Toward a Better Way to Measure Customer Satisfaction Levels in Public Housing: A Report from Cincinnati

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ABSTRACT   *This paper proposes a more reliable approach to measuring public housing customer satisfaction than has been used in the past, that is, one that (a) looks at trends in customer satisfaction rather than satisfaction at one point in time; (b) looks at different components of satisfaction; and (c) combines qualitative and quantitative information. Cross-tabular and logistic regression analysis were applied to a dataset containing approximately 1300 telephone interviews with residents of Cincinnati Metropolitan Housing Authority (CMHA) housing, interviewed over four waves (1995, 1996, 1997 and 1998). In general the survey results parallel objective evidence from agency records showing CMHA to be one of the most rapidly improving local housing authorities in the USA. Levels of housing satisfaction remained high and levels of neighbourhood satisfaction rose significantly during the period. Nevertheless, the findings highlight continuing problem areas including a high level of dissatisfaction with CMHA's repair service.*

Introduction

At the present time, American public housing authorities are under considerable pressure to improve management effectiveness. Under the US Department of Housing and Urban Development's (HUD's) Public Housing Assessment Program (PHAS), a Real Estate Assessment Center (REAC) will conduct physical inspections and review financial management, management operations, and resident satisfaction for individual local housing authorities (LHAs). The 10 points, out of 100, for resident satisfaction will take into account the level of satisfaction from the survey (initiated in late 1999) and the public housing authority's follow-up actions based on the survey results. Housing authorities that consistently perform poorly may be taken over by HUD or placed under receivership (Federal Register, 1999). Improving management effectiveness is also becoming a vital issue as housing authorities around the US implement the 1998 Quality Housing and Work Responsibility Act. QHWRA is landmark legislation which attempts to make public housing reform a reality by among other means raising performance standards for public housing agencies, and

rewarding high performance (US Department of Housing and Urban Development, no date).

The pressure to improve performance is leading to an increased interest in customer satisfaction surveys. Numerous local authorities have carried out their own surveys but most of these surveys have been 'one shot' affairs, thus providing insufficient information to assess trends. This paper addresses this gap by reporting on a multi-stage customer survey project that we have carried out for the Cincinnati Metropolitan Housing Authority. Using the results from the 1995, 1996, 1997, and 1998 waves, we track changes in tenant assessments of housing and neighbourhood conditions, and the quality of CMHA management between 1995 and 1998. The CMHA is sufficiently similar to other medium-sized housing authorities in the US (see section called, 'The Setting') so that results from our analysis can be generalised to housing authorities in this group.

This paper goes beyond a simple description of trends in levels of customer satisfaction by performing a multivariate analysis of the determinants of different satisfaction indicators. Since satisfaction is influenced by numerous background characteristics such as age and income, changes in the makeup of the public housing clientele could influence the relationship between independent and dependent variables. For example, the in-migration of a more socially mobile clientele (who already have higher expectations concerning housing amenities) might skewer the results by lowering satisfaction levels. To counteract this problem, the description of trends is supplemented with a set of multivariate analyses of the determinants of customer satisfaction. It is presumed (a) that the types of management reforms and housing/neighbourhood initiatives initiated by CMHA during the late 1990s have led to higher levels of housing and neighbourhood satisfaction and satisfaction with CMHA management; and (b) that those interviewed during the most recent wave of surveys (1998) would be more satisfied with housing and neighbourhood conditions and CMHA management than those interviewed during the first wave (1995). We anticipated that this positive relationship between a 1998 interview and satisfaction would remain significant even when we controlled for other relevant background personal, housing and mobility characteristics.

The simple analysis of trends that follows shows that in general, housing satisfaction levels remained high during this period and that satisfaction with neighbourhood conditions and CMHA management also rose. In addition, the 1998 interviewees were, as predicted, more likely to be satisfied even when background characteristics were held constant. It would be tempting to conclude that management reforms were responsible for these positive results, but lacking a comparison group, (i.e. residents of a comparable housing authority not implementing management reforms) it is inappropriate to conclude that such a causal relationship exists. Consequently, the primary contribution of this paper is, therefore, providing a more reliable approach to measuring public housing customer satisfaction than has been used in the past, one that (a) looks at trends in customer satisfaction rather than satisfaction at one point in time; (b) looks at different components of satisfaction; and (c) combines qualitative and quantitative information. The paper concludes by providing a set of questions to guide future public housing customer satisfaction research.

Literature Review

There has been far greater use of tenant surveys in the UK than in North America (Bates & Murdie, 1998). Over 60 per cent of local housing authorities in the UK had surveys undertaken between 1986 and 1993 (Prescott-Clarke *et al.*, 1993).

> In Britain, demonstrating the effectiveness of public housing became more acute during the Thatcher era with the introduction of greater competition in the social housing area. ...The trend towards greater accountability in the public service and the greater survival of housing authorities, combined with the increased use of information technology and the flexibility of surveys as a management tool, have resulted in a great deal of significance being given to the results of tenant satisfaction surveys in Britain. (Satsangi & Kearns, 1992, p. 5)

British tenant satisfaction surveys have looked at a variety of subjects including the effectiveness of local repair service programmes (Newcastle City Council, 1991; Peter Gibson Associates, 1993) and elderly residents' assessments of sheltered housing (Rosenburg & Wang, 1994). Local officials are able to benefit from at least three guidebooks indicating how tenant surveys ought to be designed and carried out (Phillips, 1991; Prescott-Clarke *et al.*, 1993; Raynsford Dallison Associates Limited, 1988).

Although less common than in Britain, American tenant surveys are becoming more commonplace. A mid-1980s Boston study (Committee for Boston Public Housing, 1985) surveyed residents in five housing developments about their need for social services. Canadian efforts include a 1988 tenant survey measuring tenant satisfaction among Ontario Housing Corporation tenants (Ministry of Housing and Municipal Affairs, 1988); a 1989 nationwide survey carried out by the Canada Mortgage and Housing Corporation (Canada Mortgage and Housing Corporation, 1990) and an early 1990s tenant survey carried out for the Metropolitan Toronto Housing Authority (KPMG Centre for Government, 1994). Many of the more recent US tenant surveys have focused on crime and drug issues reflecting special funding from the US Department of Justice (Bradel & Witt, 1992; Gress, 1994; Popkin *et al.*, 1995).

Most of the preceding tenant surveys were carried out for local councils/ public housing authorities. Surveys carried out by private landlords are also relevant to this review. Some American private property managers have developed a system of regularly administered surveys whose results are used to update and improve services. These landlords create a survey database for each building that can be updated by re-surveying users every year. "If scores drop, the building is targeted for a site visit and for follow-up measurement. Areas where scores increase are also closely studied to reward staff for positive results" (Vischer, 1991, p. 39).

Measuring tenant satisfaction is no easy matter. First, because of their reliance on structured questions tenant surveys tend to limit the kinds and the depth of questions that can be asked. Customer satisfaction surveys usually show the vast majority of tenants, even those who live in poor quality homes, satisfied with their dwellings. Without additional evidence from more in-depth approaches it is impossible to know why levels of satisfaction are consistently high. There is a growing consensus that to understand tenant satisfaction results, the closed-

ended findings should be supplemented with other information: (a) open-ended items (Birks & Southan, 1992; Prescot-Scott *et al.*, 1993;); (b) ethnographic approaches, such as participant observation (Franklin, 1989); (c) focus interviews (Peter Gibson Associates, 1993); (d) in-depth personal interviews (Popkin *et al.*, 1995); and (e) satisfaction cards distributed and collected after a particular service has been provided combined with landlord records (Prescott-Clarke *et al.*, 1993).

Second, since satisfaction is a dynamic process, efforts to treat it as a simple dependent variable are mistaken.

> The multifaceted experiences prior to, during, and after consumption, all contribute to individual satisfaction rather than there being a finite point at which satisfaction is achieved. ... New experiences and levels of awareness lead to new levels of expectation which will alter the levels of satisfaction achievable ... . Research that treats consumer satisfaction as a static, singular dependent variable, that compares the extent to which individual expectations were fulfilled or not, may be misleading by focusing on just one outcome of the continuous process of satisfaction formation and reformulation. (Birks & Southan, 1992, p. 304)

The level of satisfaction that a respondent expresses on a survey is related to how well the apartment or house meets expectations (Galster, 1985; Galster, 1987; Galster & Hesser, 1981). Individuals who in the past received low levels of service will, as a result, have low expectations and, in turn, will be satisfied with levels of service that would be unacceptable elsewhere (Conway & Knox, 1990). Tenants of public housing may have little competitive choice and nowhere to take their monies if they are dissatisfied (Birks & Southan, 1992). The lack of options may lead to reduced expectations and high satisfaction levels when surveyed. Heywood (1997) argues persuasively that low-income owners' apparent satisfaction with poor conditions does not, as is commonly thought, reflect a lack of awareness of the extent to which their homes are in poor condition. "If people are aware of the problems of the condition of their homes but still rate those homes quite highly, it probably means that other things matter more than condition" (p. 44). Expectations are not static, however. New experiences and increased levels of awareness may lead to new levels of expectation which will alter degrees of satisfaction (Bates & Murdie, 1998). For example, resident awareness of management reforms may raise expectations which could conceivably dampen satisfaction levels. Because satisfaction is a dynamic process, it is important that tenant surveys include questions on previous experiences, expectations and aspirations, and on residential mobility plans (since dissatisfaction is a precursor to moving).

