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Research Report

The Socioeconomic Effects of the Working Poor Moving to Permanent Dwellings

The Case of the Ashray Affordable Housing Pilot Project in India

Nicholas Burger, Italo Gutierrez, Krishna B. Kumar, Jill E. Luoto, Dhaval Monani, Kavita Raichura

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RAND Labor and Population

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Preface

Providing affordable housing is a pressing policy issue for many emerging (as well as developed) economies. Understanding the socioeconomic effects that moving into such dwellings can have on the working poor would allow policymakers to better assess the effectiveness of investments in housing and improve current policy solutions. In this report, which summarizes research funded by The Rockefeller Foundation, we assess these effects in the context of the Ashray Affordable Housing Pilot Project in India. The project is an excellent example of the recent private-sector initiative by the Centre for Emerging Markets Solutions (CEMS) of the Indian School of Business (ISB) to build houses in peri-urban areas on the outskirts of large metropolises.

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Executive Summary

In this report, we assess the socioeconomic effects that moving into permanent dwellings—in particular, into the Ashray Affordable Housing Pilot Project in India—has on the working poor. The rapid urbanization throughout much of the developing world has outpaced the supply of adequate and affordable housing, forcing many millions of poor migrant (and low-income) workers to live in poor conditions and leading to the expansive growth of slum neighborhoods on major cities' outskirts. Private-sector solutions to this problem in the form of affordable—yet profitable—housing construction projects are worth examining because they can be adapted to many different emerging economies that share the same challenges of rapid urbanization.

The Ashray project is an initiative led by the Centre for Emerging Markets Solutions (CEMS) of the Indian School of Business (ISB). Between August 2010 and January 2012, the Ashray project constructed 218 ultra–low-cost housing units in Shapar, Gujarat, which is located about 20 km from the city of Rajkot and close to the industrial estate of Shapar-Veraval, set up to cater to migrant (and, in general, low-income) workers. The aim of projects like Ashray is to build houses in peri-urban zones on the outskirts of large metropolitan areas that are home to manufacturing and industrial bases. By capitalizing on cheaper land, the demand for affordable housing from local workers, and creditworthy risk profiles of employed workers seeking home loans, low-cost housing projects may help low-income workers and their families improve their living conditions, while still allowing developers to recover their costs. In the case of Ashray, with units priced to be affordable for low-income households, 67 percent were presold on the first day of sales.

RAND, in collaboration with ISB, has undertaken a mixed-methods evaluation of the Ashray project as an initial step to understand the impacts that such private-sector affordable-housing projects can have on the well-being of low-income households. We collected qualitative data through focus-group discussions of current Ashray residents and carried out a quantitative survey of the residents and owners of the Ashray units in late 2013 and early 2014. Together, these two data sources provide early evidence into the ways in which this new housing project has affected the lives of its residents. We asked residents about their living situations, housing amenities, commute times to work, social networks, and financial situations, both prior to moving to Ashray and currently while living there.

The Ashray project complex was fully constructed by early 2012, and residents were already living there at the time of our study. Although our evaluation is therefore retrospective in nature, we believe that the depth of our data, both qualitative and quantitative, is valuable insofar as it can paint a first, detailed portrait of this large-scale pilot housing project. Our

findings can inform not only future housing projects but also any future planned rigorous evaluations of their effects on residents.

We find significant evidence that Ashray residents are pleased with their decisions to move to Ashray. Roughly two-thirds of surveyed residents were found to be owner-occupiers of their homes, while one-third were renting their homes. Both types of residents had largely positive reviews of their experiences living at Ashray. Residents reported that the quality of their housing had improved, and many households have less crowding in their new accommodations—many had previously been living with grandparents or other extended-family members. For those who own their properties, the opportunity for home ownership emerged as a key factor that motivated residents' decisions to move to Ashray. The benefits of home ownership—both psychological and financial—clearly affected owner-residents' overall positive reviews of their experiences at Ashray. Residents viewed the innovative financial models associated with the Ashray housing project as having opened the possibility of home ownership to them. Other major findings from our evaluation include the following:

- About 41 percent of resident household heads have primary education or less. This compares with an all-India rate of approximately 43 percent, according to recent nationally representative survey data for males over age 15, and suggests that our sampled households may be fairly representative of India's population as a whole (Ministry of Statistics and Programme Implementation, 2014, Table 15, p. A-44).
- Roughly 79 percent of households earn between 7,500 and 20,000 Indian National Rupees (INR) per month (USD 125 to USD 320). Therefore, the median household has an annual per capita income well below India's gross national income (GNI) per capita, which was USD 1,550 in 2012. Moreover, although the median household at Ashray belongs to India's Low Income Group (LIG), a significant percentage of residents belong to India's Economically Weaker Section (EWS), which is the lowest income classification in India. More than 90 percent of the national urban housing shortfall corresponds to these two segments of the population.
- About half (48 percent) of household heads reported working in the manufacturing industry, which is consistent with the locational choice for the Ashray project, which is near an industrial area.
- The average household head has been in his or her current job for more than five years, suggesting a high degree of job stability, again matching the intended model for Ashray's financial plan of finding creditworthy buyers in the LIG.
- Sixty-eight percent of owners took out some form of home financing, with an average total loan size of roughly INR 320,000 (or roughly 73 percent of the total price of the home, on average). The most common sources for home loans were housing finance corporations (HFCs) and private banks.
- Seven percent of surveyed residents reported owning their previous homes, while 64 percent own their homes at Ashray, an increase of more than 800 percent.
- Average household sizes decreased with moves to Ashray from 5.1 to 3.8 members as young families moved out of accommodations shared with extended-family members. The average household size across all of India is about 4.3 people (Ministry of Statistics and Programme Implementation, 2014, p. i).
- Housing amenities improved, on average, with moves to Ashray: Rates of indoor plumbing increased from 50 percent to 100 percent, and rates of piped water increased from

81 percent to 100 percent.[1] Rates of having a concrete (permanent) roof increased from 66 percent in previous living quarters to 100 percent at Ashray.
- The move from a big city, such as Rajkot, to the outskirts in Ashray meant that residents enjoyed fewer opportunities for such things as going to the movies or restaurants and that amenities, such as schools and hospitals, are fewer and farther away. Nonetheless, Ashray residents reported feeling a heightened sense of neighborliness and belonging to the area, and very few reported regretting their decisions to move.

Despite the predominantly positive reviews and findings, a few surprising elements emerged from our evaluation:

- Although the Ashray development was designed to offer affordable housing, monthly housing expenses for renters increased from an average of INR 1,160 in respondents' previous homes to INR 1,286 at Ashray for current renters (a 10-percent increase). For owners at Ashray, monthly payments rose from INR 1,447 to INR 3,712 (a 156-percent increase). Much of this increase could be due to the high number of young families who had previously not been paying any rent (living with relatives) or had been splitting rent with family members in their previous homes.
- Commuting times to work did not significantly decrease for the average resident, despite this being one of the motivating factors for Ashray's construction. Commuters gained just 0.5 km in commuting distance, on average, a savings of just under 2 minutes. Part of the reason may be that half of resident household heads reported not working in manufacturing, and some families moved to Ashray solely for the opportunity to purchase (versus rent) their own homes, despite longer commutes for family members.
- Although all housing units were purchased, 74 remain unoccupied. The rapid sale of Ashray units, combined with responses from homeowners, suggests that people believe that ultra–low-cost housing is a smart investment for those who can afford it, even if owners cannot or choose not to rent out the units, simply waiting for housing prices to appreciate.

In all, we found that Ashray residents viewed their decisions to move to Ashray very favorably. Just 2 percent of surveyed residents agreed or strongly agreed with the survey item "I regret the decision to move to this housing complex." Conversely, 89 percent agreed or strongly agreed with the item "I feel more satisfied with life"; 91 percent were in agreement that "the quality of our housing has improved"; and 65 percent were in agreement that "we have a stronger feeling of belonging to this area." It seems that, despite the higher monthly living costs associated with a move to Ashray and the insignificant savings on commuting time, combined with the greater distances from relatives and amenities, such as schools, hospitals, and enter-

[1] *Piped water* means that water within the home is pipe-supplied. In the case of Ashray, water comes from a bore-well that accesses groundwater. Homes without piped water are typically supplied by water tankers or would get water from pipes outside their buildings at common water connections supplied by the municipality or village authorities or wells.

Although not directly comparable, rates of having a water source "within premises" of one's home were 58 percent in rural areas and 84 percent in urban areas of Gujarat, according to 2012 data, and rates of having an "improved-source latrine" were 41 percent and 94 percent in rural and urban Gujarat, respectively. See Ministry of Statistics and Programme Implementation, 2013.

tainment, the opportunity for home ownership and the opportunity for young families to live on their own outweighed any potential negatives.

Findings from our evaluation suggest that there is demand for more housing projects similar in design and scope to Ashray's—and that additional projects could provide benefits to households. Cheaper land dictated Ashray's placement in an outlying part of Rajkot, but the location did not discourage many from purchasing homes. Residents do not view the sacrifice in amenities associated with living in an outlying area as being particularly problematic, which suggests that the basic demand for home ownership and high-quality living space may trump many other concerns. This expands the possibilities for the promise of future successful construction in similar areas, in India and in other countries. A future rigorous evaluation of such a housing project, which included the collection of baseline data on potential residents prior to construction, as well as ex post data after construction was complete, could glean even greater insights into the effects that high-quality housing could have on young migrant families and their health, well-being, and overall life satisfaction.

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Abbreviations

CEMS	Centre for Emerging Markets Solutions
EWS	Economically Weaker Section
GNI	gross national income
HFC	housing finance corporation
INR	Indian National Rupee
ISB	Indian School of Business
LIG	Low Income Group
NBFC	nonbanking financial company

SECTION 1

Introduction

The rapid migration of many millions of Indians from rural areas to urban centers in search of employment opportunities has resulted in a severe shortage of adequate and affordable urban housing, particularly for the poorer segments of Indian society. In 2007, the urban housing shortfall in India was estimated to be 24.7 million units, 90 percent of which (22 million) was housing for the lowest income quartile (Ministry of Housing and Urban Poverty Alleviation, undated). As a result, many urban migrant workers are forced to live in undesirable slum neighborhoods, often without access to basic amenities, such as water, electricity, and proper sanitation, or to commute long distances to work, which then cuts into their productive work hours. Looking ahead, this problem is expected to only worsen as urbanization trends continue. A recent McKinsey and Company report predicts that India will need to provide affordable homes to an estimated 38 million households by 2030, a feat never before achieved by any country in history (Sankhe et al., 2010). Despite government efforts to address housing challenges through redevelopment, constructing public housing projects, or providing loans for individuals to construct their own homes, the situation has not improved (Monani et al., 2012).

