

Community Advantage Panel Survey: Data Collection Update and Analysis of Attrition and Panel Representativeness April 2007

Memo prepared by
Mark Lindblad and Jong-Gyu Paik
Center for Community Capitalism
University of North Carolina- Chapel Hill

In this memo we provide an update of CAP data collection activities for 2006 and describe our data collection plan for 2007. We first summarize the CAP sampling strategy and data collection progress before turning to attrition concerns, panel representativeness, and upcoming survey plans.

Sampling Strategy and Data Collection Progress

Table 1 provides an overview of CAP data collection for our sample of 3,743 original homeowners and 1,533 original renters. The table displays the number of completed interviews by year, wave/round, module, and mode of administration.

The “2007” row of Table 1 indicates that data collection for this upcoming year will include a repeat of the social capital and parenting modules administered in 2004, as well as a new module on health care costs. We have also added new social capital questions on networking and collective efficacy, as well as questions about housing payments. We will bring the most recent version of these modules to our April 23 meeting in New York.

The “2008” row of Table 1 identifies the data collection decision we need to make for next year. Specifically, we need to decide whether or not to collect the wealth-and-assets data through in-home interviews or by phone. Our decision regarding the mode of administration has research and cost implications that we want to discuss in-person.

Table 1 also shows the more complex data collection effort that took place last year. The “2006” row of Table 1 shows that we used phone surveys to collect CAP data for three different samples: Owners Wave-4, Renters Round-3, and the Soft-Refusal sample. Whereas the Owners Wave-4 and Renters Round-3 samples were part of the original design, the Soft-Refusal sample was an intervention designed to increase completion rates and collect not only the 2006 items but also Wealth-and-Assets data from non-respondents to the 2005 interview.

Table 1
Data Collection Overview

<u>Year</u>	<u>Owners</u>				<u>Renters</u>			
	Wave	Module	Mode	Completes	Round	Module	Mode	Completes
2003	1	Home purchasing info; Counseling	SRU phone survey	3,743	--	---	--	--
2004	2	Social Capital; Parenting;	SRU phone survey	2,616	1	Social Capital; Parenting; Intent to Own	RTI phone survey	1,533
2005	3	Wealth & Assets; Mortgages; Savings; Movers Module	SRU phone survey RTI in-home interview	2,702 1,284	2	Wealth & Assets; Mortgages; Savings; Intent to own	RTI in-home interview	1,158
2006	4	Rising Energy Costs; Financial Literacy; Sense of Community; Movers Module	SRU phone survey	2,380 total (2,118 +	3	Rising Energy Costs; Financial Literacy; Sense of Community; Intent to own	RTI phone survey	1,046 total (970 +
	3&4	Wealth & Assets; Mortgages; Savings; Rising Energy Costs; Financial Literacy; Sense of Community; Movers Module	RTI phone survey to Soft-Refusal Sample (Owners who did not complete Wave-3 SRU phone survey &/or RTI in-home interview)	262)	2&3	Wealth & Assets; Mortgages; Savings; Rising Energy Costs; Financial Literacy; Sense of Community; Intent to own	RTI phone survey to Soft-Refusal Sample (Renters who did not complete RTI's Round-2 interview)	76)
2007	5	Social Capital 2; Parenting 2; Health Care Movers Module	RTI phone survey		4	Social Capital 2; Parenting 2; Health Care Intent to own	RTI phone survey	
2008	6	Wealth & Assets 2; Mortgages 2; Savings 2; Sense of Community 2; Movers Module	RTI phone survey AND/OR in-home interview		5	Wealth & Assets 2; Mortgages 2; Savings 2; Sense of Community 2; Intent to own	RTI phone survey OR in-home interview	

- Note:
- Universal core questions (demographics, employment, household expenses) asked at every wave.
 - Renters were matched to urban owners by location and income.
 - Renters Round-1 originally included 118 additional respondents who were later dropped due to not meeting age or income requirements

More specifically, the Soft-Refusal survey combined the 2005 and 2006 surveys and converted the in-home Wealth-and-Assets questions to a phone interview. The Soft-Refusal survey targeted baseline owners who did not complete Waves 2 or 3 and baseline renters who did not complete Round 2.¹ Respondents who had previously requested to be removed from the study (i.e., hard refusals) were not eligible for the Soft-Refusal sample.

The Soft-Refusal survey took considerably longer to administer, but the intervention was effective in that it yielded 262 completed owner interviews and 76 additional renter interviews. Combining these Soft-Refusals with the Owners' Wave-4 completes (n=2,118) produced a total of 2,380 completed owner interviews for 2006. Similarly, adding the 76 Soft-Refusal Renters to the Round-3 completes (n=970) yielded a total of 1,046 completed Renter interviews.

Table 2 provides additional detail on the final status of the data collection efforts for 2006. Nearly all owner households were originally made eligible for the 2006 interviewing, either through the Survey Research Unit's (SRU) Wave-4 survey or the Research Triangle Institute's (RTI) Soft-Refusal survey.

