

***PROPERTY TAX HOMESTEAD EXEMPTIONS: EXPLAINING THE VARIANCE IN
NON-CLAIMANT RATES ACROSS NEIGHBORHOODS***

Keith Ihlanfeldt

Hundreds of thousands of homeowners eligible for Florida's homestead exemption fail to claim it losing out on significant property tax savings. Mean non-claimant percentages are higher in minority and low income neighborhoods, worsening racial and income wealth inequalities. Neighborhood non-claimant percentages are regressed on variables describing the neighborhood and the county property tax assessor. The latter variables are found to play an important role in explaining neighborhood racial and income disparities in the non-claimant percentage.

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1 **I. INTRODUCTION**

2 Property tax homestead exemptions are available in more than 40 states (Institute on
3 Taxation and Economics Policy). These exemptions reduce the assessed value of a home that is
4 subject to taxation. In addition to other exemptions, such as those for the disabled, senior
5 citizens, and veterans, a homestead exemption also determines eligibility for caps on the amount
6 the assessed value can increase each year in some states, like Florida and California. To obtain a
7 homestead exemption the home must be the owner’s permanent residence. The exemptions do
8 not come automatically to eligible homeowners, but must be applied for by the homeowner. This
9 opens up the possibility that a substantial number of eligible homeowners may lose out on
10 substantial tax savings by failing to apply.¹ If the application rate varies along income and racial
11 lines, it may worsen income and wealth inequalities across demographic groups. To my
12 knowledge, this issue has not been addressed in the published literature.

13 In this paper, I study the variance across Florida neighborhoods (Census block groups) in
14 the percentage of homeowners who are eligible for the homestead exemption but do not claim it,
15 the “non-claimant percentage.” Key covariates included in models are the race and income of the
16 neighborhood and the method of application used by the county containing the neighborhood.
17 These are 1) online at the Property Assessor’s website, in person at an Assessor’s office, or by
18 mail, 2) application only allowed in person at an Assessor’s office, and 3) application by either
19 mail or in person.²

¹ As documented in the next section of this paper, I estimate that roughly 10 percent of the single-family homeowners in Florida who are eligible for the homestead exemption fail to claim it, which translates into close to 300,000 households.

² In Florida the Property Assessor (officially known as the Property Appraiser) is an elected county officer serving a four-year term, as established by Article VIII of the Constitution of the State of Florida. Duties include determining the value of all property within the county, maintaining property ownership records and parcel ownership maps, and administering the homestead exemption.

20 My results show that the non-claimant percentage is greater in minority than in white
21 neighborhoods, even after controlling for neighborhood income. The estimated racial differences
22 are statistically and economically significant. This is also true of larger non-claimant share in
23 low-income relative to high-income neighborhoods. Interacting race of neighborhood with type
24 of application used by the county reveals that racial disparities in the non-claimant percentage
25 exist in counties that allow online applications and counties that require in-person applications,
26 but not in counties allowing either in-person or mail applications, controlling for a large number
27 of influential covariates. Most neighborhoods are located in online counties. Within these
28 counties, my results suggest that providing more locations where the exemption can be filed in
29 person may have a beneficial effect on both neighborhood racial and income gaps and expanding
30 access to high speed internet within minority neighborhoods may further reduce racial gaps.

31 **II. RESEARCH QUESTIONS**

32 In the state of Florida, a \$25,000 exemption is applied to the first \$50,000 of a
33 homeowner's assessed value if the property is the homeowner's permanent residence and the
34 property is owned on January 1 of the tax year. This exemption applies to all taxes, including
35 school district taxes. An additional exemption of up to \$25,000 is applied if the property's
36 assessed value is between at least \$50,000 and \$75,000. This exemption is not applied to school
37 district taxes. Generally, depending on millage rates, a homestead exemption will save the
38 homeowner between \$800 and \$1200 in annual property taxes. A homestead exemption also
39 entitles the homeowner to the "Save Our Homes" (SOH) assessment limitation. According to the
40 Florida Department of Revenue (floridarevenue.com), SOH works as follows: "after the first
41 year a home receives a homestead exemption and the property assessor assesses it at fair market
42 value, the assessment for each following year cannot increase more than 3 percent or the percent

43 change in the Consumer Price Index, whichever is less.” The substantial reduction in the annual
44 assessment and the tight cap on its annual growth provided by a homestead exemption make it
45 highly worthwhile to claim for eligible homeowners.

46 I estimate that 291,332 single-family homeowners in Florida who were eligible for the
47 homestead exemption failed to claim it in 2017, 9.2 percent of the total. The size of this gap
48 motivates the analysis undertaken in this paper, which is to investigate differences in the
49 neighborhood non-claimant percentage between minority and white neighborhoods and between
50 low- and high-income neighborhoods.³ Non-claimant means for the year 2017 are reported in
51 Table 1 for all neighborhoods in Florida having single-family homeowners eligible for the
52 homestead exemption (n=10,608).⁴ The minority/white and low/high income neighborhood gaps
53 in the non-claimant percentage equal 4.1 and 4.7, respectively, and both differences are
54 significant at the one percent level. In light of the fact that the overall sample mean
55 neighborhood non-claimant percentage is 10.6, the magnitudes of the neighborhood racial and
56 income gaps in the percentage carry significant economic importance.

57 These mean differences in the homestead exemption non-claimant percentage across
58 neighborhood racial and income groups motivate my interest in two issues. First, are the higher
59 non-claimant percentages in minority and low income neighborhoods the result of these
60 neighborhoods more frequently having characteristics that on their own result in a higher non-
61 claimant percentage. For example, the non-claimant percentage may be higher in minority

³ I focus exclusively on homeowners residing in detached single-family homes, which represent 81 percent of all homeowners in Florida eligible for the homestead exemption. I estimate that another 14 percent come from condominium owners and that 29 percent of those eligible do not take the homestead exemption. However, I chose not to include condominiums in my analysis because the number of neighborhoods with eligible owners is half as large as the number with eligible single-family homeowners, making bin counts of many of the variables used in my analysis too thin for reliable estimation. Also, because many condominiums in Florida are second homes, I have less confidence in my counts of non-claimants.

⁴ Of the total number of block groups in Florida, 83 percent have single-family homeowners eligible for the homestead exemption.

62 neighborhoods because these neighborhoods are more frequently located in counties that do not
63 reach out to inform eligible homeowners of the existence of the homestead exemption. Second,
64 does the difference in the non-claimant percentage between minority (low income) and white
65 (high income) neighborhoods depend on these same neighborhood characteristics. For example,
66 differences may be greater in counties that require in-person applications, because the residents
67 of minority and low income neighborhoods are more frequently transportation disadvantaged
68 (Zhao et al., 2013).

69 To study these issues, I first identify factors that, regardless of the race/income of the
70 neighborhood, raise or lower the neighborhood non-claimant percentage. Then possible
71 interactions of these factors with the race/income of the neighborhood that may result in
72 differences in the non-claimant percentage gaps between minority and white (low and high
73 income) neighborhoods are considered.

