

# What comes first in sheltering needs? patterns of *Colonias* housing production

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**ABSTRACT:** The communities along the US - Mexico border, although known for their isolation, poverty, and cultural homogeneity, have managed to provide a decent, affordable solution to the housing crisis in this region through self-build housing production. These communities are called *Colonias*, and were identified as peri-urban homesteads because of their location on the fringes of major cities. On the Texas southern border, *Colonias* have experienced explosive growth since the 1950s, particularly during the first half of the 1990s. Most borderlands are dominated by one ethnic and racial group; Hispanics are estimated to make up more than 95% of the population at the Texas southern border. For most, home ownership and better job opportunities provide the primary motive for moving to the borderlands. Affordability of land acquisition and convenient, yet often clouded, deeds make this goal feasible.

This study explores housing production means in the Texas-Mexico border's *Colonias* scattered around the fringes of the city of Laredo, with an emphasis on incremental stages of progress in construction. The study investigated the residents' approach to self-build housing construction, the chronological phases, and the patterns of household preferences for prioritizing the spaces considered at each phase. The study utilized review of relevant literature, and empirical data gathered through surveys of residents of Webb County's *Colonias* in Texas. Questionnaires were distributed during two community meetings in Rio Bravo and Los Altos. From the study, conclusion regarding a housing model identifying the patterns of housing production was achieved. The study also addressed the fact that two-thirds of the housing was incrementally constructed through short-term and long-term periods, and provided policy recommendations for housing financing. In addition, the study emphasised that the majority of residents built one or two spaces as an initial "core house," and employed further phases of construction throughout the years until completion.

Conference theme: Human context: social, cultural, and economic studies

Keywords: self-build construction, housing production, US - Mexico border, *Colonias*

## 1. BORDERLANDS

Borderlands worldwide share many functional commonalities with one another as frontier structures that have been formed by global events. Borderlanders, as explained by Martinez (1994), undergo many similar experiences regardless of their location or their inhabitants' economical status. Yet immigration studies have also acknowledged the existing differences with regards to the degree of assimilation, correlated movements of migration, evolved settlements, and economical and political influences. The US - Mexico borderland stands as an example of an interdependent border with asymmetrical influences from one nation to the other. This example allows the two nations (the US and Mexico) to benefit from migration movements, and the existence of the current economic climate, which permits borderlanders to pursue the expansion of development projects on both sides (Martinez, 1994). The result is a continuous

movement of settlers who have shifted to settle rather than to commute, and who were attracted by the dream of home ownership, as well as the affordability that comes with indefinite land acquisition. Following the Mexican revolution, since the 1920s, newcomers have established settlements that are legally owned by their inhabitants, and that have gone on to attract even more acquaintances to their new, unplanned communities, known as *Colonias*.

At their initial recognition in 1990, *Colonias* were characterised by the National Affordable Housing Act-(NAHA) as "identifiable communities" in Arizona, California, New Mexico, and Texas, all within 150 miles of the US - Mexico border (HAC 2000).

These settlements have expanded along the North side of the 2000 mile border between the US and Mexico, and continue to constitute a major concern for urban scholars because of their spontaneous growth and their late recognition by policy makers (*Colonias* problems were only addressed five decades ago) (Kamal 2006).

As such, the characteristics of *Colonias* replicate the common image of Third World slums, though they are distinct in a number of aspects. For instance, in the Colonias, the house and the lot are owned by the occupant and rental units are infrequent (Davies and Holz 1992). Recent statistics show that 85% of *Colonias* residents in the Rio Grande valley and in El Paso own their homes, which is the main achievement of their residents. However, the settlements share some of the globally common characteristics of slums and other informal housing areas such as a scarcity of services and substandard housing.

### 1.1 Settling Patterns and Problems

Having acquaintances in the area was considered an important factor in making the decision to move to a *Colonia* (Kamal 2005). This is an example of a pattern of settling generally identified through migration theory (Stalker 2004), particularly in informal and squatter areas. However, moving to be near acquaintances was not the primary motive for migration in the cases studied here. In an analysis of migration motives throughout the past five decades, Massey and Espinosa (1997) concluded that social capital formation is one of three factors motivating Mexicans to cross the border into the US, which occurs because those who are acquainted with pioneer migrants are more likely to migrate. The other factors comprise human capital formation, which includes negotiating job and housing opportunities in the US, as well as market consolidation, which encouraged Mexicans to pursue better jobs in the US.

