

Appalachia's "Big White Ghettos": Exploring the Role of Heirs' Property in the Reproduction of Housing Vulnerability in Eastern Kentucky

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Abstract—Heirs' property presents obstacles to asset building because such properties have "clouded land titles," i.e., those that are difficult or impossible to use as collateral for home mortgages. Because of these difficulties, heirs' property owners may be more likely to purchase manufactured or mobile homes rather than site-constructed ones because mobile home financing can be accomplished with chattel loans. The purchase of a manufactured home as chattel property, when attached to real property classed as heirs' property, intensifies housing vulnerability because manufactured home values are more likely than site-built homes to depreciate in value; this, in concert with heirs' property classification inhibits owners' abilities to use these assets to build wealth. Using secondary parcel data, I examine the association between heirs' property ownership and manufactured housing in eight counties in central Appalachia (southeastern Kentucky)—Clay, Harlan, Knox, Lee, Leslie, Letcher, McCreary, and Owsley Counties. Contrary to expectations, I found a negative and significant association between heirs' parcels and manufactured housing presence for six of the eight counties. Further analyses revealed lower assessed property values for heirs' properties compared to non-heirs' properties, suggesting that heirs' properties are less likely to contain any kind of improvements and consequentially are more likely to be underutilized from an economic, asset-enhancing perspective.

Keywords: Appalachia, heirs' property, manufactured homes.

INTRODUCTION

A tenancy-in-common or "heirs' property" is privately owned real property, held jointly by two or more people who are typically related. This land tenure form presents numerous financial constraints for owners due to the fact that it can be difficult to ascertain the lawful co-heirs (owners) and the consequential eschewing of such properties by lending institutions. For instance, heirs' status severely limits the ability of owners to obtain financing for conventional home mortgages. Banks will not accept such properties as collateral for loans unless all heirs agree to assume the debt. Securing such agreement may be next to impossible given family conflicts and divergent ideas about the best use for the property. The only recourse for homeownership for an heir who wants to live on the property may be a manufactured

home (mobile home) purchase because financing for these dwellings can be accomplished with chattel (personal) loans, which are much easier to secure than mortgages (Genz 2001). Indeed, years of anecdotal observations suggest heirs' property prevalence and mobile home presence are positively related. In their study of heirs' property in Alabama, Dyer and Bailey (2008: 322) found "extraordinarily high" percentages of manufactured homes in two Alabama counties also believed to contain high percentages of heirs' property. The authors stress: "Mobile [manufactured] homes are an indicator of substandard housing and their prevalence may be an indicator of the prevalence of heirs' property because owners of such property are unable to qualify for conventional mortgages and must rely on personal loans (at higher interest rates) to purchase mobile homes."

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Sociology of property scholar Geisler (1995) stresses that land ownership, or the lack thereof, is a fundamental determinant of poverty's persistence. Geisler (1995), underscoring Mumford's (1962) argument that land ownership is crucial to a myriad of well-being measures, stresses that land insulates owners from destitution, over and above any income streams land may provide, and offers security for the elderly when those active streams dissipate in old age. To be without this asset exacerbates family instabilities. However, I argue that if title to that same land is "unclear" (i.e., classed as heirs' property), then its ability to build wealth for families and its efficacy as a bulwark against financial downturns are reduced, both in financial as well as social welfare terms, thus potentially increasing a range of social vulnerabilities.

In a similar vein, Deaton (2007) explicitly calls for research examining links between heirs' property and poverty. While I do not examine poverty per se, this study examines the association between property classed as heirs' property and manufactured homes in eight southeastern Kentucky counties—Clay, Harlan, Knox, Lee, Leslie, Letcher, McCreary, and Owsley—using data obtained from the U.S. Department of Agriculture Forest Service's Forest Inventory and Analysis program.¹ Comparatively little research explores heirs' property ownership in Appalachia. Also, this is the first extensive study of the relationship between heirs' property ownership and manufactured housing.