Given the scale of unmet housing demand in India and the limitations of government interventions, there is an opportunity for the private sector to play a role. The recent private-sector initiative by the Centre for Emerging Markets Solutions (CEMS) of the Indian School of Business (ISB) to build houses in peri-urban areas on the outskirts of large metropolises that are home to manufacturing and industrial bases has given fresh hope that there could be a private-sector solution to help address India's housing shortage. The CEMS project, which received valuable support from The Rockefeller Foundation, capitalizes on cheaper land, local workers' demand for affordable housing, and the improved risk profiles of employed workers seeking home loans.

Between August 2010 and January 2012, the Ashray Affordable Housing Pilot Project constructed 218 housing units in Shapar, Gujarat, and serves as an example of this novel private-sector approach (see Figure 1.1). Shapar, about 20 km from the city of Rajkot, Gujarat, is in an industrial zone set up to cater to migrant workers. With the units priced to be affordable to even those in the Economically Weaker Section (EWS), there was substantial demand: Sixty-seven percent of these units were presold on the first day of sales.[1] The cost of construction was also low, ensuring profitability for the developer and therefore the potential for scal-

[1] The Planning Commission of India classifies households in urban areas earning less than 8,300 Indian National Rupees (INR) per month as being in the EWS and households earning INR 8,300 to INR 16,500 per month as being in the Low Income Group (LIG).

Figure 1.1
A View of Front Porches of Ashray Houses and Paved Streets

Photo courtesy of Nicholas Burger, taken November 2013.

ability: INR 725 per square foot. The construction cost of the small unit, excluding land was INR 124,700, or about USD 1,950. The larger unit was INR 197,200 (about USD 3,050).

RAND, in collaboration with ISB, developed this case study of the Ashray project as an initial step to understand the effects that private-sector affordable-housing projects could have on the well-being of low-income households. We conducted a mixed-methods evaluation of the Ashray project. The research team collected qualitative and quantitative observational data in late 2013 and early 2014 to provide insights into the ways in which low-cost housing has affected the lives of its residents and provide initial evidence of the potential impact of this kind of initiative.

A full-fledged impact evaluation would involve collecting baseline data of *potential* buyers of affordable homes, typically done by surveying residents of semi-slum areas in the neighborhood of the housing project. Once the construction was completed, the next step would be to resurvey the potential buyers to obtain end-line data, which would provide information about households who actually bought the houses and moved in and about households who could have purchased homes but did not. By comparing changes in outcomes between both groups of households, we would be able to estimate the causal impact the move had on residents' lives and well-being. Although this kind of evaluation has many desirable properties, it is also more complicated than other evaluations to implement, and it was not feasible for Ashray.

In the case of Ashray, residents had already moved in when we commenced the study, and we were able to conduct only one end-line survey. The advantage of this approach is that is relatively quick and cost-effective. The drawback is that we cannot assess how household characteristics influenced the buying decision, things that could lead certain types of households to select themselves into the group we surveyed. Moreover, because we lack baseline data, we are

relying on households to recall their living conditions prior to moving into Ashray, and that could lead to recall errors. Despite these limitations, our study is an important first step to shed light on the impact of affordable housing (an area in which there is a paucity of research). It also raises additional questions that warrant further study, potentially through a full-fledged evaluation of other housing projects that are currently in the pipeline.

The remaining five sections describe our research methods and results. In Section 2, we describe the Ashray project in greater detail. Section 3 provides details on our mixed-methods approach to assessing the project's effects on residents. In Section 4, we describe the demographic, employment, and financial profiles of residents at Ashray, drawing on the survey we conducted. The next two sections form the core of our before-and-after assessment: Section 5 compares the housing amenities at Ashray with residents' previous living situations, as gathered from our survey, and, in Section 6, we provide a qualitative and quantitative assessment of the project's effect on residents. Section 7 concludes with a discussion and suggestions for future work. We have also included three appendixes: Appendix A contains an illustration of the floor plans for Ashray housing; Appendix B contains the moderator script for focus-group discussion; and Appendix C contains the items on the questionnaire given to Ashray residents.

SECTION 2

The Ashray Housing Project

The Ashray housing project is about 20 km (25 minutes by car) outside the city of Rajkot, a large, second-tier city in Gujarat. The housing project (referred to by the residents as a society) is at the end of a 1- to 2-km road (primarily gravel) off the main two-lane highway.[1] At the main road turnoff is a small village with basic shops (mostly from the service sector). Lining the main road for many kilometers near Ashray is a light industrial area, whose facilities make a range of products, including plastics and other materials, primarily for export. There is a series of clustered slum-style dwellings along the main road leading into Ashray. The society is behind a gate at the end of the road, although the housing complex is not surrounded by a fence.

Ashray comprises 218 housing units, arranged on a small grid of streets paved with concrete pavers (which reduce flooding and provide a solid surface on which to move people and vehicles) (see Figure 2.1). The society's streets are wide, ranging from about 4 to 12 meters. Each house is set back from the street by a 1-m-long front porch that has walls separating one house from the next. The houses are adjoining and currently single-storied, though they are scalable to have second stories.

There are two sizes of houses: a one-room-with-kitchen (one-RK) model and a two-bedroom-with-hall-and-kitchen (two-BHK) model. (Appendix A shows the floor plans.) Each house also has a rear porch, which either abuts another row of porches or houses or looks out over the open fields that surround Ashray on all sides. A two-BHK house has separate toilet and shower rooms, while one-RK houses have combined washrooms. The washroom in a one-RK house opens onto the backyard; in both types of houses, these facilities open onto (that is, have doors from) the bedroom.

Near the front of the society is a building that includes eight units designed for commercial use (for example, retail shops).[2] These are currently unoccupied, although there are plans for establishments to move in, pending approval of permits. In at least one case, an individual purchased one of the homes and converted it to a small shop, selling primarily nonperishable foods, an allowable use (see Figure 2.2). Otherwise, residents have to go to the village near the main road or purchase goods from mobile vendors that sell goods inside the society (for example, vegetable vendors). The society has a small playground (Figure 2.3).

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[1] The origin of the term *housing society* lies in the cooperative governance structure under which these units are required to be managed by law; it is an entity registered under the Indian Societies Registration Act of 1860.

In constructing the housing project, the developer built a small bridge and a section of paved road, which lead to the Ashray development but are on public land.

[2] As of November 2013, Ashray had at least one small, formal dry-good store (located in one of the dwelling units) and approximately eight commercial spaces, which were still vacant.

Figure 2.1
Another View of Front Porches of Ashray Houses and Customized Painting Done by Residents

Photo courtesy of Nicholas Burger, taken 2009.

Figure 2.2
An Ashray Home Converted to a Small Shop

Photo courtesy of Nicholas Burger, taken November 2013.

Owners are allowed to renovate or reconfigure their units, including adding a story. In some cases, owners have added access to the roof, either for sleeping or storage. Although building a second story is permitted, no one has done this yet. Repainting the interior or exterior is common, although not all residents choose to do so. The units come completely unfurnished (without basic shelving), so many residents have installed shelves, especially in the kitchen. In two cases, we observed that residents had made major renovations, including moving their toi-

Figure 2.3
Ashray's Playground

Photo courtesy of Nicholas Burger, taken November 2013.

lets outside (to the back porch, which is technically not a permitted use). Other residents have enclosed their rear porches to provide more living space.

Ashray has electricity available at this time (the few units not connected to the electricity grid are almost all unoccupied), and piped gas is planned but not yet available. Water is currently supplied through a groundwater well and storage tank, and water is pumped at certain intervals each day to storage tanks on the roof of each house. There is one septic tank between two houses, and the water from each septic tank goes into a soak well, again one for every two homes.

The other distinctive feature about the Ashray project is the effort that went into supporting households' access to finance. The developers reached out to finance companies to ensure that viable financing options were available to buyers. They convinced banks and specialized housing companies to provide loans that are smaller than the standard housing loans and are therefore less attractive for financial institutions.[3] The developers also worked with households throughout the purchase process to secure financing and complete the necessary forms.[4] They also reached out to nearby firms to familiarize them with the development and promote outreach to potential residents. To the best of our knowledge, this level of support is not common for housing developments in India.

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[3] The primary lenders to which the developers reached out were Gruh Housing Finance and Dewan Housing Finance Corporation (housing finance companies), Micro Housing Finance Corporation (nonbanking finance corporation), and HDFC (India's leading housing finance company).

[4] Each salaried owner had to present a pay slip, and each self-employed homeowner had to present a proof of income-tax filings for three consecutive years. With a repayment tenure of 15 years, homeowners were availed home loans of up to 80 percent of the house value. The housing unit purchased is used as collateral against the housing loan.

SECTION 3

A Mixed-Methods Evaluation Methodology

Our evaluation draws on observational data and was conducted ex post out of necessity and by design. That is, the Ashray housing complex was fully constructed by early 2012, and residents were already living there when our evaluation began in late 2013. Consequently, we have a nonrandom sample of people who have already chosen to live in Ashray, and extrapolating our findings to be representative of all low-income populations (some of whom would not make a similar choice) could lead to biased results. However, we believe that the depth of our collected data, both qualitative and quantitative, is valuable insofar as the data can paint a first and detailed portrait of this large-scale pilot housing project. Our findings can inform not only future housing projects but also any future planned rigorous evaluations of their impacts.

We used mixed-methods research techniques: We collected qualitative data through focus-group discussions of current Ashray residents, and we combine these data with a quantitative survey of the occupied homes. Our qualitative and quantitative data-collection instruments aimed at collecting information on residents' living situations, housing amenities, work commute times, social networks, and financial situations, both prior to moving to Ashray and after becoming Ashray residents. Our data-collection tools included some retrospective questions to draw out comparisons of life before and while living at Ashray. The ex post nature of our data, particularly from the retrospective questions, is necessarily subject to limitations associated with imperfect recall. However, we tried to ask only retrospective questions about topics that we believed would be easy for residents to recall, such as average commute times and presence or absence of a toilet.[1]

Focus-Group Data Collection

In November 2013, we conducted three focus-group discussions with a total of 18 Ashray residents to understand residents' impressions of their homes and experiences with their new housing. One focus group had six male attendees, one had six female residents, and the third focus group had three married couples participate together.

The staff managing the housing complex recruited participants in the focus groups, loosely aiming to ensure a mix of ages, family and house sizes, and previous living arrangements. Residents received modest gifts of approximately INR 100 INR (USD 1 to USD 2) in

[1] Berney and Blane (1997) offer encouraging evidence showing that recall of toilet facilities, water facilities, and number of children can be highly accurate over a 50-year recall period among a small sample from the United Kingdom, and De Mel, McKenzie, and Woodruff (2010) found that Sri Lankan business owners and water workers could easily recall the type of flooring and ownership of various household assets from when they were age 12.

value for participating, and the research team provided refreshments during the discussion. Participants were identified by first name only (although, in practice, many neighbors were at least somewhat familiar with each other) and provided spoken consent. To create a comfortable and secure environment for everyone to share their thoughts, we asked participants not to share with others what people said in the focus-group discussions. The RAND Institutional Review Board approved the focus-group protocol.