74 Eligible homeowners may fail to claim the homestead exemption for an assortment of
75 reasons. First, they may not be aware of its existence or misunderstand the benefits. Factors that
76 may affect awareness across neighborhoods include any outreach efforts made by the Assessor's
77 office to publicize the exemption and the level of social capital that exists within the
78 neighborhood. Neighborhood social capital refers to networks that link individuals and the
79 resources embedded in those linkages. Places within the neighborhood that expand social
80 interactions (for example, churches and clubs) have been found to increase social capital by
81 facilitating the diffusion of information (Jones and Shen, 2014; Beyerlein and Hipp, 2005). The
82 existence of the homestead exemption could be part of the information that gets traded among
83 neighborhood homeowners at gathering places within the neighborhood. Hence, the non-
84 claimant percentage may be higher in neighborhoods without these places. Diffusion of

85 information and therefore general knowledge of the homestead exemption may also be higher in
86 neighborhoods with larger numbers of homeowners and where the density of homeowners (per
87 land area) is greater. Within these neighborhoods the chance of an individual homeowner
88 interacting with another homeowner who is aware of the existence of the homestead exemption
89 is greater. Moreover, homeowners within these neighborhoods are more likely to be members of
90 homeowner associations, which can serve as a conduit for sharing information.

91 A second reason eligible homeowners may fail to claim the exemption is that, while they
92 may be aware of its existence, they may find it difficult to apply. For example, many county
93 property assessors allow online applications on their web sites. While applications can also be
94 submitted in person at the assessor's office or by mail, counties encourage online applications.
95 For homeowners without broadband access, making an application takes more effort.⁵ Hence, the
96 non-claimant percentage may be higher in neighborhoods where fewer homeowners have no or
97 limited broadband within their home. Neighborhoods may also have a higher non-claimant
98 percentage if they are located in counties that require the homeowner to come to the Assessor's
99 office to make an application for the homestead exemption. Difficulties associated with making
100 the trip to and from the Assessor's office may be a barrier, especially for the old and disabled.
101 Possibly mitigating the transportation barrier is the number of office locations within the county
102 where a homestead exemption application can be submitted.

103 A demographic of the neighborhood that may have either a positive or negative impact on
104 the non-claimant percentage are the ages of homeowners living in the neighborhood. On the one
105 hand, with age comes knowledge; hence, a larger percentage of older homeowners may be aware
106 of the existence of the exemption. On the other hand, older homeowners may find it more

⁵ The additional effort may involve a trip to the library to obtain online access, writing or calling the Assessor's office to obtain the application form and mailing it in, or making a trip to the Assessor's office to apply in person.

107 difficult to apply for the exemption, especially, as noted above, if an application requires making
108 a trip to the assessor's office. Older homeowners may also be less adept at making online
109 applications, if they have less familiarity with the internet (Turner, 2016).

110 How might the factors identified above that may affect the eligible homeowner's
111 knowledge of the exemption and her ability to apply for the exemption vary across
112 neighborhoods such that non-claimant percentages are higher in minority and lower income
113 neighborhoods? How might differences in the non-claimant percentage between minority and
114 white neighborhoods (and between low and high income neighborhoods) depend on these same
115 factors? A priori, theory and extant empirical evidence fail to suggest much in the way of
116 compelling hypotheses. However, two hypotheses that speak to the second question that are
117 related to the method of application are suggested by the literature. First, there is the literature
118 documenting the digital divide.⁶ Because broadband subscription rates are lower in low income
119 and minority neighborhoods than within high income and white neighborhoods, the non-claimant
120 percentage may be higher within the former neighborhoods if they are located within counties
121 with online applications. Second, the literature documenting the transportation disadvantages of
122 minority and low income households (Zhao et al., 2013) suggests that within counties that
123 require an in-person application the non-claimant percentage may be higher within minority and
124 low income neighborhoods.

⁶ Turner (2016) documents the racial divide in broadband usage using the U.S. Census Bureau's July 2015 Current Population Survey (CPS) Computer and Internet Use Supplement and the FCC's Form 477 Broadband Deployment Data. His key findings from the CPS national sample of 53,000 household illustrate persistent broadband adoption and deployment gaps for people of different races and ethnicities, even after controlling for income, education, age and other factors. His analysis of the FCC data which is based on each ISP's reporting of their coverage at the block level shows that, in comparison to white neighborhoods, black and Hispanic neighborhoods are less likely to have any internet provider and when they do have a provider it is more likely to enjoy a monopoly advantage. He attributes the racial/ethnic digital divide to three factors: limited choice (i.e., living in no or monopoly service neighborhood), the unaffordability of the service, and ISPs' requirement of minimum credit scores and cash deposits for obtaining service. Further evidence of the digital divide by neighborhood income/race is provided by Smith (2014) and Tomer, Kneebone, and Shivaram (2017).

125 **III. DATA**

126 My data are for the year 2017 and cover all neighborhoods (n=10,608) within the state of
127 Florida that contain single-family homes whose owners are eligible for the homestead
128 exemption, where neighborhood is defined as the Census Block Group (BG).⁷ These
129 neighborhoods are found within all 67 of Florida’s counties. Four sources of data are employed
130 in my analysis. The non-claimant percentage of the BG (i.e., the percentage of single-family
131 homeowners eligible for the exemption but who do not take it) is computed from the 2017
132 standardized property tax rolls that each county in the state of Florida submitted to the Florida
133 Department of Revenue. These tax roll data, which are updated on an annual basis, contain
134 information on real property characteristics, including land use counts at the BG level. From
135 these counts I selected single-family (SF) detached homes and four types (groupings) of
136 nonresidential properties where neighborhood residents may gather and exchange information on
137 the existence of the homestead exemption: churches, restaurants (other than fast-food),
138 nightclubs/cocktail lounges/bars, and clubs/lodges/union halls.

139 What is most important for my study are fields within the tax rolls which indicate
140 whether or not a property was granted a property tax homestead exemption, the physical address
141 of the home, and the homeowner’s billing address.⁸ If the latter two addresses match and there is
142 no homestead exemption on the property, the homeowner is considered a non-claimant.⁹

⁷ BGs are statistical divisions of census tracts which generally contain between 600 and 3,000 people. The BG is the lowest level of geography for which the Census Bureau’s American Community Survey provides demographic and economic data.

⁸ According to Florida Statute 196.031, this exemption is available to “[a] person who, on January 1st, has the legal title or beneficial title to real property in [Florida] and who in good faith makes the property his or her permanent residence or the permanent residence of another or others legally or naturally dependent upon him or her.”

⁹ There is the possibility that some homeowners who fail to take the homestead exemption and have identical physical and home addresses are not eligible for the exemption because the home is not their primary residence. This may be more of a problem with owners of condominiums, because second homes in Florida largely fall into this category. For this reason, I excluded condominiums from my analysis. To further insure that my results for single-family homes are not being affected by the possibility that I am misidentifying homeowners eligible for the

143 The second source of data is the 2017-2013 American Community Survey 5-Year
144 Estimates for BGs. From these data the number of non-Hispanic whites, non-Hispanic blacks,
145 and Hispanics were obtained for each BG.¹⁰ Also included are the median incomes of each BG,
146 the number of household heads living in owner-occupied homes, the land area of the BG, and
147 percentages of homeowners within the BG falling within the following age group categories:
148 less than 35, 35 to 59, and 60 or older.