Third, because so many background personal and housing characteristics affect tenant satisfaction, results are likely to have a number of different meanings. "One of these meanings might concern the perception of the quality of the service received, but the rating is more than likely to relate to factors independent of a landlord's action" (Satsangi & Kearns, 1992, p. 329). Previous research has identified four sets of factors as having an impact on tenant satisfaction: (a) personal factors (e.g. age, length of residence); (b) housing service characteristics (e.g. the standard of housing); (c) recent experiences (e.g.

outstanding requests for service); and (4) situational factors (e.g. the landlord's image, the quality of the surrounding neighbourhood).

It is important to contextualise information on tenant satisfaction by examining expected differences in satisfaction by subgroup (e.g. elderly versus non-elderly (Hedges & Clemens, 1994) and by development type (high-rise versus low-rise, developments/projects versus scattered-site units). The importance of this guideline is shown by Popkin *et al.*'s 1995 study of the Chicago Housing Authority's Anti-Drug Initiative. The survey showed that Rockwell residents reported significant declines in physical disorder at their development both inside and outside the building between the two survey waves. Ickes showed no change on the same measure while Horner residents actually reported a significant increase in physical disorder both inside and out. Vale (1998), in his study of Boston public housing revitalisation found residential satisfaction levels higher among residents of Commonwealth than the other two developments studied, Franklin and West Broadway. The preceding indicates the importance of using stratified samples to provide sufficiently large samples to compare satisfaction levels in different developments or different development types.

Fourth, there is consensus that tenant satisfaction is a complex attitude that cannot be measured by a single simple question. Tenant satisfaction encompasses four distinct types of satisfaction: (1) satisfaction with the dwelling unit; (2) satisfaction with the services provided, including repair service; (3) satisfaction with the whole package received for the rent paid which includes the dwelling and the service; and (4) satisfaction with the neighbourhood or area (Onibokun, 1974; Satsangi & Kearns, 1992). Consequently, tenant satisfaction should be measured by questions dealing with specific aspects of the environment (Birks & Southan, 1992; Furbey & Goodchild, 1986).

Fifth, to be useful, tenant surveys should be carried out over at least three points to identify trends. The problem with one-shot surveys is that the high levels of satisfaction can induce complacency by being perceived as 'nothing is wrong'. To be meaningful, the satisfaction results for one point in time should be compared to what they were one or two years earlier.

> If, in a satisfaction survey, for example, 40 per cent said they were 'very satisfied' in summing up their feelings about their house or flat, this statistic would be of little use. This piece of data would only be useful when comparisons could be made with the results of like questions in other surveys at other times and/or locations. If the same question targeted at the same population were repeated after 12 months and 60 per cent were then 'very satisfied' then it may be safely deduced that changes in the efficiency and/or effectiveness of the organization had occurred. (Birks & Southan, 1992, p. 305)

Sixth, interpreting survey results, even when they are part of multi-survey efforts, is far from straightforward. Results are often mixed and inconsistent with respect to programme effectiveness. Bradel & Witt's 1992 evaluation of St Paul's drug elimination programme indicated that a majority of those who had heard of the St Paul community policing programme thought that it was successful. However, over the two time periods, there was no change in the perception of crime. Thus, the programme appears to have been successful in improving attitudes toward the police but it appears not to have been successful in allaying fears about crime. The closer the researcher follows the ideal

experimental design strategy, that is, by including both an experimental and a control group, the more clear-cut and powerful the findings are likely to be. A 1991 Newcastle, England study approximated the experimental ideal by comparing survey results for one area where a post-repairs inspection programme had been carried out with another area where it had not. The fact that there were no differences in satisfaction between the two areas strongly suggested that the programme had little impact on attitudes.

Finally, unless tenant surveys are viewed as part of an overall process of communications and feedback with tenants, they may not yield useful information. Davis & Denton (1987, p. 2) note that customer satisfaction surveys can play an important public relations role in that they can demonstrate that management cares about tenant's opinions and welfare. Greater tenant involvement can therefore lead to higher response rates and more reliable results because tenants believe the survey operation will lead to better housing conditions. Similarly, Vischer (1991) suggests that private management keep tenants informed on how they are responding to tenant survey results. "Some things can be fixed quickly; others take more time. Some are costly; and some cost nothing to fix. By keeping occupants informed about what can and cannot be done—and when—managers demonstrate their responsiveness to tenants without burdening themselves with a commitment to fixing everything immediately" (p. 38). According to Vischer, rapid feedback of survey findings results in tenants responding well to re-surveying with the same instrument.

In summary, this paper builds upon previous customer satisfaction work by reporting on four waves of results rather than just one or two. In addition, we report on a variety of indicators of satisfaction (the home, the neighbourhood, and management) rather than on a single, simple, global measure of satisfaction. Further, we supplement questions on residential satisfaction with ones dealing with expectations of changes in neighbourhood conditions and the quality of management and relating to household moving plans. Finally, we augment the results from structured questions with the results from open-ended ones to better understand levels of satisfaction and moving propensity.

The Setting

CMHA is the 17th largest housing authority in the US with about 7000 units and about 17 000 residents. Its housing portfolio can be categorised into three groups: (1) traditional family developments (i.e. 'projects') known locally as the 'Big Six' developments (69 per cent), which are some of the oldest projects and consist of mid-rise buildings and garden apartments; (2) senior housing (21 per cent), high-rise complexes exclusively for the population over 62 years old and those with physical/mental disabilities; and (3) scattered-site housing, both clustered developments and individual houses (10 per cent).

The CMHA, like other urban PHAs, has been under considerable pressure to improve management effectiveness and in fact has achieved some success, according to recent HUD rankings under the Public Housing Management Assessment Program, (PHMAP, predecessor to PHAS) which evaluated such functions as the budget, repairs and rent collection; CMHA ranks as one of the most improved housing authorities in the US (McWhirter, 1996). In 1992, however, CMHA had received a HUD score of 56.65 and had been placed on the list of 'troubled' authorities. When Donald Troendle took over as CMHA

Executive Director in 1994, HUD ranked CMHA as the 13th worst large housing authority in the nation. At that time, the authority was ridden with money scandals and waste, Troendle has succeeded to the point that CMHA received a score of 94.75 per cent out of a possible 100 per cent in the most recent ratings (June, 1998; Cincinnati Metropolitan Housing Authority, 1998) is now considered the 12th best large housing authority. Furthermore, major crime in CMHA developments dropped by over 40 per cent between 1994 and 1997.

CMHA's implementation of Crime Prevention Through Environmental Design (CPTED) principles has contributed to the achievement of these impressive changes. Key strategies for implementing CPTED principles include: improving curb appeal; improving staff efficiency, marketing and lease enforcement; and improving security/reducing crime.

- Efforts to improve the curb appeal of CMHA developments include: the design of defensible space (e.g. encouraging 'territoriality' and sense of ownership), fencing, a litter management programme (e.g. colour coded maps designate residents' areas of responsibility), graffiti removal, and a towing programme for removal of junked vehicles.
- In order to improve staff efficiency and accountability, CMHA has implemented a variety of management information systems including the sophisticated tracking of vacant units.
- Components of lease enforcement include stronger admissions policies, a 90-day inspection programme, a housekeeper training programme, implementation of 'One Strike, You're Out' for those involved in criminal activities, a resident handbook explaining residents' rights and responsibilities as well as CMHA regulations, and implementation of 'income disregards' to hold upwardly mobile working families.
- Marketing efforts to change the image of CMHA and to attract more working families include print, radio and TV advertising. CMHA created Saturday leasing hours specifically for working families.
- Key components of CMHA's anti-crime initiative include: better lighting, the use of off-duty officers at family developments, a card entrance system at elderly high-rise developments, and closed circuit cameras.

Based on the results from the first four waves of CMHA survey results, these management improvements appear to have contributed to a rise in the socio-economic level of CMHA residents between 1995 and 1998. During this period, the average income level rose 24 per cent (from $7404 to $9307), the proportion attending college rose 10 per cent (from 18 to 28 per cent), and the proportion working rose 13 per cent (from 24 to 37 per cent). Meanwhile, the proportion receiving welfare (now Temporary Assistance for Needy Families, TANF) dropped 17 per cent (from 57 per cent to 40 per cent).

Data Collection and Analysis

The CMHA surveys were conducted September of 1995, 1996, 1997 and 1998, using telephone interviews. Table 1 shows the record of households contacted and interviewed each wave. As shown, completion rates dropped from 88 per cent in wave one to 68 per cent in wave 4. The primary reason for the drop appears to have been an increase in householders unavailable for an interview.

