

SETTLEMENT UPGRADING AND HOME BASED ENTERPRISES: SOME EMPIRICAL DATA

Graham Tipple¹

Director of CARDO, School of Architecture, Planning and Landscape, University of Newcastle upon Tyne

At the second meeting of the International Forum on Urban Poverty, held in Florence, we discussed home-based enterprises as a way forward for many low-income households rather than as a problem. Questions were asked about the relationship between settlement upgrading and home-based enterprises. Did their presence help or hinder upgrading? How did upgrading affect the viability of home-based enterprises?

At the time, we were planning a study in CARDO to take place in four countries and we hoped that this would shed some light on such issues. The DFID-sponsored research study² has been co-ordinated in CARDO.³

The case studies were carried out in Southern Areas in Cochabamba, Bhumeheen Camp, New Delhi, Kampung Banya Urip, Surabaya, and East Mamelodi, Pretoria. In each study, we interviewed about 150 households with HBEs and about 75 without HBEs living in the same study areas.

We were not conducting a longitudinal study, nor of a settlement from before upgrading to after, but we integrated some differences in servicing into our studies. In Bolivia, we focused on three adjacent settlements with varying degrees of servicing. In our Indian case study, we focused on a long established densely packed and labyrinthine, upgraded squatter settlement, Bhumeheen Camp, in New Delhi. Very little servicing has been provided, only paved streets, drains and some water supply. Our Indonesian case study is in a KIP settlement, upgraded in the 1970s and fully serviced. In South Africa, we chose

¹ With assistance from Justine Coulson and Peter Kellett.

² The project is funded by the UK Department for International Development (DfID) as KAR Research No. 7138 and their support is gratefully acknowledged.

³ We worked closely with partners in the Department of Geography at Newcastle, and in the University of San Simon, Cochabamba (Bolivia), School of Planning and Architecture, New Delhi (India), ITS, Surabaya (Indonesia), and CSIR (Boutek), Pretoria (South Africa)

an unserviced squatter settlement and a neighbouring, fully serviced, formal area on the extreme east of Pretoria.

Longitudinal studies are necessary if the effects of upgrading are to be isolated from other effect, such as an unwillingness to invest in unserviced “waiting” areas in South Africa. However, this paper looks at income, space and servicing in relation to the presence or absence of HBEs.

Types of HBE found

Much of the argument criticising HBEs for being polluting or difficult to control concentrates on manufacturing and other production activities, especially those involving outworking where HBEs are part of a larger manufacturing system. Along with Fass (1980), Gilbert (1988) and Strassmann (1986), we found a great variety of HBEs, most of which are single person or family-based enterprises.

By far the most common HBE is the small shop selling daily household necessities for people who do not have a refrigerator or much storage space. There are also a range of more specialised shops, teashops, and bars. Many make food for sale outside either in the street or at places of work or schools. Services are represented by repair shops, personal services and office services. Overwhelmingly, they serve the people of their neighbourhoods.

Production HBEs are often concerned with clothing manufacture, but we also had manufacturers, assemblers or finishers of many other products. In the Cochabamba sample, they are overwhelmingly concerned with clothing manufacture, mainly of denim jeans and jackets and of children’s wear, dresses and T-shirts. In Bhumeehen Camp, Delhi, India, the most common production activities are involved in outworking based on piecework in embroidery. There are also clusters of TV tuner assemblers and thread cutters. In Banya Urip, Surabaya, Indonesia, there are several production HBEs manufacturing traditional Javanese furniture, decorated birdcages for export, masks of various kinds, rattan handicrafts, and shoe uppers. There are a few niche market HBEs: a feather artist and farmers of crickets.⁴ In the South Africa sample, the activities are very

⁴ In this, thousands of insects are kept in ventilated boxes. The products are mainly eggs for high quality fish food and baby crickets for high quality bird food. Both of these feed the ornamental fish and song birds

strongly concentrated on providing daily needs and household services to local residents. Several HBEs make and sell traditional beer. Services offered include traditional healers (*sangoma*). There is little manufacturing of items for sale

Effects of home based enterprises on wellbeing.

improves their livelihoods, so does the opportunity to buy their essential supplies, have their meagre close to home.