Despite our knowing these motives, there is, however, a misconception that a large percentage of the border population is made up of illegal immigrants from Mexico. According to the 2000 Census, only 12% of border residents are non-US citizens, as compared to 7% for the nation as a whole (Purdy, J. 1999). Residents of the borderland have been absent from the attention of public policy makers as these households face severe built-environment problems including inadequate infrastructures and overcrowding of housing units. Figure 1 shows that 13% of border households live in crowded units, and among Hispanic households, 26% live in units with more than one person per room (HAC 2000). These numbers boost the crowding rate to four times the national rate. The aggravation of household living conditions is further driven by degraded infrastructure facilities, including a lack of road pavements, street lights, efficient drainage systems, curb-side garbage collection, and security. Health-related risks resulting from these conditions are addressed by Wilson and Menzies (1997), who emphasized the hazardous risks caused by the inefficient drainage systems individually established in each lot. The situation is exacerbated because of the small size of the lots, the average size of which usually range between 60 by 90 feet (US House of Representative 1990), and the absence of access to an outside sewage system; instead the residents only access substandard septic tanks and outhouses built inside their lots. As such, and because of the scarcity of

water, individual wells, also built inside the lot, are usually located within 10 feet of these septic tanks, causing health problems when the wells water is used.

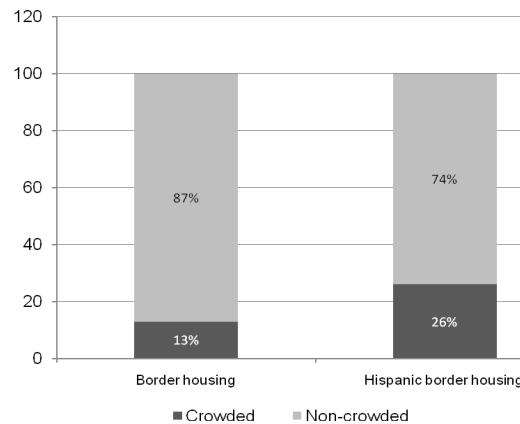


Figure 1: Percent of crowd in the Border housing  
Source: Adapted from (HAC 2000)

### 1.2 Segregation and Homogeneity

Some *Colonias* are newly formed, but many have existed for over five decades. A few *Colonia* developments began as small communities of farm laborers employed by a single rancher or a farmer. Others originated as town sites established by land speculators as early as 1900. However, the majority of *Colonias* emerged in the 1950s as developers discovered a large market for aspiring homebuyers who seek affordability through conventional financing means (Rengert, K. and Lang, R. 2001)

The border's *Colonias* currently are growing at a rate of approximately 10% per year. Many residents of these communities experience geographic, social, and economic isolation (THHSC, 2002), and thus still homogeneous. However the *Colonias* were perceived according to two issues: difference and separateness. These two were a means of portraying a distinction between the inhabitants of the borderlanders from people in their own region (Martinez 1994).

These communities are practically invisible to the rest of America — so much so that their residents have been identified as the “forgotten Americans” (HAC 1987). Substandard living conditions such as these in the *Colonias* are a daily experience for thousands of families along the US-Mexico border. Houses are made up of dilapidated dwellings constructed from corrugated tin and whatever other materials can be found.

### 1.3 Housing Informality

The pattern of *Colonias* evolved over the past five decades via a process identified as uncontrolled, unplanned, and spontaneous development. Housing associated with this pattern emerged through self-build, autoconstruction, and autoproduction processes, and is - by all means - a successful alternative to the absence of affordable housing in the southern border region, and therefore, it introduces practicality, as well as social sustainability, as explained by Serageldin:

Informal housing is a hybrid integrating contemporary technology [that entails] new form and reinterpreted traditional elements. It can be bland, awkward or whimsical, but it is always rational, practical and expedient (Serageldin 1988, p. 72).

## 2. LAND TENURE

Access to land tenure was always one problem that encouraged border households to seek land purchases in undesirable areas. Home ownership in the *Colonias* offered a status insuring a secured future for households through convenient means, which is a common characteristic of most informal settlements. This convenience was inseparable, though, from the risk of eviction, as the transfer of the deed only occurs when the final payment is made. The average *Colonia* lot is sold for ten to twelve thousand dollars, but can be acquired with no down payment, and monthly payments of only 100 dollars. However, no equity accrues for the buyer; and the ownership of the lot is subject to fulfilling all debt (Faulkner 1989).