LITERATURE REVIEW

Heirs' Property in Appalachia

The heirs' property phenomenon is evident across the rural to urban continuum, but the preponderance of writing and attention to this topic focuses on land tenure problems encountered by southern, rural African Americans (Baab 2011, Chandler 2005, Hitchner et al. 2017, Mitchell 2001, Mitchell 2005, Mitchell et al. 2010, Rivers 2007)—and for good reason. In 1980, the Emergency Land Fund estimated that 41 percent (3.8 million acres) of all African-American-owned land in the South was held as heirs' property (Emergency Land Fund 1980). Heirs' properties are expected to be pervasive in communities with higher-than-average poverty rates and lower educational attainment. While these descriptors characterize many rural, predominantly African-American communities across the Black Belt South (Gilbert et al. 2002), they aptly describe southeastern Kentucky communities as well. The socio-demographics of rural, central Appalachian counties alone compel a closer look at the extent of heirs' properties in Appalachia, yet these communities and social groups are typically left out of heirs' property discourses. The

only research of which I am aware that draws attention to heirs' property in central Appalachia has been conducted by Deaton (2005, 2007) and Deaton et al. (2009), who focus on just one county—Letcher County, KY. In line with Pruitt and Sobczynski's (2016) argument that poor, rural White communities are often not highlighted in cases involving environmental injustice, I also maintain that heirs' property and its consequences in central Appalachia remain an undeveloped area of study (Hendryx 2011). Pruitt and Sobczynski (2016) suggest that *race rather than place* is typically the focal point of questions involving environmental injustices, perhaps because racial inequity may be a more compelling platform from which a case for environmental injustice may be launched. The paucity of literature on the intersection of heirs' property and rural White populations may reflect this predisposition as well. There is an abundance of literature on Appalachian poverty and the factors that contribute to its persistence. That scholarship will not be discussed extensively in this paper because the myriad roots of Appalachian poverty are not the primary focus of this analysis. However, I do borrow terms from Williamson's (2014) popular press article which characterizes Appalachia as a "big White ghetto" because of the region's enduring poverty, perpetuated by declining coal and timber industries, high rates of both legal and illegal drug use, and its dependence on government assistance. This ironic descriptor also calls attention to the fact that predominantly White, rural areas like Appalachia experience challenges similar to those encountered by the urban poor; I would add that, like urban poverty, rural poverty can be traced to the usurping of real property rights by non-local elites (Teaford 2000).

Billings and Blee (2000: 36–37) stress that resource appropriation in Kentucky dates back to colonial times when investors from outside of the territory acquired millions of acres of land from Native populations. When White settlement began in 1775, the majority of land claims were filed by large land-holding interests, not homesteaders. Eller's (1982: 56) historical analysis of industrialization's impact on Appalachia supports this assertion, noting that "[o]bscure land titles, lost deeds, and poor records were common to most mountain communities, and speculators were quick to turn this to their advantage." The same kind of speculation or predatory practice that provides entre into African-American heirships via the buying of one or more heirs' interests (see Mitchell and Craig-Taylor in these proceedings) has also been common in eastern Kentucky. Gaventa (1980: 54–55) writes that historically, speculators would:

¹Specifically, Digital Map Products and CoreLogic datasets. Data used in this analysis were a combination of the two datasets.

...acquire the rights of a single heir on a piece of property left to several family heirs. When the other heirs refused to sell, the Company [sic] would go to court and ask for a judgment on whether the property could be 'fairly and impartially partitioned' and on whether the 'said property is of such a nature so that its sale could be of manifest interest to all parties.' Almost invariably, the court would rule that it could not be divided, and that it should be sold at a 'public auction to the highest bidder'.... Even now it is not uncommon in the area to hear statements like 'see that mountain, the 'sociation stole it from my daddy.'

The torrential rains and ensuing floods that destroyed homes in eastern Kentucky and West Virginia in 1977 helped to set in motion an investigation of land ownership in Appalachia. The influential “Who Owns Appalachia?” study published in 1983 revealed that 72 percent of affected lands were owned by absentee owners, and 80 percent of rights to subsurface-level mineral rights were owned by absentee owners, key factors that Appalachian studies scholars contribute to the region’s generational poverty (Appalachian Land Ownership Task Force 1983, Gaventa 1995).² Deaton (2005) stresses that while this revelation is important for understanding the relative lack of local ownership, the Appalachian study paid little or no attention to local, private land ownership and the forms this takes.³ Deaton (2005, 2007) and Deaton et al. (2009) assert that heirs’ property holdings pervade Appalachia and that, as a form of capital, land is not maximized to its fullest extent because of tenuous property holdings. No comprehensive survey of heirs’ property ownership has been conducted for Appalachia; however, Deaton’s (2005) survey of Letcher County, KY, in 2004 revealed that 24 percent of local, nonindustrial landowners held some portion of their real property as heirs’ property. However, this figure should be considered with some caution because of the small sample size (n = 47 respondents).