Each focus-group discussion lasted approximately one hour and was moderated by two RAND researchers, with the Indian research partners providing translation in real time. We followed a semistructured 16-item discussion guide that was developed to address the following broad topics:

- reasons for relocating to Ashray and any barriers respondents overcame to make the decision to relocate
- experiences and outcomes of moving to Ashray, both for themselves and for their family members
- more-general impressions of the neighborhood (versus of their own housing units)
- general quality-of-life measures.

The moderators asked questions in an open-ended manner, providing more-specific prompts when necessary. Both researchers took independent notes during the discussions, which were then consolidated. To promote confidentiality and encourage a free exchange of feedback, the discussions were not audio- or video-recorded.

To identify key themes and concepts, two other RAND researchers independently analyzed the content of the notes from the three focus-group discussions. Because of the small number of focus groups, there were few discrepancies between these two researchers in the overall themes that emerged.

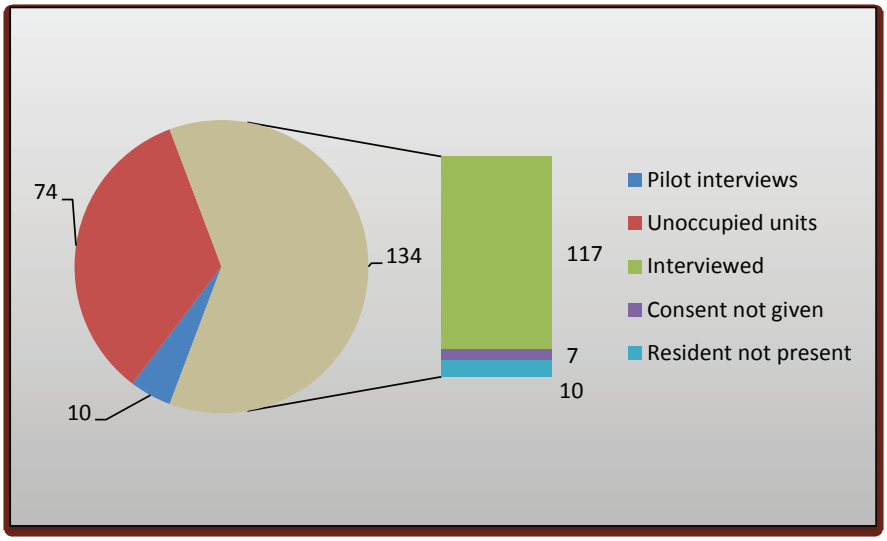
Survey Data Collection

We also implemented a household survey of the Ashray residents between December 2013 and January 2014 to collect more-systematic data on demographics, household preferences, and experiences moving to and living in Ashray. This was not a random-sample survey; we aimed to survey the entire population of resident households. The household survey was administered to the heads of household of all the occupied units from the total 218 housing units in Ashray. The respondents included owners who are living in their homes and renters who are living in homes owned by other parties. Because our survey was administered to household heads, the vast majority (94 percent) of respondents were male.

Figure 3.1 breaks down the distribution of the 218 housing units in Ashray according to their survey status. Although all units have been sold, 74 of them remained unoccupied, leaving a resident population of 144 households.[2] Ten household heads were interviewed during the

[2] Some of the unoccupied houses are owned by companies that have not yet allotted them to their employees. Homes owned by investors could be empty for the following reasons: Rental yields in India are abysmally low (the current yield is around 4 percent, and, for such a low return, the investors may not want to go through the trouble of renting because rental laws are still pretty restrictive in India); some of those who have purchased the houses live in company accommodations, where they neither pay rent nor pay for water, electricity, or maintenance. They may move in later, or when they change jobs.

Figure 3.1
Breakdown of Housing Units According to Interview Status



pilot of the survey instrument, and we do not include those records in the analysis. After the pilot, we contacted the remaining 134 occupied households. For ten households, the residents were not present at the time we attempted to reach them; in seven cases, they did not agree to the interview. Thus, our final sample size for the resident survey is 117 household heads.

The research team jointly developed the survey instrument, which we pilot-tested in November 2013. Research-team members in India oversaw implementation of the survey, and we worked with three students from Christ College Rajkot to complete the survey enumeration. On average, the survey took 30 minutes to complete.

The resident survey covered five core topics:

- household demographic characteristics
- income and employment
- current housing in Ashray
- housing prior to living in Ashray
- impacts on the household of living in Ashray.

We report results from this survey in Sections 4, 5, and 6 (with the latter two sections focusing on assessing the impact of moving to Ashray).

SECTION 4

A Profile of Ashray Residents

In this section, we begin by summarizing the profile of Ashray residents based on our survey. When possible, we draw comparisons to the populations of the state of Gujarat, as well as to all of India based on the National Survey Sample (NSS) data in order to put our sample's characteristics into context. In the next two sections, by presenting comparative results between previous housing experiences and current experiences at Ashray according to our survey and focus-group discussions, we assess the impacts that moving to Ashray can have on residents.

Resident Demographic and Income Profile

Table 4.1 contains some basic sociodemographic information on the 117 Ashray resident household heads who were successfully contacted and consented to participate in the quantitative survey. The average household at Ashray is relatively young, with household heads being an average of about 36 years old. The average household size is just under four persons, with 94 percent of households headed by males and 91 percent of heads being married or cohabitating. For comparison, men head roughly 93 percent of Gujarat's urban households, among which the average household size is about 3.9 persons (Ministry of Statistics and Programme Implementation, 2014, p. 46). About 73 percent of all of India's population over age 15 is currently married. In terms of education, about 41 percent of Ashray household heads have a primary education or less, and only 20 percent of household heads have educational levels beyond secondary. This compares to all-India rates of roughly 43 percent of males age 15 and above having a primary education or less, while 22 percent of males age 15 and above have education levels of "higher secondary" or above.[1]

About 79 percent of surveyed Ashray households earn between INR 7,500 and INR 20,000 per month (roughly USD 125 to USD 330), and roughly two-thirds of surveyed residents were owners (as opposed to renters) of their homes.[2] Similar comparisons to Gujarat or all-India using NSS data are not possible because of significant differences in the questionnaires used to collect the data. However, the median resident household has a reported annual per capita income that falls well below India's gross national income (GNI) per capita, which was USD 1,550 in 2012 (World Bank, undated). Moreover, although the median Ashray house-

[1] Based on authors' calculations using NSS data. See Ministry of Statistics and Programme Implementation, 2014, Tables 14–15.

[2] The decision to buy is usually made only after the family has moved in. Many residents are migrants from within and outside the state; therefore, they tend to make the decision to buy after first making a long-term commitment to the area.

Table 4.1
Basic Sociodemographic Information on Survey Respondents

Demographic	Mean
Male household head (%)	94.0
Cohabitating or married (%)	91.0
Age of household head (years)	36.0
Household size	3.8
Number of children under 5 years old	0.3
Number of children 5 years old or older	1.1
Count of asset ownership (0–8)[a]	5.4
Educational attainment of household head (%)	
Less than primary education	16.0
Primary education	25.0
Secondary education, partial or complete	38.0
Technical or vocational education, partial or complete	10.0
University education, partial or complete	10.0
Monthly household income (%)	
Less than INR 7,500	10.0
INR 7,500 to 10,000	26.0
INR 10,000 to 15,000	37.0
INR 15,000 to 20,000	16.0
INR 20,000 to 30,000	8.0
INR 30,000 to 40,000	3.0
INR 40,000 or above	1.0
Home-ownership status at Ashray (%)	
Owner	64.0
Renter	34.0
Other	2.0
Number of bedrooms	1.5

NOTE: Sample size is 117. Percentages might not sum to 100 because of rounding.

[a] Asset ownership counts the number of assets from zero up to eight from a list that includes radio, television, computer, electric fan, car, motorcycle, refrigerator, mobile phone, and bicycle.

hold is in India's LIG, a significant number of residents belong to India's EWS, which is the lowest income classification in India.

Apartment homes were approximately evenly split between the one-RK and two-BHK models. Finally, the average household owned roughly five of the eight household assets listed

in our survey (and noted in Table 4.1). Although all but one surveyed resident reported owning a mobile phone, and 89 percent owned a television, just 5 percent reported owning a computer, and 7 percent a car (not shown).

Resident Employment Profile

Table 4.2 contains information on the employment characteristics of surveyed household heads.

About 62 percent of heads work for private companies, while another 27 percent are self-employed; just 4 percent work for the government, and 6 percent are not working. This can be roughly compared with an unemployment rate for urban India of 5.5 percent based on "current daily status" and rates of self-employment and regular salaried employment of 38 percent and 51 percent, respectively, among Gujarat's urban population.[3] Surveyed household heads at

Table 4.2
Employment Information on Household Heads

Employment	Mean
Employment status of household head (%)	
Working for a private company	62.0
Working for the government	4.0
Self-employed or working for family business	27.0
Not working	6.0
Economic sector of household head (%)	
Manufacturing	48.0
Retail or sales	33.0
Other	19.0
Occupation of household head (%)	
Technician	16.0
Production or transportation worker	27.0
Sales and services	13.0
Clerical	8.0
Professional or manager	9.0
Other	26.0
Job tenure (years)	5.4
Usual weekly hours of work at main job	60.7

NOTE: Number of observations is 117. Percentages might not sum to 100 because of rounding.

[3] Regarding current daily status for urban India, see Ministry of Statistics and Programme Implementation, 2014, p. 182. Regarding employment for Gujarat specifically, see Ministry of Statistics and Programme Implementation, 2014, p. 48.

Ashray reported working an average of more than 60 hours per week. Roughly half (48 percent) of household heads reported working in the manufacturing industry, which makes sense, given that Ashray is near an industrial area. Another one-third of household heads reported working primarily in sales or retail. Interestingly, among those employed, the average person has been in his or her current job for more than five years, suggesting a relatively high degree of job stability. This was somewhat expected, given that the financial business model for the Ashray project consisted of selling the units upfront and receiving cash from buyers at regular stages of the development of the project—in other words, selling the units to creditworthy customers. Therefore, all potential buyers were subject to an elaborate screening process to ensure that there was a constant income stream in order to avoid any sort of cash-flow glitch in the development of the project.

