TYPES OF NEIGHBORHOODS AND HOME-BASED ENTERPRISES: EVIDENCE FROM LIMA, PERU

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Introduction

In the cities of developing countries from a tenth to a quarter of dwellings have an enterprise on the premises, usually one that the operators prefer to available outside work.[1] People bake, cook, sew, print, repair, photograph, give injections, cut hair, sell drinks, rent lodging, keep chickens, and sell other goods and services. Such home-based enterprise (HBEs) are not only widespread but are likely to proliferate in numbers while their relative importance falls slowly. Even in the United States small businesses -- with five million in dwellings -- are still proliferating but producing a falling share of output (White, 1981). For the employment share of HBEs to fall by half, a generation must elapse, insofar as today's cross-sections imply a trend (Strassmann, 1985b). HBE survival depends in part on access, cost of space, density of settlement, and a cluster of other traits associated with neighborhoods. Policies for urban improvement, income growth, and employment generation will not be optimal if the relationship between neighborhood characteristics and the productive use of dwellings is ignored. This article explores their interaction and presents evidence from surveys carried out in 1980 and 1983 in the Metropolitan Area of Lima, Peru.[2]

A neighborhood is a spatial unit within a city in which dwellings, households, and social relations have enough homogeneity to be seen as different from those beyond its boundary. People may see themselves as neighbors because they know one another, belong to the same ethnic group, attend the same church, use the same schools, are part of a political subdivision, or share some other activity or outlook. That is the

subjective definition. As the U.S. National Commission on Neighborhoods (1979) said, "each neighborhood is what the inhabitants think it is." Outside analysts and policy makers, however, are likely to use larger geographic scales than inhabitants in order to avoid dealing with innumerable ill-defined units. Even dividing a city into two or three types of area is too aggregative; but defining smaller units in a useful, researchable way has been a problem for economists, apart from housing studies (Stolnitz, 1968, p. 222).

In housing, concepts of homogeneous neighborhood clusters have gradually displaced the Von Thunen paradigm of a monocentric city with rings of gradually falling land values but rising site areas, better dwellings, and higher incomes (Von Thunen, 1826; Hoyt, 1939; Tiebout, 1956; Alonso, 1964; Haugen and Heins, 1969; Muth, 1969; Mills, 1972; Wheaton, 1977 and 1979; Downs, 1981). Beyond the boundary of any neighborhood, the blend of housing types and values is clearly different. In our analysis we shall therefore use housing-based definitions of neighborhoods.

A housing-based view of neighborhoods need be no more impersonal and static than any other. Housing must not be seen as a mere physical stock that gradually deteriorates in accordance with its initial quality. The size and quality of dwellings continually change as a function of owners and occupying households, not because of the buildings themselves. A wide variety of economic and social forces make people expand, convert, subdivide, maintain, improve, or neglect their housing. Because of births, deaths, and migration, people move in and out of neighborhoods; and meanwhile investment comes in or savings flow out, just as goods and services move in and out. Only if all these movements balance will neighborhoods, including the condition of housing, be stable. As an

example of an imbalance, an influx of poor people makes it profitable for landlords to subdivide and neglect housing in inner cities, creating slums. Good opportunities for work, including HBEs, on the other hand, can raise incomes in a legitimized squatter settlement in such a way that housing is expanded and improved to create a middle class neighborhood. As neighborhoods change, their boundaries expand or contract. Such processes can be furthered or hindered by taxes, controls, and public investment, often with unintended consequences when policies are based on misconceptions.

This article is not concerned with everything about neighborhoods but only with the role of HBEs within them. There are several propositions: 1. The characteristics of neighborhoods determine where the greatest proportion of households have HBEs and where they are most lucrative (which is not the same thing). 2. These neighborhood characteristics either raise (or lower) the demand for the goods and services produced by HBEs or raise (or lower) the availability of inputs. 3. The way such demand and supply factors affect different neighborhoods changes the composition of output produced by HBEs located there. Involved are such factors as transport, proximity to formal sector enterprises, and degree of unemployment in an area. 4. Finally, we shall see how HBEs cause or reflect dwelling, hence neighborhood, improvement or deterioration.

A highly abstract model could be developed. Such models have been devised for testing the effects of racial segregation in the United States and are explained in some of the references already cited. The relevance of these models to the complexities of a city like Lima is only partial, and currently our state of knowledge is such that not much is lost by going directly to the data in the form of cross-tabulations, regressions, and a few illustrative cases. As Lisa Peattie said recently, so far our theories

are "not grounded in a solid understanding of how economies work, and our planning principles can check themselves only via data which represents very imperfectly indeed the complex multi-dimensional social-economic environments which cities are" (Peattie, 1983, p. 14).

Neighborhood Categories in Lima

Types of neighborhood vary among cities because they differ in geography, history, culture, economy, political administration, size, and rate of change. In the case of Lima, Peru, what matters is that the city is located in an extensive coastal desert so that a process of illegal private subdivision and sale of agricultural land was not a major pattern as elsewhere in Latin America. About half of the desert occupied by squatters around Lima has been public land, and another third has been land in dispute. On the one hand, homesteading is encouraged under Peruvian law; but on the other, land reverts to the state if not used. Peruvian governments have even connived in squatter "invasions" of land either as a populist gesture or to promote inner city commercial redevelopment (Collier, 1976, pp. 35-37; Caretas, 1985a).

This article concerns the entire metropolitan area, including the port of Callao. Population grew at an annual 5.1 percent during 1940-61, accelerated to 5.4 percent during 1961-1972, and then slowed to 3.8 percent, reaching 5.3 million in 1983. According to two Swiss cartographers, Oliver Perrotet and Roland Grah, three thousand new streets were added to the existing nine thousand between 1980 and 1985 (Ugarriza, 1985). Space does not allow further description of the city and its long history at this point. The major neighborhood categories according to predominant housing type will be listed next. These categories have been developed by the survey unit of

the Ministry of Labor, the Directorate of Employment and Migration Studies.

Four types of neighborhood have mainly formal housing -- commercially built according to official standards on land with legal title. Four other types are rather informal: illegally built or violating standards in a variety of ways. The four formal types are: 1. Luxury (Residencial), 2. Conventional (Convencional), 3. Standard urbanization (Urbanizacion no Popular), and 4. Popular urbanization (Urbanizacion Popular).

Luxury housing had an average resale value of $35,800 according to its owners in our 1980 survey (US $1 = 285 soles) and made up 6.5 percent of the housing stock. Such neighborhoods of detached expensive dwellings (246 m^2) in gardens were mainly in the southern districts of San Isidro, Miraflores, Barranco, and Surco. In high-income neighborhoods only one in forty dwellings had a home enterprise, and therefore in this study we combined these observations with the next category, "conventional neighborhoods."

Conventional neighborhoods had 28.3 percent of households and consisted of individually built, usually attached houses, often subdivided into apartments, more often rented than not, having average floorspace of 100 m^2 on lots that were barely larger. Average resale value in 1980 was 13,100 dollars, and average rent was $16.50 monthly. Such neighborhoods made up somewhat more than half of the central districts of Lima and the area that stretched from there to the high-income zones to the south. Together, the conventional and luxury neighborhoods had 34.8 percent of households and 21.7 percent of home businesses in 1983 -- less than their proportionate share (see Table 1).