149 The third source of data is the County Property Assessor web pages. For each of Florida's
150 67 counties, I identified from these pages which of three methods of homestead application are
151 used by the county (online, in person or by mail; only in person at the office; or in-person/by
152 mail), the race and gender of the property assessor, the number of offices within the county
153 where an application for an exemption could be submitted, and whether the Assessor conducted
154 outreach publicizing the existence of the exemption. The deadline for submitting an application
155 is March 1 of the tax roll year. The web sites were visited in February based on the assumption
156 that if the assessor was conducting outreach it would be advertised at that time on the web site.
157 The latter include activities such as having staff from the assessor's office meet with church and
158 community groups. Such meetings may not always be advertised, with staff showing up at events
159 scheduled for other purposes. Nevertheless, because the assessors are elected and not appointed,
160 political capital theory suggests that major outreach efforts would appear on their web sites.
161 Table A.1 lists the Assessor data on each county. Online applications are allowed in 31 counties,

exemption, I ran my models with and without a dummy variable representing coastal counties. Second homes are largely located along the coast; hence, if the owners of these homes are being miss-identified as non-claimants, the inclusion of the coastal dummy variable would have important effects on my results. Results showed that there was practically no difference in the results between including and excluding the coastal variable, which provided some assurance that non-claimants are being correctly identified.

¹⁰ I divide neighborhoods into white majority and minority majority, where minorities include non-Hispanic blacks and Hispanics. Separating out the latter two groups to form their own majority neighborhoods resulted in too few neighborhoods where there was a sufficiently large number of neighborhoods by the county type of application for reliable estimation.

162 while applications must be made in person at the Assessor's office in 28 counties. The remaining
163 8 counties allow application either by mail or in person.

164 Finally, I utilized data from the Federal Communications Commission Form 477 for
165 December, 2016. Form 477 requires broadband internet providers to file lists of the census
166 blocks in which they can or do offer service to at least one location, with additional information
167 about the service. I exploit these data to investigate whether minority and low income
168 neighborhoods have higher non-claimant percentages within counties with online applications as
169 the result of fewer blocks in the neighborhood having high-speed broadband service.

170 **IV. DESCRIPTIVE STATISTICS**

171 Table 2 presents the means and standard deviations of the dependent and independent
172 variables employed in the estimation of the non-claimant models. Before viewing these numbers,
173 it is of interest to note the total number and percentage of property owners who failed to claim
174 the homestead exemption across the entire state of Florida in 2017. As noted above, my estimate
175 of the number of single-family homeowners who were eligible to receive the exemption in 2017
176 but failed to take it is 291,332. Because counties may require processing time in granting the
177 exemption after an application has been filed, this numbers and the numbers used to compute the
178 neighborhood non-claimant percentages exclude homes that were purchased in years 2016 and
179 2017. Including these recent homebuyers results in an upper bound estimate of 461,321
180 homeowners who were eligible for the exemption but failed to claim it (12.4 percent of the total).
181 The magnitude of the non-claimants underscores the considerable importance in studying the
182 issue, especially as it may differentially affect race and income groups.

183 The means reported in Table 2 are for the 10,608 neighborhoods used to estimate my
184 models. Paralleling the state percentage (9.2%), the BG mean shows that the non-claimant

185 percentage for single-family homeowners is 10.6 percent. A minority neighborhood is defined as
186 one where adding together the number of non-Hispanic blacks and Hispanics represents a
187 majority of the neighborhood's residents. Of the total number of neighborhoods, 33 percent
188 (3,501 in number) are minority. Low and middle income neighborhoods are defined based upon
189 dividing the neighborhood distribution of median incomes into tercels, with the bottom and
190 middle thirds of the distribution representing low and middle income neighborhoods,
191 respectively. The mean neighborhood percentage of homeowners aged 35 to 59 is 43 percent,
192 and the mean percentage 60 and older equaled 49 percent.

193 The vast majority of the neighborhoods are in counties with online applications (88%,
194 9335 in number)), but there remain 923 neighborhoods where only in-person applications are
195 accepted and 382 neighborhoods where application can be made in-person or by mail. The
196 percentage of neighborhoods found in counties with a black (female) assessor equals 11.7%
197 (17.6%). The percentage of neighborhoods located in counties where outreach is conducted to
198 publicize the homestead exemption is 26.5%. The mean number of assessor office locations is
199 2.2. The presences of nonresidential gathering places in the neighborhood were measured as the
200 number per 100 homeowners. The neighborhood means range from 0.11 (bars) to 1.2 (churches).

201 In summary, the large number of neighborhoods statewide provide reasonable bin counts
202 across all of my variables, increasing the possibility of obtaining reliable estimates of their
203 effects on the neighborhood non-claimant percentage.

204 **V. METHODOLOGY**

205 Regression models are estimated seeking to explain the variance in the non-claimant
206 percentage across neighborhoods. The baseline model can be expressed as

$$(1) \quad y_i = \mathbf{n}_i' \boldsymbol{\theta} + \mathbf{s}_i' \boldsymbol{\beta} + \mathbf{x}_i' \boldsymbol{\delta} + \mathbf{c}_i' \boldsymbol{\gamma} + \varepsilon_i,$$

207 where i denotes the i^{th} neighborhood (BG) for $i = 1, 2, \dots$. The dependent variable y_i is the non-
 208 claimant percentage in the i^{th} neighborhood in year 2017. \mathbf{n}_i and \mathbf{s}_i are neighborhood
 209 characteristics from the ACS. The \mathbf{n}_i include dummy variables indicating whether minorities are
 210 a majority of the residents within the neighborhood (reference category is a white neighborhood)
 211 and whether the neighborhood is a low or middle income neighborhood (reference category is a
 212 high income neighborhood). The \mathbf{s}_i are other neighborhood descriptors indicating the ages of
 213 homeowners living in the neighborhood (percentage of homeowners who are 35 to 59 years old
 214 and the percentage who are 60 years old or older), the number of homeowners in the
 215 neighborhood, and the density of homeowners within the neighborhood. \mathbf{x}_i are counts per 100
 216 homeowners of the four types of nonresidential properties in the neighborhood (as defined in
 217 Section III) obtained from the county tax rolls. The variable \mathbf{c}_i is the total population of the
 218 county. To the baseline model I add information culled from the county Property Assessor's web
 219 site (\mathbf{p}_i),

$$(2) \quad y_i = \mathbf{n}_i' \boldsymbol{\theta} + \mathbf{s}_i' \boldsymbol{\beta} + \mathbf{x}_i' \boldsymbol{\delta} + \mathbf{c}_i' \boldsymbol{\gamma} + \mathbf{p}_i' \boldsymbol{\theta} + \varepsilon_i,$$

220 where \mathbf{p}_i includes dummy variables representing the race (black=1) and gender (female=1) of
 221 the Property Assessor, the method of homestead exemption application (online, in-person, or by
 222 mail=1, only in-person=1, the reference category is in person or by mail), whether the Assessor
 223 conducts outreach publicizing the homestead exemption (yes=1), and the number of office
 224 locations within the county where a homestead exemption can be claimed.