Table 1. Response rate by year of survey

	1995	1996	1997	1998
Completed	88%	76%	71%	67%
Refusals	3	6	11	8
Illness or language barrier	3	10	7	8
Unavailable	6	8	11	17
Total contacted	385	465	468	477

Source: Institute for Policy Research, University of Cincinnati.

This may reflect an increase by wave in the proportion working. It is undoubtedly harder to reach working as compared to non-working householders.

For each wave, a stratified random sample design was used to obtain enough respondents (roughly 100) from each of the three main project types—traditional family developments, senior housing, scattered-site projects (both clustered developments and individual scattered-site units)—to conduct separate analyses by project type.

The survey included questions on residential mobility plans and desires, housing and neighbourhood problems, housing and neighbourhood satisfaction, attitudes toward management and repairs, and demographic characteristics. Eight variables from the CMHA data files were merged with the survey data, using the CMHA's client identification number for the match. The CMHA variables were: the number of bedrooms, family size, census tract, head of household income source, sex of head of household, annual family income, rent and name of the development which was recoded into one of four project types (traditional, senior, clustered scattered-site, and single-family scattered-site). As a final step, the results from the four waves were combined into a single dataset with a variable added to identify which year the interview took place (i.e. 1995, 1996, 1997, 1998). Table 2 describes the demographic characteristics of the merged dataset. The cross-tabs and logistic regression features of SPSS were used to examine the determinants of customer satisfaction. The cross-tabular results were used to prepare bar charts to portray changes in customer satisfaction between 1995 and 1998 (see Varady, 1999 for the Tables used to create these diagrams).

Table 3 defines the variables included in the logistic analysis. It was beyond the intended scope of this paper to examine in detail the impact on satisfaction of other background personal and housing characteristics besides the 'wave' of the survey project in which the respondent was interviewed. The reader interested in this broader subject—determinants of housing satisfaction—should review Varady & Preiser's 1998 article.

To measure housing satisfaction respondents were asked if they were 'very satisfied', 'somewhat satisfied', 'somewhat dissatisfied', or 'very dissatisfied' with their new home. In the past, researchers have usually combined the first and second and the third and fourth categories into two broader groupings, 'satisfied', and 'dissatisfied', and have then used multivariate modeling to distinguish satisfied from dissatisfied respondents. The analysis for the present article uses a different recoding scheme for housing dissatisfaction, one that distinguishes the 'very satisfied' from the 'less than very satisfied'. Had the conventional approach been used, there would have been few respondents in

Table 2. Demographic and housing characteristics of customer satisfaction survey respondents by Cincinnati Metropolitan Housing Authority (CMHA) housing type

Variables	Traditional family development	Elderly development	Clustered scattered-site development	Individual scattered-site unit	Sig.
Percentages					
Lived at current address less than 5 years	72%	57%	62%	58%	0.000
Married	5	4	8	14	0.001
Employed	37	9	42	51	0.000
One or more children	71	6	70	84	0.000
High school degree	59	39	64	70	0.000
Income $5000 or higher	55	60	62	76	0.002
Female respondent	93	71	90	87	0.000
African-American	97	87	95	95	0.000
Means					
Age (years)	38.75	65.09	40.54	41.14	0.000
Monthly rent	$161.82	$169.46	$205.63	$260.10	0.000
Annual income (CMHA records)	$7959	$7731	$10 045	$12 578	0.000
Length of residence (years)	4.57	5.84	5.23	5.32	0.000

Source: CMHA customer satisfaction surveys.
Notes: The length of residence question originally had five response categories ranging from six months or less to more than 10 years. To create an interval-type variable, we replaced the original number with the mid-point for the length of time category. For example we replaced '1' with '0.25 years' and '5' with '12.5 years'. This approach assumes that respondents exhibit a normal distribution within each of these five categories.

the 'dissatisfied' group and a minimal amount of variation to account for. A set of logistic regression runs based on this recoding scheme confirmed this assertion. Furthermore, separate analysis of the relation between housing satisfaction (unrecoded) and moving plans showed that the 'somewhat satisfied' respondents more closely resembled 'somewhat dissatisfied' ones than they did 'very satisfied' respondents. Logistic regression, rather than ordinary least squares regression, was used because the former is more suitable for dependent variables consisting of dichotomous, ordinal data.

All of the variables in the analysis were either nominal or categorical. In the case of the latter variables, the logistic regression computer routine created a series of dichotomous variables from the separate categories. The first category was treated as the reference category and was excluded from the analysis. Thus, for example, the factor identifying wave one interviewees was considered the reference category while the separate factors identifying interviewees in the other three waves were included. The logistic regression runs (Tables 4 and 5) sought to determine the extent to which the year interviewed (i.e. 1996, 1997 or 1998) was correlated with the likelihood of being satisfied, controlling for all other characteristics. It was predicted that a 1998 interview (i.e. householders having the most time to perceive the impacts of the management reforms) would be positively correlated with customer satisfaction, all other factors controlled. Table 6 summarises the logistic regression runs indicating whether any year of survey indicator (1996, 1997 or 1998) had a positive statistically significant impact on customer satisfaction.

Table 3. Definitions of variables included in the logistic regression analysis

Variables	
Independent variables	
Length of residence	Equals 1 if 6 months or less, 2 if between 6 months and 1 year, 3 if 1–5 years, 4 if 6–10 years, 5 if more than 10 years.
Married	Equals 1 if married, 0 otherwise.
Widow	Equals 1 if a widow, 0 otherwise.
Never married	Equals 1 if never married, 0 otherwise. Divorced was the reference group.
Employed	Equals 1 if employed, 0 otherwise.
Not looking	Equals 1 if not looking for work (i.e. housekeeper or student), 0 otherwise. Unemployed was the reference category.
Education	Equals 1 if less than high school degree, 2 if completed high school degree, 3 if completed some college.
Age	Equals 1 if 18–29 years, 2 if 30–45 years, 3 if 46–64 years, 4 if 65 years and older.
Income	Equals 1 if less than $5000, 2 if $5000–$9999, 3 if $10 000–$14 999, 4 if $15 000 and over.
Welfare	Equals 1 if receive welfare (AFDC), 0 otherwise.
Female	Equals 1 if female, 0 otherwise.
CMHA family development	Equals 1 if live in CMHA traditional family development ('Big Six'), 0 otherwise.
CMHA elderly development	Equals 1 if live in CMHA elderly development, 0 otherwise.
CMHA individual scattered-site unit	Equals 1 if live in CMHA individual scattered-site unit, 0 otherwise. CMHA clustered scattered-site development was the reference category.
Wave	Equals 1 if 1995, 2 if 1996, 3 if 1997, 4 if 1998.
Dependent variables	
Housing satisfaction	Equals 1 if very satisfied, 0 otherwise.
Housing problems	Composite of responses to 8 items: (a) walls with peeling paint or broken plaster; (b) plumbing that does not work; (c) pests, such as rats, mice or cockroaches; (d) broken locks or no locks on the door to the building; (e) broken windows; (f) a heating system that does not work; (g) a stove or refrigerator that does not work; (h) exposed wire or electrical problems. Chronbach's alpha = 0.7437. Index recoded into two categories; equals 1 if 1 or more problems, 0 otherwise.
Neighbourhood dissatisfaction	Equals 1 if somewhat or very dissatisfied with the neighbourhood, 0 otherwise.
Neighbourhood problems	Composite of responses to 6 items: (a) litter or trash in the streets or sidewalks; (b) graffiti or writing on the walls; (c) people drinking alcohol in public; (d) drug dealers or

	drug users; (e) abandoned buildings; (f) gangs. Chronbach's alpha = 0.8328. Index recoded into 2 categories; equals 1 if 1 or more problems, 0 otherwise.
Neighbourhood is getting better	Equals 1 if neighbourhood is getting better, 0 otherwise.
Apartment unsafe at night	Equals 1 if somewhat or very unsafe, 0 otherwise.
Neighbourhood unsafe during day	Equals 1 if somewhat or very unsafe, 0 otherwise.
Neighbourhood safety is getting better	Equals 1 if neighbourhood safety is getting better, 0 otherwise.
Neighbourhood social strengths	Composite of responses to 5 items: (a) if, necessary, could find someone in the neighbourhood to talk to right away; (b) people in the neighbourhood can get help from others if they are in trouble; (c) if one is upset about something, there is someone in the neighbourhood to turn to; (d) if there is a serious problem in the neighbourhood, the people can get together to solve it; (e) being a member of the neighbourhood is like being a member of a group of friends. Chronbach's alpha = 0.8276. Index recoded into two categories; equals 1 if 3 or more positive social characteristics, 0 otherwise.
Satisfaction with timeliness of CMHA housing repairs	Equals 1 if good or excellent, 0 otherwise.
Satisfaction with quality of housing repairs	Equals 1 if good or excellent, 0 otherwise.
Timeliness of CMHA housing repairs getting better	Equals 1 if getting better, 0 otherwise.
Quality of CMHA housing repairs getting better	Equals 1 if getting better, 0 otherwise.
Satisfaction with CMHA maintenance of trees, grass, and flowers	Equals 1 if good or excellent, 0 otherwise.
Satisfaction with CMHA maintenance of garbage pick-up areas	Equals 1 if good or excellent, 0 otherwise.
Satisfaction with CMHA maintenance of parking areas	Equals 1 if good or excellent, 0 otherwise.
CMHA grounds maintenance is getting better	Equals 1 if getting better, 0 otherwise.
Complaints to CMHA would not be investigated	Equals 1 if a complaint would not be investigated, 0 otherwise.
CMHA information dissemination is inadequate	Equals 1 if perceives CMHA's efforts to keep residents informed are inadequate, 0 otherwise.
CMHA tenant involvement is limited	Equals 1 if believes that CMHA takes resident views into account in decision-making 'not at all', 0 otherwise.
No moving plans	Equals 1 if does not expect to move within 5 years, 0 otherwise.