"Standard urbanizations" are any developments of completely finished housing on several city blocks that are newly laid out either by private

Table 1: Characteristics of Households and Dwellings With and Without Home-based Enterprises (HBEs) by Type of Neighborhood, Metropolitan Lima, 1980, 1983[a]

	1 Conventional Residential	2 Standard Urbanization	3 Popular Urbanization	4 Pueblos Jovenes	5 Substandard, Subdivided	6 All[b]
1. Sample Distribution, %						
a. All	34.8	9.7	16.4	27.0	9.9	100.0
b. Home Enterprises	21.7	4.5	20.2	41.3	12.3	100.0
2. Income, monthly, US dollars						
a. All	315.5	254.4	200.7	153.0	187.0	235.1
b. Households with HBEs	215.2	219.7	204.8	142.5	156.0	176.1
c. HBE income	94.4	64.3	85.2	53.9	60.4	70.3
3. Share of HBE Income in 2b, %	43.9	29.7	41.6	37.8	38.7	39.9
4. Floorspace, m^2						
a. All	127.2	98.0	109.0	87.0	65.0	104.0
b. All with HBEs	135.9	145.2	143.5	105.6	56.4	115.6
5. Lot area, m^2						
a. All	143.0	144.0	173.0	152.0	120.0	148.0
b. All with HBEs	153.0	192.0	160.0	161.0	65.0	149.0
6. Sewerage System Connection, All, %	77.5	79.6	66.0	36.2	58.6	62.5
7. Percent Owner-Occupation, All	41.2	79.8	77.0	87.0	40.5	62.9
8. Value,[c] US dollars						
a. All	17,300	10,400	8,400	2,600	5,100	9,200
b. All with HBEs	9,960	12,600	6,700	2,900	2,900	5,600
9. Rent, US dollars						
a. All	20.7	11.8	15.0	8.8	9.1	15.5
b. All with HBEs	16.4	31.8	17.9	11.1	4.1	10.5

Source: June-July 1980 Housing Survey (n=1,167); October-December 1983 HBE Survey (n=1,706)

Notes: [a]For definition of the six neighborhood types, see text

[b]Includes 26 dwellings in unclassified neighborhoods

[c]No value was indicated by 21 households, including some of the 82 free users

developers or a government agency. If the sites are small and if development consists of no more than providing roads, water, sewerage, and perhaps a core dwelling, the project is a "popular urbanization." By 1985 there were about 160 of these (Caretas, 1985a). They often sold sites through trade unions or cooperatives with payment a collective responsibility. Private developers sometimes organized such cooperatives in order to be able to launch the projects with a government "social interest" loan. With their half-finished dwellings, such popular urbanizations sometimes resembled "sites and services" projects elsewhere and were intermediate between the formal and the informal, as defined above. In the early 1980's, 16.4 percent of households lived there and carried on 20.2 percent of HBEs. by contrast, "standard urbanizations" contained few HBEs and had more expensive dwellings that were not, however, larger (see Table 1, columns 2 and 3). Popular urbanizations were mainly found north of the river Rimac, near Callao, or in such eastern districts as San Juan de Lurigancho. Standard urbanizations had been developed on vacant tracts throughout the city, but especially near the high and intermediate income districts of the south. Since they had only 9.7 percent of households and 4.5 percent of HBEs, we sometimes pooled these observations with those of conventional neighborhoods. Monthly household incomes in standard urbanizations were 26.8 percent higher than in popular urbanizations and 66.3 percent higher than in pueblos jovenes (Table 1, line 2a).

The remaining four types of neighborhood were 1. Irregular settlements (once barriadas, renamed pueblos jovenes or "young towns" in 1968), 2. Tenements in old subdivided inner-city mansions (quintas), 3. Small permanent units along an alley or courtyard (callejones), and 4. Clusters

of huts made of inferior materials (*correlones* and *rancheria*) (Sanchez Leon *et al.*, 1979, pp. 41-42, 60-62). The layouts and housing types in these neighborhoods in Lima, as in similar ones in other countries, reflect special local patterns to such an extent that use of the Spanish words for designation seems appropriate.

In 1980, *pueblos jovenes* had 27 percent of households, 31 percent of the population, and 41.3 percent of HBEs. Most of them were in the northern and southern desert "cones," spreading sideways from major highways. *Pueblos jovenes* made up over 70 percent of the southern cone but not quite 50 percent of the northern cone, which had many more popular urbanizations. The way *pueblos jovenes* begin with a thousand or more families staking out bits of desert with Peruvian flags and hanging up straw mats between sticks, and the way some of the oldest, dating back to the 1950's, have improved and graduated to the label of middle-income conventional neighborhoods has perhaps been studied more than any other irregular urban expansion. It was here that Matos Mar (1966), Turner (1965), and Mangin (1967) recognized first that such periurban settlements were not a cancerous blight with a hopeless "culture of poverty" andmarginal economic importance. By 1980 the phenomenon had already led to over a hundred Peruvian and foreign scholarly publications (Wallace, 1984).

The first squatter settlement was Armatambo in 1924, but the process did not really gather momentum until the hills of San Cosme and El Agustino were taken in 1946 and 1947. Ten years later 109,000 people lived in 56 settlements (Matos Mar, 1966, p. 229). With a 12 percent growth rate, their population reached 1.5 million in 1980.

Special laws against such organized but irregular "invasions" of land date back to 1961, but the process continued unabated in the mid-1980s.

During 1984 thirty-five such occupations took place (Caretas, 1985). It was not that anyone else especially wanted or claimed the government-owned desert land that was taken, but the process of transferring it from federal to municipal authorities and getting title involved 105 documents and a minimum of 44 months, according to a study of El Instituto de Libertad y Democracia (forthcoming, reported in Caretas, 1985a). In 1984 the Marxist Mayor of Lima and the conservative Minister of Housing attempted to accelerate the process for 640 hectares in the neighborhood of Huayacan on behalf of seven thousand families organized in ten housing associations. The attempt to bypass the various legal steps failed, and tacit encouragement was given to "invade" in the usual manner. But on June 23, 1984, four thousand squatters from a different association arrived, and violence ensued. Police were called in to protect "legitimate" against "illegitimate" squatters.

The remaining three low-income neighborhoods had 9.9 percent of households and 12.3 percent of HBEs, with 6.5 percent in Callejones, 4.7 percent in Quintas, and only 1.0 percent in Correlones and Rancheria. Although these categories can be partitioned further, we often combine them as "substandard/subdivided." As can be seen in Table 1, 60 percent of housing in such neighborhoods is rented, but what is not rented has about double the value of owned housing in pueblos jovenes, primarily due to better location. Dwellings are smaller but more likely to have a sewer system connection, usually a common facility. Rents are low, 38 percent as high per square meter as in conventional neighborhoods (See Table 2). The explanation lies in rent controls and the fact that (as a result) many properties have been deeded to churches and charitable foundations. Under such circumstances incentives to maintain or to improve are minimal.