225 To investigate whether the impacts of the neighborhood race and income variables on the
 226 neighborhood non-claimant percentage varies with the other covariates entering the model, I
 227 interact \mathbf{n}_i' with $\boldsymbol{\theta}'_i$, with the latter representing the other covariates entering the model $\boldsymbol{o} = \{\mathbf{s}, \mathbf{x},$
 228 $\mathbf{c}, \mathbf{p}\}$.

$$(3) \quad y_i = \mathbf{n}_i' \boldsymbol{\theta} + \mathbf{s}_i' \boldsymbol{\beta} + \mathbf{x}_i' \boldsymbol{\delta} + \mathbf{c}_i' \boldsymbol{\gamma} + \mathbf{p}_i' \boldsymbol{\theta} + (\mathbf{n}_i' * \mathbf{o}'_i) \boldsymbol{\sigma} + \varepsilon_i.$$

229 Interaction models are also estimated after stratifying the sample based on the method of
230 application used by the county. Here the purpose is to determine whether changes in assessor
231 policies can reduce the higher non-claimant percentages in minority and low income
232 neighborhoods in counties with online and in-person applications. Specifically, can the
233 percentage differences between minority and white neighborhoods and between low and high
234 income neighborhoods be reduced if counties make outreach efforts or increase the number of
235 offices where applications can be filed. Presumably, these changes are quite doable, and
236 therefore they are of particular interest.

237 Finally, using only neighborhoods located within counties with online applications, I first
238 investigate how the neighborhood non-claimant percentage is affected by the percentage of
239 blocks in the neighborhood with high-speed broadband internet (PHBI). Second, are the
240 white/minority and low income/high income neighborhood differences smaller after controlling
241 for PHBI? An affirmative answer will depend on whether PHBI affects the non-claimant
242 percentage and is lower in minority (low income) in comparison to white (high income)
243 neighborhoods. Third, after interacting PHBI with the neighborhood racial and income types, are
244 these interactions statistically significant, suggesting that neighborhood differences in the non-
245 claimant percentage depends on the block coverage of high-speed internet within the
246 neighborhood.

247 **VI. RESULTS**

248 There are many results. To facilitate their presentation, this section is divided into four
249 parts. Part A presents the results from estimating the baseline neighborhood non-claimant
250 percentage model (1) and the augmented baseline model including the descriptors of the county

251 property tax assessor (2). Part B presents results which address whether the higher mean non-
252 claimant percentages in minority and low income neighborhoods can be attributed to the
253 race/income of the neighborhood having a correlation with one or more of the other covariates
254 that have a positive effect on the non-claimant percentage. The results from interacting the
255 neighborhood race and income variables with the other covariates in the model (3) are presented
256 in Part C. In Part D results are presented from estimating separate models for neighborhoods
257 located in counties with online applications and counties that require an application be filed in
258 person at the assessor's office, where the race of the neighborhood is interacted with dummy
259 variables indicating whether the neighborhood is in a county that reaches out to publicize the
260 homestead exemption or in a county that has more than one location where an application can be
261 filed. The results from estimating models for neighborhoods in counties with online applications
262 where the coverage of high-speed internet access within the neighborhood is included as an
263 independent variable are presented in Part E.

264 **A. Results from Estimating the Baseline and Augmented Baseline Models**

265 The baseline model results are reported in column (1) of Table 3. The non-claimant
266 percentage is 3.3 percentage points higher in minority neighborhoods in comparison to white
267 neighborhoods and the estimated effect is statistically significant at the one percent level. In light
268 of the fact that the sample mean non-claimant percentage is 10.6, the magnitude of the minority
269 neighborhood effect suggests that it is also economically significant. The average neighborhood
270 contains 383 single-family homeowners who are eligible for the homestead exemption. Thus, 3.4
271 percentage points translates to roughly 13 more non-claimants in a minority in comparison to a
272 white neighborhood. Highly significant results are also found for low and middle income

273 neighborhoods. In comparison to high income neighborhoods, the low and middle income
274 neighborhood non-claimant percentages are 2.9 and .7 percentage points higher, respectively.

275 Many of the other covariates entering the baseline model are statistically significant and
276 their estimated signs have intuitive appeal. Neighborhoods with a higher percentage of older
277 homeowners, especially the percentage of homeowners aged 35 to 59, have a lower non-claimant
278 percentage. These results suggest that general knowledge of the homestead exemption is higher
279 in neighborhoods where the homeowners are older. Both the number of homeowners and their
280 density within a neighborhood lower the neighborhood non-claimant percentage, again
281 suggesting a higher collective knowledge of the homestead exemption. Knowledge also appears
282 to be greater within neighborhoods that have more establishments falling into the nonresidential
283 group “clubs, lodges, and union halls.” One anomalous result is that the number of churches is
284 found to raise the neighborhood non-claimant percentage.

285 As shown in column 2 of Table 3, adding the variables describing the property tax
286 assessor have little effect on the results obtained with the baseline model. This is especially
287 noteworthy in the case of the neighborhood race and income estimated coefficients, which are
288 almost the same and remain significant at the one percent level. The assessor variables are all
289 highly significant. In comparison to neighborhoods located within counties with applications
290 accepted either in person or by mail, neighborhoods located within counties that have online or
291 in-person applications have non-claimant percentage that are 3.0 and 3.8 percentage points
292 higher, respectively. Having an additional location within a county where an application can be
293 filed reduces the neighborhood non-claimant percentage by 0.3 percentage points.
294 Neighborhoods in counties making an outreach effort to publicize the homestead exemption have

295 a non-claimant percentage that is 1.0 percentage points lower. The neighborhood non-claimant
296 percentage is higher if the assessor is a female and lower if she/he is black

297 **B. Results Examining Higher Mean Non-Claimant Percentages in Minority and** 298 **Low Income Neighborhoods**

299 In Section II, I identified two issues I intended to address in response to higher mean
300 neighborhood non-claimant percentages in minority and low income neighborhoods. The first
301 issue is whether the mean differences can be attributed to the race/income of the neighborhood
302 having a correlation with one or more of the other covariates that have a positive effect on the
303 non-claimant percentage. One possibility regarding the minority neighborhood percentage is that
304 it simply reflects the fact that minority neighborhoods are more frequently low income in
305 comparison to white neighborhoods. A regression of the non-claimant percentage on minority
306 neighborhood alone yields a minority/white difference of 4.07 percentage points (i.e., the
307 difference in means). Adding the low and middle income variables to the model (simple model)
308 lowers the minority disadvantage to 3.21 percentage points, suggesting that income differences
309 between minority and white neighborhoods play only a modest role in explaining the higher
310 mean non-claimant percentage in minority neighborhoods. The low and middle income
311 neighborhood coefficients obtained from estimating the simple model are 3.61 (low income), and
312 0.68 (middle income). After including the full set of covariates (full model), the estimates are
313 3.31 (minority), 2.87 (low income), and 0.66 (high income). Correlations between neighborhood
314 income and the covariates are partially responsible for the results obtained from the simple
315 model—the low income/high income neighborhood difference falls by 20 percent. In contrast,
316 the minority/white neighborhood difference is unaffected by the inclusion of the covariates. An
317 examination of the correlation matrix revealed relatively high negative correlations between a

318 low income neighborhood and the number of homeowners in the neighborhood and the
319 percentage of homeowners in the neighborhood aged 35 to 59. Recall that increases in both of
320 these variables are found to reduce the non-claimant percentage. Adding these variables to the
321 simple model explained the 20 percent decline in the non-claimant percentage difference
322 between low and high income neighborhoods.