Affordability, as well as a strong social capital through the opportunity for networking with acquaintances in the region encouraged people from Mexico and from other border *Colonias* to continue the flow of migration towards these *Colonias*, shaping an urban pattern typically known for its informality. With such pattern and growth, the settlements were always known for their complexity and hybrid status. A similar case study of unplanned growth in Mexico City's informal communities was explored by Ward (1984), who elaborated on the causes of the complexity in the process of formation, and described the following three methods by which informal settlements were created: 1) land is sold by interested agents (land-developers, as in *Colonias*, vote-catchers, radicals, or other politically-involved people) who sell the lots as informal subdivisions on marginal lands with inadequate services and infrastructure; 2) land invasions occur less frequently and are driven by political reasons or the poor's need for homes and land ownership; 3) land is sold by contracts for deeds to newcomers, through which they have the right-of-use. However, the land transfer occurs only after the last payment is made. *Colonias* as well as the settlements of Mexico City identified by Ward (1982) have shown that they can grow and improve over time. In addition, they contribute to the national economy through the ways in which their residents share in their housing provisions.

As a way out of their disempowered status, *Colonias* residents have continued to negotiate with the legislature and have advocated for their rights to affordable housing and a decent infrastructure. The legislature in Texas, throughout the past decade, has sought to curtail the inequities inherent in the contracts for deeds used for land transactions in these areas. In 1995, the Texas state legislature passed the *Colonias* Fair Land Sales Act-FLSA (HAC 2000). FLSA forced all developers to register contracts for deeds so that counties may keep records of them. This legislation

was also intended to assure provision of a basic infrastructure by developers prior to selling.

## 3. HOUSING PRODUCTION

### 3.1 Self-build Production in *Colonias*

Informal settlers in most developing countries manage to secure low-tech and flimsy materials to construct their first shelters, upon arriving to these new settlements. Some would rather stay with their acquaintances or family on a rent-free basis by installing a trailer or constructing a small shack in their family's back yard, a solution which could help to secure some savings for a future lot purchase. Although it is a difficult process to estimate the number of these hidden residents, as well as to estimate the number of households grouped into single lots, the Housing Assistance Council (HAC 2000) has estimated that approximately 13% of the border's housing units are mobile homes, as compared to 8% nationally.

Home ownership rates are higher along the border than nationwide, and are comparable to home ownership rates in all non-metro areas. Housing values are much lower in the *Colonias* than elsewhere; however, the median housing value in the border region is less than half the national median. (HAC 2000)

Many *Colonia* residents embody a strong homeownership norm, but for them conventional financing methods are often inaccessible. They sought purchase in the *Colonias* despite the difficulties associated with the settlements' services. The scattered patterns and remote locations of all *Colonias* also enhance the difficulty and expenses involved in comprehensively delivering services and resources, especially to the settlements located a wide distance from the city's inner fabric. Construction of wastewater treatment plants for such small communities is economically inefficient. Likewise, the extension of water distribution and wastewater collection lines from existing treatment facilities to remote geographical locations tends to be prohibitively expensive (Singleman, J. 2002).

### 3.2 Incremental Process

The majority of these settlements of informal housing are built over a long period of time with heterogeneity in the housing production means. The result is - in most cases - a family-based product (Burgess 1985). Informal housing shares the same process of growth with squatter settlements. Mangin (1967) explained that as years go by and the stability of the residents is accomplished, residents put most of their capital into construction that might take many years to complete. Notwithstanding, housing in squatter settlements is still temporary and usually built upon the initial occupation of the land. The housing may stay temporary in nature for a long time, as a result of the inhabitants' fear of eviction. To achieve a fully-constructed house, most settlers must live on the sites in temporary houses or shacks during the construction period; however, a few choose to postpone moving to their lot until their house is entirely constructed (Mangin 1967). Some of them,

particularly in the early settling process, are supported by the community through providing free-hosting lots and houses.