We anticipated low completion rates for the Soft-Refusal survey because the sample was constructed from prior refusals and others who had previously dropped out of the study. Table 2 shows that the percentage of Soft-Refusals who completed interviews was in the low twenties for both owner and renters.

Completion rates were much better among those owners and renters who were eligible for the regularly scheduled Wave-4 and Round-5 calling. Table 2 shows that for both owners and renters, regular interviewing yielded completion percentages in the low eighties. Specifically, Wave-4 owners completed 84% of those eligible while Round-3 completed 83%. While these completion rates are good, we are hopeful that next year RTI can improve upon these completion rates for both owners and renters.

¹ In addition, a small number of Spanish-speaking owners were transferred to RTI's Soft-Refusal panel in the Fall of 2006 when SRU experienced problems with their bilingual staffing. Rather than wait for SRU to hire more bilingual interviewers, RTI was asked to take-over all remaining bilingual calling from SRU.

Table 2
Final Status of 2006 Data Collection Efforts

Final Status – 2006	<u>Owners</u>			<u>Renters</u>		
	Wave-4	Soft-Refusal	All	Round-3	Soft-Refusal	All
Completed Interview	2,118 (83%)	262 (22%)	2,380	970 (84%)	76 (23%)	1,046
Bad Number & Unable to contact	360 (14%)	568 (48%)	928	125 (11%)	198 (60%)	323
Ineligible	5 (0.2%)	56 (5%)	61	20 (2%)	23 (7%)	43
Refused – hard refusal	3 (0.1%)	3 (0.3%)	6	6 (0.5%)	1 (0.3%)	7
Refused – soft refusal	57 (2%)	306 (26%)	363	37 (3%)	32 (10%)	69
Total Originally Eligible 2006	2,543	1,195	3,738	1,158	330	1,488

Note: Percentages shown are column percentages.

CAP Samples by Wave and Round

Having identified the final status for 2006 in the previous section, we now turn to completions across all waves and rounds since inception of baseline data collection in 2003.

Owners

Of the 2,380 owners who completed interviews in 2006, 1,840 (77%) also completed Waves 1, 2, and 3. The original baseline sample contained 3,743 homeowners, and about half (1,840, 49%) have completed all four interviews. Another 21% (798) have completed three interviews, and 15% (578) have completed just two interviews. Table 3 displays the number and percentage of completed owner interviews by wave.

Table 3
Owners' Interviews by Wave

Number of Waves Completed	Number of Owners	Percentage	Cumulative Percentage
All four waves	1,840	49.2%	49.2%
Only three waves	798	21.3%	70.5%
<i>Wave 1, 2 & 3</i>	351	9.3%	
<i>Wave 1,2 & 4/SR</i>	99	2.6%	
<i>Wave 1, 3 & 4/SR</i>	348	9.3%	
Only two waves	578	15.4%	85.9%
<i>Wave 1 & 2</i>	324	8.7%	
<i>Wave 1 & 3</i>	162	4.3%	
<i>Wave 1 & 4/SR</i>	92	2.4%	
Only one wave (baseline)	527	14.1%	100%
Total	3,743	100%	

Note: 'SR' denotes 'Soft-Refusal'. Numbers are based on the raw dataset prior to data cleaning.

Renters

Of the 1,046 renters who completed 2006 interviews, 970 (93%) also completed Rounds 1 and 2. The original baseline renters' sample consisted of 1,533 renters, and 63% of these have completed all three interviews while 17% have completed only two rounds. Note that renters have had one less interview opportunity than owners because the renters' sample was administered concurrently with the Owners' Wave-2 survey. Table 4 displays the number and percentage of completed renter interviews by round.

Table 4
Renters' Interviews by Round

Number of Rounds Completed	Number of Renters	Percentage	Cumulative Percentage
All three rounds	970	63.3%	63.3%
Only two rounds	264	17.2%	80.5%
<i>Round 1 & 2</i>	188	12.2%	
<i>Round 1 & 3/SR</i>	76	5.0%	
Only one round (baseline)	299	19.5%	100%
Total	1,533	100%	

Note: Numbers are based on the raw dataset prior to data cleaning.

Eligibles for 2007 Survey

The number of panel members originally eligible for 2007 interviewing consists of 2,931 owners and 1,218 renters. We derive these numbers by requiring at least two prior completed surveys, and then subtract for refusals, deceased, or otherwise ineligible panel members. Calling begins in June.

Panel Attrition Bias

This section considers panel representativeness in two ways. First, we examine the extent to which our current panels represent baseline respondents. Specifically, we compare the baseline characteristics of owners and renters who dropped out of the study to those who were retained. In creating the retention variable, we concatenate completes from the Soft-Refusal sample to those from Wave-4/Round-3. We use multivariate logit models to predict retention between baseline completes and the 2006 data collection outcome: dropped-out or retained.

The second way we examine panel representativeness is by comparing the owners' panel to the larger CAP portfolio. For this analysis, we use chi-square tests to identify differences between our Wave-4 completes and all relevant CAP loans.