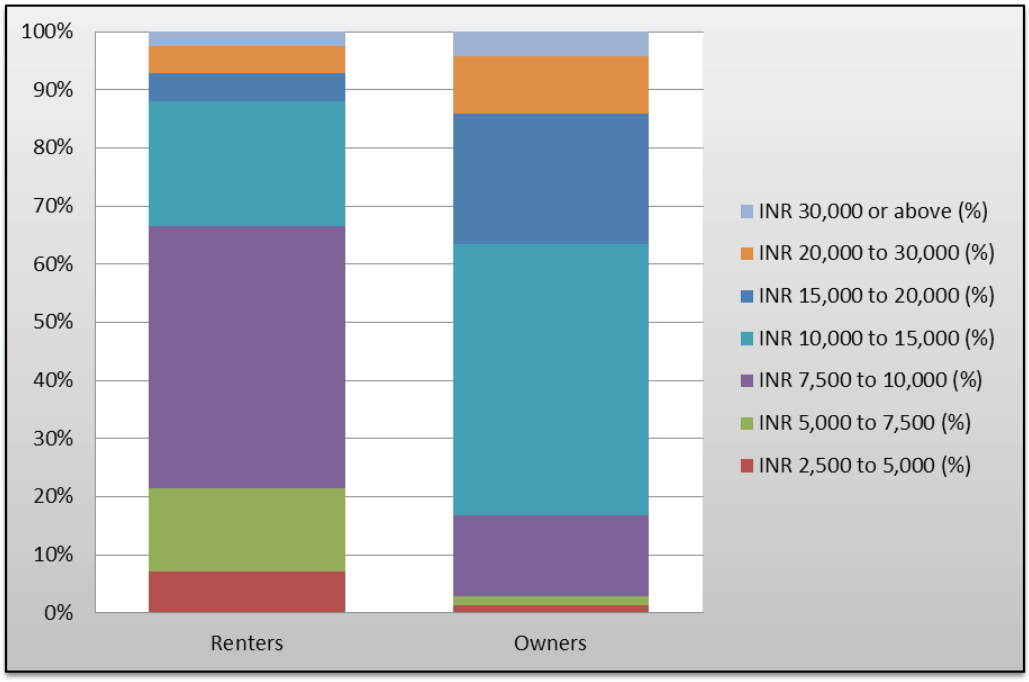
Financing Information for Ashray Residents

As mentioned earlier, a primary motivating factor for the construction of the Ashray homes was to increase the supply of affordable housing for lower-income residents. The business model included innovative financing support mechanisms to expand access to home ownership to those who otherwise may not qualify for private-sector mortgage loans. Households had access to assistance with the loan application process from both the management at Ashray and nearby employers, which, in some cases, helped to process paperwork for their employees during the loan application process. The mortgages had durations of between 15 and 20 years at interest rates between 10 and 11 percent. The mortgages were between 70 and 80 percent of the home value. The owners had to pay at least 20 percent as down payment.

However, there is also a relatively high rate of renters among the residents at Ashray (34 percent; see Table 4.1), indicating that some bought these houses as investments and rented them out. When we compare those households who rent and those who own, we see that renting households have lower incomes, on average (Figure 4.1). A similar portrait emerges when educational levels and asset ownership are compared across owning and renting households. Interestingly (in data not shown for the sake of brevity), household heads who own their homes are more likely to be self-employed or working for family businesses (35 percent) than renters are (14 percent) and are slightly older (38 versus 33 years, on average).

As a result of these socioeconomic differences in owning versus renting households, we examine their financial portraits separately in Table 4.3. Among the 75 surveyed households who reported owning their homes, Ashray is their only owned property for the vast majority (89 percent), and 80 percent are the first owners of the units they occupy at Ashray. The average Ashray home was sold for INR 439,000 in 2010. Prices of two-BHK units were higher, on average, at INR 519,800 INR, than prices of one-RK units, at INR 359,600. To pay for their homes, 68 percent of owners took out some form of home financing, with an average total loan size of roughly INR 320,000 (or roughly 73 percent of the total price of the home, on average, suggesting that large down payments also helped many owner-residents to secure mortgage loans). The most common sources for home loans were housing finance corporations (HFCs) and private banks. Additionally, although the majority of owner households used personal savings to finance their down payments (86 percent), 43 percent also borrowed from family to enable their down payments. Average monthly mortgage payments are INR 3,300 for a one-RK unit and INR 4,300 for a two-BHK unit.

Figure 4.1
Household Income Profile of Ashray Owners Versus Renters



Renters of Ashray homes have significantly lower monthly payments, on average, than owner-residents have. They pay just under INR 1,300 per month (INR 1,063 per month for a one-RK unit and INR 1,412 per month for a two-BHK unit). Nonetheless, the allure of home-ownership is clear: Seventy-two percent of surveyed Ashray renters said that they would like to buy their homes. Although the monthly mortgage payments are higher, residents view their homes as investments. We discuss this in greater detail in Section 6, when we present findings from focus-group discussions as well.

Table 4.3
Financing Information for Ashray Owners and Renters

Financing	Mean
For owners (n = 75)	
The Ashray home is the only property they own (%)	89.0
First owner of unit (%)	80.0
Amount paid (thousands of INR)	439.0
One-RK unit	359.6
Two-BHK unit	519.8
Took loans (%)	68.0
Among those who took loans, loan source (n = 50) (%)	
From family	4.0
From employer	2.0
From formal bank	42.0
From money lender	2.0
From HFC	54.0
Among those who took loans, sources of down payment funding (n = 50) (%)	
Personal funds	86.0
Family	43.0
Employer	10.0
Formal banks	0.0
Money lender	4.0
HFC	2.0
Among those who took loans, average total loan amount (n = 50) (thousands of INR)	319.7
One-RK unit (n = 29)	273.9
Two-BHK unit (n = 21)	382.9
Monthly loan repayment (thousands of INR)	3.7
One-RK unit (n = 29)	3.3
Two-BHK unit (n = 21)	4.3
Among borrowers, those who said that the possibility of borrowing from banks was very important for their buying decisions (%)	96.0
For renters (n = 39)	
Monthly rental payment (thousands of INR)	1.3
Would like to buy a home (%)	72.0

SECTION 5

Housing Amenities at Ashray and in Previous Homes

By first comparing the physical amenities in their current premises and those of their previous dwellings, we begin to assess the effect that moving into Ashray can have on residents. We again draw comparisons with findings from NSS data, where possible, to put our sample's findings into context.

Our survey asked residents about the amenities available and other characteristics of their homes and living arrangements at Ashray, as well as retrospective information on similar outcomes in the homes they left in order to move into Ashray. Table 5.1 presents information that compares the current living situations at Ashray and those in residents' previous homes. As expected, rates of home ownership increased significantly for Ashray residents: Just 7 percent of surveyed residents reported owning their previous homes, while 64 percent own their homes at Ashray, an increase of more than 800 percent. The high rates of "other" ownership status (35 percent) from their previous living arrangements consisted mainly of households living with relatives, such as parents or grandparents. We see a clear decline in this type of housing

Table 5.1
Housing Amenities and Characteristics in Previous Homes Versus at Ashray

Characteristic	Before	After	Change
Ownership status (%)			
Owner	6.8	64.1	57.3
Renter	58.1	34.2	–23.9
Other	35.0	1.7	–33.3
Monthly housing expenses (INR)	1,319.2	2,638.3	1,319.1
Among owners	1,446.8	3,712.1	2,265.3
Among renters	1,160.3	1,285.7	125.4
Family structure			
Family size	5.1	3.8	–1.4
Number of core members (spouses and children)	2.9	2.8	–0.1
Number of other members	1.6	0.4	–1.2
House size and crowding			
Number of bedrooms	1.7	1.5	–0.2
Number of family members per bedroom	3.1	2.8	–0.3

Table 5.1—Continued

Characteristic	Before	After	Change
Housing amenities (%)			
Electricity	99.1	100.0	0.9
Piped water	81.2	100.0	18.8
Indoor plumbing or toilet	50.4	100.0	49.6
Concrete or other permanent roof	66.1	100.0	33.9
Concrete or other permanent walls	95.8	100.0	4.2
Concrete or other permanent floors	96.6	100.0	3.4
Work commuting distance			
In km	7.0	6.5	–0.5
In minutes	21.0	18.8	–2.2
Work commuting modes (%)			
Own car	0.9	0.9	0.0
Motorbike	31.0	53.0	22.0
Bike	7.8	6.8	–1.0
Public transport	6.0	0.9	–5.1
Company transport	12.1	7.7	–4.4
Walking	17.2	6.0	–11.2
Rickshaw (including shared)	5.2	10.3	5.1
Other	19.8	14.5	–5.3
Average commuting by mode (km)			
Own car	1.0	2.0	1.0
Motorbike	7.7	6.3	–1.3
Bike	5.1	4.2	–0.9
Public transport	15.7	10.0	–5.7
Company transport	16.4	8.1	–8.3
Walking	1.6	1.7	0.1
Rickshaw (including shared)	11.7	13.3	1.6
Other	0.2	3.5	3.3
Average commuting by mode (minutes)			
Own car	5.0	15.0	10.0
Motorbike	18.0	17.3	–0.7
Bike	20.0	19.0	–1.0
Public transport	40.0	25.0	–15.0

Table 5.1—Continued

Characteristic	Before	After	Change
Company transport	49.6	27.8	–21.9
Walking	11.3	12.9	1.6
Rickshaw (including shared)	28.3	31.3	2.9
Other	1.5	8.7	7.2

NOTE: Because of rounding, differences shown in the "Change" column might be slightly different from expected.

arrangement at Ashray; accordingly, we see that average household sizes decreased with a move to Ashray, from 5.1 to 3.8 members. This decrease in average household family size seems to have resulted in less crowding overall; the number of family members per bedroom decreased from 3.1 to 2.8 persons, on average, with a move to Ashray.

However, moving to Ashray has meant incurring higher monthly housing expenses, even for those who choose to rent. Monthly housing expenses increased from an average of INR 1,160 per month in the previous home to INR 1,286 per month at Ashray for current renters (a 10-percent increase).[1] For current owners, housing expenses increased from INR 1,447 per month in their previous home to INR 3,712 per month (a whopping 156-percent increase). A part of this increase is clearly due to the higher rates of home ownership at Ashray and the associated task of paying off an interest-bearing mortgage loan in a (typically) 15-year time frame.

Yet the overall amenities at Ashray are also superior, on average. All homes at Ashray have electricity, piped water, and an indoor (private) toilet, while just 50 percent of residents' previous homes had indoor plumbing, 81 percent had piped water, and 99 percent had electricity. Furthermore, 47 percent of surveyed residents reported that they shared toilets in their previous homes (83 percent of those who did not have indoor plumbing in their previous homes shared toilets, versus 12 percent of those with indoor plumbing in their previous homes; data not shown). Although not directly comparable, rates of having a water source "within premises" of one's home were 58 percent in rural areas and 84 percent in urban areas of Gujarat, according to 2012 data, and rates of having access to an improved-source latrine were 41 percent and 94 percent in rural and urban Gujarat, respectively (see Ministry of Statistics and Programme Implementation, 2013). Thus, a move to Ashray provided an improvement over the amenities at the previous homes of our surveyed residents, as well as an improvement relative to the averages for Gujarat as a whole. Similarly, although most residents reported permanent floor and wall materials in their previous homes, just 66 percent had a permanent (concrete) roof.[2] All homes at Ashray have concrete floors, walls, and roofs, which are generally considered the highest-quality material for such construction. Fly-ash blocks were used as an ecofriendly alternative to clay bricks. Putting these findings together, one cannot draw the conclusion

[1] Strictly speaking, those who were renters before and who are renters now pay a little less at Ashray. However, many who are renters now were paying zero before (living with parents or grandparents), so, overall for current renters, there is an increase in average housing expenses.