Table 2. Types of Neighborhood and Home Business Incomes, Value, and Rent

	n	Monthly Income		Area, m^2		Value $	Rent per month	Value per m^2, $	Rent per m^2, $	Ratio value to income	Percent rent in monthly income
		Total	Home Business	Site	Dwelling						
1. Conventional/Residential	371	215.2	94.4	152.7	135.9	9,963	16.0	65.7	.229	4.39	10.5
2. Standard Urbanization	77	219.7	64.8	191.9	145.2	12.608	31.8	91.5	.893	5.05	15.7
3. Popular Urbanization	345	204.8	85.2	159.6	143.5	6,714	17.9	54.8	.376	3.92	14.5
4. Pueblos Jovenes	703	142.5	53.9	161.4	105.6	2,926	11.1	29.7	.147	1.99	8.8
5. Quintas	81	161.6	55.4	54.5	60.0	3,761	4.0	42.0	.094	1.48	3.4
6. Callejones	111	151.1	59.3	52.5	51.5	2,176	3.0	46.2	.083	2.98	2.7
7. Corralones/Rancheria	17	161.1	91.1	197.1	71.7	(250)	12.3	(16.7)	.160	(.08)	7.6
8. Total or Weighted Average	1,704	176.1	70.3	148.8	115.6	5,600	10.5	45.5	.187	3.04	7.4

Source: Survey of 1,706 home businesses, October 17 - December 10, 1983.

Fifty-eight percent of substandard/subdivided neighborhoods are found in the central districts and in Callao, but even here such housing makes up only a minority (16 percent) of the stock.

Households in 1980 had lived an average of 13.8 years in substandard/subdivided neighborhoods, longer than in any other type, with the rest of the city averaging 10.5 years. According to Ward and Melligan, inner-city housing has been "almost totally ignored" in studies of developing countries; but they found in Mexico City that "there is considerable population stability among the poor in the city center [in] response to growing urban diseconomies associated with living at the periphery, or in certain cases to the effects of past rent control legislation." They doubted that "there is widespread and intensive [commercial and public] pressure to redevelop valuable downtown or inner-city sites from residential to other more 'efficient' land uses" (Ward and Melligan, 1985, pp. 199, 202). The callejones and corrolones of Lima are much like the vecindades and ciudades perdidas of Mexico City. A similar attempt in Peru to eradicate housing and resettle families as in Mexico after 1972 would likely have similar consequences: much retention and reversion of sites to substandard housing for the poor.

Income, Type of Output, and Location

The most striking overall pattern of location of HBEs, their concentration in certain neighborhoods can be seen in Table 3, lines 3 and 6: In the city as a whole one in nine dwellings (10.8 percent) had an HBE, but in pueblos jovenes, they occurred 1.5 times as often, one in six dwellings. In conventional/standard residential neigh-borhoods, HBEs were found only

Table 3: Major Neighborhood Types and the Distribution of Households, Home Businesses, Incomes, and Dwelling Values

	Conventional, Standard Residential	Popular Urbanization	Substandard, Subdivided	Pueblos Jovenes	All
1. Percent of Households	45.5	16.7	10.2	27.6	100.0
2. Percent of Home Businesses	26.2	20.2	12.3	41.3	100.0
3. 2 ÷ 1	.58	1.21	1.21	1.50	1.0
4. Monthly Total Income, dollars	216.0	204.8	156.0	142.5	176.1
5. Home Business Income	89.3	85.2	60.4	53.9	70.3
6. Share of Business Income in total (5 ÷ 4)	.41	.42	.39	.38	.40
7. Value of Owner Occupied Dwelling, dollars	10,500	6,714	2,926	2,919	5,600
8. Ratio, Value to Annual Total Income [#7 - 12 (#4)]	4.05	2.73	1.56	1.71	2.65
9. Non-home Business Income	126.7	119.6	95.6	88.6	105.8

Source: Survey of 1,706 home businesses, October 27 - December 10, 1983.

Note: Substandard, subdivided includes quintas, callejones, corralones, and rancheria. Category 1 includes luxury, conventional, and standard urbanization.

.58 times as often as the Lima average, one in sixteen dwellings. In the other two major types of neighborhoods, popular urbanizations and substandard/subdivided, their incidence was 21 percent above average -- one in eight dwellings had an HBE.

Yet home businesses were not more profitable in the pueblos jovenes than elsewhere -- on the contrary, they were less so. Household incomes in pueblos jovenes were 66.0 percent as high as in conventional neighborhoods, and HBE income was only 60.4 percent as high. Less should be made of that difference within pueblos jovenes than of the overall pattern that seems to apply to all areas -- that HBEs everywhere make up around 40 percent of income among the households that have them. One is tempted to infer that households feel that only if that much is earned will diverting space from family use (or will building an addition) be worth it. In assessing if that behavior is consistent with making trade-offs at the margin to maximize utility, one must recall that in pueblos jovenes, callejones, and inner-city slums, value of dwellings was disproportionately less than income of occupants. In poor neighborhoods, houses were worth less than twice household annual income, while in conventional neighborhoods values were four times annual incomes (Table 3, line 8). Value per square meter in conventional/residential areas was 2.2 times as high as in pueblos jovenes though incomes were only 51 percent higher. The relevant comparison with quintas and callejones is that rent per square meter was 2.6 times as high, while incomes were only 38 percent higher in conventional neighborhoods (see Table 2). But the willingness and capacity to set up an HBE depends on more than income and space, as we shall see.

What mattered was not only net income earned, but its relation to opportunities elsewhere, working conditions, and time spent (for a review of the literature on household economic strategies, see Schmink, 1984). A question is what the marginal home enterprise was like so that average HBE earnings were a monthly $89.3 (US $1.00 = 2000 soles in late 1983) in conventional neighborhoods and $85.2 in popular ubanizations, but only $60.4 and $53.9 in substandard/subdivided neighborhoods and pueblos jovenes. What family member operated it? Where did they sell? What did they sell?

In what type of neighborhood fifteen sorts of economic activity were located is shown in Table 4. Nearly half the HBEs were in retail trade and disproportionately located in pueblos jovenes. Second came the manufacture of clothing, and this went on especially in conventional neighborhoods and in the quintas and callejones. The disproportion was so great that twice as much HBE manufacturing went on in quintas and callejones as might be expected. Good access for selling to other businesses is a primary explanation. Though not as lucrative as some other HBE types, selling manufactured goods to businesses was generally the preferred type with over 60 percent of operators saying that such an HBE was not just "better" but "much better" than work in the formal sector. They depended on access, just as the retail stores in the more remote pueblos jovenes depended on lack of access of operators to job opportunities and of buyers to better shopping possibilities (Strassmann, 1985a).