The appendices display descriptive statistics for all variables in the models (Owners: Appendices A & C, Renters: Appendix B). In addition, a separate analysis considers potential bias in calling patterns by presenting the number of calls that were made to non-respondents (Appendix D).

Samples

As discussed previously, a total of 2,380 owners completed a 2006 survey (2,118 owners who completed the wave 4 SRU phone survey and 262 owners who completed the RTI soft refusal survey). For this retention analysis, these 2,380 completes were merged with our panel demographic database, and 66 cases were removed due to missing data on items in the analysis². Thus the final sample used for this analysis of owner retention is 3,677 (see Appendix A)

A total of 1,046 renters completed a 2006 survey (970 renters who completed a round-3 RTI phone survey and 76 renters who completed the RTI soft refusal survey). These 1,046 renters were merged with our panel demographic database. Of the 1,533 renters in the wave 1 RTI phone survey, 99 cases were removed due to missing data³. Thus, the final sample used for the renter retention is 1,434 (see Appendix B)

These sample sizes (Owner=3,677, Renter=1,434) are larger than the samples used in last year's analysis (Owners=3,496, Renters=1,395) because, where possible, we recoded missing demographic data using other sources, including Self-Help data and later waves of survey data. For owners, we eliminated missing baseline data in sex and employment status, and added 181 more respondents to this year's analysis. For renters, recoding missing baseline data permits 39 more respondents than were used in last year's attrition analysis.

² For owners, sources of *unique* missing data follow: age (n=7) race (n=3), marital status (n=23), and education (n=30). Overall, 66 cases were removed due to missing data.

³ For renters, sources of *unique* missing data follow: age (n=13) race (n=6), marital status (n=50), and education (n=17). Overall, 99 cases were removed due to missing data .

Multivariate Analyses of Panel Retention

Demographic variables were entered into multivariate logit models predicting the likelihood that owners and renters would be retained through 2006. In order to compare findings from owners and renters, the first two models contain only those variables common to both the owner and renter panels. The third model includes additional loan-characteristic variables available only through our Self-Help dataset of CAP homeowners.

For all three models, income was trimmed due to non-significance and a higher rate of missing data. U.S. region was also trimmed due to non-significance and the testing of geographic effects through state rather than region. States were compared to the reference category of ‘other states,’ which was created by combining states with less than 100 respondents in the baseline panel. This variable construction resulted in owners and renters having a different number of parameters for the state variable.

Retention: Owners vs. Renters

In predicting retention, significant findings point toward attrition bias. Ideally, then, none of the variables would show significance. However, the results shown in Tables 5 and 6 do suggest some attrition bias: the model chi-square values indicate that both the owner and renter models partially explain retention between baseline and the most recent follow-up surveys. Appendices A, B, and C respectively display descriptive statistics for all variables used in Models 1-3.

For owners, Model 1 of Table 5 shows that sex, race, marital status, education and geography jointly predict retention while controlling for the non-significant effects of age and employment. Specifically, the odds of retention between Wave-1 and Wave-4 are .76 times lower for male owners than for females. The odds of retaining Hispanic owners are .70 times lower compared to Whites. For married or partnered owners, the odds of being retained are 1.2 times higher compared to owners who have never been married. Education levels also increase retention: compared to high school graduates, the odds of being retained are about two times higher among owners with four year college degrees. Geographic effects existed in Mississippi, Ohio and Oklahoma, with the odds of being retained .42 times lower for Mississippi owners. Owners in Ohio and Oklahoma were around 1.4 times more likely to be retained compared to other states.

For renters, Model 2 of Table 5 indicates that age, marital status, education and geography jointly predict retention. Compared to younger renters aged 25 years or less, the odds of being retained are about 1.7 times higher among renters aged 36 years and older. Education levels were only significant in the highest bracket: compared to high school graduates, the odds of being retained are 2.2 times higher among owners with some graduate or more. Geography effects were present, with the odds of being retained are 1.49 times higher in North Carolina compared to other states.

Table 5
Logit Model Regressing Panel Retention on Demographic Variables

Variable	Model 1 - Owners		Model 2 - Renters	
	B	Odds ratio	B	Odds ratio
Sex				
(Female)				
Male	-.28	.76**	-.20	.82
Age				
(25 years old or less)				
26 – 30 years old	-.03	.97	.01	1.01
31 – 35 years old	.08	1.08	.08	1.08
36 – 40 years old	.12	1.13	.61	1.85**
41 years old or more	.11	1.11	.55	1.73**
Race				
(White)				
Black	-.10	.90	.05	1.05
Hispanic	-.35	.70**	-.29	.75
Other	-.06	.94	-.15	.86
Marital status				
(Never married)				
Married or living with partner	.20	1.22*	-.18	.83
Widowed, divorced, separated	.17	1.19	-.36	.70*
Education				
11th grade or less (High school graduate/GED)	-.18	.84	-.31	.73
Some 2 year college	.26	1.30*	.17	1.18
2 year degree	.25	1.29*	.44	1.56
Some 4 year college	.34	1.40**	.08	1.09
Bachelor's degree	.75	2.11**	.06	1.06
Some graduate school or more	.66	1.94**	.79	2.21*
Employment				
(Employed)				
Unemployed, looking for work	-.24	.78	-.27	.76
Unemployed, not looking for work	-.20	.82	.62	1.86
Retired	.25	1.29	-.02	.99
State				
(Other states)				
Arizona	-.20	.82	.17	1.18
California	-.18	.83		
Illinois	-.18	.83		
Michigan	.26	1.30		
Mississippi	-.87	.42**		
North Carolina	.16	1.17	.40	1.49**
Ohio	.40	1.49**		
Oklahoma	.35	1.42**	.21	1.23
South Carolina	-.29	.75		
Texas	-.15	.86		
Virginia	.01	1.01		
Intercepts		.26		.69
Model Chi-Square (-2LogL)		187.70		80.34
Df		30		22
N		3,676		1,434