Given limited amounts of land available for smallholders, the question is: why the likely preponderance of heirs’ properties, both historically and contemporarily? Historically, topographical features of the land may have played a role. Early settlements were demarcated by mountains, which reinforced cultural isolation and the primacy of kinship ties over integration with the larger society. Because land ownership ended at mountain ridges,

social and civic obligations often terminated there as well (Eller 1982: 7). Efforts to clarify property ownership through mechanisms such as probate courts may have been inconsistent with local priorities. Also, lack of knowledge about legal requirements of land ownership may have also been a contributing factor. Contemporarily, Deaton (2005, 2007) posits that high transaction costs (e.g., court fees) involved in clearing titles perpetuates this sort of land tenure.

Challenges of Manufactured Home Ownership

Manufactured homes comprise a large percentage of the housing stock in Appalachia (north Alabama, Kentucky, east Tennessee, West Virginia, and Virginia) (Jones et al. 2016). There are >560,000 manufactured or mobile homes in Kentucky (Kentucky Housing Corporation 2013). These units make up 19 percent of the occupied housing units in the State (Jones et al. 2016: 60). Manufactured homes are concentrated in the southeastern portion of Kentucky, comprising between 27 and 34 percent of the housing stock (Jones et al. 2016: 60).

Furman (2014: 4) distinguishes “manufactured housing” from “mobile home”; both are constructed on a chassis, but the latter references houses built prior to June 15, 1976. After this date, factory-constructed homes were required to conform to U.S. Department of Housing and Urban Development (HUD) codes. Categorically, the post-1976 constructions are considered superior in design and durability, compared to such homes built before this date (Jones et al. 2016). Indeed, post-1976 manufactured home models that conform to HUD standards offer affordable housing options (Beamish et al. 2001). For instance, the mean sales prices in May 2018 in the Southern United States were \$56,300 for a new, single-wide manufactured home (not including land) and \$97,000 for a double-wide (U.S. Census Bureau 2018).⁴ To compare, the average sales price in August 2018 for a new, site-constructed home was \$388,400, and the median purchase price of a new site-constructed home was \$320,200 for the same period (price includes land) (U.S. Census Bureau 2018).

Manufactured homes are more likely to be purchased by older people, those with only a high school education, and lower income and lower net worth households (Consumer Financial Protection Bureau 2014: 13). Heirs’ property owners may also be more likely to purchase manufactured homes because of the lower cost relative to site-built homes, and because no additional costs for land

²Peluso et al. (1994) and West (1994) also argue that poverty in regions such as Appalachia is due not only to the unevenness of private land ownership distributions but also because these places have long been dominated by extra-local, public land management bureaucracies that wield power favoring specific resource extraction interests.

³The report states that <50 percent of the land in Appalachia was owned by local people.

⁴Single-wide mobile homes are ≤18 feet (5.5 m) × 90 feet (27 m) wide. Double-wides are ≥20 feet (6.1 m) × ≤90 feet (27 m) wide. Double-wides have features similar to site-constructed homes, as opposed to the rectangular-shaped structures that characterized many mobile homes prior to the 1970s.

purchases are required. This understanding is expressed by a research participant in Dyer and Bailey (2008: 330): “The only catch to (heir property) is most companies want you to have a clear title to a tract where you can build a house.” The respondent then contrasts this requirement with that for a manufactured home: “With a mobile [manufactured] home, they’ll just put it on the property.... The advantage (of heir property)...is that whoever wants to put a home here can; they don’t have to look for property anywhere else.”

Despite the advantages of affordability and improvements in quality, manufactured homes can exacerbate social (i.e., housing) vulnerability because higher interest rates are required for the chattel loans that secure them; loan periods are shorter; buyers are targeted by subprime lenders; and housing values of nearby site-built homes are lowered (Wubneh and Shen 2004). A major criticism of manufactured homes is that they often follow “blue book” depreciation schedules used for motor vehicles (National Consumer Law Center 2014, Pendall et al. 2012). The consensus among both creditors and home purchasers is that manufactured homes either depreciate in value, compared to site-constructed homes, or their appreciation is much less predictable (Jewell 2003, Wubneh and Shen 2004, Yarnal and Aman 2009). Jewell (2003) qualifies these assumptions. The value of a manufactured home is more likely to appreciate if it is situated on land owned by the owner of the manufactured home who would have the right to alienate (that is, sell) both the land and the manufactured home. Ownership of both reduces ambiguities for potential buyers and thus has the effect of increasing bargaining prices.