Besides retail stores, personal services were important home businesses in pueblo jovenes. Manufacturing of "sturdy" products -- footwear, furniture, and metal goods -- were typical HBEs in popular urbanizations,

Table 4: Percentge Distribution of Fifteen Home Business Types According to Product or Service in Seven Types of Neighborhoods

	(1) Conventional/ Residential	(2) Standard Urbani-zation	(3) Popular Urbani-zation	(4) Pueblos Jovenes	(5) Quintas	(6) Callejones	(7) Corralones Rancheria	(8) All	(9) n=
Metal products, exclud-ing machinery	7.1	----	35.7	57.1	----	----	----	100	12
Furniture	13.1	----	29.4	33.6	2.0	19.9	2.0	100	42
Repair, all types	30.2	3.4	18.9	36.4	3.4	2.8	4.8	100	59
Food products	37.2	6.7	17.7	18.8	17.5	2.1	----	100	40
Footwear	19.0	3.5	28.6	34.9	7.0	7.0	----	100	24
Restaurants, cafes, bars	43.8	3.8	13.7	25.9	5.6	7.5	----	100	82
Retail trade	16.8	3.5	18.9	52.8	2.1	5.2	0.8	100	828
Miscellaneous manufacturing	18.7	1.3	31.0	17.5	10.7	20.7	----	100	62
Textiles	45.6	9.7	14.0	28.0	----	2.8	----	100	30
Clothing	24.7	2.3	20.5	31.7	9.9	10.6	0.3	100	263
Miscellaneous personal and social services	13.0	1.7	24.5	49.5	6.0	5.2	----	100	48
Renting rooms and apartments	29.8	5.7	30.7	28.6	----	2.3	2.9	100	71
Health-related services	23.6	21.9	21.9	25.0	5.3	2.4	----	100	70
Laundries, cleaning	12.4	12.4	14.3	35.8	10.7	10.7	3.6	100	23
Other	48.9	----	13.5	30.2	----	----	7.4	100	52
All	21.9	4.5	20.2	41.2	4.7	6.5	1.0	100	1,706

Source: Survey of 1,706 home businesses, October 17 - December 10, 1983

areas with both space and good access. Such manufacturing, unlike most other HBEs, was primarily operated by men.

After retail trade and garment making, the most numerous HBEs were serving food or drinks, renting rooms, dispensing health services, and making repairs of many types. All of these were located in disproportionate numbers in conventional/standard neighborhoods apparently because in these higher income areas demand for such services was higher. In defining types of HBE it therefore appears useful to add a market dimension to the usual product or service classification. Reclassifying HBEs is the next topic.

Types of Operators and Markets

The highest monthly incomes were earned by makers of metal products ($128.5) and furniture ($113.0), and the least by laundresses ($32.6) and the dispensers of various medical services ($34.6), as may be seen in Table 5. Also shown in the table is where goods and services were sold, whether to other businesses (5.6 percent), to persons throughout the city (17.7 percent), or to neighbors (66.0 percent). The lower the income earned, the more likely were sales confined primarily to the local neighborhood ("this and nearby streets") and the less likely was the HBE a subcontractor to other businesses.

Moreover, low income HBEs were more likely to be operated by women. No male household head washed clothes at home. No female household head ran a business in repairs or making leather, wood, and metal products. Eighty percent of the operators of these businesses were male household heads, compared with 24.4 percent for the entire sample of HBEs. (Female heads ran 10.5 percent, female spouses 45.2 percent, and others the remaining 19.8 percent.)

Table 5: Main Type of Market for Home Businesses According to Type of Product or Service, and Monthly Incomes, Lima, Peru, 1983

	(1) Neighbors on this and nearby streets	(2) Persons throughout the city	(3) Businesses	(4) Other	(5) Total	(6) Monthly Income, dollars (standard error)
1. Metal products, excluding machinery	28.6	50.0	7.1	14.2	100.0	128.5 (20.0)
2. Furniture	38.8	47.4	11.8	2.0	100.0	113.0 (13.2)
3. Repair, all types	49.2	43.2	6.2	1.4	100.0	104.2 (15.2)
4. Food products	57.9	26.5	2.1	13.5	100.0	101.0 (27.0)
5. Footwear	40.7	17.5	42.0	0.0	100.0	93.6 (9.0)
6. Restaurants, cafes, bars	61.1	15.7	1.0	22.1	100.0	89.6 (10.4)
7. Retail trade	84.6	11.5	1.2	2.6	100.0	71.9 (10.8)
8. Miscellaneous manufacturing	27.7	32.1	31.6	8.7	100.0	71.7 (9.5)
9. Textiles	58.3	26.5	2.8	12.5	100.0	70.5 (14.3)
10. Clothing	51.4	25.1	14.3	9.2	100.0	58.2 (3.8)
11. Miscellaneous personal and social services	80.9	10.5	3.4	5.2	100.0	58.1 (14.5)
12. Renting rooms or apartments	100.0	0.0	0.0	0.0	100.0	52.8 (7.2)
13. Health-related services	79.5	18.0	0.0	2.6	100.0	34.6 (5.9)
14. Laundries, cleaning	46.3	32.2	3.6	17.9	100.0	32.6 (4.6)
15. Other	36.0	26.7	13.4	7.4	100.0	99.7 (17.6)
16. All	66.0	17.7	5.6	10.6	100.0	70.3 (3.9)

Source: Survey of 1,706 home businesses, October 27 - December 10, 1983

In the light of these patterns, HBEs were reclassified into the twenty categories of Table 6. Medical services, retail trade, restaurants and bars, and manufacturing are subdivided into categories by type of market -- local neighborhood, city-wide to persons, and business. Except for stores and cafes, "city-wide" was assumed to include neighbors in the higher-income residential areas, conventional/residential. Certain types of manufactured goods were aggregated into larger categories to maintain acceptable subsample sizes. The combination of food products, textiles, and clothing was then subdivided into male and female-operated types. "Female" includes operation by female heads, female spouses, and all "others" since most of these were women.

Noteworthy about the twenty classifications of Table 6 is the greater extent to which they sort out the profitable from the low-yielding. Male-operated light industries with a city-wide market now give the highest income, followed by retail trade, restaurants, etc., with a city-wide market. Both are more profitable than making leather, wood, and metal products. Least profitable remain those female-operated HBEs: laundries or medical services and light manufacturing for the local neighborhood. The top three categories have 5.5 times the income of the bottom three, which compares with 3.6 times as much in Table 5 for the top and bottom two categories. The new categories discriminate much better among more and less productive HBEs.