Note: Panel retention frequencies follow: Owners retained 2,342, dropped out 1,334; Renters retained 988, dropped out 446. Reference groups are in parentheses; States with less than 100 observations were included in Other states; Region and income were not significant and removed; * p<.05; ** p<.01

Across Models 1 and 2, only education, marital status, and state significantly affect retention. Higher-educated baseline respondents are more likely to be retained in 2006. Marital status and state also affected retention, but these effects are not consistent across owners and renters.

Fewer Hispanics are retained, but Hispanic attrition is significant only for homeowners. In contrast to last year, renter's attrition is not significant by race.

Results for sex and age are consistent to last year. Retention is less likely for male owners but there is no effect for renters. Conversely, retention is less likely for younger renters but there is no age effect for owners.

Overall, these results show that we continue to have difficulty retaining baseline respondents who were lower educated, younger, male, Hispanic, and unmarried. As RTI takes over all surveying in 2007, special attention will again be given to these groups in order to target them for retention.

Retention among Owners: Adding owner-specific loan characteristics

The third model predicting retention adds loan characteristic variables available through the Self-Help database. These loan characteristics obviously do not exist for our renters. This expanded model, shown in Model 3 on Table 6, adds origination loan characteristics to the owners' baseline demographic variables shown earlier in Model 1 of Table 5. Descriptive statistics for this expanded model are shown in Appendix C.

In predicting owner retention, the more comprehensive model displayed in Table 6 indicates that sex, race, marital status, education, borrower credit score and state jointly predict retention while controlling for the non-significant effects of age, employment, first time homebuyer, AMI income, loan origination year and original loan-to-value.

More specifically, the odds of retaining owners between Wave-1 and Wave-4 (including the soft-refusal survey) are .77 times lower for male owners than female. The odds of retaining Hispanic owners are .74 times lower compared to Whites. For married or partnered owners, the odds of being retained are 1.3 times higher compared to owners who have never been married. Education levels also increase retention: compared to high school graduates, the odds of being retained are almost two times higher among owners with four year college degrees. Borrower credit score at origination also increases retention: compared to owners where the origination credit score was unavailable, the odds of being retained are almost two times higher among owners with credit score greater than 720. Geography effects existed in some states. The odds of retention for owners in Mississippi are .46 times lower compared to reference group. Meanwhile, the odds of retention for owners in Ohio are 1.5 times higher compared to other states.

Even though state-level attrition bias is evident, there is no effect for largest state observation in our panel, North Carolina (n=930, 29%).

The purpose of Model 3 of Table 6 was to add loan-characteristic variables to the analysis shown in Model 1 of Table 5. Table 6 results indicate that most of our baseline loan characteristics do not bias retention: first-time homebuyer status, AMI income, loan origination year and original loan-to-value ratio are all non-significant when controlling for other relevant variables. The loan characteristic that affects retention is credit score at origination, and this impact is dramatic. In addition to credit score, the more comprehensive Model 3 of Table 6 indicates that attrition bias persists in our owners' panel with regard to sex, race, marital status, education, and geography

Table 6
Logit Model Regressing Owners' Retention on Demographics and Loan Characteristics

Variable	Model 3 – Owners	
	B	Odds ratio
Sex		
(Female)		
Male	-.26	.77**
Age		
(25 years old or less)	-.06	.94
26 – 30 years old	.06	1.06
31 – 35 years old	.09	1.10
36 – 40 years old	.08	1.09
41 years old or more		
Race		
(White)		
Black	-.01	.99
Hispanic	-.31	.74*
Other	-.08	.92
Marital status		
Married or living with partner	.25	1.28*
Widowed, divorced, separated (Never married)	.18	1.19
Education		
11th grade or less (High school graduate/GED)	-.13	.88
Some 2 year college	.28	1.33*
2 year degree	.29	1.33*
Some 4 year college	.37	1.45**
Bachelor's degree	.69	2.00**
Some graduate school or more	.69	1.99**
Employment		
(Employed)		
Unemployed, looking for work	-.25	.78
Unemployed, not looking for work	-.25	.78
Retired	.25	1.28
First-time homebuyer		
(Not a first-time home buyer)		
First-time homebuyer	.05	1.05
Income as percentage of AMI		
(0-50% AMI)		
51%-80% AMI	.02	1.02
>81% of AMI	-.21	.81