Heirs’ property owners would seem to be on good standing with respect to this stipulation given that they are private property owners. However, heirs’ property ownership involves undivided, fractional land interests. Ownership of the land is conditioned by the fact that owners do not possess clear, marketable title to land, only fractional interests. Although these owners may convey the full manufactured home title to a potential buyer, owners do not have the right to transfer full title to the land; they can convey only their fractional interests in the land. According to the Chief Appraiser with the Athens-Clarke County, GA, Tax Assessor’s Office, manufactured homes located on heirs’ property are routinely valued lower than manufactured homes on property with clear title precisely because buyers do not want to buy into heirships.⁵

So, while manufactured homes can reduce housing vulnerability by offering both shelter and many other non-tangible benefits associated with home ownership, from

a long-term investment perspective, buyers do not fare well because of the displacement specter. An emotionally charged case involving displacement of heirs’ property owners in the coastal region of South Carolina illustrates this point. Twenty-five members of the Rivers family clan were evicted from their property in 2001 by county deputies after a court ruled that the heirs’ property on which the family resided was to be sold to a developer. The judge overseeing the case ordered that the land be sold and six homes removed (Grabbatin and Stephens 2011: 133). The recounting of eviction day by the *Charleston Post and Courier* (recounted in Grabbatin and Stephens 2011) goes on to state that one heir in particular could only “watch[ed] as Berkeley County Deputies placed her mobile home on a trailer, removed the cinder blocks, and hauled it away.” This eviction happened because, at that time, anyone with a fractional interest in heirs’ property could ask that the land be partitioned, and, at that time, other co-heirs did not have the rights afforded to them by the Uniform Partition of Heirs Property Act (see Mitchell in these proceedings). In this case, the court ruled that the best way to divide the property was via a court-ordered partition sale. This meant that all family members who lived on the land had to vacate the property because it was sold to someone outside of the family.

METHODOLOGY

Residential, farm, and condominium parcels in Clay, Harlan, Knox, Lee, Leslie, Letcher, McCreary, and Owsley Counties (fig. 1) were analyzed using secondary datasets compiled by Digital Map Products and CoreLogic. The data contained parcel listings with annotations indicating heirs’ property. I classified a parcel as heirs’ property if the owner name column contained any of the following notations: “heirs,” “hrs,” “et al.,” “others,” “estate of,” “others,” or “1/x” (indicating fractional interest). Counties use varying methods of describing parcels as heirs’ property, and, in some cases, no clear indication may be made. I consider heirs’ indicators contained on the parcel listings as incomplete inventories of heirs’ property for the respective counties because of inconsistencies in how counties account for heirs’ property. For this reason, I assume that the heirs’ parcels identified represent a sample rather than a census of all possible heirs’ parcels in the study counties. The data provide no indication of manufacture date of mobile homes although I suspect that a number of them may have been constructed before 1976.

The combined Digital Map Products and CoreLogic databases contain 117 fields, including: property owner name, property location, owner address, building age, number of rooms in structures, number of acres, land use category, assessed and improvement values, sale price, and

⁵ Personal communication. 2017. K. Dunagan, Chief Appraiser, Tax Assessor’s Office, Athens-Clarke County Unified Government, Athens, GA 30603.