[2] Fifty-one percent of previous homes had concrete floors, while 46 percent had tile floors; 44 percent of walls were concrete in previous homes, while 48 percent were brick and 3 percent stone. We group all of these materials as "concrete or permanent" in Table 5.1.

that the increase in housing expenses resulting from a move to Ashray is a negative outcome. Although they are paying more, residents are also getting more. For instance, because of the ground-only-structure feature of the project (i.e., a horizontal development rather than vertical development), the buyer owns the housing unit and the land on which the unit is built. And indeed, residents' ability to afford more-expensive but higher-quality amenities might have caused them to move to Ashray (and, in many cases, buy) in the first place. Only a full-fledged prospective evaluation could help uncover such deeper insights.

One motivating factor for Ashray's construction at its current location was to be closer to manufacturing- and industrial-sector jobs for lower-income migrant workers who might otherwise be forced to commute long distances to work. However, we find only modest decreases in average commute times and distances among our sample of respondents. Commuters gained just 0.5 km in commuting distance, on average, from 7 to 6.5 km, a savings of just under 2 minutes (from 21 to 19 minutes, on average).

These small differences might appear surprising when we look at the significant changes in modes of transport for commuting to work. Rates of motorbike transport rose from 31 to 53 percent, while rates of walking and taking company or public transport to work decreased. Although the average commuting time and distance within most major categories of transport did not change significantly on average (for example, the average commute time for walkers is around 12 minutes to walk an average distance of about 1.7 km before and after moving to Ashray), the change in the composition of travel methods and the smaller number of walkers overall (one of the fastest commuting methods) means that the overall averages did not change significantly.

SECTION 6

Motivations, Benefits, and Costs of Moving to Ashray: Conclusions from Qualitative and Quantitative Analyses

The primary focus of our evaluation of the Ashray housing project was to understand what motivates households to move to Ashray—and purchase a home—and what benefits (or disadvantages) they reported that they derive from their housing choice. In this section, we address these issues in greater detail by drawing on data from our quantitative survey and from our qualitative focus groups. Combining data sources allows us to report richer texture and themes that emerge from our findings.

Motivations for Moving to Ashray

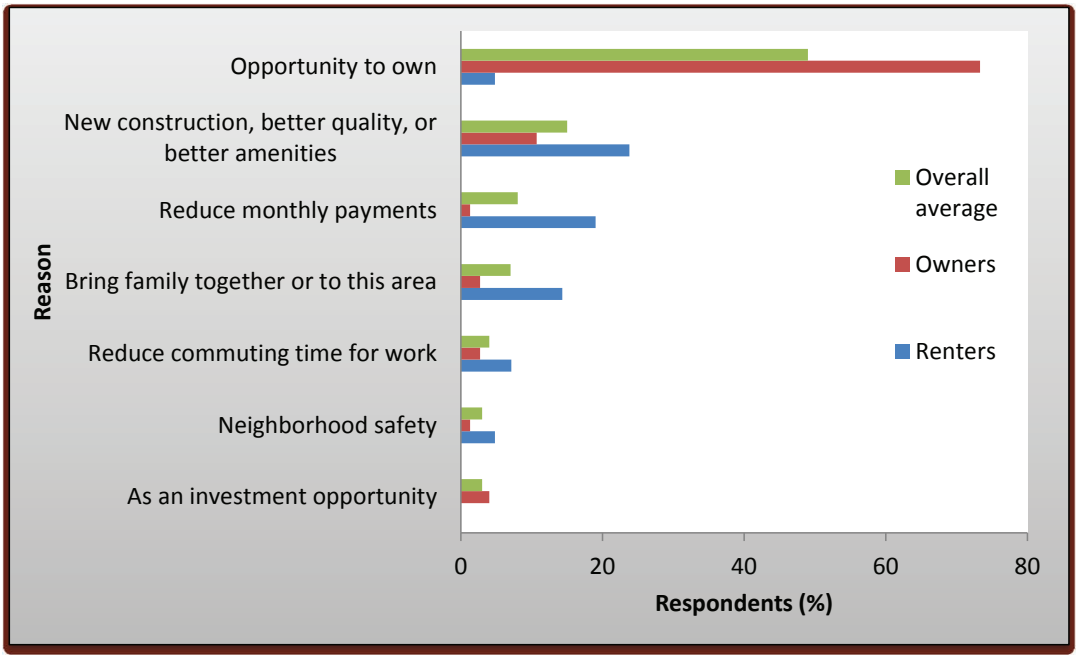
Understanding why households chose to move to Ashray and (in most cases) purchase homes provides context for the benefits that residents reported receiving from living in Ashray. Table 6.1 provides a few illustrative quotes from focus-group participant households about why they chose to purchase homes in Ashray. The stated reasons for moving to Ashray differed between those who own their homes and those who rent (see Figure 6.1). Better housing quality and better amenities were the most important motivations to relocate into Ashray among renters (24 percent) but a distant second among owners (11 percent), who reported the opportunity to own as the single most important factor explaining their decision to move to Ashray (73 percent).[1] The opportunity to own a home was a central theme that arose both from focus-group discussions and the survey of Ashray residents as a primary motivator to move to Ashray.

Table 6.1
Themes and Illustrative Quotes from Three Focus Groups Demonstrating Key Motivators for Moving to Ashray

Perceived Motivating Factor	Illustrative Quote
Price of housing	"If we could get something in this budget, there [would be] nothing else to think about."
Opportunity to buy (versus rent)	"Very happy I've bought it because the price has gone up."
Ease of securing financing	"There were other sites where the documents were not clear and the bank refused the loan," but not at Ashray.
Natural environment	"It's too polluted and crowded in the city."
Reduced commute times (for those working in or near Ashray)	I save "two hours per day" versus living in Rajkot.

[1] Enumerators were trained not to prompt respondents with options for this survey question.

Figure 6.1
Primary Reason for Moving into Ashray Housing, According to Survey Results (%)



Although 34 percent of surveyed Ashray residents were renting their homes, a clear majority of renters (72 percent) also reported that they would like to purchase their homes. Residents viewed the opportunity to buy as not only unique but also as a good investment.

Financing is a common barrier to home ownership in India, and Ashray owners discussed the role that financing played in their decisions to move to Ashray. Sixty-eight percent of owners took loans to help finance their purchase, and the availability of financing was a very important factor in their purchase decisions (see Table 4.3 in Section 4). Focus-group participants (all of whom were homeowners) agreed that the ease of obtaining a loan and the relatively low price for the Ashray homes were key driving variables for their moves to Ashray. At least one focus-group participant remarked on the general challenge of obtaining a home loan and noted that his employer had helped with the application process at Ashray. Overall, focus-group homeowners noted that getting a loan can be a barrier to homeownership, but, at least for this group (all owners who necessarily navigated the process successfully at Ashray, with its various forms of assistance), the process was not prohibitive, especially given the support they received. In line with the survey findings is the fact that the vast majority of focus-group participants took loans in order to buy their houses.

After price and the opportunity for home ownership, the next most commonly cited reason among focus-group participants for choosing to move to Ashray was the "natural environment" (which was not something about which our survey asked directly). Focus-group participants stated that they enjoy the cleaner air and less urban crowding than in Rajkot or other urban centers. For example, one respondent stated, "It's too polluted and crowded in the city." When asked whether they would ever think of selling their houses and moving because the prices of their Ashray homes had risen since their purchases, another respondent stated that elsewhere (especially the city of Rajkot) is "too loud, too noisy; we don't want to go anywhere."

Moreover, respondents noted that housing prices in places like Rajkot would have also gone up, making the move difficult.

Another factor cited in the focus-group discussions as encouraging families to relocate to Ashray was the reduced commute times for those working in or nearby Ashray, but the overall importance of this factor was low. For instance, although a few of the interviewed women worked in the nearby fields and factories and, for them, their commute times were reduced following their moves to Ashray, there were no real complaints among those who now had reverse commutes back to Rajkot. Even for those focus-group participants still working in Rajkot, whose commute times lengthened from where they were living before, these families decided to move to Ashray in order to be able to purchase houses in a safe neighborhood at a reasonable price, and other factors were of secondary importance. This finding from focus groups aligns well with our survey findings that average commute times did not decrease substantially (see Table 5.1 in Section 5); similarly, Figure 6.1 shows that just 4 percent of households named "reducing commuting time for work" as their main motivations for relocating.

Although our focus groups did not include renters, from our surveyed renters, we gather that reducing their monthly payments was also cited as a primary motivator for relocating, as was "bringing family together/to this area" (see Figure 6.1). Although we do not see an overall decrease in average rental amounts between previous and current living accommodations for renters (Table 5.1 in Section 5), about 43 percent of Ashray renters were previously living with their parents or other relatives. A move to Ashray potentially meant getting a better place with more space for one's nuclear family at a similar price.

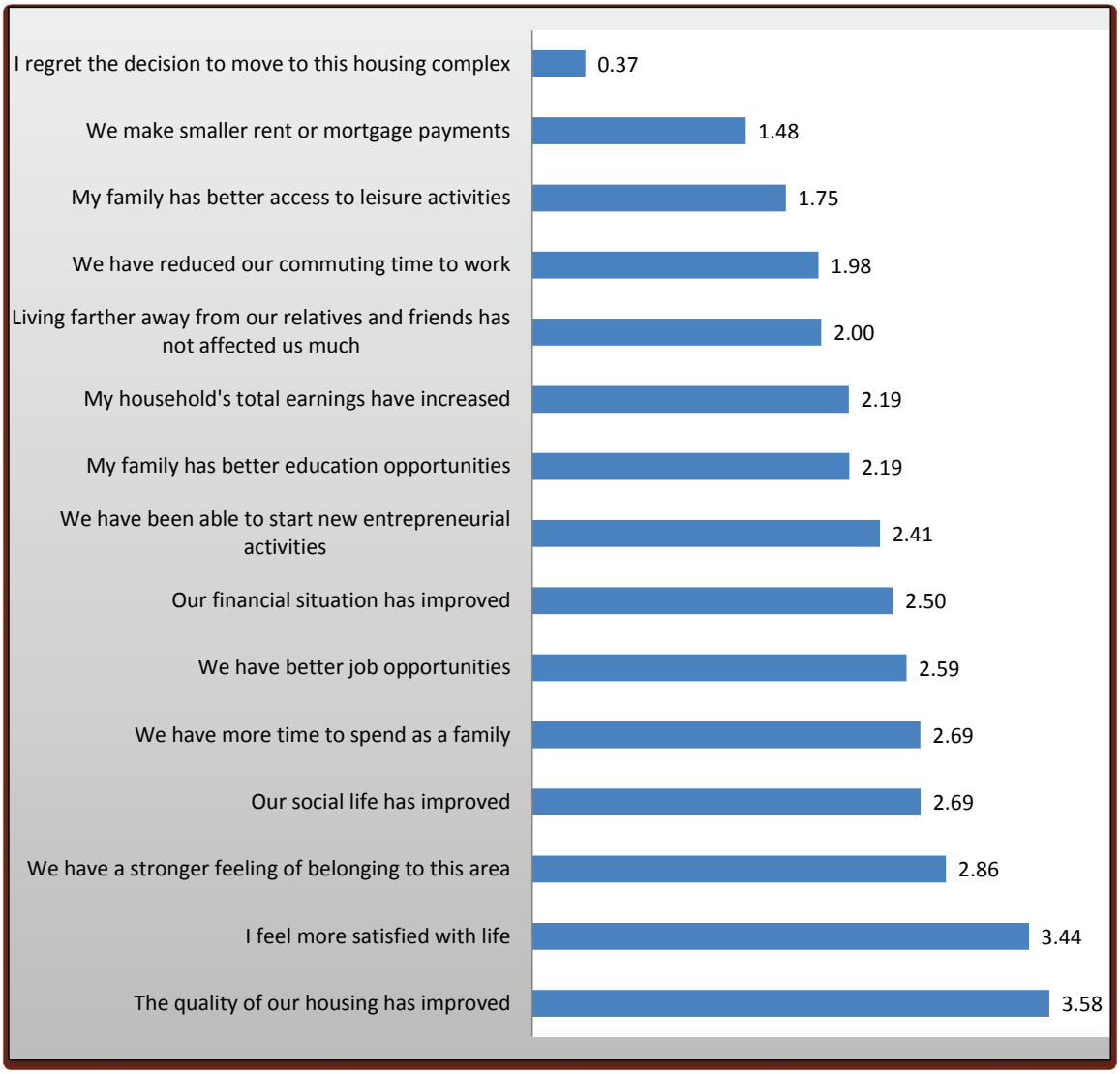
Moving to Ashray: Experiences and Outcomes