Note: For the ordinal variables listed above, the logistic regression routine treated the first category as the reference group.

Table 4. Logistic regression results. Factors affecting neighbourhood assessments and moving plans. Parameter estimates (standard error)

Variables	Neighbourhood dissatisfaction	Neighbourhood problems	Apartment unsafe at night	Safety is getting better	Neighbourhood social strengths
Length of residence					
6 months to 1 year	0.6524* (0.3206)	− 0.2156 (0.3605)	0.1714 (0.3965)	− 0.5910 (0.3632)	− 0.1648 (0.3107)
1–5 years	0.6495* (0.2701)	0.3296 (0.3100)	0.1564 (0.3392)	− 0.3929 (0.2961)	0.0889 (0.2638)
6–10 years	0.7902* (0.3158)	0.7338* (0.3575)	0.2261 (0.3907)	− 0.4662 (0.3403)	0.1905 (0.3072)
10 years or more	0.7521 (0.3251)	0.8262* (0.3674)	0.1775 (0.4193)	− 0.2964 (0.3458)	0.8252* (0.3384)
Married	0.3746 (0.3614)	− 0.1259 (0.4003)	− 0.0725 (0.4705)	0.2472 (0.3975)	0.1988 (0.3571)
Widow	0.1547 (0.2729)	− 0.2317 (0.2745)	− 0.3345 (0.3885)	− 0.1635 (0.2908)	− 0.1979 (0.2809)
Never married	− 0.1389 (0.1802)	− 0.2449 (0.2065)	− 0.2395 (0.2221)	0.2445 (0.1940)	0.2015 (0.1823)
Employed	0.0815 (0.2272)	0.5568* (0.2522)	− 0.0481 (0.2991)	0.0167 (0.2425)	− 0.0747 (0.2324)
Not looking	0.0460* (0.2121)	0.2577 (0.2255)	− 0.0261 (0.2830)	− 0.1386 (0.2261)	0.0779 (0.2177)
Education					
High school	− 0.0877 (0.1713)	− 0.3923* (0.1964)	− 0.3116 (0.2159)	0.0462 (0.1850)	0.2162 (0.1731)
More than high school	0.4044* (0.1894)	− 0.2001 (0.2149)	− 0.0864 (0.2307)	− 0.3270 (0.2096)	0.2710 (0.1896)
Age					
30–45 years	− 0.1557 (0.1922)	− 0.05291* (0.2388)	0.1713 (0.2217)	1.0659*** (0.2254)	0.06005** (0.1860)
46–64 years	− 0.7522** (0.2712)	− 0.07562* (0.3163)	− 0.9434* (0.3689)	1.4312*** (0.3037)	1.5031*** (0.2820)
65 years or more	− 1.1618** (0.3712)	− 1.7867*** (0.4055)	− 0.5260 (0.4895)	1.2206** (0.4121)	1.6437*** (0.3849)
Children					
One	0.2093 (0.2519)	0.3171 (0.2960)	0.3423 (0.3200)	− 0.3009 (0.2717)	0.1271 (0.2597)
Two or more	0.1255 (0.2277)	0.3749 (0.2616)	0.0317 (0.2933)	− 0.4176 (0.2430)	− 0.2635 (0.2313)
Income					
$5000 to $9999	− 0.1206 (0.1612)	0.0919 (0.1807)	− 0.5956* (0.2072)	0.1088 (0.1776)	0.3127 (0.1620)
$10 000 to $14 999	0.2147 (0.2363)	0.3685 (0.2715)	− 0.6339* (0.3053)	0.2212 (0.2537)	0.6800** (0.2380)
$15 000 or more	− 0.1828 (0.2572)	0.5032 (0.3167)	− 0.4603 (0.3160)	0.5050 (0.2742)	0.3541 (0.2560)
Female	0.0910 (0.2464)	− 0.0583 (0.2556)	(0.3789)	(0.2774)	− (0.2505)

Family development	1.3994*** (0.3002)	1.6358*** (0.2989)	0.7804 (0.4306)	0.3465 (0.3280)	− 0.0539 (0.2908)
Elderly development	0.5202 (0.3649)	0.8493* (0.3601)	0.2552 (0.5395)	− 0.3789 (0.3949)	0.2908 (0.3642)
Individual scattered-site unit	− 0.4803 (0.3810)	− 1.4006*** (0.3804)	0.4258 (0.5137)	− 0.2797 (0.4201)	0.7364 (0.3715)*
Welfare	0.2858 (0.1686)	0.3659 (0.1892)	− 0.0047 (0.2175)	− 0.0110 (0.1833)	0.1470 (0.1715)
Wave					
1996	− 0.2763 (0.2001)	− 0.1020 (0.2304)	− 0.2756 (0.2338)	0.4774* (0.2307)	− 0.0629 (0.1966)
1997	− 0.3739 (0.2002)	− 0.3939 (0.2267)	− 0.4439* (0.2407)	0.6837** (0.2269)	0.1413 (0.1978)
1998	− 0.6072* (0.2082)	− 0.5491* (0.2317)	− 0.9114* (0.2736)	1.0652*** (0.2284)	0.6166** (0.2094)
Constant	− 1.3308* (0.6774)	− 0.0774 (0.7212)	− 2.0640* (0.9764)	− 3.3432*** (0.7629)	− 1.1861 (0.6808)
Chi-square	182.422	286.881	71.865	93.005	159.699
df	27	27	27	27	27
Significance	0.0000	0.0000	0.0000	0.0000	0.0000
Number of cases	982	986	984	932	986

Source: CMHA customer satisfaction surveys.
Notes: See Table 3 for definitions of variables and reference categories. *Statistically significant at the 0.05 level. **Statistically significant at the 0.01 level. ***Statistically significant at the 0.001 level.

Findings

Housing Satisfaction and Housing Conditions

Previous customer satisfaction surveys on both sides of the Atlantic have usually shown the vast majority of residents to be satisfied with their home, even those living in poor quality units. Our results are no exception. Over the course of the four surveys, the overwhelming majority (76 per cent) of CMHA residents were satisfied with their homes. Thirty-three per cent were very satisfied and 43 per cent were somewhat satisfied. Of the 23 per cent who were dissatisfied, 14 per cent were somewhat dissatisfied and 9 per cent were very dissatisfied.

Our results are similar to those recently reported by HUD in its first national housing assessment (HUD, 1999). In a pilot of the first national survey of residents of public housing, 75 per cent of residents responded that they were satisfied or very satisfied with their dwelling units, and 64 per cent said they would recommend their public housing development to a friend or family member.