We can now see that 57.4 percent of HBEs in pueblos jovenes were local neighborhood-oriented retail stores, snackbars, and the like, and that similarly 53.5 percent of these types were in those pueblos. It does not, however, appear likely that this allocation of resources was overdone,

Table 6. Monthly Income and Percentage Distribution of 20 Home Business Categories by Type of Neighborhood

	(1) Percentage Distribution	(2) Conventional, Residential	(3) Standard Urbanization	(4) Popular Urbanization	(5) Pueblos Jovenes	(6) Quintas	(7) Callejones	(8) Rancheria	(9) Monthly Income, US dollars (and standard errors)
I. Food products, textiles, clothing									
A. Female operated									
1. Market in low-income neighborhood	6.1	---- (---)	---- (---)	36.3 (10.9)	43.8 (6.4)	11.6 (14.8)	8.3 (7.8)	----	33.1 (4.5)
2. City-wide market	8.2	54.2 (19.6)	7.8 (14.1)	11.4 (4.6)	14.0 (2.8)	8.8 (15.3)	5.6 (7.0)	----	52.0 (11.9)
3. Sell to businesses	1.5	13.4 (0.9)	---- (---)	13.4 (1.0)	40.1 (1.4)	10.1 (3.1)	19.8 (4.4)	3.3 (4.9)	77.4 (18.6)
B. Male operated									
4. Market in low-income neighborhood	1.2	---- (---)	---- (---)	20.5 (1.2)	51.1 (1.5)	4.1 (1.0)	24.3 (4.4)	----	112.4 (25.3)
5. City-wide market	1.8	44.9 (3.6)	2.8 (1.1)	13.8 (1.2)	30.3 (1.3)	8.3 (3.1)	---- (---)	----	166.5 (13.0)
6. Sell to businesses	.9	22.9 (.9)	---- (---)	---- (---)	34.4 (0.7)	19.8 (3.6)	22.9 (3.0)	----	106.2 (8.6)
II. Leather, wood and metal products									
7. Market in low-income neighborhood	1.7	---- (---)	---- (---)	36.3 (3.1)	48.4 (2.0)	2.9 (1.0)	12.0 (3.1)	----	73.5 (13.5)
8. City-wide market	2.3	23.9 (2.5)	---- (---)	22.5 (2.5)	32.3 (1.8)	2.2 (1.0)	19.2 (6.7)	----	128.7 (12.1)
9. Sell to businesses	1.4	10.4 (.7)	3.5 (1.1)	27.7 (1.9)	27.7 (0.9)	3.5 (1.0)	23.9 (5.2)	3.5 (4.9)	111.0 (5.0)
III. Other manufacturing									
10. Market in low income neighborhood	0.7	---- (---)	---- (---)	64.5 (2.2)	28.4 (0.6)	---- (---)	7.1 (0.7)	----	24.4 (8.2)
11. City-wide market	8.5	21.7 (1.4)	3.4 (1.1)	30.2 (2.2)	13.5 (0.5)	19.9 (6.1)	11.6 (2.6)	----	57.3 (20.3)
12. Sell to businesses	0.7	48.0 (1.4)	---- (---)	14.9 (0.5)	---- (---)	14.9 (2.1)	22.3 (2.2)	----	128.7 (2.4)
IV. Retail trade, restaurants, bars									
13. Market in neighborhood	44.2	18.3 (37.0)	3.9 (38.0)	19.2 (42.0)	53.5 (57.4)	1.7 (16.3)	3.0 (20.6)	0.4 (17.0)	58.4 (27.2)
14. City-wide market	8.5	22.9 (8.8)	1.7 (3.3)	14.9 (6.2)	34.5 (7.1)	6.0 (10.8)	17.4 (22.6)	2.6 (22.0)	151.8 (11.4)
V. Other service									
15. Repairs	3.5	30.2 (4.8)	3.4 (2.7)	18.9 (3.2)	36.4 (3.1)	3.4 (2.5)	2.8 (1.5)	4.8 (17.0)	104.2 (3.7)
16. Medical for neighborhood	3.3	16.3 (2.4)	21.0 (15.2)	24.6 (4.0)	28.4 (2.2)	6.7 (4.6)	3.0 (1.5)	----	23.8 (23.2)
17. City-wide medical	0.8	51.5 (2.0)	25.3 (4.8)	11.6 (0.5)	11.6 (0.2)	---- (---)	---- (---)	----	76.7 (5.7)
18. Laundries and cleaning	1.4	12.4 (0.8)	12.4 (3.8)	14.3 (1.0)	35.8 (1.2)	10.7 (3.1)	10.7 (2.2)	3.6 (4.9)	32.5 (5.1)
19. Lodging	4.2	29.8 (5.7)	5.7 (5.3)	30.7 (6.3)	28.6 (2.9)	---- (---)	2.3 (1.5)	2.9 (12.1)	52.8 (8.1)
20. Miscellaneous	6.2	30.2 (9.4)	2.5 (3.8)	20.5 (6.9)	29.7 (6.6)	2.5 (3.6)	2.9 (3.0)	1.8 (12.1)	62.7 (3.0)
21. All	100.0	21.7	4.5	20.2	41.3	4.7	6.5	1.0	70.3 (3.9)

Source: Survey of 1,706 home businesses, October 27 - December 10, 1983

Note: Numbers in parentheses refer to distribution within cloumn categories. Others refer to row categories

given neighborhood conditions. If lack of access allowed sales only in the local neighborhood and if women were the available labor force, then a store-cafe was the best choice. Other female-operated local-neighborhood-selling HBEs earned less. If the alternatives are compared using the regression coefficients of Table 8, a typical woman who switches from operating a store-cafe in a pueblo joven to sewing or baking for the neighborhood is likely to lower her monthly income from 40 to 19 dollars. Note that all other HBE types that are predominantly in these irregular settlements are also those with no more than local neighborhood markets (Table 7). The regression suggests (Table 8, lines 3 and 6) that , other things equal, selling mainly to low-income neighbors lowers HBE income by 75.9 dollars but that being located in a pueblo joven is otherwise a negative factor only compared with popular urbanizations.

The share of manufacturing among pueblo joven home businesses was 19.9 percent, which is close to the 21.4 percent found among all stores and workshops in barriadas in 1957 by Matos Mar (1977, pp. 143-144). Altogether 7.1 percent of families had stores or workshops and 7.2 percent of the labor force worked in barriadas (Matos Mar, 1977, p. 273). By the early 1980's 16.2 percent of pueblo joven households had home enterprises. Such enterprises are like those described in detail by Susan Lobo:

> In a typical two-block stretch are seven dry-good stores and two shoe-repair shops, two bars, four prepared-food stands, one soccer clubhouse, one political club, and one pharmacy. The prices at these small stores are slightly higher than at the local markets, but their more convenient location makes up for the difference. . .
>
> . . . There are many artisans involved in the repair and creation of articles . . . All tailors are men and each generally

> specializes in one article of clothing . . . Most tailors work in their homes, although some work in clothing factories . . . Three young women . . . had set up small beauty salons in their homes. A number of women . . . have signs posted by their doors indicating that for a small fee they will administer an injection. Some of these practitioners have taken a short course from the local public health nurse. A few individuals, primarily women, also cure the traditional illnesses of susto (soul-loss illness often caused by a bad dream). . .
>
> . . . Some families in Ciudadela Chalaca and Dulanto prepare food for boarders . . . A large number of families also raise guinea pigs, rabbits, or ducks for their own consumption and for sale. (Lobo, 1982, pp. 16, 51-53).

In other parts of the city, the composition of output of HBEs is also determined by transport, local demand, proximity to formal sector enterprises, availability of space, and other neighborhood characteristics. The patterns may be analyzed using Table 7 which gives the ratios of actual HBEs in any branch to the number that would be expected if the composition of output were everywhere the same. For example, since consumers with the highest incomes live in conventional/residential neighborhoods, one finds the most enterprises with a city-wide clientele here, especially light manufacturing (food, clothing, and textiles) and a variety of services, above all medical and dental. To function here one has to be able to compete with nearby large or modern enterprises.