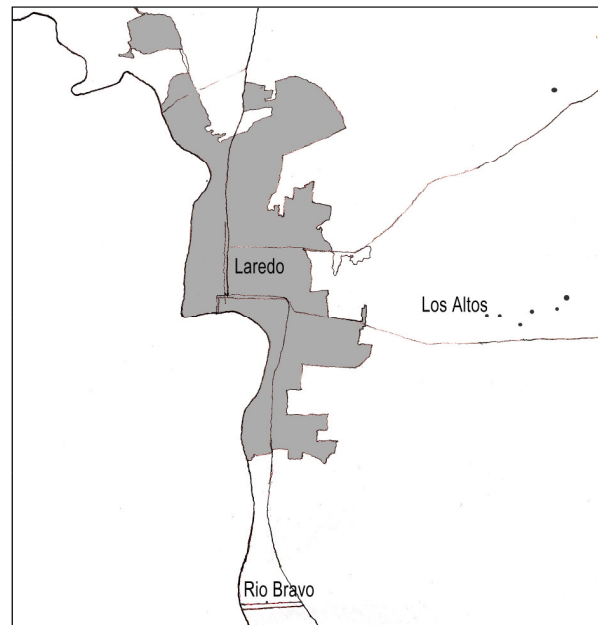
With no public policy support for affordable housing in the borderlands, *Colonias* residents can generally only afford to construct poorly constructed shelters when they arrive at the settlements. Within a number of years, they become capable of consolidating their lots to improve their houses.

#### 4. WEBB COUNTY COLONIAS

Empirical data for this study was part of a broader study of housing morphology, which employed systematic image-based analysis of housing morphology, survey questionnaires, and interviews with the directors of local community centers. Data used in this study was gathered from eight *Colonias* in Webb County, located at the southern Texas border, linking the US with Mexico. The county was acquainted with the author's home institution in Texas during the time of undertaking this study, and was also a useful choice because of the high growth rate of its population. The state growth rate was 8% during the 1990s; nevertheless, the border counties grew by an average of 15%, with extreme growth displayed by Webb County at 22.4% (Chapa et al. 1996). The following aspects were also considered in the selection of the geographical area: 1) The county includes the city of Laredo, located on the Rio Grande river, which is a major access point to the United States, connecting highway 35 with other major highways and linking the US with Central America (Ward 1999). As such, the city, and hence the county, are major sources of immigrants to the US, a fact that raises the issue of affordable housing needs; 2) the city also is a home to the central Rio Grande regional office of the Center for Housing and Urban Development - CHUD, located in the home institution of the author during the period of this research, a fact which played a vital role in facilitating field access; and 3) the CHUD regional center, as well as the selected *Colonias*, were in close proximity to the author's institution, which is a time and money-saving factor. Two community centers, affiliates of CHUD, that are located on the Laredo city fringe, were selected as sites for distributing the survey questionnaires, which were administered by the author and a group of local volunteers.

Informal interviews with the directors of the two community centers of the Rio Bravo and the Los Altos *Colonias* confirmed that people from different *Colonias* in Webb County attend these monthly events. In addition, community meetings are a method of enhancing the response rate because they are a more effective alternate to the drop-off, mailing or phone surveys. Prior meeting with the residents, recruitment flyers were delivered to the community centers a week before the survey-distribution to inform *Colonias* residents about the research and its purpose. The survey forms were administered over two consecutive days during food distribution events sponsored by the Webb County Food Bank, and held in the community

centers of the Rio Bravo and the Los Altos *Colonias*, shown in Figure 2.



**Figure 2:** *Colonias* of survey participants and community meetings.

Source: Adapted from (TX-home town locator 2008)

The process of selection of participants could not be on a random basis because of a lack of documentation as *Colonias* residents do not obtain home addresses unless they register their lots with the county, a process associated with consolidation. This situation, resulting from the housing informality, strongly advocated for the viable use of non-probability sampling by asking all residents attending the food bank event to participate (Kamal 2006). This selection was also based on an assumption of a high rate of absentee owners, as identified in Ward and Carew (2001), which enhanced the impracticality of conducting drop-off or face-to-face meetings with the residents at their homes.



**Figure 3:** Volunteers helping *Colonias* residents in filling out the survey forms

The survey covered multiple topics, three of which that are used in this study include: 1) the type of tenure (ownership vs. rent), 2) the household's characteristics (households/lot), and 3) the housing production (builder, increment, duration, and prioritized elements). Residents were encouraged to participate by announcing the availability of in-kind rewards distributed through drawings held at the end of each community meeting.

Survey forms were available in both Spanish and English, as not all participants were bilingual, and local leaders and volunteers were instructed on how to help the residents complete the forms (see Figure 3).

## 5. ANALYSIS OF FINDINGS

The survey data gathered from the Rio Bravo and Los Altos meetings showed that the 177 residents who participated in the survey descended from eight *Colonias* in Webb County (shown in Figure 2 as black dots), which included Los Altos and Rio Bravo, where the meetings were held. The Rio Bravo meeting was crowded with one, and only one, community representation. All participants were residents of Rio Bravo, while participants at the Los Altos meeting represented seven communities, mostly located on Highway 59. To establish a broad understanding of the housing features based on the investigated variables, data from the questionnaires conducted at both meetings with the *Colonias* residents were collected into one set. A "no-response" rate was documented and included in the analysis of the research variables.