Employment and income benefits

It is evident in all our case studies that HBEs greatly increase the employment opportunities for low-income households especially for women. At least 50 per cent more women work in HBE operating households than in those without a HBE. The differences in number of workers between HBE and non-HBE operators vary from 24 to 59 per cent.

Table 1. Household monthly income (means, PPP£)*

In PPP pounds	Bolivia	India	Indonesia	South Africa
Mean	1,067	254	417	464
Median	739	211	277	343
Non-HBEs				
Mean	401	200	307	345
Median	321	171	248	290
Percentage improvement from HBE				
Mean	166	27	34	34
Median	130	23	12	18

Purchasing Power Parity Pounds remove the differences in buying power among local currencies.

In table 1, the differences between HBE and non-HBE households are important to us in this paper as income benefits are one of the chief arguments in favour of HBEs. All our case studies show respectable increases in income for HBE households in comparison with their non-HBE operating neighbours. Where they occur, HBEs generate between half and

that are so highly prized in Japan, Malaysia and Singapore. Adults are sold to other farmers for breeding or go to be ground up in food protein additives.

three quarters of their households' incomes. They provide between one third and half of

Access to Services

An important aspect upgrading efforts for the housing environment is the access that occupants have to essential services. When HBEs are present, there are issues of whether service provision by enabling the provision of better services or whether they overload services provided only for residential users.

Table 2.
frequencies)

	India		Indonesia		South Africa			
	HBE	<i>Non-HBE</i>	HBE	<i>Non-HBE</i>	HBE	<i>Non-HBE</i>		
Water tap	52.1	48.0	3.3	10.7	82.9	86.7	60.5	61.8
Bath/shower room	32.7	17.3	4.0	10.6	98.7	100.0	9.5	4.4
Flush toilet	87.9	78.7	-	-	97.4	97.3	45.6	48.5
Pit latrine	15.1	20.0	-	-	0.0	0.0	34.7	39.7
Telephone line	53.9	25.3	4.7	5.3	100.0	100.0	4.8	8.8
Electricity	100.0	93.3	95.3	100.0	97.4	100.0	54.4	51.5
Sewerage	72.1	56.0	-	-	100.0	100.0	54.4	51.5
Refuse collection	0.0	0.0	-	-	98.0	98.7	54.4	51.5
Place to receive post	0.0	0.0	91.3	85.3	100.0	100.0		-

There is a varied relationship between the standard of services enjoyed by HBE and non-HBE households among the samples. In Bolivia, HBE households enjoy marginally better services than non-HBE households, but they have twice as many telephone connections. In India, the poor services of the HBE households are reflected in the non-HBEs but the latter have much poorer water and bathroom availability. Telephones and electricity are marginally more available to non-HBE operators – both of which are counterintuitive.

The non-HBE sample in Indonesia is marginally better serviced than that with HBEs, but both are very well serviced. In South Africa, there is a slightly better servicing record for the non-HBE households but that is probably a sampling quirk arising from a slightly larger proportion's being drawn from Extension 5 where full servicing is available.

Thus, our data show no general improvement in servicing by virtue of having an HBE. This leaves the question of whether the HBEs impose unsustainable burdens on the

residential levels of service provision. The nature of the HBEs present and the wastes they produce generate two findings:

- That a few HBEs generate noxious or dangerous wastes and they need to be controlled in some way; perhaps through a registration system with random inspections.
- That all others tend to throw away waste similar to that produced in the domestic milieu (food, dust, ash, cloth, thread), but just in larger quantities, and to throw it away in similar ways to households. Thus, if the waste collection system is inadequate, HBEs will exacerbate the problems.

Water use levels in the HBEs that are present are obviously higher than domestic uses, particularly in preparing and serving food; brewing, retailing vegetables, meat and fish; and services such as hairdressing, photography, medical and dental practices. However, none of these practised at HBE scale is likely to draw more water than can be supplied at domestic pressures through standard pipes.