323 In summary, my examination of the first issue suggests that correlations between the
324 covariates and the race and income of the neighborhood are largely not responsible for the higher
325 mean non-claimant percentages found for minority and low income neighborhoods.
326 Neighborhood race and income apparently have their own independent effects on the
327 neighborhood non-claimant percentage, apart from any correlation they may have with the
328 variables included in my models. Estimated neighborhood racial and income differences in the
329 non-claimant percentage may reflect other correlates absent from my models. One possibility,
330 which I explore below, is that neighborhoods differ in their access to high-speed internet access.
331 There are other possible correlates that may explain demographic differences in the non-claimant
332 percentage that I could not investigate due to the absence of data. For example, financial literacy
333 may be lower in minority and low income neighborhoods and this may play a role in applying
334 for the exemption.¹¹

335 **C. Revisiting Neighborhood Racial and Income Gaps in the Homestead**

336 **Exemption Non-Claimant Percentage**

337 The second issue I identified in Section II is whether the differences (gaps) in the non-
338 claimant percentage between minority/white and low/high income neighborhoods vary with the
339 covariates included in the full model. To investigate this issue, I estimated a fully interacted

¹¹ In their review of the literature, Lusardi and Mitchell (2014) cite numerous studies that have found that financial literacy is lower among low income and minority individuals.

340 model (3) where the neighborhood race and income variables are interacted with all of the other
341 variables in the model. Statistically insignificant interactions were dropped from the final
342 estimated model, yielding the results presented in Table 4.¹² The most glaring differences in the
343 gaps are found across the three methods of application (presented at the top of Table 4). In
344 counties with application allowed by either mail or in person the minority/white gap is .028 and
345 is not statistically significant. In contrast, in counties with online and only in-person applications
346 the minority/white gaps are large, equaling 4.417 and 4.478 percentage points, with both
347 estimates statistically significant at the one percent level. There are also wide differences in the
348 low/high income gap across the three application types. The gap is .696 percentage points and
349 insignificant in counties with mail/in-person applications, 3.893 in counties which allow online
350 applications, and -3.366 in counties requiring the application be filed in person. The latter
351 interesting result may reflect lower income owners having a stronger incentive to file an
352 application (by the diminishing marginal utility of income) or higher income homeowners having
353 a higher opportunity cost (time value) of making an in-person application.

354 Both outreach and having more than one location where an application can be filed
355 results in the minority gap changing from large and highly significant to negative and small.
356 Standing in sharp contrast to these results are those obtained for the income gap. Outreach and
357 multiple locations produce large differences in favor of high income neighborhoods. One
358 possible explanation for the latter findings is that assessors may target higher income
359 neighborhoods in reaching out into the community with outreach and additional office locations.

¹² To maintain comparisons between the effects of the covariates on the racial and income gaps in the non-claimant percentages, if an interaction is significant for the racial (income) gap it is retained for the income (racial) gap. Also, while the number of locations where a homestead exemption can be filed and the neighborhood number of homeowners entered previous equations as continuous variables, the results in Table 4 are based on a model that converts these variables into dummy variables: multiple locations=1, otherwise 0; single location=1, otherwise 0; number of homeowners in the neighborhood higher than the mean value=1, otherwise 0.

360 While I offer no evidence in support of this conjecture, it is consistent with the hypothesis
361 advanced and tested in many studies that local government services are better in higher income
362 neighborhoods. While there may be political motivations underlying possible spatial targeting in
363 the services provided by assessors, my findings could also reflect the provision of more services
364 in neighborhoods having more homeowners.

365 Other variables having a large impact on the racial gap in the neighborhood non-claimant
366 percentage is the number of homeowners in the neighborhood and the race and sex of the
367 assessor. Moving from a neighborhood with less than the mean number of homeowners to one
368 with more than the mean number results in the minority/white neighborhood gap changing from
369 highly significant at 4.3 percentage points to near zero and insignificant. If the assessor is a
370 woman or if she/he is black the minority/white gap is roughly 3.5 percentage points higher.

371 **D. Results from Estimating Separate Models by Type of Application**

372 From a policy perspective, the assessor can make two changes that may reduce racial and
373 income gaps in the non-claimant percentage: publicizing the existence of the exemption by
374 reaching out into the community and facilitating in person applications by providing more than
375 one location where an application can be filed. The results presented in Table 4 show that the
376 minority gap in the non-claimant percentage does not exist in counties that practice outreach or
377 provide multiple office locations for in person applications. However, the specification of the
378 model assumes that these results apply equally to counties regardless of their method of
379 application. Because the methods of application are so different this may be an untenable
380 assumption. This assumption is relaxed by estimating separate equations based on the method of
381 application. As documented in Appendix Table A.1, the vast majority of neighborhoods are
382 located within counties with either online or in person applications. Separate equations were

383 estimated for neighborhoods located in counties with online (n=9335) and only in-person
384 applications (n=923), where the neighborhood race and income variables are interacted with
385 whether the county had outreach or multiple locations. Results, which are presented in Table 5,
386 reveal important differences in the impacts of the above policies on racial and income gaps in the
387 non-claimant percentage between online and in person application counties.

388 Consider first the results from estimating the model for neighborhoods located in counties
389 with online applications. Neighborhood racial and income gaps are larger in counties with
390 outreach, with the racial difference small (.192) in comparison to the income difference (.946).
391 As mentioned in section C, the latter difference in favor of high income neighborhoods may
392 reflect assessors targeting their outreach to these neighborhoods. Having multiple locations
393 where the exemption can be filed is found to reduce both neighborhood racial and income gaps
394 in the non-claimant percentage. The decline is small in the minority gap (.192) and more
395 pronounced in the income gap (.936).