### 5.1 Informal Sharing and Ownership

The review of literature showed that the population growth rate in Webb County is approximately triple to that of the state growth rate. Data gathered from the two community meetings showed that 46.9% of participants shared their lot with one or two other households, and only 37.8% of the households were living in their lots unaccompanied, as shown in Table 1. Home ownership is a valuable asset to the *Colonias* residents, as sharing the lot is a step towards moving to a separate lot when the household can afford to pay for their own lot, a prototype pattern of mobility and growth in informal settlements in the Third World. The data also showed that more than half of the households (53.7%) own their homes, while only 15.8% live in rental homes, and 2.2% don't pay a mortgage or rent (Cross-testing questions showed that this group of residents were living in trailers).

### 5.2 Participatory Construction

When participants were asked to provide detailed processes describing their house production, their response rate was not high. As shown in Table 2, 36.2% did not respond to the question asking them to identify their home builder, but the accounted for response was high enough for the questionnaires' methodology to be considered. Nearly half of the participants (49.7%) indicated that they adopted a self-build approach, building their houses by themselves or

through their acquaintances. While more than one third (31.1%) of the total respondents confirmed the use of their own nuclear family as construction labor, 18.6% were assisted by their friends and extended families who also lived in the community. It was also emphasized that less than 10% of the total responses (6.2%) indicated that participants used a professional market approach, hiring a local contractor to construct their homes. Finally, those who indicated "other" in their responses (7.9%) were renting a home, or living in a trailer, or sharing other household's property.

**Table 1:** Type of tenure in Webb County *Colonias*

Home acquisition	N.	%
Ownership	95	53.7
Renting	28	15.8
Other	4	2.2
No response	50	28.3

**Table 2:** Self-built and other means of construction

House Builder	N.	%	Total
Self &/or husband/wife	55	31.1	Self-built: 49.7%
Kin assistance	33	18.6	
Hired local contractor	11	6.2	Other: 14.1%
Other	14	7.9	
No response	64	36.2	

### 5.3 Prioritized Incremental Spaces

Housing production in the *Colonias* of Webb County was incrementally constructed. Table 3 shows that the majority of residents, approximately two-thirds (66%) of total participants, constructed their current houses through different phases. The residents in Webb County *Colonias* invested in their houses over time, which began as small shelters, and improved to accommodate the household and its future growth. For this purpose, the incremental process occurred through one of the following two periods: either a short-term or a long-term period of construction.

More than half of the residents (53.0%) built their houses over a period of time ranging from less than one year to twenty years. This group was divided into the following two categories shown in Table 4: 1) The first group, majority of the residents (41.2%), indicated that they constructed their houses over a short-term period not exceeding five years (17.5% built their houses in less than one year, and 23.7% built them in a period ranging from one to five years); 2) The second group, (11.8%) of the residents, constructed their houses over a long period, ranging from six to twenty years (9.0% built their houses in six to ten years, and 2.8% built their houses in eleven to twenty years). Only (4%) of total participants indicated that they built their houses on a period exceeding twenty years or over "other" period not identified in addition to (43%) of no response rate.

When the participants were asked to identify the patterns of preferences which they chose for prioritizing the spaces considered for the initial phase of construction, they indicated that the incremental phases that established their finalized houses included constructing a few elements, ranging from one to five spaces, followed by subsequent phases until the completion of the construction. As shown in table 5, over half of the participants (50.8%) indicated that the initial phase of construction included one; two; three, or four spaces could be considered as the “core house”.