There are also needs for reliable water drainage and electricity systems, both of which are unorganised in parts of our samples. The demand for roads access is mixed. In India and Indonesia, HBEs cope with the narrow, non-motorable lanes by using cycle- and motorcycle-based modes. In Bolivia, roads are well developed. In South Africa, the surface of roads and tracks is an issue for HBEs and one in which upgrading assists HBEs cf. Kenyan experience in (Kigochie, 2001). Upgrading policies should regard all low-income neighbourhoods as the potential location for many commercial, retail and light industrial uses and plan service levels accordingly.

In our consideration of whether better servicing equates to improved home-based enterprises, we divided our South Africa sample between the new serviced area and the neighbouring unserviced informal area, in which residents are waiting to be moved into a serviced area.⁵

⁵ Such a relationship of settlements inevitably generates causal relationships, not necessarily dependent on the level of servicing. However, these are often represented in the differences between upgraded settlements and those that have not been upgraded, so our findings may be valid elsewhere.

Table 3. South Africa: means according to whether house has sewerage (as proxy for new area)

	Has no sewerage- Old area	Has sewerage - New area
Current cost of modifications	1,615	13,090
Current cost of machinery/ equipment	393	2,050
House loan	15,000 (n=1)	34,167
Business loan	1,100	850
No. of rooms	4.05	5.91
Area of rooms (square metres)	22.1	34.0
Area of main building (square metres)	17.2	24.2
Area of main building used for HBE (square metres)	1.02	1.24
Total income	1,774	1,755
Income from HBE	1,119	1,071
Total pay of HBE	1,329	1,039
Cost of raw materials per month	795	566

We might expect, following Kigochie (2001) that home-based enterprises in the serviced area would be larger, employ more people and create more income than those in the unserved area. However, our findings are equivocal on this. In the new areas, the dwellings are larger (34 square metres as opposed to 22 square metres) and more of their area is in a main building (24 square metres compared with 17 square metres). Slightly more space is used for the home-based enterprise (1.2 square metres compared with 1 square metre). However, incomes in the new area are almost the same, if a little lower than those in home-based enterprises in the unserved area. These findings are counterintuitive and demonstrate no improvement has taken place in the five years of occupying the new area, indeed those still to move from the squatter area are slightly better off!

Two variables stand out, however, in demonstrating that, perhaps, businesses in the serviced area are more permanent and on a growing trajectory. These are the cost of modifications and the amount of money spent on machinery or equipment. Both of these are considerably higher in the serviced area than in the unserved area.

Table 4. Bolivia: means according to whether house has sewerage (as proxy for new area)

	Has no sewerage c.25 per cent of sample	Has sewerage
Current cost of modifications	3,480	2,888
Current cost of machinery/ equipment	5,504	8,558
House loan	3,000	4,000
Business loan	5,767	3,635
No. of rooms	3.5	4.2
Area of rooms (square metres)	63.1	74.9
Area of main building (square metres)	63.0	67.8
Area of main building used for HBE (square metres)	24.1	17.0
Total income	706	788
Income from HBE	596	593
Total pay of HBE	777	533
Cost of raw materials per month	832	406

In our Bolivia sample the pattern is different, but, again, inconclusive. Here, the presence of sewerage tends to reflect the age of the settlement and how far it is up the hill. About 25 per cent of our home-based enterprise dwellings do not have sewerage. Dwellings which have sewerage are larger (4.2 rooms rather than 3.5) but a smaller amount of the dwelling is used for home-based enterprises (17 square metres compared with 24 square metres for those with no sewerage). Home-based enterprises in dwellings with sewerage generate similar amounts of income for the household, but less pay overall than those without sewerage. They have also had less spent on them for modifications (US\$2888 in comparison with US\$3480). Businesses in dwellings with sewerage also have lower business loans than those without (US\$3600 compared with US\$5800).

Neither the South Africa nor the Bolivia case gives any material to confidently predict that the provision of services will improve the operation of home-based enterprises. It is obvious that other circumstances also affect profitability and the scale of home-based enterprises.

Space availability and use

One of the major arguments against home-based enterprises is their likely effect on domestic space – they use scarce space that is needed for domestic functions. To examine this, we divided space into that which is exclusively used for the HBE and that which is jointly used for HBE and domestic purposes. Half of the latter we counted as HBE space.