Continued on next page

Continued from previous page**Borrower credit score**

(No credit score)

Less than 580	.46	1.58*
581-620	.33	1.39
621-660	.39	1.48*
661-720	.47	1.60**
Greater than 720	.73	2.07**

Origination year

(1999)

2000	-.10	.90
2001	-.05	.95
2002	-.02	.98
2003	.03	1.03

Loan to value

(0-90%)

91%-95%	-.11	.90
96%-97%	-.18	.84
>97%	-.17	.84

State

(Other states)

Arizona	-.15	.86
California	-.17	.84
Illinois	-.11	.90
Michigan	.36	1.44
Mississippi	-.77	.46**
North Carolina	.20	1.22
Ohio	.41	1.51**
Oklahoma	.28	1.33
South Carolina	-.28	.76
Texas	-.14	.87
Virginia	-.09	.91

Intercepts

-.10

Model Chi-Square (-2LogL)

216.8

Df

45

N

3,555

Note: Reference groups are in parentheses; States with less than 100 observations were included in the 'Other states' category. Region variables were not significant and removed; * p<.05; ** p<.01

Calling Patterns among Non-Respondents

Attrition bias in 2005 prompted an examination of calling patterns among non-respondents. The purpose of last year's analysis was to determine if the number of calls made to non-responding owners differed according to the sources of attrition bias identified in the 2005 retention analysis: race, sex, education, and marital status.

Last year we found that non-respondents from these high-attrition groups were called fewer times than the low-attrition groups. For example, the 2005 analysis found that non-responding Hispanics were called an average of 18 times compared to an average of 32 times for non-Hispanics. Given poorer retention rates for Hispanics, males, lower-educated, and never-married baseline respondents, we were disturbed to find this pattern of lower calling for these high attrition groups. We notified our survey contractors of these calling pattern discrepancies, and asked that a better job be done this year.

The current analysis follows-up on this request and examines 2006 calling patterns to once again gauge potential discrepancies in calling. Results are shown in Appendix D, which displays the average number of calls made to non-responding owners and renters by source of attrition bias. Appendix D shows that among non-responding owners, Black and Hispanic households in 2006 received 6 to 10 more calls on average than White & other race non-respondents. Appendix D also shows that owners in the other high-attrition groups from 2005 (male, lower-educated and never married) received more calls than the low-attrition groups. Appendix D also shows a similar pattern for non-responding renters.

For both owners and renters, then, in 2006 the high attrition groups received more calls. These findings indicate that our survey contractors complied with our center's request to call the high-attrition groups at a higher rate than the low-attrition groups.

Representativeness of the CAP Owners' Panel Compared to other Self-Help Borrowers

This section compares the characteristics of the owners' panel to those of other CAP borrowers. Table 7 displays frequencies of demographic and homebuyer variables. The CAP portfolio to which we direct our findings consists of 28,991 homeowners, while the Wave-4 & Soft refusal sample consists of 2,380. Due to missing data, we exclude 9,550 loans, including 484 Wave-4 & Soft-Refusal sample loans. Thus, the final sample sizes for this analysis are 19,924 for CAP portfolio and 1,896 for Wave-4 & the Soft-Refusal sample.

Chi-square tests were used for comparisons, and Table 7 displays results. The middle column of Table 7 shows percentages for the broader profile of 19,924 CAP borrowers who did *not* respond to Wave-4 & Soft refusal panel. The right column shows percentages for 1,896 Wave-4 & Soft refusal panel responding owners. The percentages shown are column percentages. For example, 52.3% of male baseline respondents completed the Wave-4 & Soft refusal panel compared to the 57.5% of males in the larger CAP portfolio.

Table 7 displays significant differences for all variables except borrower credit score. Demographic findings indicate that, compared to the larger profile of CAP borrowers, our Wave-4 & Soft refusal sample under-represents males, Hispanics, and higher income (as a percentage of AMI) borrowers. For race, Hispanics represent 21% of the portfolio but only 12% of the panel. Whites represent 55% of the portfolio yet 65% of the panel. The owners' panel over-represents Whites, females and lower income borrowers. Age is also significant although the proportions appear similar between groups.

In terms of homebuyer characteristics, our Wave-4 & Soft refusal panel over-represents first-time homebuyers compared to the larger profile of CAP borrowers. Origination Loan-To-Values is also significant although a pattern is not clear from the distribution.

These results identify some bias in the representativeness of our CAP panel when compared to the population of all Self-Help loans. The most worrisome difference lies in race: our panel over-represents Whites and under-represents minorities, especially Hispanics. Post-sample weighting will need to be used to help correct for these biases.