**Table 3:** Housing incremental construction

Construction Phases	N	%
Phases	117	66
No response	60	34

**Table 4:** Periods of housing construction

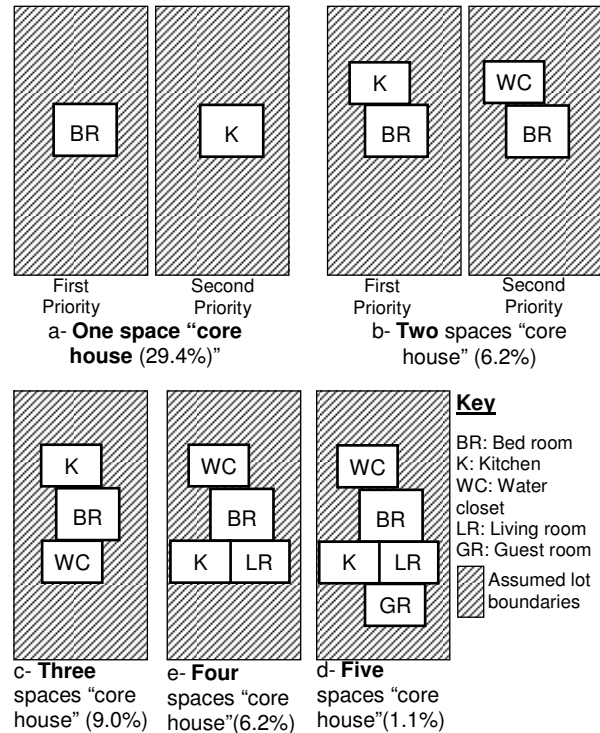
Construction Completion (yr)	N	%	Total	
Short-term	Less than one	31	17.5	41.2%
	One-Five	42	23.7	
Long-term	Six-Ten	16	9.0	11.8%
	Eleven-Twenty	5	2.8	
	More than twenty	0	0.0	
	Other	7	4.0	4%
No response	76	43.0		

To identify residents’ preferences regarding the types of space(s) considered to provide the “core house,” five living spaces were assigned for participants to choose from. The spaces included a bed room, kitchen, water closet, living room, and guest room. Participants were asked to identify the space(s) they began with during the first part of their construction phase.

The majority of the participants (29.4% of the total residents) explained that they began with only one space, and 6.2% started their home by constructing two spaces. Also, 9.0% of the total responses showed that the residents built three spaces during the initial phase of their houses, while only 6.2% started with four spaces. Only 1.7% were either able to afford building five spaces as the start, or built six spaces at one time. The spaces prioritized highest by the residents were built during the first phase of the construction, which is considered the “core house” phase. Figure 4 shows the spaces identified by each respondent’s group. While the majority of residents who indicated that they built one space in their initial phase of construction built a bedroom first, the rest built a kitchen. While the majority of residents who built two spaces in the initial phase of construction built a bedroom and a kitchen, the remainder built a bedroom and a water closet. For the residents building more than two spaces, they followed the following pattern: three spaces were usually a bedroom, kitchen, and water closet; four spaces included a bedroom, kitchen, water closet, and living room; and five spaces included a bedroom, kitchen, water closet, living room, and guest room.

**Table 5:** Spaces in housing construction

Spaces	N	%	Total
One space	52	29.4	35.6%
Two spaces	11	6.2	
Three spaces	16	9	15.2%
Four spaces	11	6.2	
Five spaces	2	1.1	1.7%
All	1	0.6	
No response	84	47.5	47.5%



**Figure 4:** Patterns of prioritized spaces in the “core house” construction

**CONCLUSION**

Despite incorporating a small number of case studies through utilizing the data from the two community meetings, this paper establishes a crucial basis for the incremental self-build housing production in Webb county, Texas. The research findings, yet need to be tested on a broader sample prior validation, provide sufficient context-dependent evidence that is valid for the process of housing production by low-income households in Webb county who are eligible for the food bank donated food (see Flyvbjerg, 2004 for more information about case study research).

In the two investigated case studies of the Los Altos and Rio Bravo community meetings, the participants who resided in eight different *Colonias* identified their means of progressively producing their own houses through an incremental, self-build process. This research argues the existence of a pattern for this

type of housing production, and establishes a broad view regarding its principles and processes, as well as the associated factors that shape it. A model, shown in Figure 5, was compiled and its components were discussed. The model summarizes the research findings, and portrays the current methodology for this housing production, so this research can be adopted in future housing provisions. Shaded areas in the model reflect the significant findings, including self-build constructions, common phases, and residents' prioritized spaces. The following key points were deduced as the key components of the model:

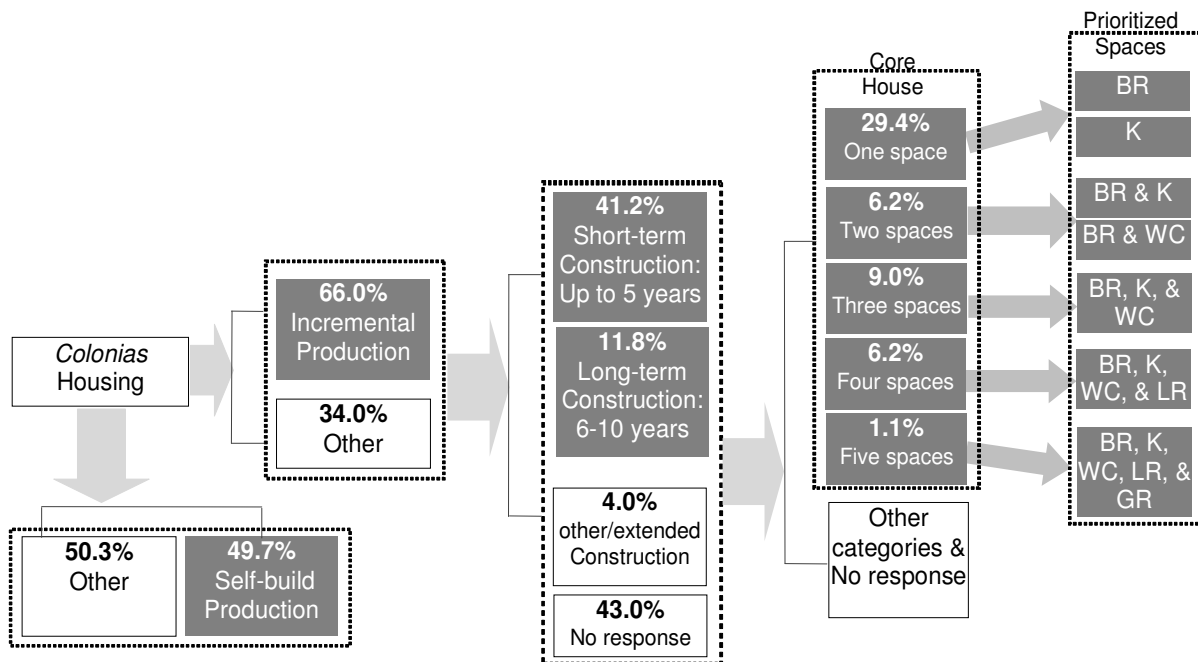
- Home Ownership and Incremental Financing  
Home ownership is the common trend of land tenure in the *Colonias* and, therefore, assistance needs to be improved when housing solutions are provided. Most of the Webb County *Colonias* are in different stage of consolidation, where residents have built their houses via short term phases ranging from less than one year to five years. Financial arrangements could be made with the residents to construct one or two spaces of the house, at a level and at a rate that they could afford to pay, for a period of five years. This principle would be in line with the sites and services approach, which was initiated by the World Bank in the 1970s as one of two development approaches (including slums upgrading). This approach was successful and is currently employed in other countries.

- Characteristics of the "Core house"  
The *Colonias*, as is the case with most of these types of informal settlements worldwide, are a fast growing type of community in terms of both its population and its infrastructure needs. Residents build an initial phase identified as a "core house," usually built over a

short term or a long term period. While short-term construction can range from less than one year to a five year period, long-term periods can range from six to ten years. The more commonly constructed "core houses" include up to four spaces built during the initial phase. However, one or two spaces are more the norm. The prioritized spaces include a bedroom or a kitchen (if one space is built), and both a bedroom and a kitchen, or a bedroom and a water closet (if two spaces are built). Housing agencies need to be familiar with and sponsor this means of incremental production.

- Participatory Building Process  
Colonias residents replicate the prototype participatory construction method commonly known in informal areas in developing countries. Residents collaborated to construct their houses through employing themselves, spouses, and their families as free labor. Only a small percentage of housing is produced through hiring local construction labor. This participatory approach not only provides an affordable solution for low and very low-income households, but at the same time, this offers an opportunity for residents to participate in the economy through their informal finance of the construction costs, which reduces the burden on the public sector accountability in housing provision. At the same time this approach strengthens social ties among the community members and the acquainted groups.

- Policy Recommendation  
Policy makers at the county, state, and federal levels need to consider an alternate approach for incremental financial support for "core house" constructions. This support could be followed up with subsequent arrangements to sponsor incremental home expansion, which would accommodate the anticipated growth of



BR: Bedroom; WC: Water Closet; LS: Living Room; K: Kitchen; GA: Guest Area

**Figure 5:** Incremental Housing Model in the Colonias of Webb County, Texas

the household and its finances, and at the same time assure the ability of a household to fulfil the full payment of the debit from previous loans. Such convenience financing and construction process should help to overcome the overcrowding problems and lack of housing affordability in the southern border region.

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## REFERENCES

Burgess, R., 1985. Problems in the classification of low-income neighborhoods in Latin America. *Third World Planning Review*, 7(4): 287-306.