When this is combined with space exclusively for HBEs to calculate “net space”, as we call it,

In considering the amount of space in the home used for HBEs, our case studies give us two different stories. In Bolivia, Indonesia and South Africa, dwellings occupied by HBE operators are larger than those for non HBEs. They have more rooms and larger areas. They have fewer people per room and more space per person (ranging from 7 square metres in South Africa to 19 square metres in Bolivia at the means). In them, the HBEs tend to take up quite a small proportion of the dwelling: 30 per cent in Bolivia and up to 20 per cent in Indonesia and South Africa. This leaves two thirds of the net space for domestic uses in Bolivia and 80 per cent in Indonesia and South Africa. In Bolivia and South Africa, HBE households still have more net domestic space than non-HBE households. In Indonesia they have slightly less space, but still each household has 47 square metres net domestic space at the mean.

It is also illuminating to look at space per person as this takes account of household size and gives a more accurate picture of the crowding involved in the space use. While net domestic space per person is still higher for HBEs in Bolivia (12 square metres compared with 9 square metres for non HBE households), it is slightly lower than for non-HBE operators in both Indonesia and South Africa. At worst, the South African sample has a mean of 5.5 square metres per person net domestic space for HBE operators and 7 square metres for non HBE operators.

Thus, it can be seen that HBEs tend to occupy the extra space that HBE operators have, but the larger households in HBE operating dwellings mean that there is less space per person for them than for non HBE households. However, the amount of space that remains is still no cause for concern.

The India case, however, is very different. The problem arises from the very small dwellings that have a mean of only 2.1 rooms and 10.8 square metres for HBE operators and 1.8 rooms and 8.4 square metres for non-HBE operators. Occupancy rates are in excess of three persons per room at the means and each person has only 2 square metres at the mean (for both HBE and non HBE households).

HBEs in India only use a mean of 4 square metres of net space, but this constitutes almost 40 per cent of dwelling area at the mean, leaving a mean of 6.7 square metres net domestic space (61 per cent of the original area). This compares with 8.4 square metres at the mean available for non HBE households. HBE households, therefore, have only a mean of 1.3 square metres per person net domestic space compared with 2 square metres for non HBE operators. The presence of HBEs drive net occupancy rates up above 4 persons per room at both mean and median for HBE operators.

As these figures show, there is a serious problem of crowding in our Indian case study, and it is exacerbated to quite considerable extents by the presence of HBEs.

Conclusions

HBEs are very important for income generation, especially for women. Their establishment improves incomes, and access to jobs, goods and services within a settlement and can, therefore, be regarded as upgrading. There is little conclusive evidence from our case studies that most HBEs impose anything more than moderate increases in demand for services in their neighbourhoods. Our data do not provide conclusive evidence that they have better service levels than non-HBEs; nor that those with better services perform better than those with poorer, even though this is intuitively self-evident. HBEs use surprisingly little space within the home at a level that is not a significant imposition for most households. The exception to this occurs in very small dwellings where even small spaces are significant. This points to the need to change public attitudes towards providing small plots or dwellings for people living in poverty.

Our preliminary findings show that HBEs are compatible with settlement upgrading but there seems to be insufficient evidence yet to establish causal relationships between the two. We will be conducting multivariate analysis over the coming months and hope to establish some causality therefrom.

Bibliography

Fass, S. M. (1980) "The Economics of Survival: A Study of Poverty and Planning in Haiti" (3178534-6), Office of Urban Development, Bureau for Development Support, Agency for International Development - International Development Cooperation Agency, Washington D.C.

Gilbert, A. G. (1988). "Home enterprises in poor urban settlements: constraints, potentials, and policy options". *Regional Development Dialogue*, **9, 4** (Winter): 21-37.

Kigochie, P. W. (2001). "Squatter rehabilitation projects that support home-based enterprises create jobs and housing: the case of Mathare 4A, Nairobi". *Cities*, **18** (4): 223-233.

Strassmann, W. P. (1986). "Types of Neighbourhood and Home-Based Enterprises: Evidence from Lima, Peru". *Urban Studies*, **23**: 485-500.