an unbiased estimating function using a representative sample, the sample estimate is usually incorrect due to sampling error. Sampling error is the amount of difference between the sample estimate of a parameter and the population parameter. Hence, sampling error is the amount of error introduced in estimating population parameters by sampling alone. The sampling error (e) is estimated as

$$e = 1/\sqrt{n} ,$$

where n is the sample size. The sampling error for the unadjusted samples in this study range from 8 to 10%. The sampling error is presented in Table 4.

Table 4. Sample Characteristics by Colonia Area

	<u>Cameron Park</u>	<u>Lopez- ville</u>	<u>Lull</u>	<u>Progreso</u>	<u>Ranchito</u>
<u>From Sample</u>					
n	132	152	154	157	102
e	8.7%	8.1%	8.1%	8.0%	9.9%
f	0.853	0.765	0.543	0.673	0.566
<u>With Additional Cases</u>					
n	147	152	158	170	104
e	8.2%	8.1%	8.0%	7.7%	9.8%
f	0.837	0.765	0.531	0.646	0.557

Sample size (n), sample error (e) and finite population correction factor (f)

While this sampling error is relatively high for survey research, particularly for research whose aim is to precisely predict population parameters, these samples are of finite populations they should be adjusted to accommodate the relative sampling fraction. The finite population correction (f) is defined as

$$f = \sqrt{1-n/u},$$

where u is population size and n is sample size. To adjust the standard error for finite populations it is multiplied by f, or

$$s_f = s \sqrt{1-n/u} = sf.$$

The unadjusted and adjusted confidence interval widths for binary variables of various selected proportions are presented in Figure 2 for each sample.

The confidence interval widths without finite population corrections (Figure 2a) show the reported proportions have a 95% confidence interval ranging from $\pm 4.5\%$ to 6% , to ± 7.5 to 10% in Ranchito and Cameron Park respectively, depending on the proportion under consideration--increasing as p approaches .5. Meanwhile, confidence intervals adjusted by the finite population correction factor (Figure 2b) range from ± 2.5 to 4.5% , to ± 4 to 7% in Lull and Cameron Park respectively, depending on the proportion under consideration--increasing as p approaches .5. The Cameron Park sample is improved least by the finite population factor, while the prediction capacity of the Lull and Progreso samples are improved the most.

This analysis indicates that the analyst will be wrong 1 time in 20, if changes in proportions greater than 7.5% are attributed to chance. Changes in Lull greater than approximately 4% are unlikely (with 95% confidence) to be attributable to chance. Moreover, changes as small as 2.5% can be detected, if they occur in Lull and the proportions of interest, p , are approximately .9 or .1. All changes of approximately 6% or more will be detectable in Lopezville, with the smallest detectable change being just over 4.5%, if $p = .1$ or $.9$. Hence, on both ends of the distribution (either more rare or more predominant), the smaller the amount of change able to be detected. At one end of the distribution, as instances become more rare (p approaches 0) the smaller the observable change; and at the other end of the distribution, the more predominant the occurrence (p approaches 1) the smaller the amount of change able to be detected.

Hence, there are three reasons this study can use relatively small sample sizes;

1. the study is primarily interested in detecting patterns of change in a variety of questionnaire items, not single items;
2. many of the distributions of interest are not likely to be equally split distributed but rather skewed in one direction or another; and
3. the samples are from finite populations, standard errors are corrected by the finite population correction factor, which makes it possible to detect even quite small changes under some circumstances.

C. Selected Findings

The selected findings on critical issues presented in this report are not intended to be comprehensive. These findings neither represent all of what these data address or all of the numerous problems facing colonia residents. While these selected findings are not intended to be a comprehensive analysis of these data on colonia issues, they are indicative of some of the major issues facing colonia residents. Many of the underlying issues associated with each graph are quite complex and require extensive discussion. These more extensive discussions will be the subjects of subsequent papers; however, because this is a summary report and for the sake of brevity, only bullet summaries of these findings are provided.