We asked focus-group participants about their experiences since moving to Ashray, both for themselves and their families, and respondents reported broadly positive views. This finding parallels those from the survey. About 90 percent of survey respondents either agreed or strongly agreed with the statement that, because the respondent's family (or household) moved to Ashray, "I feel more satisfied with life," and about 97 percent of respondents either disagreed or strongly disagreed with the statement, "I regret the decision to move to this housing complex."

Figure 6.2 captures the impacts that resident households in our survey reported that they experienced after moving to Ashray. In this figure, we summarize responses to positive and negative potential impacts from moving to Ashray by the degree of agreement among respondents using a five-point Likert scale. We present the reported impacts in ranked order, starting from the statements with which respondents agreed least often and ending with those with which they agreed most strongly, on average. Thus, the potential impact "I regret the decision to move to this housing complex" scored lowest, while "the quality of our housing has improved" scored highest in average degree of agreement among residents. For this figure, "strongly disagree" responses score zero, while "disagree" scores one, "neither agree nor disagree" scores two, "agree" scores three points, and "strongly agree" scores four points. The figure shows the overall average scores for each potential impact about which survey respondents were asked and shows the overall positive reviews from moving to Ashray.

Informed by our survey data and findings from the focus-group discussions, we have grouped responses about experiences and challenges with moving to Ashray into different

Figure 6.2
Self-Evaluation of How Moving to Ashray Housing Has Affected Resident Households (Average Scores; 0 = Strongly Disagree, 4 = Strongly Agree)



categories that broadly capture different quality-of-life elements, ordered from more to less positive.

Environment, Social Issues, and Safety

The aspects that resident households who participated in the focus-group discussions most commonly cited as leading to their positive experiences at Ashray included the lack of pollution and relative peacefulness, including lack of crowding and noise, compared with their previous homes. One focus-group respondent noted that most units are owner-occupied and credited this for a heightened sense of neighborliness, explaining, "because we don't want our society [neighborhood] to get dirty, we take our garbage really far away." Another respondent attributed the relative peace and cleanliness as reasons that their son was sick less often since moving

to Ashray. The focus group of male participants cited the low cost of living as another key advantage (i.e., low cost of living in terms of not eating out at restaurants and going to movies).

Another finding that emerged from the focus-group discussions was that a drawback of moving to Ashray was leaving family and friends behind in Rajkot. However, most focus-group respondents felt that the positives of moving outweighed this negative. The survey results also indicate that leaving relatives behind was not viewed as an insurmountable negative: Just 35 percent of survey respondents disagreed or strongly disagreed with the statement "Living farther away from our relatives and friends has not affected us much." Figure 6.2 corroborates that this ranked relatively low on the list of potential impacts from moving to Ashray.

Many focus-group respondents also expressed that they know their neighbors better living in Ashray than they did when they lived in Rajkot. Survey evidence corroborates this heightened feeling of neighborliness and belonging; indeed, these ranked third and fourth in terms of potential impacts with which respondents were most in agreement (Figure 6.2). About two-thirds of surveyed Ashray respondents agreed or strongly agreed with the statement "We have a stronger feeling of belonging to this area," and 64 percent were in agreement that "Our social life has improved."

The discussion within the female focus group in particular suggested that there was an overall improvement in trust and neighborliness at Ashray, which again some women attributed to being homeowners (versus being renters in the city).[2] However, other participants, predominantly from the focus group of couples, had a different view. They expressed that, because the Ashray housing complex mixes socioeconomic classes and includes some migrant families from other states, the social interactions with their neighbors had deteriorated as compared with their previous (presumably more homogeneous) housing situation. A larger-scale analysis could uncover greater insights into these divergent viewpoints between focus groups and the survey.

In general, respondents were in agreement that the overall level of safety was an improvement in Ashray relative to the city. For example, one male respondent said that Ashray was "much safer here for wives and children." However, many noted the absence of a fence surrounding the property as a drawback in this regard.[3]

Economic Opportunities and Commute Times

Focus-group respondents were split on whether the location of Ashray improved economic opportunities and reduced commute times, and responses depended largely on the type of job or industry in which the respondent was working. Those in the manufacturing industry felt that there were more job opportunities and that commute times were generally smaller than

[2] Another problem mentioned about renting was the need to find a different place to rent every 11 months. The Indian Rent Control Act was amended a few years back to include a stipulation that there would be no tenancy rights for a tenant in a rental agreement for less than a year. This change was made to address fears from the previous law, in which strong tenancy rights made it virtually impossible to evict a tenant, causing landlords to not rent out dwellings. However, to provide limited rights to the tenant, the owner is allowed to increase the rent only after an 11-month period. Typically, landlords tend to extend an 11-month contract by signing a fresh 11-month contract (with possibly a higher rent); however, in the lower socioeconomic segments, in which ironclad legal documents may not be available, landlords continue to fear that tenants would try to exercise tenancy rights, which, in practice, leads them to ask tenants to vacate every 11 months.

[3] Our discussions with the designer and builder of the project revealed that residents want to use the government land surrounding Ashray to build a fence, but this is not permitted. Residents did not agree to the builder's offer of building a fence on actual Ashray boundaries.

before, which is consistent with the developer's location choice for Ashray. One male focus-group respondent mentioned that there were also more agricultural job opportunities, particularly for women, who may be prohibited to travel the distance between Rajkot and similar agricultural work.

However, respondents who work in service industries (which often meant working in Rajkot) reported that there were few local job opportunities. Women in particular reported this view during focus-group discussions. One female respondent previously had a sewing business but felt that she was "less accessible" since moving to Ashray. Another female respondent complained, "I would rather teach computers than work in factories, which are close by." Many male respondents who work in service-industry positions now commute into Rajkot, which has meant an increase in commuting times relative to before.

However, as we reported in Section 5, concerns about commuting were not as prominent among the full sample of survey respondents (see also Figure 6.2). Differences in average commute times did not differ significantly between those employed in the manufacturing and construction industries and those employed in the service sector. Furthermore, survey respondents were split on whether the move to Ashray facilitated a reduction in commuting times (38 percent disagreed or strongly disagreed with the statement "We have reduced our commuting time to work," while 35 percent agreed or strongly agreed). In terms of job opportunities, just 5 percent of those surveyed disagreed with the statement that, because the respondent's family (or household) moved to Ashray, "we have better job opportunities." It might be that our survey captured a more positive evaluation of moving to Ashray in terms of job opportunities because about 94 percent of the respondents were males, many of whom (48 percent) work in the manufacturing sector.

Access to Facilities and Services

A few participants in the focus groups noted the lack of available shopping and other amenities in the immediate area to Ashray. For example, one respondent stated, "If we want to buy anything, we have to go to the main market." There was greater agreement among focus-group respondents that the location and number of nearby schools were worse than the options where they lived previously. Nearly all respondents with school-age children cited the increased commuting costs and fewer choices of schools as drawbacks about living in Ashray. However, the findings from our focus-group discussions may not generalize to the broader survey population, among whom there seemed to be more divergence on this issue: Just 34 percent of survey respondents disagreed or strongly disagreed with the statement "My family has better education opportunities," while 36 percent of respondents agreed or strongly agreed.[4]

Focus-group respondents seemed less concerned about access to hospitals or other medical care, which seemed to be comparable at Ashray to what they had at their previous dwellings. One respondent explained, "schooling is something daily; this [medical facility] is something you use once in a while." Regarding leisure activities, focus-group respondents agreed that there were few entertainment options near Ashray, and a few expressed that they would regularly go to Rajkot to watch a movie. However, many respondents seemed to think that having access to cable television and Internet was a sufficient, and more affordable, substitute for other forms of entertainment. Consistent with the focus-group results is the fact that the

[4] Twenty-four of 117 respondents did not answer this survey question because it was not applicable to their families. We do not include these observations in our calculations.

majority of the survey respondents (52 percent) either disagreed or strongly disagreed with the statement "My family has better access to leisure activities."

Ashray Amenities and Suggestions for Improvement

Focus-group respondents were pleased with the well-paved roads dividing the rows of houses in the Ashray housing complex. When asked what amenities could improve quality of life at Ashray, two suggestions that emerged from our focus groups included introducing a nearby grocery store and improved drinking water facilities. Currently, focus-group respondents stated, the water was not suitable for drinking and, as a result, they either boiled their water, bought bottled water, or bought an expensive water filter (at a cost of about INR 5,000). Table 6.2 includes some illustrative quotes on suggested improvements for Ashray housing from our focus-group discussions.

When we asked focus-group participants about the design and layout of their homes, the biggest complaint was the location of the toilets. Residents noted that the toilets are inside the dwelling units and accessible only from the bedroom, which is also the main living area. This posed a particularly difficult issue when extended-family members were staying in the house and had to walk through the bedroom to access the toilet at night. The owners of at least one unit visited by the research team even had gone so far as to renovate their home and move their toilet to the outside backyard (not a permitted reconstruction).

Respondents also complained about the lack of storage space, especially shelves in the kitchen. We observed that multiple households had built or installed storage or shelving in the kitchen areas after moving in. Respondents also noted the lack of an enclosure fence. Less frequently mentioned concerns included the lack of availability of east–west-facing houses, access to the roofs (flat surfaces that can be used for sleeping at nights or other purposes; some households have erected steel ladders to access their roofs), better waterproofing of the buildings, and higher walls at the back of the houses to increase privacy.