396 For counties that require making an application in person, outreach has strong contrasting
397 effects on the racial and income gaps. The minority/white gap is 5.736 (p-value=.024) in
398 counties without outreach versus 1.742 (p-value=.179) in counties with outreach. The income
399 gap, however, is much larger in counties with outreach (2.529, p-value=.035) in comparison to
400 counties without outreach (-4.696, p-value=.000). These results are consistent with arguments
401 already advanced that suggest that lower income homeowners may have a stronger incentive to
402 make an in person application and that outreach may be targeted to higher income
403 neighborhoods. Differences in the racial and income gaps between neighborhoods located in
404 counties with one versus multiple assessor locations are large in magnitude. The minority/white
405 gaps are 5.736 (p-value=.024) and 1.742 (p-value=.180) for neighborhoods located in counties

406 with multiple locations versus a single location for making an application. The corresponding
407 income gaps are -4.695 (p-value=.002) and 2.529 (p-value=.035). As suggested above, the
408 income gap may be reversed from positive to negative in counties requiring an in person
409 application as the result of homeowners in low income neighborhoods having a greater incentive
410 to file the application, which is facilitated in counties having multiple locations for making an
411 application.

412 What do these results suggest regarding outreach and multiple assessor office locations in
413 possibly reducing neighborhood racial and income gaps in the homestead exemption non-
414 claimant percentage? Support is provided in favor of having more than one location for filing an
415 application within counties allowing online applications, with both the neighborhood minority
416 and income gap smaller in counties with more than one location where an application can be
417 filed. In counties requiring that an application be made in person each of the polices has an
418 opposite effect on the two gaps. Outreach reduces the minority gap, but raises the income gap.
419 Multiple locations increase the minority gap, but decrease the income gap. To make sense of
420 these results, it should first be noted that for both methods of application outreach is found to
421 increase the income gap suggesting that outreach may need to be better targeted to lower income
422 neighborhoods. Regarding the minority gap, outreach results in a large decrease within in-person
423 counties suggesting this as a policy option. Multiple locations within these counties are
424 recommended as a policy for reducing the income gap (actually changing it in favor of low
425 income neighborhoods), but having more than a single location enlarges the minority gap,
426 suggesting that additional locations benefit white neighborhoods to a greater extent than minority
427 neighborhoods. Overall, while the results suggest that changes in assessor services (outreach and
428 offices) may have an impact on reducing neighborhood racial and income gaps in the non-

429 claimant percentage, they also point to the need for evidence on differences in these services
430 between minority (low income) and white (high income) neighborhoods. Next I consider one
431 final issue of policy interest; namely, whether improving broadband internet within minority and
432 low income neighborhoods can reduce neighborhood gaps within counties with online
433 application.

434 **E. The Role of High-Speed Internet within the Neighborhood**

435 Neighborhoods in Florida are largely located in counties with online application for the
436 homestead exemption. Minority and low income neighborhoods in these counties have higher
437 non-claimant percentages of the homestead exemption, differences that are both statistically and
438 economically significant. One possible explanation for these findings is that homeowners in
439 these neighborhoods may have less access to high-speed internet. The FCC data show that some
440 internet is available at the block level in almost all neighborhoods, but this is not the case with
441 “high-speed” internet. For example, 98 percent of the neighborhoods located in counties with
442 online application have download internet speeds of 15 megabits per second (Mbps) or higher for
443 all blocks in the neighborhood. However, only 50 percent of the neighborhoods have all blocks
444 with download speeds of 30 Mbps or higher.

445 The first issue I address is whether the block level coverage of high-speed broadband
446 internet within a neighborhood located in a county with online application impacts the
447 neighborhood’s homestead exemption non-claimant percentage. I added the percentage of blocks
448 in the neighborhood with access to high-speed broadband (PHBI) to the full model including all
449 covariates. Results are presented in Table 6. The estimated coefficient on PHBI is -0.021 (p-
450 value=.002), indicating that a one percentage point increase in PHBI reduces the neighborhood
451 non-claimant percentage by 0.021. Having found that PHBI matters to the neighborhood non-

452 claimant percentage, there is the issue of whether differences in PHBI across neighborhoods
453 explains the higher non-claimant percentages in minority and low income neighborhoods.
454 Results addressing this question are presented for Equations A and B in Table 6. Equation A
455 includes all covariates, but without the neighborhood internet coverage variable. The non-
456 claimant percentage is 2.9 percentage points higher in minority in comparison to white
457 neighborhoods, 3.6 points higher in low income than in high income neighborhoods, and 1.1
458 points higher in middle than high income neighborhoods. Equation B adds to Equation A the
459 PHBI variable. The inclusion of PHBI has essentially no effect on the neighborhood racial and
460 income differences in the non-claimant percentage. Because there is almost no relationship
461 between the neighborhood types and PHBI (PHBI correlation coefficients between minority, low
462 and high income neighborhoods equal .007, .013, and -.007, respectively) the failure of PHBI to
463 explain the neighborhoods gaps is not surprising. Equation C adds to Equation B interactions
464 between the neighborhood types and PHBI. The interaction is significant for minority and middle
465 income neighborhoods, but insignificant for low income neighborhoods. At the bottom of the
466 table, implied racial and income gaps at alternative percentages of PHBI are reported. Increasing
467 PHBI from 25 to 75 percent (100 percent) reduces the minority/white neighborhood gap in the
468 non-claimant percentage from 5.3 to 3.6 (2.8) percentage points. These results show that if a
469 minority and a white neighborhood both have 25 percent of their blocks with high-speed internet,
470 the minority neighborhood is at a worse disadvantage than if both neighborhoods have complete
471 block coverage. The results of Turner (2016) suggest one explanation for these findings. Based
472 upon responses from the 2015 Computer and Internet Use Supplement (“Supplement”) to the
473 Current Population Survey, he reports that among employed persons, 61 percent of whites go
474 online at work, versus just 38 percent of Hispanics and 47 percent of blacks. Because high-speed

475 internet is the rule rather than the exception at work, in comparison to minorities, whites may be
476 better able to make an online application for the homestead exemption by applying at work, even
477 if they have no high-speed access at home. For the low and middle income gaps, higher values of
478 PHBI are associated with larger gaps in favor of higher income neighborhoods. But, as
479 mentioned, the interaction between PHBI and low income neighborhood is not significant and
480 the increases in the middle income gap with higher values of PHBI are all small in magnitude.
481 The results therefore suggest that the importance of PHBI is limited to its effect on reducing the
482 racial gap in the non-claimant percentage. However, the effect is small in magnitude. A standard
483 deviation increase in PHBI within minority neighborhoods (15 percentage points) would
484 decrease the minority gap in the non-claimant percentage by 0.5 percentage points.

485 The PHBI results should be properly interpreted. They do not necessarily imply that high-
486 speed internet fails to play an important role in explaining racial or income neighborhood
487 differences in the homestead exemption non-claimant percentage within counties with online
488 application. PHBI is a measure of the ability to purchase within-home high speed broadband and
489 not its actual presence within the home. Survey evidence indicates that the lower internet
490 subscription rates among minority and low income households are more due to the costs of the
491 subscription and the necessary computer equipment than the absence of a provider (Turner,
492 2016). Hence, a better measure of the impact of home high speed internet on racial and income
493 neighborhood gaps in non-claimant percentages would be neighborhood subscription rates. To
494 my knowledge, data on subscription rates are not presently available at the block group level.
495 Thus, a more complete analysis of the role of the internet in affecting neighborhood non-
496 claimant percentages must await better data. Nevertheless, the finding that access to high speed
497 internet matters to the racial gap suggests that capturing both access and cost would show that

498 the registered effects of PHBI understate the true importance of the internet in explaining the
499 gap.