Satisfaction levels remained high between 1995 and 1998 with about three-quarters satisfied at each point in time (Figure 1). The logistic results showed no

Table 5. Logistic regression results. Factors affecting assessments of management quality. Parameter estimates (standard error)

Variables	Satisfaction with CMHA maintenance of parking areas	CMHA grounds maintenance is getting better	Complaints to CMHA would not be investigated	CMHA information dissemination is inadequate	CMHA tenant involvement is limited	No moving plans
Length of residence						
6 months to 1 year	-0.5397	-0.3226	1.0681**	0.2642	1.0858**	-0.2800
	(0.3263)	(0.3141)	(0.3351)	(0.3113)	(0.4150)	(0.3627)
1 to 5 years	-0.2450	-0.6146*	0.8191**	0.0661	0.9775**	-0.9262**
	(0.2702)	(0.2665)	(0.2916)	(0.2643)	(0.3708)	(0.3113)
6 to 10 years	-0.0783	-0.5447	0.7542*	0.2142	1.3327**	-0.6814
	(0.3173)	(0.3064)	(0.3416)	(0.3056)	(0.4148)	(0.3552)
10 years or more	-0.0858	-0.7376	0.8147*	-0.0368	0.7704	-0.6383
	(0.3297)	(0.3186)*	(0.3509)	(0.3225)	(0.4405)	(0.3637)
Married	-0.2821	-0.0234	-0.0976	0.9859**	-0.0630	-0.1160
	(0.3717)	(0.3528)	(0.3770)	(0.3483)	(0.4120)	(0.4080)
Widow	0.1881	-0.2496	-0.2919	0.0168	-0.2471	-0.1583
	(0.2849)	(0.2555)	(0.2939)	(0.2748)	(0.3424)	(0.3005)
Never married	0.0081	0.2365	-0.2477	0.1772	-0.4718*	-0.0768
	(0.1826)	(0.1745)	(0.1837)	(0.1749)	(0.2064)	(0.2030)
Employed	-0.3582	0.3254	-0.0524	-0.1046	-0.0076	-0.9134***
	(0.2322)	(0.2204)	(0.2365)	(0.2259)	(0.2698)	(0.2539)
Not looking	-0.4401	-0.0436	0.0130	-0.2995	-0.1958	-0.4714*
	(0.2141)	(0.2034)	(0.2246)	(0.2124)	(0.2572)	(0.2346)

	(1)	(2)	(3)	(4)	(5)	(6)
Education						
High school	−0.0605	−0.0624	−0.4426*	−0.0306	−0.2515	−0.2018
	(0.1723)	(0.1649)	(0.1792)	(0.1685)	(0.2009)	(0.1930)
More than high school	−0.5052**	−0.1777	−0.1562	0.3106	−0.1632	−1.0214***
	(0.1930)	(0.1833)	(0.1914)	(0.1835)	(0.2137)	(0.2196)
Age						
30 to 45 years	0.4623*	0.4837*	−1.0148***	−0.5483**	−0.5836**	1.1077***
	(0.1905)	(0.1904)	(0.1953)	(0.1844)	(0.2156)	(0.2423)
46 to 64 years	0.4903	0.9748***	−1.1437***	−0.4054	−0.6801*	1.7712***
	(0.2770)	(0.2697)	(0.2824)	(0.2659)	(0.3144)	(0.3134)
65 years or more	0.3725	1.0974**	−1.6738***	−0.3345	−0.8895*	1.8062***
	(0.3824)	(0.3575)	(0.3960)	(0.3701)	(0.4532)	(0.4224)
Children						
One	−0.3149	−0.2327	0.3220	0.2745	0.3383	−0.3316
	(0.2548)	(0.2530)	(0.2591)	(0.2493)	(0.2879)	(0.2825)
Two or more	−0.3829	0.1566	0.3084	0.2357	−0.2504	−0.5588*
	(0.2296)	(0.2244)	(0.2395)	(0.2276)	(0.2723)	(0.2520)
Income						
$5000 to $9999	0.0723	0.2907	−0.1782	−0.2568	−0.2351	−0.0840
	(0.1637)	(0.1556)	(0.1672)	(0.1585)	(0.1897)	(0.1864)
$10 000 to $14 999	0.5615*	0.2001	0.1423	−0.5064*	−0.3984	−0.1049
	(0.2424)	(0.2269)	(0.2362)	(0.2302)	(0.2837)	(0.2734)
$15 000 or more	0.4391	−0.0074	—			—
	(0.2600)	(0.2527)	(0.2685)	(0.2496)	(0.2798)	(0.3242)
Female	0.0268	−0.0688	−0.0077	0.0154	0.5399	0.3130
	(0.2529)	(0.2336)	(0.2623)	(0.2463)	(0.3301)	(0.2775)
Family development	0.0532	0.4361	−0.1537	0.1620	0.1309	−0.8424**
	(0.2980)	(0.3006)	(0.2915)	(0.2909)	(0.3412)	(0.3259)
Elderly development	0.7400*	0.4532	−0.6420	−0.4551	−0.4437	−0.1050
	(0.3669)	(0.3552)	(0.3674)	(0.3613)	(0.4415)	(0.4007)

Table 5. Continued

Variables	Satisfaction with CMHA maintenance of parking areas	CMHA grounds maintenance is getting better	Complaints to CMHA would not be investigated	CMHA information dissemination is inadequate	CMHA tenant involvement is limited	No moving plans
Individual scattered-site unit	0.6077 (0.4031)	0.1956 (0.3733)	-0.4857 (0.3702)	-0.0384 (0.3599)	-0.1894 (0.4343)	0.5364 (0.3939)
Welfare	-0.0283 (0.1732)	0.0830 (0.1647)	-0.4457* (0.1770)	0.1429 (0.1688)	0.1888 (0.1996)	-0.1502 (0.1965)
Wave 1996	-0.1317 (0.2019)	-0.3015 (0.1953)	0.1763 (0.2012)	0.1046 (0.1900)	0.2108 (0.2202)	-0.4132 (0.2279)
1997	0.0729 (0.2024)	-0.1914 (0.1924)	-0.3736 (0.2051)	-0.1560 (0.1908)	-0.1456 (0.2277)	-0.3765 (0.2298)
1998	0.5147* (0.2105)	0.4779* (0.1953)	-0.5255* (0.2174)	-0.9300*** (0.2101)	-0.6771** (0.2606)	-0.4904* (0.2398)
Constant	0.1726 (0.6818)	-1.0370 (0.6549)	0.6163 (0.7012)	-0.1408 (0.6696)	-2.1744* (0.8709)	0.7080 (0.7544)
Chi-square	121.964	56.587	127.399	101.600	74.613	333.651
df	27	27	27	27	27	27
Significance	0.0000	0.0007	0.0000	0.0000	0000	0.0000
Number of cases	865	954	905	973	934	923

Source: CMHA customer satisfaction surveys.
Notes: See Table 3 for definitions of variables and reference categories. *Statistically significant at the 0.05 level.
**Statistically significant at the 0.01 level. ***Statistically significant at the 0.001 level.

Table 6. Summary of logistic regression runs indicating whether any year of survey indicator (1996, 1997 or 1998) had a positive statistically significant impact on customer satisfaction

Dependent variables	
Housing satisfaction	No
Housing problems	No
Neighbourhood satisfaction	Yes
Neighbourhood problems	Yes
Neighbourhood is getting better	No
Apartment is safe at night	Yes
Neighbourhood is safe during day	Yes*
Neighbourhood safety is getting better	Yes
Neighbourhood social strengths	Yes
Moving plans	Yes
Satisfaction with timeliness of CMHA housing repairs	No
Satisfaction with quality of housing repairs	No
Timeliness of CMHA housing repairs is getting better	No
Quality of CMHA housing repairs getting better	No
Satisfaction with CMHA maintenance of trees, grass, and flowers	No
Satisfaction with CMHA maintenance of garbage pick-up areas	Yes*
Satisfaction with CMHA maintenance of parking areas	Yes
CMHA grounds maintenance is getting better	Yes
Complaints to CMHA would be investigated	Yes
CMHA information dissemination is adequate	Yes
CMHA involves tenants in decision-making	Yes

Notes: We have changed the wording of the direction of some of the variables in this table as compared to Tables 4 and 5 so as to improve clarity. For example, we have changed the label 'neighbourhood dissatisfaction' in Table 4 to 'neighbourhood satisfaction'. When we made this type of change we also changed the sign of the result; thus the meaning of the results remains unchanged.
* Due to limited space, these results are not included in Table 4 or Table 5. The results for safety during the day are very similar to the results for safety at night; similarly, the results dealing with CMHA maintenance of garbage pick-up areas are very similar to the results dealing with maintenance of parking areas.

significant change in levels of satisfaction once other factors were controlled. The fact that CMHA management reforms were not linked to increases in housing satisfaction may simply be due to the fact that they were so high to start off with.

Were the high levels of housing satisfaction simply a product of low expectations resulting in tenants not being aware of the extent to which their homes were in such poor condition? To answer this question, we asked respondents to assess the extent to which eight different aspects of their home constituted a problem. The eight housing faults ranged from peeling paint on walls to electrical problems. We created an index measuring perceived housing problems by summing the number of major housing problems each respondent experienced. Although the score could range from 0 to 8, the average score was only 0.7. Nearly two-thirds (64 per cent) of the respondents experienced no major housing problems. The remainder was fairly equally distributed between those experiencing one problem and those who experiencing two or more. Thus, the high level of housing satisfaction did, in fact, reflect generally good housing conditions.

Figure 2 shows that between 1995 and 1998, there was no meaningful change
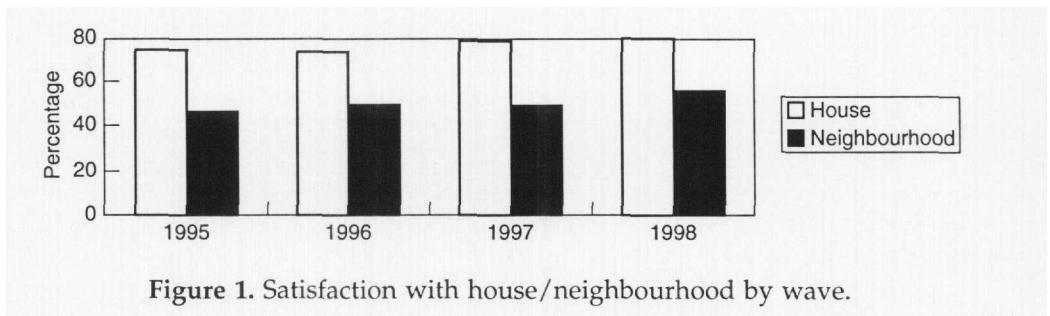
Figure 1. Satisfaction with house/neighbourhood by wave.

in the incidence of major housing problems. The same conclusion emerged from the logistic results.