Popular urbanizations have space, good access to utilities, and many skilled workers among the resident population. All these factors point toward messy and noisy types of manufacturing that might not be as profitable or welcome elsewhere -- making furniture, metal goods, and leather products. Indeed, as already mentioned, these activities are

Table 7. Ratio of Actual to Expected Distribution of 20 Home Business Categories by Type of Neighborhood

	(1) Percentage Distribution	(2) Conventional, Residential	(3) Standard Urbanization	(4) Popular Urbanization	(5) Pueblos Jovenes	(6) Quintas	(7) Callejones	(8) Rancheria
I. Food products, textiles, clothing								
A. Female operated								
1. Market to low-income neighborhood	6.1	----	----	1.80	1.06	2.47	1.28	----
2. City-wide market	8.2	2.50	1.73	.56	.34	1.87	.86	----
3. Sell to businesses	1.5	.62	---	.66	.97	2.15	3.05	3.3
B. Male operated								
4. Market in low-income neighborhood	1.2	----	----	1.01	1.24	.87	3.75	----
5. City-wide market	1.8	2.07	.62	.68	.73	1.77	----	----
6. Sell to businesses	.9	1.06	----	----	.83	4.21	3.52	----
II. Leather, wood and metal products								
7. Market in low-income neighborhood	1.7	----	----	1.80	1.17	.62	1.85	----
8. City-wide market	2.3	1.10	----	1.11	.78	.47	2.95	----
9. Sell to businesses	1.4	.48	.78	1.37	.67	.74	3.68	3.5
III. Other manufacturing								
10. Market in low-income neighborhood	0.7	----	----	3.19	.69	----	1.09	----
11. City-wide market	1.4	1.00	.76	1.49	.33	4.23	1.78	----
12. Sell to businesses	0.7	2.21	----	.74	----	3.17	3.43	----
IV. Retail trade, restaurants, bars								
13. Market in neighborhood	44.2	.84	.87	.95	1.30	.36	.46	.4
14. City-wide market	8.5	1.06	.38	.74	.84	1.28	2.68	2.6
V. Other services								
15. Repairs	3.5	1.39	.76	.94	.88	.72	.43	4.8
16. Medical for neighborhood	3.3	.75	4.67	1.22	.69	1.43	.46	----
17. City-wide medical	0.8	2.37	5.62	.57	.28	----	----	----
18. Laundries and cleaning	1.4	.57	2.76	1.77	.87	2.28	1.65	3.6
19. Lodging	4.2	1.37	1.27	1.42	.69	----	.35	2.9
20. Miscellaneous	6.2	1.39	.56	1.01	.72	.53	.45	1.8
Percentage Distribution	100.0	21.7	4.5	20.2	41.3	4.7	6.5	1.0

Source: Survey of 1,706 home businesses, October 17 - December 10, 1983

Note: Ratios are the percentage of a type of home enterprise in a neighborhood divided by the percentage of all home enterprises in that neighborhood

Table 8: Income as a Function of Home Busines Characteristics: Regression Coefficients from a Sample of 831 Units with Separate Space for the Enterprise in Lima, Peru, 1983

	(1) Income per home business	(2) Income per worker	(3) Percent of sample in category
1. Male household head runs business	27.6** (12.3)	18.2*** (6.7)	24.4
2. Female head or spouse runs business	-23.6** (11.9)	-3.7 (6.4)	55.7
3. Sales mainly to low-income neighbors	-75.9*** (13.3)	-32.9*** (7.2)	57.1
4. Sales mainly to businesses	-9.7 (20.8)	-15.6* (11.3)	4.4
5. Located in popular urbanization	47.1*** (15.6)	22.8*** (8.4)	20.2
6. Located in pueblo joven	21.8 (14.9)	7.8 (8.2)	41.3
7. Located in old sub-divided mansion or callejone substandard housing	8.8 (22.0)	16.9 (11.9)	12.3
8. Education of operator, years of formal schooling	2.4*** (0.9)	2.0*** (0.5)	
9. Floorspace used by the business, m^2	0.15*** (0.05)	0.04 (0.03)	
10. Retail store, cafe, restaurant, or bar	54.0*** (11.2)	24.4*** (6.1)	52.6
11. Wood, leather, or metal products	17.0 (18.1)	6.3 (9.8)	5.4
12. Textile, clothing, or food products	31.2** (16.1)	9.4 (8.7)	19.5
13. Manufacturing other than 10 or 11	-25.0 (34.4)	-17.8 (18.6)	2.8
14. Constant	55.7*** (17.1)	35.1*** (9.2)	
15. Adjusted R square	.124	.091	

Source: Survey of 1,706 households with home enterprises in the Lima Metropolitan Area, October 27 to December 10, 1983. Only 831 households with a single enterprise and using some space exclusively for the business are included here.

Note: Regression coefficients (except for floorspace and education) apply to dummy variables that are 1.0 if the condition is present and otherwise 0.0. Standard errors are in parentheses. Significance at the .01, .05, and .10 level are given by three, two, or one asterisks, respectively.

Twenty-one home enterprises sold services (other than retail trade, food, or drink) to neighbors and others in middle or high income districts and were operated by someone other than the male or female head or spouse. If that person used the average amount of floorspace and had the average amount of education, monthly home business income is implied to be US $77.4 or $50.2 per worker. Regression coefficients imply how much income would vary from that with each condition. The education coefficient must be multiplied by the number of years different from the mean of 6.83 years. Mean floorspace was 35.4 m^2. Mean home business income of this sample was US $87.5 or $58.9 per home worker.

The residual percentages were: neither male or female head or spouse -- 19.8 percent; sales to middle or higher income consumers throughout the city -- 35.6 percent; located in conventional, standard residential area -- 265.2 percent; producing a service other than retail trade, cafes or renting rooms -- 15.5 percent; renting rooms or apartments -- 4.2 percent.

disproportionately located here, though not as much as in callejones where their number is two or three times as high as expected. By contrast, the inner-city quintas have more light and less of such "sturdy" manufacturing, which cannot be carried out as readily in upper-story rooms and among crowded streets.

Households in quintas and callejones are too poor to buy as many services as those in popular urbanizations and are physically closer to competitors who provide them city-wide on separate premises. Hence fewer of their HBEs provide services than those in popular urbanizations or even those in pueblos jovenes. Of course, the mere increase in manufacturing HBEs reduces the percentage share of other activities. A fifth of all manufacturing HBEs were here, contrary to the thirteenth that might be expected. Nearly half of HBEs here were in manufacturing compared with 27 percent for the urban average. Especially concentrated here were the subcontractors that sold to other businesses, and among these female-headed HBEs were conspicuous. These were also the ones least willing and able to shift to formal sector work.