Table 7
Representativeness of the CAP Sample:
Owners' Panel compared to other Self-Help Borrowers

Variable	Self-Help Loan Portfolio Not in CAP Wave-4/SR	Community Advantage Panel In Wave-4/SR
Sex*		
Male	57.5	52.3
Female	42.5	47.7
Race*		
White	55.2	64.9
Black	19.5	20.5
Hispanic	21.0	11.8
Other	4.3	2.8
First-time Homebuyer*		
Yes	36.5	45.0
No	63.5	55.0
Age*		
25 or less	22.8	25.1
26-30	21.8	21.2
31-35	16.6	18.1
36-40	12.9	11.3
41 or older	25.9	24.3
Income as Percentage of AMI*		
0-50% AMI	30.3	34.7
51%-80%AMI	59.5	57.0
>80% AMI	10.2	8.3
Loan to Value*		
0-90%	13.6	12.2
91-95%	10.0	8.8
96-97%	46.0	50.0
>97%	30.4	29.0
Borrower credit score		
No Credit Score	2.6	1.8
Missing Score	2.5	2.8
Less than 580	4.9	5.2
581- 620	11.0	11.2
621-660	22.4	23.2
661-720	31.5	30.3
Greater than 720	25.1	25.5
Borrower credit score (mean)	677.9	673.0
LTV at origination (mean)	95.2	95.1
N	19,924	1,896

Note: Percentages shown are column percentages.

* represents χ^2 significant, $p < .05$

Conclusion

Data collection in 2006 employed a large number of retention strategies directed toward both respondents and interviewers. The major intervention was the Soft-Refusal sample, which targeted more than 1,500 non-respondents from prior years and resulted in 338 owners and renters completing surveys and returning to the panel. The Soft-Refusal survey boosted the total completes for 2006 to 2,380 owners and 1,046 renters.

Analyses of attrition and sample representativeness do raise some concerns that we will need to address analytically. Even with continued retention efforts including field tracing and incentives for respondents and interviewers, we now anticipate some attrition bias at the end of data collection in 2008. Given current trends, we expect higher attrition among respondents whose baseline status consisted of being lower educated, younger, male, Hispanic, and unmarried.

Such attrition biases are not unusual in panel data collection, and methods to deal with these problems include weighting and multiple imputation. Upon completion of data collection in 2008, we will need to use post-sample weighting to minimize the impact of biases resulting from higher attrition across various demographic groups. We will also need to impute missing values within cases. Both of these techniques will need to be incorporated into the final panel dataset. We have provided RTI with specifications toward the creation of a final dataset to be finished and made publically available by 2010.

More immediately, data collection in 2007 will begin in June. The 2007 survey is nearly complete, and we will bring this year's new survey items to our April 23 meeting. We will also bring information to help us all decide on whether or not to administer the 2008 survey by phone or in-person.

Henceforth, data collection will be conducted entirely by RTI. We anticipate that consolidation of data collection within this one professional organization will simplify and improve data collection processes and outcomes.

Appendices A – D

- A Owners Attrition: Demographics by Wave-4 Retention Status
- B Renters Attrition: Demographics by Round-3 Retention Status
- C Owners Attrition: Demographics and Loan characteristics by Wave-4 Retention Status
- D Non-Responding Owners: Average Number of Calls by Source of 2005 Attrition Bias

Appendix A
Owners Attrition: Demographics by Wave-4 Retention Status

Variable	All		Dropped-out		Retained	
Sex **						
Male	1,987	54.0%	793	39.9%	1,194	60.1%
Female	1,690	46.0%	542	32.1%	1,148	67.9%
Age						
25 years old or less	710	19.3%	257	36.2%	453	63.8%
26 – 30 years old	865	23.5%	315	36.4%	550	63.6%
31 – 35 years old	648	17.6%	235	36.3%	413	63.7%
36 – 40 years old	489	13.3%	181	37.0%	308	63.0%
41 years old or more	965	26.2%	347	36.0%	618	64.0%
Race **						
White	2,266	61.6%	741	32.7%	1,525	67.3%
Black	717	19.5%	271	37.8%	446	62.2%
Hispanic	569	15.5%	281	49.4%	288	50.6%
Other	125	3.4%	42	33.6%	83	66.4%
Marital status						
Married or living with partner	2,101	57.1%	791	37.6%	1,310	62.4%
Widowed, divorced, separated	721	19.6%	235	32.6%	486	67.4%
Never married	855	23.3%	309	36.1%	546	63.9%
Education **						
11 th grade or less	315	8.6%	164	52.1%	151	47.9%
High school graduate/GED	781	21.2%	338	43.3%	443	56.7%
Some 2 year college	623	16.9%	225	36.1%	398	63.9%
2 year degree	553	15.0%	197	35.6%	356	64.4%
Some 4 year college	477	13.0%	167	35.0%	310	65.0%
Bachelor's degree	543	14.8%	140	25.8%	403	74.2%
Some graduate school or more	385	10.5%	104	27.0%	281	73.0%
Income[^]						
Less than \$10,000	31	0.9%	10	32.3%	21	67.7%
\$10,000-\$14,999	77	2.2%	29	37.7%	48	62.3%
\$15,000-19,999	247	6.9%	96	38.9%	151	61.1%
\$20,000-\$24,999	518	14.5%	188	36.3%	330	63.7%
\$25,000-\$34,999	994	27.8%	358	36.0%	636	64.0%
\$35,000-\$49,999	1,229	34.3%	445	36.2%	784	63.8%
\$50,000-\$74,999	385	10.8%	127	33.0%	258	67.0%
\$75,000 or greater	101	2.8%	37	36.6%	64	63.4%
Employment						
Employed	3,398	92.4%	1,225	36.0%	2,173	64.0%
Unemployed, looking for work	116	3.2%	51	44.0%	65	56.0%
Unemployed, not looking for work	62	1.7%	25	40.3%	37	59.7%
Retired	101	2.8%	34	33.7%	67	66.3%
Borrower credit score**						
Credit score=0 or missing score	182	5.0%	98	53.8%	84	46.2%
Less than 580	170	4.6%	70	41.2%	100	58.8%
580- 619	420	11.4%	171	40.7%	249	59.3%
620-659	864	23.5%	338	39.1%	526	60.9%
660-719	1,160	31.6%	414	35.7%	746	64.3%
720 or greater	881	24.0%	244	27.7%	637	72.3%
Age (mean)	35.1		35.0		35.1	
Borrower credit score (mean)*	675.3		667.9		679.3	
LTV at origination (mean)	96.2		96.3		96.2	
N[^]	3,677		1,335		2,342	