Neighbourhood Satisfaction and Neighbourhood Conditions

Respondents were far more satisfied with their homes than their surrounding neighbourhoods. Just over one-half (51 per cent) of the respondents were satisfied with their neighbourhood which was considerably smaller than the percentage satisfied with their home (77 per cent). The 'satisfied' group was equally split between those very satisfied (24 per cent) and those somewhat satisfied (27 per cent). Among those dissatisfied, a higher proportion was very dissatisfied (28 per cent) than was somewhat dissatisfied (21 per cent).

Neighbourhood satisfaction levels rose over the four-year study period (Figure 1). Whereas less than half of the respondents were satisfied with their neighbourhoods in 1995, 1996 and 1997, in 1998 over half (56 per cent) were. The proportion who were very dissatisfied with their neighbourhood declined by 11 per cent (from 32 per cent to 21 per cent) between 1997 and 1998. The logistic results (Table 4) further support this point. With each succeeding wave the likelihood of being dissatisfied decreased. The odds on being satisfied with one's neighbourhood for the most recent wave (1998) were 1.8 times that for the reference group, those interviewed in 1995.

Neighbourhood conditions were more problematic than housing conditions. Respondents were asked whether six different neighbourhood conditions ranging from litter or trash to gangs constituted minor or major problems or whether they were no problem at all. More than half of the respondents mentioned drug dealers (the most frequently mentioned problem) as a major problem. We created an index of neighbourhood problems by summing the number of major neighbourhood problems cited by each respondent. The average score for neighbourhood problems, 1.62, was significantly higher than for housing prob-
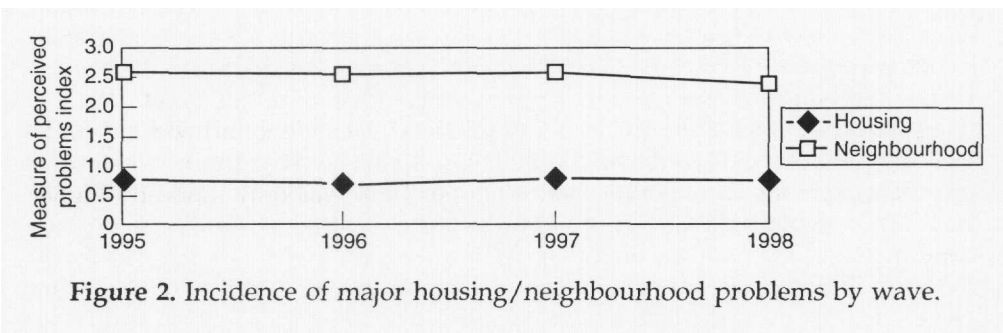
Figure 2. Incidence of major housing/neighbourhood problems by wave.

lems, 0.7, even though the latter index was based on more items. Furthermore, whereas nearly two-thirds (62 per cent) perceived one or more major neighbourhood problems, only about one-third (36 per cent) reported one or more major housing problems. The 62 per cent who perceived major neighbourhood problems was roughly equally divided between those who perceived one or two problems and those who perceived three or more.

Between 1995 and 1998 the reported incidence of neighbourhood problems declined significantly, from 1.67 in 1995 to 1.37 in 1998. During the same period there was a modest increase, from 37 per cent to 42 per cent, in the proportion who perceived no major neighbourhood problems. The wave in which the respondent was interviewed had a statistically significant impact on perceived neighbourhood problems when other factors were taken into account (Table 4). That is, the odds for perceiving one or more neighbourhood problems for those in wave four were about three-fifths (0.5775) of those in wave one.

We separately asked respondents whether they thought neighbourhood conditions were getting better, were getting worse, or were remaining the same. Far more residents believed that conditions were getting better (46 per cent) than believed conditions were getting worse (20 per cent). The remaining 34 per cent thought that conditions were remaining the same. There was a modest 5 per cent increase between 1997 and 1998 in the proportion optimistic about neighbourhood conditions. However, there were no significant changes in expectations by wave, based on the logistic regression results.

Neighbourhood Safety

The survey included two separate questions on perceptions of safety. Respondents were first asked how safe they felt in their apartment at night; they were next asked how safe they felt on the streets near their home during the day. In each case, respondents were asked whether they felt 'very safe', 'somewhat safe', 'somewhat unsafe', or 'very unsafe'. The results were basically the same for the two questions. Over the course of the four waves, more than four-fifths of the respondents felt somewhat or very safe. Within this group, about half felt very safe. These results are basically similar to those obtained by Zelon and associates as part of a HUD funded 1994 national survey of public housing residents. In that study "slightly more than one in five public housing residents reported feeling unsafe in their developments/neighbourhoods" (p. 1).

The results show substantial increases in feelings of safety between 1995 and 1998 (Figure 3). The proportion feeling very safe during the day on neighbourhood streets rose from 37 per cent in 1995 to 58 per cent in 1998. Between 1997 and 1998, the proportion feeling very safe in their own apartment rose from 47 per cent to 59 per cent. The logistic regression results also show residents feeling far safer in their apartment at night and on neighbourhood streets in 1998 than in 1995. Specifically, the odds on feeling safe in one's apartment at night for those in wave four were 2.5 that for householders in wave one (Table 4).

Respondents were not nearly as optimistic about neighbourhood safety as they were about neighbourhood conditions in general. The proportion believing security conditions were getting better (29 per cent) was only modestly higher than the proportion believing conditions were getting worse (24 per cent). However, both the cross-tabular results (Figure 4) and logistic regression results (Table 4) show optimism about security rising between 1995 and 1998. The
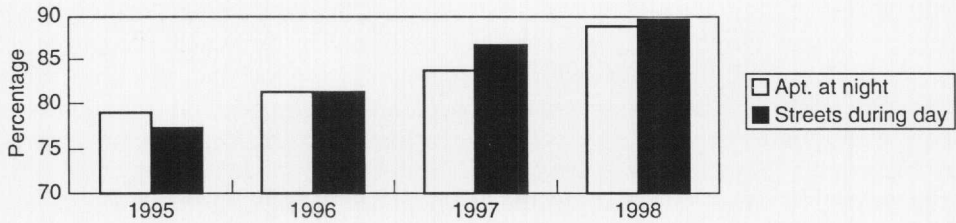
Figure 3. Feel safe by wave.

proportion believing security was getting better rose from 21 per cent in 1995 to 38 per cent in 1998. Correspondingly, the proportion believing that security was getting worse nose-dived from 37 per cent to 18 per cent. Similarly, the odds on feeling safe in the neighbourhood for wave four respondents were three times that of those in wave one.

Neighbourhood Social Fabric

Respondents were asked five separate questions dealing with the quality of the neighbourhood social fabric, ranging from whether they could find someone to talk to, if they felt like talking, to whether they felt that being in their neighbourhood was like being a member of a group of friends. Results suggest that most residents have a strong social network to fall back on in times of need. About two-thirds felt that they could find someone to talk to if needed, and a similar proportion felt that people in their neighbourhood could generally get help from others when necessary. Slightly smaller proportions, (about three-fifths) felt that they could find someone to talk to if they were upset and that people could get together if there was a serious problem. Less than one-half, however, felt that being a member of their neighbourhood was like being a member of a group of friends.

We computed an index to measure the quality of the neighbourhood social fabric by summing the number of statements to which respondents agreed. The resulting index could range from 0 to 5. On average, respondents agreed with about three of the statements (2.81). The results show an improvement over time in the quality of the social environment available to CMHA residents (Figure 5). That is, there was a statistically significant increase in the social fabric index from 2.67 in 1995 to 3.05 in 1998.

Similarly, the logistic results show wave four respondents rating their social
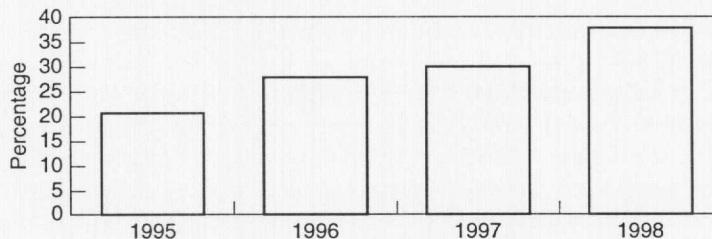

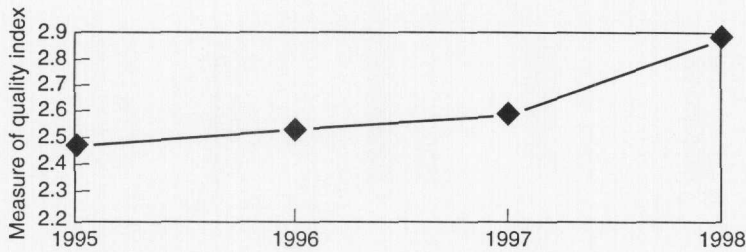**Figure 4.** Problem of crime has got better by wave.