This pattern has been observed by others (Webb, 1977; Reichmuth, 1978; Bromley and Gerry, 1979; Uzzell, 1980; Farbman, 1981; Gilbert and Gugler, 1982; Moser and Marsie-Hazen, 1984, and studies cited there). Peattie found it in cities as distinct as Hong Kong and Bogota. Referring to shoemaking in Bogota, she observed:

> A workshop of this sort fits easily into the small, ordinary living room of the working-class dwelling . . . Thus all through the low-rent areas in Bogota residential facades conceal a multitude of such small workshops . . .
>
> Since . . . small firms, operating almost invisibly in the interior of dwellings, can avoid [paying minimum wages and fringe benefits], there is an obvious economic logic for a certain

> amount of subcontracting by the larger firms to the smaller enterprises. . .
>
> . . . The small firms also require a supply of cheap space. This means, in practice, slums . . . they provide a setting in which those with minimal status resources can have the prideful sense of being 'independent' (Peattie, 1981, pp. 213-214, 225, 230-231).

Small firms can hold their own when space and access are cheap and where the technological advantages of large scale are not overwhelming. Even in Hong Kong, the share of small enterprises rose during 1951-1977 because of a flexible subcontracting system and the availability of cheap space:

> It thus turns out that small enterprises in Hong Kong -- which means, as we must remember, most of the enterprises in Hong Kong -- pick their location not according to the factors usually dominating location theory, but according to the nature of the housing stock . . . [But] private redevelopment and public policy tend to combine in reducing the supply of building environments suitable for this kind of use. (Peattie, 1983, p. 12).

Producing only for local neighborhood sales, the activity most typical of pueblos jovenes, is likely to yield the lowest incomes because of easiest entry, least skills, and lowest capital intensity. That such enterprises earned $75.9 less monthly than others, cet. par., has already been mentioned. Also, such work was undertaken by members of households with twice as much unemployment (12.8 percent) compared with the average of all households with HBEs (6.7 percent). Except for metal products, every branch of HBE in 1983 had some unproductive enterprises that had earned only six dollars or less in the month preceding the survey. Usually they were local neighborhood-oriented. Yet all except shoemakers and laundresses had some enterprises that had earned 250 dollars or more. The most lucrative

city-wide providers of food products or personal services had earned over 700 dollars, and one retail store had earned 2,500 dollars.

Dwelling and Neighborhood Improvements

The number and types of HBEs in a neighborhood affects the quality of neighborhoods in many ways. We are concerned with only one aspect of that relation -- whether or not dwellings are better or worse if an enterprise is operated there. Is it larger, of better quality, with more amenities, and of higher value? To answer that question with respect to Lima, we have to refer to our 1980 survey covering dwellings both with and without HBEs. The results are shown in Table 9. Neighborhoods were aggregated into three categories: 1) conventional, 2) popular urbanizations and pueblos jovenes, and 3) substandard/subdivided. Too few observations were in that last, diversified category for statistical significance.

In general, dwellings with HBEs were better than others without them in popular urbanizations and pueblos jovenes (poor neighborhoods) and worse than dwellings without HBEs in conventional neighborhoods. In the poor neighborhoods dwellings with HBEs had a resale value one-third higher (as estimated by owners), were located on sites 11.1 percent larger, had 30.2 percent more floorspace, and were 23.7 percent more likely to have a sewerage system connection that those without HBEs. Occupants with HBEs had expanded their dwelling from 2.3 rooms to 3.5 rooms, while others had expanded from 1.9 to 3.2 rooms about the same amount.

By contrast, in conventional neighborhoods, dwellings with HBEs were declared to be worth 26.4 percent less that those without, were located on sites 16.2 percent smaller, but in dwellings with the same amount of floorspace (121 m^2) and with about the same number of rooms, 3.8. The HBE

Table 9: Characteristics of Dwellings with a Home-based Enterprise (HBE) Compared with Others (None Works at Home), Lima, Peru, 1980

	Total Sample[a]		Conventional, Standard, Residential Areas		Popular Urbanizations and Pueblos Jovenes	
	With HBE	Without	With HBE	Without	With HBE	Without
1. Sample Size	132	1,035	51	468	65	441
2. Percent	11.3	88.7	9.8	90.2	12.8	87.2
3. Household Income, Monthly [US$ 1980]	226	236	286	304	188	169
4. Years at Site	13.6	10.7	14.6	11.0	13.1	9.6
5. Owners, Sample Size	95	710	30	260	60	397
6. Value [US$ 1980]	8,119	9,360	12,553	17,056	6,019	4,513
7. Tenants, Sample Size	29	312	19	202	3	39
8. Rent [US$ 1980]	14.5	15.6	11.6	18.4	12.5	12.2
9. Site, Area, m^2	144.9	148.9	122.2	145.9	175.7	158.0
10. Floorspace, m^2	114.7	103.2	121.2	121.0	119.9	92.1
11. Number of Rooms	3.56	3.50	3.82	3.93	3.46	3.20
12. Rooms Added	.81	.73	.63	.35	1.12	1.30
13. Sewerage System Connection, %	60.6	62.7	66.7	79.3	56.9	46.0

Note: [a]The total sample included 26 enterprises in quintas, callejones, corralones, and rancheria. HBEs providing lodging are excluded.

Source: Sample of 1,167 households, July 10 - July 3, 1980, carried out by the Office of Technical Manpower Studies of the Ministry of Labor of Peru and MSU.

occupants had on the average added .63 rooms while others had only added .35 rooms. A third of HBE operators had no sewer system connection, compared with only 20 percent of others. With or without HBEs, dwellings were better and incomes higher in the conventional neighborhoods; but here the HBEs belonged to relatively poorer households trying to keep up; while in the low-income neighborhoods, HBE operators were the elite.

We have already pointed out that in all areas, the HBE income was about 40 percent of what those households earned. Since 68 percent of respondents in 1983 said that they needed the HBE in order to afford the dwelling, it appears clear that housing conditions would have been worse without homebased enterprises. Conversely, 70 percent of HBE operators said that their enterprise would not exist if the dwelling space were not available. Over 80 percent of repair workers and male-head-dominated "sturdy" manufacturing operators said the business income was necessary for the dwelling. Less than half of the dwellings with women weaving or dispensing medical services were dependent on such income. Yet these female-operated businesses, including laundries, retail trade, and personal services, were the ones most dependent on the dwelling as a site. About three-quarters could not operate elsewhere, while about half of the "sturdy" activities were considered moveable. Although the income of the male-headed HBEs was more, their dwellings had lower value than those operated by women, partly because total household income was less.

The average household with an HBE used 30.6 percent of its 115.6 m^2 dwelling for the business, or 1.2 out of 3.6 rooms. With 1.9 rooms for the business, or 74.8 m^2, providers of lodging gave the most space to the business, followed by makers of metal and food products with about 1.5 rooms or over 40 percent of the space. The women who wove, knitted,

and laundered used the least space for the business, 13 percent, yet as already mentioned these were most dependent on the dwelling. The highly significant association of HBE income with floorspace used by the business can be seen in the regression (Table 8, line 9).