500 **VII. CONCLUSIONS AND POLICY IMPLICATIONS**

501 Almost all states offer property tax savings to homeowners who claim their home as their
502 permanent residence by providing a homestead exemption which reduces the assessed value of
503 their home. Some states, like Florida, also provide a cap on annual increases in assessed values
504 that comes along with the homestead exemption. The exemption does not come automatically
505 with ownership but must be applied for by the homeowner. In Florida, thousands of homeowners
506 eligible for the homestead exemption fail to take it. At the national level, the number is more
507 likely to be in the millions. This paper has provided a comprehensive investigation of the factors
508 influencing the variance of estimated non-claimant rates across neighborhoods. Non-claimants
509 as a percentage of homeowners eligible for the exemption is substantially higher in minority and
510 low income neighborhoods. Hence, failures to take the exemption is worsening the relative
511 economic position of homeowners living in these neighborhoods.

512 The lion's share of neighborhoods in Florida are located which allow online application
513 for the homestead exemption. Hence, from a policy perspective it is particular concerning that
514 among these neighborhoods the estimated non-claimant percentage is roughly four percentage
515 points higher in minority (relative to white) and low income (relative to high income)
516 neighborhoods. My results offer some promise that policy can reduce, at least moderately, these
517 gaps in the non-claimant percentage. Providing more locations where the exemption can be filed
518 in person may have a beneficial effect on both racial and income gaps and expanding access to
519 high speed internet within minority neighborhoods may further reduce racial gaps. The role of
520 the assessor reaching out into the community to better inform eligible homeowners of the

521 exemption may also be beneficial, but my results suggest that this must be done more or less
522 uniformly across neighborhoods defined by their race or income level. Other policies may also
523 be useful, but could not be explored in the present analysis due to the limitation of the data.
524 Many of the covariates included in my models that measure knowledge of the exemption are
525 found to be important. Hence, policies to better inform eligible homeowners of the exemption in
526 minority and low income neighborhoods may be beneficial. One approach is to have the county
527 assessors or the Florida Department of Revenue send notices in the mail of the exemption to all
528 homeowners (perhaps, with an application form that can be mailed in). While this may prove to
529 be too costly, an alternative mailing would be limited to those homeowners who are eligible for
530 the exemption but have not claimed it. As done in this paper, the assessor can flag those
531 homeowners whose mailing and physical addresses are the same.

532 While my results pertain only to Florida, they suggest that homestead exemption non-
533 claimants may be common in the many other states offering the homestead exemption. As in true
534 in Florida, in all of these states the exemption is not automatically given to all eligible
535 homeowners. The Florida experience with the homestead exemption is unlikely to be unique.
536 Hence, although research on other states is needed, higher non-claimant percentages within
537 minority and low income neighborhoods may be common, contributing at the national level to
538 the economic disadvantages experienced by households living in these neighborhoods. If
539 nothing else, my research points to the need for further research into the failure of eligible
540 homeowners to take the homestead exemption.

541

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Table 1
Means of Homestead Exemption Non-Claimant Percentages

	Mean	Standard Deviation
Neighborhood type		
Majority minority (3509)	13.281	8.664
Majority white (6326)	9.198	6.405
Difference	4.083*	
Low income (2933)	13.426	8.867
High income (3573)	8.705	6.938
Difference	4.721*	
Middle income (3329)	9.963	5.741
High income (3573)	8.705	6.938
Difference	1.258*	
Observations	10,608	

Notes: Low and high income neighborhoods are defined by dividing the distribution of neighborhood median incomes into tercels. * indicates that the difference in means is significant at the 1% level. The numbers in parentheses are the number of neighborhoods in each group.

Table 2
Means and Standard Deviations of Dependent and Independent Variables

	Mean	Standard Deviation
Percent single-family home non-claimant	10.549	7.481
Minority neighborhood	0.331	0.470
Low income neighborhood	0.300	0.458
Middle income neighborhood	0.339	0.473
% homeowners aged 35–59	43.198	18.156
% homeowners 60 and older	49.463	20.138
Total number homeowners (1,000)	4.421	4.179
Homeowners/land area (density)	0.323	0.297
Churches/homeowners (100)	1.178	7.342
Restaurants/homeowners (100)	0.457	2.673
Clubs, lodges, union halls/homeowners (100)	0.183	3.046
Nightclubs, bars/homeowners (100)	0.111	1.246
County population (1000)	95.460	81.546
Online application	0.877	0.328
In-person application	0.087	0.282
Outreach	0.265	0.441
Office locations	2.189	1.538
Black appraiser	0.117	0.372
Female appraiser	0.176	0.381
Observations	10,608	

Table 3
 Results from Estimating the Neighborhood
 Non-Claimant Percentage Baseline Model (Column 1)
 and the Model Including the Assessor Characteristics (Column 2)

	(1)	(2)
Minority neighborhood	3.347*** (0.196)	3.311*** (0.196)
Low income neighborhood	2.882*** (0.233)	2.876*** (0.232)
Middle income neighborhood	0.710*** (0.162)	0.665*** (0.161)
% homeowners aged 35–59	–0.045*** (0.013)	–0.048*** (0.013)
% homeowners 60 and older	–0.022* (0.012)	–0.027** (0.012)
# homeowners	–0.120*** (0.030)	–0.121*** (0.030)
Homeowner density	–1.512*** (0.440)	–1.330*** (0.045)
Churches	0.162*** (0.029)	0.163*** (0.029)
Clubs, lodges, union halls	–0.313*** (0.073)	–0.313*** (0.074)
Nightclubs and bars	–0.154 (0.239)	–0.160 (0.231)
Restaurants	0.049 (0.056)	0.052 (0.056)
County population	0.001 (0.002)	0.003 (0.002)
Online application		3.014*** (0.264)
In-person application		3.839*** (0.454)
Office locations		–0.305*** (0.062)
Outreach		–0.982*** (0.305)
Black appraiser		–0.874*** (0.190)
Female appraiser		0.597*** (0.167)
R-square	0.130	0.141
Observations	10,608	10,608

Notes: Robust standard errors are in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4
 Estimated Racial and Income Neighborhood Gaps in the
 Non-Claimant Percentage Obtained from the Interaction Model (Equation 3)

	Racial Gap Minority – White	Income Gap Low – High
Method of application		
Mail/in-person	0.028 (2.800)	0.696 (1.243)
Online	4.417*** (0.368)	3.893*** (0.487)
Only in-person	4.478*** (1.157)	-3.366*** (1.264)
Outreach		
Yes	-1.202 (1.200)	4.420*** (0.940)
No	5.648*** (0.672)	0.170 (0.773)
Multiple locations		
Yes	-2.086* (1.159)	4.064*** (0.090)
No	6.532*** (0.827)	0.525 (0.937)
Number of homeowners		
High (above mean)	0.137 (0.978)	2.759*** (0.707)
Low (below mean)	4.309*** (0.783)	1.831** (0.872)
Sex of assessor		
Female	3.494*** (0.998)	2.205*** (0.735)
Male	0.952 (0.680)	2.385*** (0.769)
Race of assessor		
Black	3.664*** (0.990)	2.449*** (0.844)
White	0.781 (0.651)	2.140*** (0.823)