Table 6.2
Themes and Illustrative Quotes from Three Focus Groups Demonstrating Suggested Improvements for Ashray

Suggested Improvement	Illustrative Quote
Lack of surrounding amenities	"If we want to buy anything we have to go to the main market."
Location of toilets	"I would rather have the toilet and washroom outside the house."
Lack of storage space	"I wish there were shelves in the room."

SECTION 7

Discussion and Future Directions

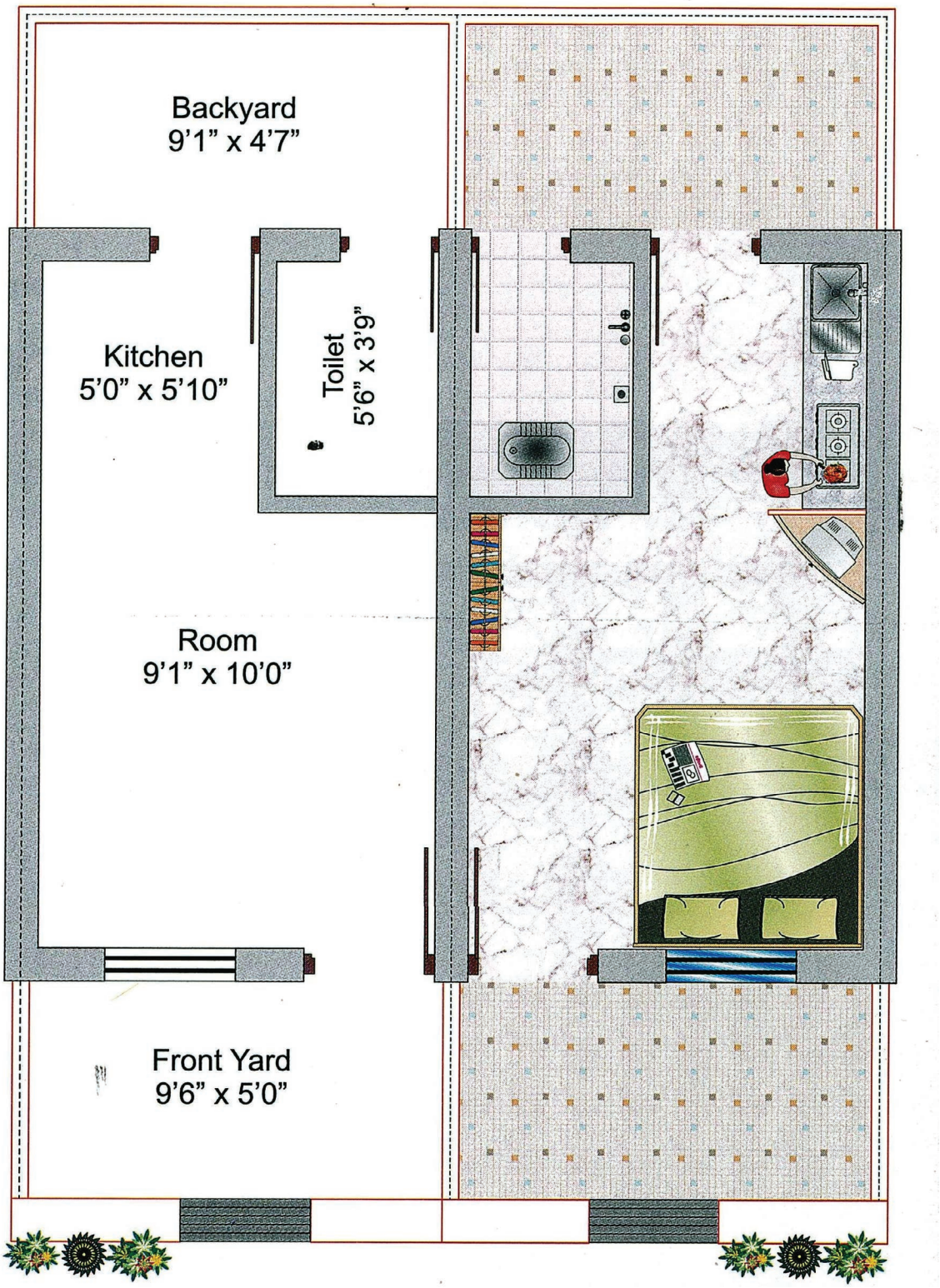
Looking ahead, the challenges facing India as its urbanization trend continues suggest an imminent need for innovative models that can meet the demand of a burgeoning class of many millions of low-income workers for affordable housing. In particular, the need for high-quality housing to offset further expansion of slum-style dwellings is clear, as is the need for such housing to be made affordable, whether via innovative financing models or innovative construction designs or some combination therein. The Ashray housing project may be one such model and combines an innovative model of construction (by capitalizing on cheaper land near industrial sites) with innovative financial support mechanisms.

According to our observational evaluation, Ashray residents view their decisions to move to Ashray very favorably, and the opportunity for home ownership appears to trump nearly all other concerns. If these findings generalize, they suggest a clear latent demand for more affordable-housing projects like Ashray. A rigorous evaluation of such a housing project could provide even stronger evidence on the impacts of high-quality housing on young migrant families and their health, well-being, and overall life satisfaction. In turn, such evidence—especially if derived from profitable private-sector models—could help to address the burgeoning affordable-housing shortage throughout many of the world's cities that continue to grow at unprecedented rates.

APPENDIX A

Ashray Housing-Unit Floor Plans

Figure A.1
Ashray Housing-Unit Floor Plan: One Room with Kitchen



SOURCE: Shubhashray Housing India, undated.

Figure A.2
Ashray Housing-Unit Floor Plan: Two Bedroom with Hall and Kitchen

SOURCE: Shubhashray Housing India, undated.

APPENDIX B

Focus-Group Discussion Guide Draft: Moderator Script

Good morning/afternoon. Let me start by saying thank you for agreeing to talk with us today. Your insights and experiences are very important. My name is _____, and I will be moderating today's discussion. I am joined by my colleague _____. She will be assisting us during our talk today.

We are researchers from the RAND Corporation, a nonprofit research institute that conducts studies in the public interest—in education, health care, and other areas. We have been asked by The Rockefeller Foundation to conduct a study about how affordable urban housing projects, such as yours, are working, so we are here today to talk to residents about their experience with the Ashray housing project. We will ask you questions about why you moved to Ashray, how the move has affected you and your family members, and what you think of the neighborhood.

Since we are interested in hearing all of your opinions and value whatever you have to say, please feel free to express your viewpoints during this discussion, which should take around one hour. There are no right or wrong answers to any of the questions I will ask. Simply answer the questions based on your experience. Everyone in the group has not had the same set of experiences, so your insights and perspectives may differ. That is okay. You don't need to agree with others in your group, but you must listen respectfully to their views.

[Read the informed-consent form.]

I. Let's start off by everyone telling the group how long you have lived in Ashray, and what brought you here initially?

- Probe: What factors were most important in deciding to bring your family to Ashray?
- Probe: Were there any factors about Ashray that initially discouraged you from moving here? What ones?
- Probe: Has your commuting time changed after you moved to Ashray? How so?
- Probe: What did you think of the housing prices at Ashray?
- Probe: What did you think of the financing conditions for buying a house at Ashray?
- Probe: What characteristics of your housing were the most appealing? Which ones were the less appealing?
- Probe: Were there other reasons you moved to Ashray?

II. Now, we would like to ask you about how moving to Ashray has affected other members in your family.

- Probe: Would you say moving to Ashray has had a positive, negative, or neutral effect on the other members of your family? In what ways?
- Probe: What have been the most positive effects?
- Probe: What have been the most negative effects?
- Probe: Did you leave behind some family members when you moved to Ashray? Who and why? Or has moving to Ashray allowed you to reunite with some family members?
- Probe: Have the economic and/or educational opportunities for other family members improved or deteriorated (after moving to Ashray)? How and why?

III. Now we would like to discuss how you feel about your neighborhood (that is everywhere within a 20-minute walk). Are you happy here? What is it you like or dislike about where you live?

- Probe: Do you feel that your current neighborhood is safe? Is it safer than your previous neighborhood? What are the main differences?
- Probe: Do you feel that your current neighborhood has good access to schools, hospital, and recreational activities? How does it compare with your previous neighborhood?
- Probe: Do you feel that you belong to your neighborhood?
- Probe: Do you have friends in this area? Would you say that you interact more, less, or about the same with your current neighbors in comparison to your old neighbors?

Closing: Is there anything else that we have left out, or do you have any additional comments that you would like to share related to anything we have discussed today?

Please, let me remind you: In order to protect everyone's privacy, including your own, you are not to share anything discussed in this group with anyone else.

Please, also remember that, if you have any questions about this study, you can contact Nicholas Burger at RAND, 1200 S. Hayes St., Arlington, VA 22202, USA, +1-310-393-0411, ext. 5139. And if you have any questions or concerns about your rights as a research subject, you can contact the Human Subjects Protection Committee at RAND, 1700 Main Street, Santa Monica, CA 90407, +1-310-393-0411, ext. 6369.

Thank you, and this concludes our discussion.

APPENDIX C

Individual Questionnaire for Ashray Housing Residents

I.1 House #	
I.2 Date of Visit	
I.3 Surveyor ID	
I.4 Survey status (mark with an X)	
	( ) Consent not given
	( ) Completed
	( ) Partial
	( ) Resident not present
	( ) Rescheduled
	( ) Other:_____

Hello, my name is _____, and I am doing a survey for RAND, a nonprofit research institution in California (USA) and for the Indian School of Business (ISB) Centre for Emerging Markets Solutions (CEMS).

We are interested in talking with residents at Ashray to study the effects of affordable urban housing projects of families' well-being. Thus, we would like to interview *any of the registered owners or registered renters of this home*.

[If nobody living in the house is the owner or renter of record, say, "We would like to interview the person who is *responsible for the financial decisions* of the household."]

[If the person is available, read the informed-consent form.]

[If the person is not available: "Could you indicate what would be a good time to talk to him/her?"]

A. Basic demographics

First, we would like to ask some basic information about you and your household.

A.1 Gender

Male 1

Female 2

A.2 Age in completed years

A.3 Are you currently . . . ? (Read options aloud and mark most appropriate response.) [ ]

Married	.....	1
Living together with partner	.....	2
Divorced or separated	.....	3
Widower or widow	.....	4
Single, never married	.....	5
Other. Specify_____	.....	98

A.4 What is your level of schooling? (Read options aloud.) [ ]

No schooling	.....	1
Less than primary	.....	2
Primary	.....	3
Some secondary	.....	4
Secondary	.....	5
Some technical/vocational education	.....	6
Technical/vocational education	.....	7
Some university	.....	8
University or more	.....	9

A.5 Do you own any of the following? (Read options aloud and record as appropriate for each one.) (For each item, mark 1 = yes, 2 = no.)