Dwelling expansion and improvement, however, depended not so much on what HBE went on there as on total household income, which depended more on HBEs in some cases (the "sturdy" businesses) than in others. Tenants rarely made improvements, and owner-occupants of the most expensive housing in luxury districts and standard urbanizations also made fewer improvements than others, about 70 percent as many as the average. Owner-occupants of dwellings in conventional neighborhoods and popular urbanizations were the greatest improvers, making 21 percent more than the average. Those in pueblos jovenes and in substandard/subdivided housing were close to the average. This measure is based on whether or not occupants had done any of the following: reconstructed the shell, added rooms, improved the kitchen, installed better water or sanitary facilities, plastered and painted the inside or outside, improved wall or roofing materials, finished ceilings, improved flooring, installed better windows or doors, improved the garden, added fill or graded the site, and built a fence or wall around the site -- 16 types altogether. If pueblos jovenes did less improving than others, it was due not just to lower incomes, but also to doubts at some sites that adequate infrastructure would ever be installed (Strassmann, 1984a). Thus neighborhood improvements, here in the form of infrastructure, provides the setting for better dwellings and more productive HBEs, which generate the income that promotes better neighborhoods.

The average household with an HBE had made 3.5 of the sixteen improvement types listed in the preceding paragraph. Fewer than three improvement types were made by households with HBEs in repair, furniture making, and the dispensing of medicine. The most (4 or more) improvements were made by those with HBEs making textiles, food products, or providing lodging.

The most popular type of improvement was adding a room, and 37.2 percent of households did that, adding 2.1 rooms on the average. Operators of the most lucrative HBE, metal products making, were the most likely room-adders with 64.2 percent doing so, and they were followed by the food products makers with 50.3 percent. However the 37.5 percent of HBEs providing lodging added the most rooms each: 3.0. Only 13.1 percent of households with a medicine dispensing service had added a room. Obviously, some HBEs were more dependent on additional and separate space for their success than others.

The average HBE of 1983 had been started with a 7.3 year delay after the household had moved in 12.7 years earlier. Years of occupancy were shortest in standard urbanizations (10.2 years) and pueblos jovenes (10.3 years), and longest in callejones with 19.8 years. The 15.0 years in quintas and conventional neighborhoods were more typical. Making textiles and dispensing medical services were started after the shortest delays (5.3 and 4.4 years), in part because extra space and improvements were least needed for those activities. The longest delays were in starting a repair business (8.5 years) or renting out rooms (9.6 years), partly because of their relation to the life cycle of the household and partly because of the extra investment and experience that had to be accumulated for those activities. The main point of all this is that dwelling improvement, type of enterprise, and urban location are interrelated in complex ways that

differ with each branch of activity. Without HBEs, however, both the incentive and the income for making improvements would be lacking, and housing and neighborhood conditions throughout the city would be worse. After all, about 106,500 households in Lima (10.8 percent) had such businesses in 1983 and with them produced 3.9 percent of metropolitan household income.

Conclusion

Home-based enterprises are an important part of the economic and social fabric of cities in developing countries, but their role varies greatly with the type of neighborhood. In Lima, Peru, they occur over twice as often in the vast squatter settlements, pueblos jovenes, north and south of the city, as they do in conventional neighborhoods. Somewhere in between is their frequency in popular urbanizations and inner-city substandard neighborhoods, quintas and callejones. Yet wherever they are, they average about the same proportional contribution to the incomes of households that have them, forty percent. They are thus more productive in higher-income neighborhoods than in others and do not proliferate to the point of everywhere yielding the same income at the margin.

The explanation is in part that the opportunity cost of both persons and dwellings in higher-income districts is greater. Better jobs in the non-residential modern sector are more accessible to persons living there, while the cost of dwelling space per square meter is two or three times as high. Here is greater density of settlement than in the outskirts, more apartment living, together with more convenient transport facilities.

But not only do HBEs vary in frequency in different neighborhoods, but the proportion of various types among them also changes. Primary

determinants of these variations seem to be cost of space and access to markets -- either allowing competition or giving protection against it. The predominance of retail stores for the immediate neighbors in squatter settlements and of prospering metal products and furniture making in popular urbanizations reflect these factors. They suggest that infrastructure, especially transport, can raise productivity and threaten the comparatively unproductive.

The importance of access and cheap space is also shown by the extent to which HBEs flourished in quintas and callejones, inner-city substandard, crowded housing. Apart from retail trade, HBEs, especially in manufacturing, were common, and the operators found them most desirable compared with alternatives although incomes were not exceptionally high. Housing in these neighborhoods may be unsightly, but demolition should not be planned without remembering the income-earning opportunities that might be destroyed together with the dwellings. Much of the inner-city deterioration is due to tenancy at controlled low rents, not due to partial business use. Elsewhere occupants with HBEs improve and expand their dwellings as much as other households, work that they could not afford without the HBE income.

Do these and other findings from Lima apply throughout the developing world? The answer depends on whether or not economic behavior elsewhere and the process of urbanization are different. With respect to behavior, throughout history and in all urban cultures a large proportion of dwellings has been used both for household consumption and for production to be exchanged with others. Concentration of work in factories and office buildings had little momentum until the Industrial Revolution, and doctrines about separating residential and working zones followed that.

Nevertheless, whether or not some time and space in the dwelling might not be advantageously used for producing extra income is an issue still weighed by millions of households in countries at all income levels (for a review of the literature, see Strassmann, 1985b).

Less obvious is whether or not the process of urbanization in other countries leads to types and sequences of residential neighborhoods similar to those of Lima. Geography, culture, legislation, etc., do make a difference. Nevertheless, in a general way the experience of Lima has been typical. Urban migration accelerated in the 1950s and 1960s, and existing markets for capital and land could not cope with the provision of land and housing for the influx of poor people. The result was squatting, unregulated subdivision of land, and conversion of old dwellings to housing that was small, crowded, and unsanitary. Public agencies did not have the power, resources, or understanding to set urban goals and to attain them. The result has been types of neighborhood much like those of the four major categories of Lima: conventional housing, inner-city slums, irregular settlements on the outskirts, and partly subsidized but often incomplete developments, such as Lima's popular urbanizations. Variations within each of these categories may have no counterpart in Lima. To that extent the prevalence of home-based enterprises will also be different, given urban size and income levels. These levels depend on the extent of capital accumulation, technological change, and other progress in the competing yet partly complementary modern sector.

Notes

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[2]In Lima for both the 1980 and 1983 surveys, households were selected at random from those in 203 clusters of about 120 dwellings. These clusters had been previously selected by the Directorate of Employment and Migration Studies, Minister of Labor and Social Progress, in a random stratified manner from 5,900 clusters into which the Lima Metropolitan Area, including the port of Callao, had been divided. In 1980 1,167 households were interviewed during June 10-July 3. Of the initial selection 266 interviews did not materialize because dwellings had been demolished, were now unoccupied, used entirely for non-residential purposes, or had occupants who refused to be interviewed or could not be located even after four return visits. Added were 53 households to

represent unexpected increased density of settlement. Among the final 1,167 households, 132 had home businesses.

To identify a larger sample of home enterprises for the 1983 survey, 15,107 dwellings were selected first in the manner described above. A total of 1,706 households with home businesses were found -- again 11.3 percent, but actually only 10.8 percent with allowance for some stratification to reduce first-stage sampling costs. Since 193 households had two businesses and 7 households had three businesses, the total number found was 1,913. Interviews concentrated on the main home business. This survey was carried out during October 27 to December 10, 1983.

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