Note: Percentages shown are row percentages.

[^] Due to missing data, income has a smaller sample size for drop-outs (1,290) and retainees (2,292).

* represents χ^2 or t-test significant, $p < .05$; ** $p < .01$

Appendix B
Renters Attrition: Demographics by Round-3 Retention Status

Variable	All		Dropped-out		Retained	
Sex						
Male	417	29.1%	143	34.3%	274	65.7%
Female	1,017	70.9%	303	29.8%	714	70.2%
Age **						
25 years old or less	277	19.3%	107	38.6%	170	61.4%
26 – 30 years old	202	14.1%	76	37.6%	126	62.4%
31 – 35 years old	165	11.5%	61	37.0%	104	63.0%
36 – 40 years old	150	10.5%	40	26.7%	110	73.3%
41 years old or more	640	44.6%	162	25.3%	478	74.7%
Race **						
White	638	44.5%	182	28.5%	456	71.5%
Black	472	32.9%	129	27.3%	343	72.7%
Hispanic	261	18.2%	115	44.1%	146	55.9%
Other	63	4.4%	20	31.7%	43	68.3%
Marital status**						
Married or living with partner	449	31.3%	164	36.5%	285	63.5%
Widowed, divorced, separated	258	18.0%	84	32.6%	174	67.4%
Never married	727	50.7%	198	27.2%	529	72.8%
Education **						
11 th grade or less	255	17.8%	106	41.6%	149	58.4%
High school graduate/GED	449	31.3%	143	31.8%	306	68.2%
Some 2 year college	225	15.7%	62	27.6%	163	72.4%
2 year degree	117	8.2%	27	23.1%	90	76.9%
Some 4 year college	126	8.8%	37	29.4%	89	70.6%
Bachelor's degree	190	13.3%	58	30.5%	132	69.5%
Some graduate school or more	72	5.0%	13	18.1%	59	81.9%
Income[^]						
Less than \$10,000	305	22.4%	94	30.8%	211	69.2%
\$10,000-\$14,999	195	14.3%	62	31.8%	133	68.2%
\$15,000-19,999	198	14.6%	52	26.3%	146	73.7%
\$20,000-\$24,999	171	12.6%	44	25.7%	127	74.3%
\$25,000-\$34,999	296	21.8%	102	34.5%	194	65.5%
\$35,000-\$49,999	152	11.2%	47	30.9%	105	69.1%
\$50,000-\$74,999	36	2.7%	12	33.3%	24	66.7%
\$75,000 or greater	7	0.5%	3	42.9%	4	57.1%
Employment **						
Employed	903	63.0%	282	31.2%	621	68.8%
Unemployed, looking for work	174	12.1%	67	38.5%	107	61.5%
Unemployed, not looking for work	70	4.9%	11	15.7%	59	84.3%
Retired	287	20.0%	86	30.0%	201	70.0%
Age (mean)**						
	38.8		36.1		40.0	
N[^]						
	1,434		446		988	

Note: Percentages shown are row percentages.

[^] Due to missing data, income has a smaller sample size for drop-outs (416) and retainees (944).