Figure 5. Average number of positive neighbourhood social attributes.

neighbourhood more positively than those interviewed in wave one, even when other background characteristics were controlled (Table 4). The odds on perceiving three or more positive neighbourhood attributes for 1998 respondents were nearly twice as great as for those interviewed in 1995.

CMHA House Repairs and Grounds Maintenance

Of all the results, the ones dealing with the CMHA repair service are most problematic. About three-quarters of CMHA residents requested help from the repair service annually. Plumbing problems, the most common cause of repair requests, led to two-fifths of the requests. Two-thirds of those who filed repair requests saw the repair work completed. Those who made a repair request were asked to assess the quality of the CMHA repair service with respect to (1) timeliness and (2) workmanship. That is, was the repair work 'excellent', 'good', 'fair', or 'poor'? The results indicate a fairly high level of dissatisfaction with the repair service. Fifty-six per cent rated the timeliness of the repair as fair to poor; the results for quality of workmanship were similar. Figure 6 shows that over the course of the four surveys, there was little change in ratings of the timeliness of repairs. The same conclusion emerged from the logistic regression results. Ratings for the workmanship of repairs did rise, however. That is, the proportion rating workmanship as good to excellent rose from 44 per cent in the 1995 to 1997 surveys to 52 per cent in the 1998 version. Similarly, the odds on rating workmanship of repairs as good-excellent for those interviewed in 1998 were 1.6 that of 1995 interviewees.

Respondents who had made repair requests were asked whether they thought the timeliness/quality of workmanship was 'getting better', 'remaining the same' or 'getting worse'. Respondents were two to three times as likely to
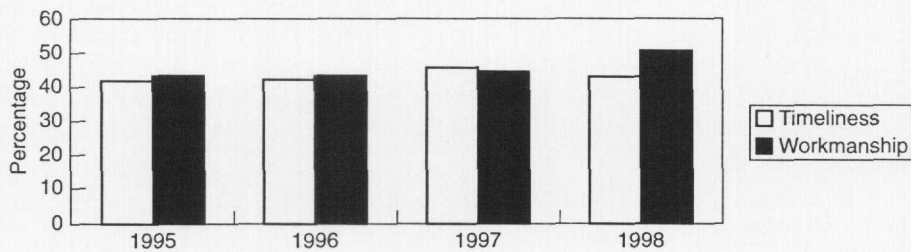

Figure 6. Rate repairs as good to excellent by wave.
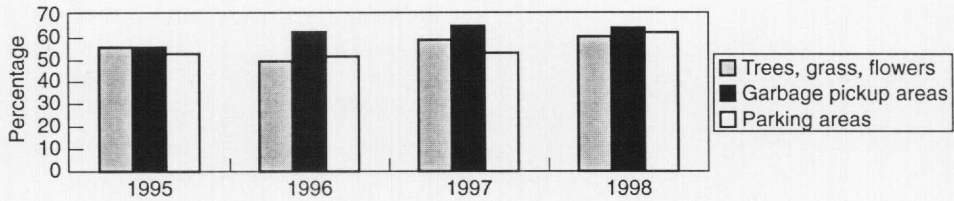
Figure 7. Rate maintenance as good to excellent by wave.

believe that the repair service was getting better with respect to timeliness/ workmanship than they were to believe that it was getting worse. Over the four waves there was considerable fluctuation in confidence about the quality of the repair service. Between 1995 and 1997 the proportion believing the timeliness/ workmanship was improving dropped. However, a modest turnaround occurred between 1997 and 1998 when the proportion optimistic rose from 25 per cent to 33 per cent. These changes were not large enough to be statistically significant when other factors were taken into account.

Results dealing with CMHA grounds maintenance generally were more positive than those dealing with the repair service. Respondents were asked to assess three aspects of CMHA grounds maintenance: (1) trees, grass, and flowers; (2) garbage pick-up areas; and (3) parking areas. Was each aspect of maintenance 'excellent', 'good', 'fair' or 'poor'? Clearly, respondents were more pleased with CMHA grounds maintenance than they were with the CMHA repair service. Whereas more than one-half rated each of these three aspects of maintenance as at least good, less than half had rated the timeliness and workmanship of repairs as so highly.

Furthermore, assessments of two of the three components of grounds mainte- nance—the maintenance of parking areas and the maintenance of trees, flowers, and shrubs—improved between 1995 and 1998 (Figure 7). The proportion rating maintenance of parking areas as good to excellent, which stood at just over 50 per cent in the first three surveys, rose to 61 per cent in the fourth survey (1998). Similarly, in the logistic regression analysis, respondents interviewed in 1998 were significantly more likely than those interviewed in 1995 to rate the maintenance of parking areas as good to excellent (Table 5). Specifically, the odds of a 1998 respondent providing a good or excellent rating were 1.7 times greater than for a 1995 respondent. Both the cross-tabular and logistic regression results show that during this period there was no clear-cut pattern of change in assessments of garbage pick-up areas.

Far more respondents perceived that the quality of regular CMHA grounds maintenance was improving than perceived it getting worse (35 per cent versus 14 per cent. The proportion perceiving improvement, which had declined from 41 per cent in 1995 to 35 per cent in 1996 and 1997, rose to 46 per cent in the most recent survey. This conclusion—increasing optimism about the quality of grounds maintenance—was also borne out by the logistic regression analysis (Table 5).

CMHA Governance

Most (60 per cent) CMHA clients felt that if they made a complaint, it would be thoroughly investigated. This indicator fluctuated widely between 1995

and 1998. Between 1995 and 1996, the proportion believing that their complaint would be investigated dropped sharply from 61 per cent to 52 parent, then rose to 62 per cent in 1997 and then increased further to 66 per cent in 1998. Similarly, the logistic computer run shows that the odds on believing that a complaint would be thoroughly investigated for 1998 respondents were 1.7 times greater than for 1995 respondents.

Respondents were asked: 'How would you rate CMHA in keeping you informed about housing matters or things happening that may affect you? Would you say: 'Excellent', 'Good', 'Fair', or 'Poor'. Overall, three-fifths of CMHA respondents rated CMHA efforts to keep them informed as at least 'Good'. Whereas the proportion rating CMHA efforts as good to excellent stood at about 55 per cent in the first three surveys, the figure rose to 73 per cent in the 1998 survey. The odds on believing that CMHA efforts to keep residents informed were good or excellent were 2.5 times higher among 1998 respondents than they were among 1995 ones.

We asked respondents whether CMHA involved residents 'a lot', 'a little' or 'not at all' in decision-making. More than three-quarters (77 per cent) of the respondents felt that CMHA involved respondents to some degree. However, far more believed that residents were involved a little (48 per cent) than believed they were involved a lot (29 per cent).

Although the pattern of change over time is somewhat erratic, the results do suggest modest increases in perceptions of tenant involvement in CMHA decision-making. The proportion believing that tenants were involved at least a little in CMHA decision-making, which had dropped from 77 per cent to 70 per cent between 1995 and 1996, rose from 70 per cent to 76 per cent between 1996 and 1997, and then rose further to 83 per cent in 1998. These changes are statistically significant based on the multivariate analysis. That is, the odds for 1998 interviewees believing CMHA takes residents views into account at least a little were double that for residents interviewed in 1995.

Mobility

Given the preceding results showing high levels of housing satisfaction and rising levels of neighbourhood satisfaction one might expect little interest in moving among residents. This was not the case. Nearly three-quarters, (73 per cent) of the respondents wanted to move; fifty-eight per cent were very interested and 15 per cent were somewhat interested. The proportion who were very interested in moving rose fairly sharply between 1995 and 1996 (68 per cent to 75 per cent) but stabilised at that point. There was no significant increase by wave in the desire to move once other factors were taken into account. Not surprisingly, the proportion planning to move within five years (58 per cent) was less than the proportion wanting to move.

Figure 8 shows that the proportion anticipating moving rose sharply between the 1995 and 1996 surveys (from 47 per cent to 59 per cent) but remained fairly stable between 1996 and 1998. The logistic results provide additional evidence of the rising propensity to move among CMHA residents. Specifically, the odds on planning to move among 1998 interviewees was 1.6 times greater than for 1995 respondents.