Chapa, J., Torres, R., and Hanneberger, J., 1996. *University study predicts growing poverty and housing crisis on the Texas border*. Press advisory and statement. The border low income housing coalition: <http://www.bordercoalition.org/Papers/>. [Accessed 03/18/2005].

Davies, C., Holz, R., 1992. Settlement evolution of 'Colonias' along the U.S-Mexico Border: The case of the lower Rio Grande valley of Texas. *Habitat International*, 16 (4): 119-142.

Faulkner, T., 1989. Desperate situations, local innovations, Colonias: Problems and promise. *Borderlines*. 6 (1): 1-4.

Flyvbjerg, B., 2004. Five misunderstandings about case-study research. In: Seale, C. et. al(ed.) *Qualitative Research Practice*. Sage: London, PP. 420-434.

HAC (Housing Assistance Council), 2000. *Border Colonias overview*. Housing Assistance Council: <http://www.ruralhome.org/pubs/hsganalysis/ts2000>. [Accessed 03/15/2005].

HAC (Housing Assistance Council), 1987. *A Decent Home: A History of Federal Rural Housing Programs*. Unpublished report. Housing Assistance Council: Washington, D.C.

Kamal, A., 2006. Acquaintances and Shaping Housing Identity in Informal Settlements: Case Study from the U.S-Mexico Border Colonias. Proceedings, *The XVI ISA World Congress of Sociology*. Durban: South Africa.

Kamal, A., 2005. *Morphological Themes of Informal*

*Housing in Colonias: Impacts of Sociocultural Identity on Webb County Housing Form*. Unpublished thesis. College of Architecture, Texas A&M University: College Station, TX.

Mangin, W., 1967. Latin American squatter settlements: A problem and a solution. *Latin American Research Review*, 2(3), 65-98.

Martinez, O. J., 1994. *Border People: Life and Society in the U.S.-Mexico Borderlines*. The University of Arizona Press: Tucson, AZ.

Massey, D. S., and Espinosa, K. E., 1997. What's driving Mexico-U.S. migration? A theoretical-empirical, and policy analysis. *American Journal of Sociology*, 102(4), 939-999.

Purdy, J., 1999. The New Culture of Rural America. *The American Prospect*, 11 (3), 26-31.

Rengert, K. and Lang, R., 2001. *Cowboys and Cappuccino: The Emerging Diversity of the Rural West*. Fannie Mae Foundation: Washington, D.C.

Serageldin, M. A., 1988. The development and morphology of informal housing. In: R. Powell (ed.), *The Architecture of Housing: Concept Media*. The Aga Khan Award for Architecture: Singapore, pp 50-73.

Singleman, J. 2002. Work After Welfare: Are People Better Off?. Working paper, *Rural Sociological Society Annual Meeting*. Chicago: IL.

Stalker, P. 2004. *Migration Theory: Structures*. Stalker guide to international migration. URL: [http://pstalker.com/migration/mg\\_theories\\_2.htm](http://pstalker.com/migration/mg_theories_2.htm). [Accessed 2/28/2005].

THHSC (Texas Health and Human Services Commission), 2002. *Colonias Initiative Evaluation, Final Report*. Texas Health and Human Services Commission. [http://www.hhsc.state.tx.us/hhsc\\_projects/Colonias/eval0302.pdf](http://www.hhsc.state.tx.us/hhsc_projects/Colonias/eval0302.pdf). [Accessed 04/12/2004].

U. S. House of Representatives, 1990. *Colonias: A Third World within Our Borders*. Report, Select Committee on Hunger. U.S. Government Printing Office: Washington, D.C.

Ward, P. M., 1999. *Colonias and Public Policy in Texas and Mexico: Urbanization by Stealth*. University of Texas Press: Austin, TX.

Ward, P. M., 1984. Mexico: Beyond sites and services. In: Payne, G. (ed.) *Low-Income Housing in the Developing World: The Role of Sites and Services and Settlement Upgrading*. John Wiley & Sons: Chichester, pp. 149-158.

Ward, P. M., 1982. *Introduction to Self-Help Housing: A Critique*. Mansell Publishing Limited: London, UK.

Ward, P. M., Carew, J., 2001. Tracking land ownership in self-help homestead subdivisions in the United States: the case of Texas "Colonias". *Land Use Policy*, 18, 165-178.

Wilson, R. H. and Menzies, P., 1997. The Colonias water bill. In: Wilson, R. (ed.) *Public Policy and Community: Activism and Governance in Texas*. University of Texas Press: Austin, TX, pp. 229-274.