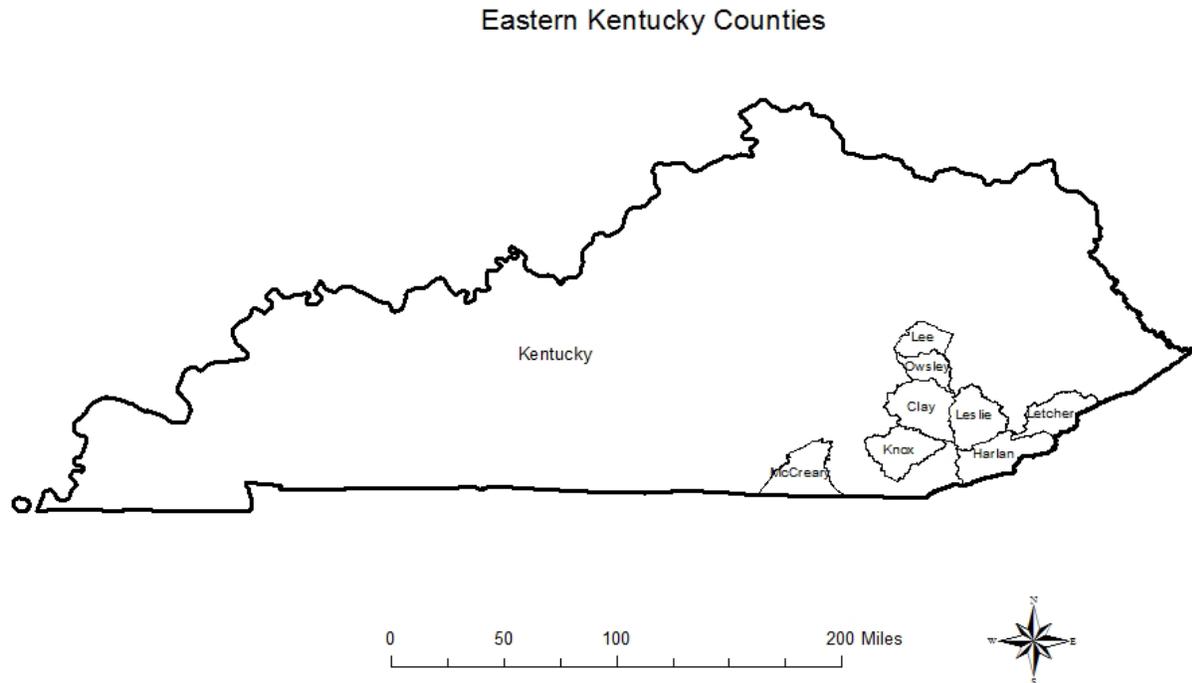


Figure 1—Study area, comprising eight southeastern Kentucky counties.

sale date. The data are in the form of geospatial files for use with Geographic Information System software. Data obtained were for tax years 2017–2018.

I specified eight logistic regression models to evaluate the relationship between manufactured homes and heirs' property. The dependent variable, manufactured home, was coded 1 if the property contained such a dwelling and 0 otherwise. Heirs' property is the only predictor variable. It was coded 1 for heirs' property and 0 for non-heirs' property.

RESULTS

Table 1 shows number of heirs' parcels, percent of parcels classed as heirs' property, along with acreage and assessed property value (land and structures). These numbers include all heirs' parcels, not just residential, farm, and condominium. Leslie County stands out in terms of greatest number, percent acreage, and value of heirs' property. Heirs' property acreage totals >100,000 for the eight-county area with a value of roughly \$60 million. Assessed values are typically lower than the market value (home sale price). Local governments use assessed real estate values to levy property taxes. These values are calculated by taking into account the value of nearby properties, recent improvements, and rental income. Table 1 also shows that mobile or manufactured housing units comprise between 21.6 percent and 41.3 percent of all housing units in these counties. These percentages

are from the 5-year (2012–2016) U.S. Census Bureau American Community Survey (Social Explorer 2017a). These figures are far above the average 12.1 percent for the State and the roughly 6 percent for the Nation.

Table 2 shows key socio-demographic variables for the study counties, for Kentucky, and for the United States—population, percent of population age 18–64 below poverty, median household income, median age, percent of population covered by a public health care policy, and percent unemployed for those age 16 and over (Social Explorer 2017b). Compared to both the Nation and the state of Kentucky, each of the study counties has a higher poverty rate, lower annual median household income, higher public health care coverage, and higher unemployment rates.