The results to an open-ended question asking people for their reasons for wanting to move highlight the fact that wanting to move does not necessarily
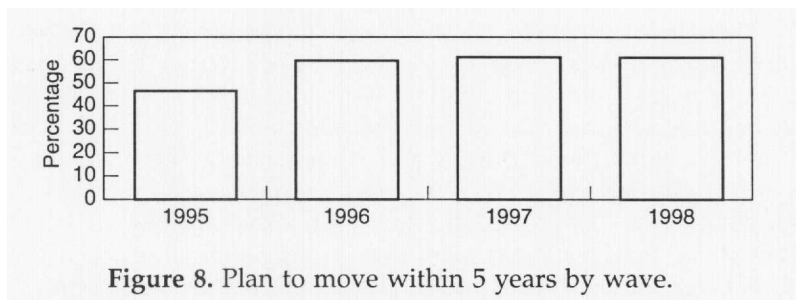
Figure 8. Plan to move within 5 years by wave.

indicate dissatisfaction with CMHA housing. The recoded results to the open-ended question show that roughly two-fifths of the respondents wanting to move for 'normal' mobility reasons (e.g. they felt a need for a change, they believed they needed more space for a growing family, they wanted to purchase a home). The remaining three-fifths wanted to move because of neighbourhood problems (crime, drugs, bad neighbours) or because of dissatisfaction with some aspect of their home or with CMHA rules. Some simply said they wanted a 'better place' or that their CMHA house was 'too old' while others cited specific concerns, that they needed more closet space, that they had experienced plumbing problems, that CMHA units lacked central air conditioning, that their family needed a washer or dryer, or that they wanted carpeting throughout the home. With the data gathered on the surveys it was impossible to test for the validity of these alternative explanations.

Conclusions and Future Directions

Policy Implications

Public housing authorities are under increasing pressure to become more business-like and to improve their performance. As a result LHAs have been increasingly interested in using customer satisfaction surveys to assess needs and to measure their ability to raise levels of satisfaction of tenants. Unfortunately, few LHAs have up to this point carried out the types of multi-wave surveys necessary to portray trends.

Addressing this gap in existing research, this paper has presented a more reliable approach to measuring public housing customer satisfaction than has been used in the past, that is, one that (a) looks at trends in customer satisfaction rather than satisfaction at one point in time; (b) looks at different components of satisfaction; and (c) combines qualitative and quantitative information. Cross-tabular and logistic regression analysis were applied to a dataset containing approximately 1300 telephone interviews with residents of Cincinnati Metropolitan Housing Authority (CMHA) housing, interviewed over four waves (1995, 1996, 1997 and 1998).

In general, the survey results (Table 6) parallel objective evidence from agency records showing CMHA to be one of the most rapidly improving local housing authorities in the US.

- Over the course of the study period, levels of housing satisfaction have remained high and residents have reported few major problems with their homes.
- At the start of the study period, residents tended to be more dissatisfied with their neighbourhood than with their dwellings. However, beginning in 1995

neighbourhood satisfaction levels rose while over the same period residents perceived fewer major neighbourhood problems such as drug dealing and gangs.

- Perceptions of safety in the home and neighbourhood rose in tandem with rising levels of housing satisfaction. Residents' assessments of the social quality of their surrounding neighbourhood also rose during this period. In other words, over time increasing proportions of residents reported that they could turn to neighbours for help, if necessary.
- Most residents rated three aspects of grounds maintenance as good to excellent. Furthermore, residents' assessments of two aspects of grounds maintenance—the upkeep of parking areas, the maintenance of trees, grass, and flowers—improved significantly during this period.
- Survey results dealing with CMHA governance were mostly positive. A majority of residents felt that if they made a complaint to CMHA management it would be thoroughly investigated. The proportion feeling this way rose significantly between 1995 and 1998. Furthermore, most residents felt that CMHA did a good job in keeping them informed; there was a significant rise in the proportion responding this way over the course of the study period.

Nevertheless, the survey results highlight three possible problem areas for CMHA. First, a majority of the residents were dissatisfied with both the timeliness and the quality of repairs. While assessments of the quality of workmanship improved between 1995 and 1998, the low ratings for timeliness changed little. Second, although there were modest increases in residents' perceptions of their involvement in CMHA decision-making the fact is, as of 1998, two-thirds felt that CMHA took their views into account only a little or not at all. Finally, despite the above noted positive results dealing with housing/neighbourhood satisfaction, the proportions planning to move within five years rose significantly between 1995 and 1998 and stood at 59 per cent in 1998. The next section proposes research aimed at these problem areas.

Future Research

Future research needs to look at how changes in management can alter tenant satisfaction. Study designs might include samples from housing authorities experiencing major management reforms and from housing authorities lacking these efforts. In addition, it would be useful for researchers to gather some base-line indicators tapping respondents' retrospective memory of tenant satisfaction before the management changes took place to supplement current assessments of housing and neighbourhood conditions and management quality. Future studies might investigate the extent to which residents' feelings about their home and neighbourhood are influenced by changes in the demographic make-up of tenants and positive news stories on television and local newspapers.

Second, future studies need to explain why people feel safer or why they believe they live in stronger and more socially cohesive neighbourhoods, if that is in fact the case. In the present study it is clear that perceptions of safety improved but it is not clear why. Were exterior physical improvements such as better fencing and better lighting the reason or was it due to better management resulting in the attraction of more working residents who are willing to abide by

the rules? Or do the results reflect the overall decline in crime in Cincinnati, as in other American cities? As the case with safety, it is difficult to pinpoint specific reasons for the improvement in the social environment of CMHA housing. Have improvements in safety led residents to feel more comfortable visiting friends and relatives living nearby? Has stricter enforcement of CMHA regulations, leading to the screening out or eviction of problem families made residents feel more comfortable with their neighbours? Has the increasing number of employed householders and a decreasing number dependent on welfare enhanced the social environment, and if so, how?

Third, additional research is needed to explain why dissatisfaction levels with repairs remains so high despite CMHA's management improvements and residents' high level of housing satisfaction. Do the findings reflect the fact that when individuals assess 'crisis-type' services (whether they live in public housing or not) their standards are both high and difficult to meet? Alternatively, does the disruptive nature of repairs contribute to negative ratings? Finally, is it possible that CMHA's more businesslike management approach (which is shifting more of the responsibilities to the tenant) may be creating anxieties leading to these high dissatisfaction levels? To give just one example, after a first free service call, CMHA charges tenants to open their front door if they have locked themselves out. In the past, this service was free no matter how many times the problem occurred. Future research is needed to test for the validity of these alternative explanations.

Fourth, additional work is needed on tenants' views on their involvement in local authority decision-making. Many academics and housing officials have asserted that residents should be involved in decision-making to the maximum degree possible. By this standard, CMHA's citizen participation policies would seem inadequate in as much as residents believe that CMHA only involved them minimally in decision-making. However, the fact that only a small minority of residents are actively involved does not necessarily indicate any failure on the part of CMHA. Many residents may be disinterested in being actively involved. The increasing number of employed CMHA residents may feel that they do not have time for such activity, or that they would not be expected to participate were they living in private rental housing. Vale's 1998 study of Boston public housing revitalisation highlights the fact that a high level of citizen participation may not be a prerequisite for improved management performance. The most successful revitalisation occurred at the Commonwealth development where a private agency handles management. The role of residents there is to monitor the performance of the private agency. Questions for future research include the following: To what degree do residents want to be involved more than they are now? If they want more involvement, how would they like to be involved, and how much additional time would they be willing to spend?

Finally, future research is needed on residential mobility among public housing residents. In this study, it was far from clear why levels of housing satisfaction remained high and levels of neighbourhood satisfaction rose, but mobility propensity increased. Surveys should be carried out in the low-income private rental sector as a gauge to see whether the intended mobility rate is as high. A long-term residential mobility research agenda should include the following questions. To what extent have efforts to reduce the stigma of public housing living succeeded, and if so, has this success led to a stronger attachment to public housing? To what extent does the perceived availability of other

housing options impact on how quickly individuals move out of public housing (Freeman, 1998)? Which types of public housing householders are most likely to be aware of the availability of decent private rental housing, both in the city and suburbs? Do working householders who move into public housing see their stay in public housing as a stepping-stone into the private stock, (or toward home ownership) or as a long-term interest? If the former, how could they be encouraged to remain in income- and tenure-mixed developments so as to serve as role models for low-income families?

  If socially mobile families view public housing as a stepping stone in their quest for their ideal home this is not necessarily a problem. The shift would be consistent with the original mission of the public housing programme that was to provide temporary help for unemployed workers until they could find a job. As local housing authorities become more businesslike, they may be performing a similar function, that is, attracting working families for only a short period. Some housing authority directors may see this trend as an obstacle to efforts to create stable, income mixed communities where workers can serve as role models. HUD's HOPE VI public housing revitalisation programme, which emphasises income and tenure mixing, may offer an answer to this dilemma. Socially mobile householders might be encouraged to shift from renting a public housing unit to owning their own home while remaining at the same revitalised site. Future research is needed to determine the numbers and types of upwardly mobile householders who would be interested in making such short-distance moves.

Acknowledgements

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