A. Radio	[ ]
B. Television	[ ]
C. Computer	[ ]
D. Electric fan	[ ]
E. Car	[ ]
F. Motorcycle	[ ]
G. Refrigerator	[ ]
H. Mobile phone	[ ]
I. Bicycle	[ ]

B. Income and employment

The next questions are about your work and earnings. First, think about your main job (or the job where you work during most of the week).

B.1 Are you currently . . . ? (Read options aloud and mark most appropriate response.) ☐

Working for a private company	.....	1
Working for the government	.....	2
Self-employed	.....	3
Working in family business	.....	4
Not working but looking for work (Skip to B.8)	.....	5
Not working and not looking for work (Skip to B.8)	.....	6

B.2 What sector best describes your main job? (Read options aloud and mark most appropriate response.) ☐

Agriculture	.....	1
Manufacturing	.....	2
Construction	.....	3
Services	.....	4
Retail/sales	.....	5
Street vendor	.....	6
Other	.....	98

B.3 What best describes your occupation at your job? (Read options aloud and mark most appropriate response.) ☐

Manager	.....	1
Professional	.....	2
Technician	.....	3
Clerical	.....	4
Sales and services	.....	5
Farmer, fisherman, hunter, logger	.....	6
Production or transportation worker	.....	7
Other. Specify_____	.....	98 ☐

B.4 What are *your monthly* take-home earnings from this job? (If paid in kind, please think what would be the equivalent monetary value.) If you cannot provide an actual figure, can you provide a range? (Read range options aloud.) ☐

Less than INR 2,500	.....	1
INR 2,500 to 5,000	.....	2
INR 5,000 to 7,500	.....	3
INR 7,500 to 10,000	.....	4
INR 10,000 or above	.....	5
Refused to answer	.....	98

B.5 How long have you had this job? (Record years and months.)

Years	
Months	

B.6 In what city or village do you do your job?

B.7 How many hours do you usually work on your main job in an average week?

B.8 What is *your household's total monthly* take-home earnings? (If there are in-kind earnings, please provide an equivalent monetary value.) If you cannot provide an actual figure, can you provide a range? (Read range options aloud.)

Less than INR 2,500	.....	1
INR 2,500 to 5,000	.....	2
INR 5,000 to 7,500	.....	3
INR 7,500 to 10,000	.....	4
INR 10,000 to 15,000	.....	5
INR 15,000 to 20,000	.....	6
INR 20,000 to 30,000	.....	7
INR 30,000 to 40,000	.....	8
INR 40,000 or above	.....	9
Refused to answer	.....	98

C. Current accommodations (Ashray)

The next questions are about your current accommodations at Ashray.

C.1 Is this your primary residence (where you usually sleep)?

Yes	.....	1
No	.....	2

C.2 Do you rent or own this property? (Read options aloud and mark most appropriate response.)

Own	.....	1
Rent (Skip to C.12)	.....	2
Neither; this property belongs to parents or relatives (Skip to C.13)	.....	3
Neither; this property belongs to friends (Skip to C.13)	.....	4
Other. Specify _____ (Skip to C.13)	.....	98

C.2A Are you the first owner of this property? (Read options aloud and mark most appropriate response.)

Yes, I am the first owner of this property.	.....	1
No, I am the second (or later) owner of this property	.....	2

C.3 How much did you pay for this property? (in INR)

C.3A Who did you buy your house from?

C.4 Did you take loans or borrow money to buy this property?

Yes 1

No (Skip to C.10) 2

C.5 From whom did you borrow money? (Read options aloud and record as appropriate for each one.) (For each item, mark 1 = yes, 2 = no.)

A. Family members

B. Employer

C. Formal bank

D. Money lender

E. HFC

F. NBFC [nonbanking financial company]

G. Other. Specify: _____

C.5B From where did you arrange the amount specifically for the *initial down payment* of the house? (For each item, mark 1 = yes, 2 = no.)

A. Myself

B. Family members

C. Employer

D. Formal bank

E. Money lender

F. HFC

G. NBFC

H. Other. Specify: _____

C.6 Prior to borrowing for this house, had you ever borrowed from any of these sources before? (Read options aloud and record as appropriate for each one.) (For each item, mark 1 = yes, 2 = no.)

A. Family members

B. Employer

C. Formal bank

D. Money lender

E. HFC

F. NBFC

G. Other. Specify: _____

C.7A What was the total amount of your loans for the house? (in INR)

C.7B Are you still repaying those loans? (1 = yes, 2 = no)

C.8 What is the total monthly payment that you now make? (in INR)

C.9 (If C.5C = 1, ask) How important was the possibility of borrowing money from banks for purchasing this property?

- Very important 1
- Somewhat important 2
- Not important 3

C.10 Is this the only property you own?

- Yes (skip to C.14) 1
- No 2

C.11 How many properties [do] you own?

(If C.2 = 1 above, skip to C.14.)

C.12 What is your monthly payment in rent for this apartment (in INR)?

C.13 Would you like to buy a home?

- Yes 1
- No 2

C.14 How many people live in your household (take meals together)?

C.15 Of those people, how many are (read options aloud and fill in each)

- A. Self or spouse .....
- B. Children under five years old .....
- C. Children 5 year old or older .....
- D. Siblings .....
- E. Parents/parents-in-law .....
- F. Other relatives .....
- G. Other (Specify:_____) .....

C.16 How many bedrooms does this house have?

C.17 What year and month did you start living here?

- Year .....
- Month .....

C.18 Does this house have the following? (Read options aloud and record as appropriate for each one.) (For each item, mark 1 = yes, 2 = no.)

- A. Electricity .....
- B. Piped water .....
- C. Indoor plumbing/toilet .....

C.18B (If C.18.C = 2, ask; otherwise, skip to C.19) Does this house have a shared toilet? (1 = yes, 2 = no)

C.19 How far is your workplace from your home? (Record in kilometers; if unemployed, mark "N/A.")

C.20 How many minutes does it take to travel to work every day? (Record one-way time in minutes; if unemployed, mark "N/A.")

C.21 What form of transport do you take to work on most days? (Read options aloud and mark most appropriate response.) (If unemployed, mark "N/A")

Own car	.....	1
Motorbike	.....	2
Bike	.....	3
Public transport	.....	4
Company transport	.....	5
Walking	.....	6
Rickshaw (including shared)	.....	7
Other. Specify:_____	.....	98

D. Information on prior housing

Now we are going to ask you a few questions regarding your living arrangement before you moved to Ashray.

D.1 In which locality/city did you live just before moving to Ashray?

D.1A Were you living with your parents? (1 = yes, 2 = no)

D.1B Where did you live before your previous house?

D.2 How far (in kilometers) is the locality you lived in just before Ashray?

D.3 Did you rent or own your housing prior to moving to Ashray? (Read options aloud and mark most appropriate response.)

Own	.....	1
Rent	.....	2
Neither; this property belongs to parents or relatives (skip to D.5)	.....	3
Neither; this property belongs to friends (skip to D.5)	.....	4
Other. Specify _____ (skip to D.5)	.....	5

D.4 What was your monthly payment in rent or loans related to housing? (in INR)

D.5 How many people lived with you (took meals together) before moving to Ashray housing? (If D.5 = 0, skip to D.7.)

D.6 Of those people, how many were (read options aloud and fill in each)

A. Self or spouse	.....
B. Children under five years old	.....
C. Children 5 year old or older	.....
D. Siblings	.....
E. Parents/parents-in-law	.....

F. Other relatives .....

G. Other (Specify:_____) .....

D.7 How many bedrooms did your prior house/quarters have?

D.8 How long (in years) did you live at that house/quarters?

D.9 Did your prior house/quarters have the following? (Read options aloud and record as appropriate for each one.) (For each item, mark 1 = yes, 2 = no)

A. Electricity .....

B. Piped water .....

C. Indoor plumbing/toilet .....

D.9B (If D.9.C = 2 ask; otherwise, skip to D.10.) Did your prior house/quarters have a shared toilet? (1 = yes, 2 = no)

D.10 What was the primary material of your prior house's/quarters' roof? (Read options aloud and mark most appropriate response.)

Tin/iron 1

Concrete 2

Thatch 3

Nadiya/roof tile 4

Other. Specify:_____ 98

D.11 What was the primary material of your prior house's/quarters' walls? (Read options aloud and mark most appropriate response.)

Tin/iron 1

Concrete 2

Brick 3

Stone 4

Mud/mud brick 5

Other. Specify:_____ 98

D.12 What was the primary material of your prior house's/quarters' floors? (Read options aloud and mark most appropriate response.)

Mud/earth 1

Concrete 2

Tile 3

Wood 4

Other. Specify:_____ 98

D.13 How far from your place of employment was your prior house/quarters? (Record in kilometers; if unemployed, mark "N/A.")

D.14 How much time did it take to travel to work every day from your prior house/quarters? (Record one-way time in minutes; if unemployed, mark "N/A.")

D.15 What form of transport did you take to work on most days when you were living at your prior housing/quarters? (Read options aloud and mark most appropriate response.) (If unemployed, mark "N/A.")

Own car	.....	1
Motorbike	.....	2
Bike	.....	3
Public transport	.....	4
Company transport	.....	5
Walking	.....	6
Rickshaw (including shared)	.....	7
Other. Specify:_____	.....	98

E. Ashray housing's impact on households

E.1 Now think about the changes that moving to Ashray has made in your life and that of your household. Please tell me whether you agree or disagree [with] the following statements: (Read options aloud and fill with an "x" in each.)

Because my family (or household) moved to Ashray…	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Does Not Apply
A. We have better job opportunities.						
B. My household's total earnings have increased.						
C. We have been able to start new entrepreneurial activities.						
D. We have reduced our commuting time to work.						
E. We have more time to spend as a family.						
F. Our financial situation has improved.						
G. We make smaller rent or mortgage payments.						
H. The quality of our housing has improved.						
I. My family has better education opportunities.						
J. My family has better access to leisure activities.						
K. Our social life has improved.						
I. We have a stronger feeling of belonging to this area.						
M. Living farther away from our relatives and friends in our previous neighborhood has not affected us much.						
N. I feel more satisfied with life						
O. I regret the decision to move to this housing complex						

E.2 Of all possible reasons, what was the primary motivation for moving to your house at Ashray? (Do not read options. Listen to respondent and mark most appropriate single response.)

Opportunity to own	.....	1
As an investment opportunity	.....	2
Reduce monthly payments	.....	3
Reduce commuting time for work	.....	4
New construction/better quality/better amenities	.....	5
Neighborhood safety	.....	6
Better schools, hospitals, etc., nearby	.....	7
Bring family together/to this area	.....	8
Other	.....	98

F. Consent to recontact in the future

We may want to recontact you in the future to see if there are any changes in your household and in your experience with Ashray. Giving your permission for us to recontact you does not obligate you in any way.

F.1 Do you give us your permission to recontact you in the future?

Yes	.....	1
No	.....	2

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