* represents χ^2 or t-test significant, $p < .05$; ** $p < .01$

Appendix C
Owners Attrition: Demographics and Loan characteristics by Wave-4 Retention Status

Variable	All		Dropped-out		Retained	
Sex **						
Male	1,955	55.0%	776	39.7%	1,179	60.3%
Female	1,600	45.0%	518	32.4%	1,082	67.6%
Age						
25 years old or less	688	19.3%	249	36.2%	439	63.8%
26 – 30 years old	835	23.5%	306	36.6%	529	63.4%
31 – 35 years old	628	17.7%	228	36.3%	400	63.7%
36 – 40 years old	475	13.4%	176	37.0%	299	63.0%
41 years old or more	929	26.1%	335	36.1%	594	63.9%
Race **						
White	2,251	63.3%	738	32.8%	1,513	67.2%
Black	676	19.0%	259	38.3%	417	61.7%
Hispanic	514	14.5%	255	49.6%	259	50.4%
Other	114	3.2%	42	36.8%	72	63.2%
Marital status						
Married or living with partner	2,035	57.2%	768	37.7%	1,267	62.3%
Widowed, divorced, separated	697	19.6%	230	33.0%	467	67.0%
Never married	823	23.2%	296	36.0%	527	64.0%
Education **						
11th grade or less	303	8.5%	159	52.5%	144	47.5%
High school graduate/GED	754	21.2%	331	43.9%	423	56.1%
Some 2 year college	606	17.1%	221	36.5%	385	63.5%
2 year degree	544	15.3%	193	35.5%	351	64.5%
Some 4 year college	466	13.1%	161	34.5%	305	65.5%
Bachelor's degree	517	14.5%	134	25.9%	383	74.1%
Some graduate school or more	365	10.3%	95	26.0%	270	74.0%
Employment						
Employed	3,282	92.3%	1,185	36.1%	2,097	63.9%
Unemployed, looking for work	113	3.2%	50	44.2%	65	55.8%
Unemployed, not looking for work	62	1.7%	25	40.3%	37	59.7%
Retired	98	2.8%	34	34.7%	64	65.3%
First-time homebuyer						
Not a first-time homebuyer	1,626	45.7%	587	36.1%	1,039	63.9%
First-time homebuyer	1,929	54.3%	707	36.6%	1,222	63.4%
Income as percentage of AMI**						
0 – 50 % AMI	1,213	34.1%	464	38.2%	749	61.8%
51 – 80% AMI	2,046	57.6%	704	34.4%	1,342	65.6%
> 80% of AMI	296	8.3%	126	42.6%	170	57.4%
Borrower credit score**						
No credit score	152	4.3%	89	58.5%	63	41.5%
Less than 580	191	5.4%	79	41.4%	112	58.6%
581- 620	403	11.3%	164	40.7%	239	59.3%
621-660	841	23.6%	320	38.0%	521	62.0%
661-720	1,137	32.0%	420	36.9%	717	63.1%
> 720	831	23.4%	222	26.7%	609	73.3%

Continued on next page

Continued from previous page

Origination year*							
1999	84	2.4%	30	35.7%	54	64.3%	
2000	870	24.4%	328	37.7%	542	62.3%	
2001	1,094	30.8%	430	39.3%	664	60.7%	
2002	1,389	39.1%	469	33.8%	920	66.2%	
2003	118	3.3%	37	31.4%	81	68.6%	
Loan to value**							
0 – 90%	389	10.9%	130	33.4%	259	66.6%	
91 - 95%	303	8.5%	103	34.0%	200	66.0%	
96 - 97%	1,644	46.3%	670	40.7%	974	59.3%	
> 97%	1,219	34.3%	391	32.1%	828	67.9%	
State**							
Other states	814	22.9%	315	38.7%	499	61.3%	
Arizona	112	3.2%	56	50.0%	56	50.0%	
California	159	4.5%	76	47.8%	83	52.2%	
Illinois	175	4.9%	75	42.9%	100	57.1%	
Michigan	108	3.0%	36	33.3%	72	66.7%	
Mississippi	105	2.9%	63	60.0%	42	40.0%	
North Carolina	930	29.2%	309	33.2%	621	66.8%	
Ohio	428	12.0%	125	29.2%	303	70.8%	
Oklahoma	414	11.7%	114	27.5%	300	72.5%	
South Carolina	97	2.7%	39	40.2%	58	59.8%	
Texas	99	2.8%	46	46.5%	53	53.5%	
Virginia	114	3.2%	40	35.1%	74	64.9%	
N^	3,555		1,294		2,261		

Note: Percentages shown are row percentages.

* represents χ^2 significant, $p < .05$; ** $p < .01$

Appendix D
Non-Responding Owners: Average Number of Calls by Source of 2005 Attrition Bias

Final Calling Status	Race			Sex		Education		Marital Status	
	White & Other	Black	Hispanics	Female	Male	Some College or More	HS Education or less	Married, Partnered, Divorced	Never Married
Unable to Contact Owners (N=491)									
Mean	12.0	22.4	17.8	14.1	16.1	15.3	15.4	15.2	15.7
Median	7.0	9.5	15.0	7.0	9.0	8.0	8.0	8.0	9.0
Average*		17.4		15.1		15.3		15.4	
Renters (N=156)									
Mean	16.1	24.2	36.8	22.5	24.6	23.7	22.8	23.8	22.6
Median	6.0	11.0	28.0	9.0	14.5	11.0	12.0	11.0	12.0
Average*		25.7		23.6		23.2		23.2	