Notes: Robust standard errors are in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5
 Results from Estimating Neighborhood Non-Claimant Models for
 Counties with Online Applications and Only In-Person Applications

Panel A: Outreach	Method of Application	
	Online	In-Person
Minority group, minority – white		
No outreach	2.272*** (0.252)	5.736** (2.607)
Yes outreach	2.464*** (0.337)	1.742 (1.340)
Income group, low – high		
No outreach	3.322*** (0.227)	-4.696*** (1.467)
Yes outreach	4.268*** (0.479)	2.529* (1.204)
 Panel B: Multiple Locations		
	Method of Application	
	Online	In-Person
Minority group, minority – white		
Single location	2.464*** (0.337)	1.742 (1.340)
Multiple location	2.272*** (0.252)	5.736** (2.607)
Income group, low – high		
Single location	4.268*** (0.479)	2.529** (1.204)
Multiple location	3.332*** (0.228)	-4.695*** (1.514)

Notes: Numbers in parentheses are robust standard errors. *, **, *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 6
 Minority/White Neighborhood Gaps in
 Homestead Exemption Non-Claimant Percentages and Internet Access

	Estimated Coefficient	Standard Error
Equation A		
Minority neighborhood	2.939***	0.183
Low income neighborhood	3.605***	0.228
Middle income neighborhood	1.134***	0.148
Equation B		
Minority neighborhood	2.994***	0.181
Low income neighborhood	3.623***	0.227
Middle income neighborhood	1.127***	0.148
Percent of blocks high-speed	-0.021***	0.007
Equation C		
Minority neighborhood (MI)	6.166***	1.663
Low income neighborhood (L)	2.224	1.848
Middle income neighborhood (M)	-2.544*	1.314
Percent of blocks high-speed (PHBI)	-0.032**	0.013
MI * PHBI	-0.034*	0.018
L*PHBI	0.015	0.019
M*PHBI	0.040***	0.014
Low income gap		
PHBI=25	2.614*	1.376
PHBI=50	2.984***	0.904
PHBI=75	3.364***	0.443
PHBI=100	3.744***	0.231
Middle income gap		
PHBI=25	-1.539	0.962
PHBI=50	-0.534	0.667
PHBI=75	0.471	0.294
PHBI=100	1.476***	0.160
Racial gap		
PHBI=25	5.315***	1.208
PHBI=50	4.465***	0.797
PHBI=75	3.614***	0.368
PHBI=100	2.764***	0.747

Note: Equations are estimated for neighborhoods located in counties with online application for the homestead exemption and include all covariates.

**Appendix Table A.1
County Property Assessor Characteristics**

County	Application	Assessor Race	Assessor Sex	Outreach	Offices
Alachua	Mail, In person	White	Male	No	One
Baker	Mail, In Person	White	Male	No	One
Bay	Online, Mail, In Person	White	Male	No	Two
Bradford	Only In Person	White	Male	No	One
Brevard	Online, Mail, In Person	White	Female	Yes	One
Broward	Online, Mail, In Person	White	Male	Yes	One
Calhoun	Only In Person	White	Female	No	One
Charlotte	Online, Mail, In Person	White	Male	No	One
Citrus	Online, Mail, In Person	White	Male	No	Two
Clay	Mail, In person	White	Male	No	One
Collier	Only In Person	White	Female	No	Four
Columbia	Only In Person	White	Male	No	One
Dade	Online, Mail, In Person	White	Female	Yes	One
DeSoto	Only In Person	White	Male	No	One
Dixie	Only In Person	White	Male	No	One
Duval	Online, Mail, In Person	White	Male	No	One
Escambia	Online, Mail, In Person	White	Male	No	Two
Flagler	Mail, In person	White	Male	No	One
Franklin	Only In Person	White	Female	No	One
Gadsden	Mail, In person	Black	Male	No	One
Gilchrist	Only In Person	White	Male	No	One
Glades	Only In Person	White	Female	No	One
Gulf	Only In Person	White	Male	No	One
Hamilton	Only In Person	White	Male	No	One
Hardee	Only In Person	White	Female	No	One
Hendry	Only In Person	White	Female	Yes	One
Hernando	Online, Mail, In Person	White	Male	No	Two
Highlands	Only In Person	White	Male	Yes	One
Hillsborough	Online, Mail, In Person	White	Male	No	Five
Holmes	Only In Person	White	Male	No	One

Indian River	Online, Mail, In Person	White	Male	No	Three
Jackson	Mail, In person	White	Female	No	One
Jefferson	Mail, In person	White	Female	No	One
Lafayette	Only In Person	White	Male	No	One
Lake	Online, Mail, In Person	White	Male	No	Two
Lee	Online, Mail, In Person	White	Male	No	One
Leon	Online, Mail, In Person	Black	Male	Yes	One
Levy	Only In Person	White	Male	No	One
Liberty	Online, Mail, In Person	White	Female	No	One
Madison	Mail, In person	White	Female	No	One
Manatee	Online, Mail, In Person	White	Male	No	One
Marion	Online, Mail, In Person	White	Male	No	One
Martin	Online, Mail, In Person	White	Female	No	Three
Monroe	Only In Person	White	Male	No	Three
Nassau	Online, Mail, In Person	White	Male	No	Three
Okaloosa	Only In Person	White	Male	No	Two
Okeechobee	Only In Person	White	Male	No	One
Orange	Online, Mail, In Person	Black	Male	Yes	One
Osceola	Online, Mail, In Person	White	Female	Yes	One
Palm Beach	Online, Mail, In Person	White	Female	No	Five
Pasco	Online, Mail, In Person	White	Male	No	Three
Pinellas	Online, Mail, In Person	Black	Male	No	Four
Polk	Online, Mail, In Person	White	Female	No	Three
Putnam	Only In Person	White	Male	No	Three
Saint Johns	Online, Mail, In Person	White	Male	No	One
Saint Lucie	Online, Mail, In Person	White	Female	No	Three
Santa Rosa	Online, Mail, In Person	White	Male	No	One
Sarasota	Online, Mail, In Person	White	Male	No	Three

Seminole	Online, Mail, In Person	White	Male	No	One
Sumter	Only In Person	White	Male	No	Three
Suwannee	Only In Person	White	Male	No	One
Taylor	Only In Person	White	Male	No	Three
Union	Only In Person	White	Male	No	Three
Volusia	Online, Mail, In Person	White	Male	No	One
Wakulla	Only In Person	White	Male	No	One
Walton	Only In Person	White	Male	No	One
Washington	Only In Person	White	Male	No	One