Logistic Regression: Heirs' Property and Manufactured Homes

Using SAS statistical software, I fitted logistic regression models, where the probability of a parcel containing a manufactured house or a "mobile home" ($Y = 1$) was modeled as a function of the binary heirs' variable. Table 3 shows model results, including beta weights, odds ratios, and p -values for each model. There was a strong and significant association between heirs' property and manufactured housing for every county except Harlan and Letcher; however, this relationship was opposite of what was expected. Consistent with the significance

Table 1—Heirs' property characteristics for Clay, Harlan, Knox, Lee, Leslie, Letcher, McCreary, and Owsley Counties, KY

	Number of county parcels	Number of heirs' parcels	Percent of parcels classed as heirs' property	Heirs' property acreage	Heirs' property assessed value	Percent manufactured housing
Clay	11,622	343	3.39	12,431.16	\$8,433,100	30.1
Harlan	17,331	354	2.42	10,645.25	\$4,373,853	21.6
Knox	16,995	149	0.99	5,732.05	\$2,818,465	30.6
Lee	4,128	141	3.93	8,036.40	\$2,631,625	24.9
Leslie	8,468	1,255	15.19	45,545.88	\$23,106,924	41.3
Letcher	13,839	338	2.44	360.70	\$1,907,300	27.6
McCreary	8,602	476	5.83	8,368.81	\$10,743,652	28.5
Owsley	2,711	228	8.58	10,235.30	\$6,310,800	26.5
Total	83,696	3,284	--	101,355.55	\$60,325,719	--

Sources: Parcel data: Digital Map Products and CoreLogic for 2017–2018. Manufactured housing data: Social Explorer (2017a).

Table 2—Socio-demographic characteristics for Clay, Harlan, Knox, Lee, Leslie, Letcher, McCreary, and Owsley Counties, KY

County	Population	Percent below poverty	Median household income	Median age	Percent public health care	Percent unemployed
Clay	21,160	39.2	\$22,174	39.0	60.4	11.7
Harlan	28,031	32.9	\$25,350	41.2	56.9	10.3
Knox	31,740	33.1	\$26,553	40.1	57.3	13.3
Lee	6,896	37.8	\$21,185	42.8	56.8	13.8
Leslie	10,869	31.7	\$25,282	41.7	54.6	17.0
Letcher	23,382	29.5	\$29,181	41.7	55.8	12.9
McCreary	17,850	43.0	\$18,972	38.9	59.8	17.7
Owsley	4,552	36.5	\$22,106	41.7	61.7	8.4
Kentucky	4,411,989	18.0	\$44,811	40.0	38.1	7.6
United States	318,558,162	14.2	\$55,322	37.7	33.0	7.4

Source: Social Explorer (2017b).

values, the odds ratio column shows that for the same six counties (Clay, Knox, Lee, Leslie, McCreary, Owsley), the odds of a manufactured dwelling on heirs' parcels were significantly lower than for non-heirs' parcels.

Given the unexpected association, I attempted to examine the data to determine whether there were fewer houses, generally, on heirs' compared to non-heirs' parcels. Missing data prevented this analysis; however, I did compare mean assessed values for heirs' and non-heirs' properties, as this would provide some indication of

property improvements. Table 4 shows these results. Data were analyzed using an independent samples *t*-test. The assessed value, again, reflects rates for both the land and improvements. Across all counties, mean assessed heirs' property values were significantly lower than the mean values for non-heirs' properties. This suggests that there may be fewer improvements or structures of any kind, whether manufactured or site-built homes, on heirs' parcels. This finding is consistent with my understanding that heirs' parcels are less likely to be improved, thus resulting in underutilized capital.

Table 3—Logistic regression estimates for heirs' property and manufactured housing for Clay, Harlan, Knox, Lee, Leslie, Letcher, McCreary, and Owsley Counties, KY

County	MLE coefficient	HP 95% CI	HP odds ratio	Odds ratio 95% CI	Model chi-sq.	p-value	% correct predictions	N ^a
Clay	-0.75	-1.10– -0.41	0.47	0.33–0.67	22.02	0.0001	0.510	10,130
Harlan	0.10	-0.42–0.62	1.11	0.60–1.87	0.13	0.7095	0.502	14,610
Knox	-1.54	-2.18– -0.90	0.21	0.11–0.41	34.44	<0.0001	0.505	15,031
Lee	-1.47	-2.47– -0.47	0.23	0.09–0.63	13.44	0.0040	0.516	3,584
Leslie	-0.53	-0.73– -0.33	0.59	0.48–0.72	30.24	<0.0001	0.530	8,261
Letcher	0.04	-0.49–0.57	1.04	0.61–1.78	0.02	0.8793	0.575	3,165
McCreary	-0.31	-0.58– -0.03	0.74	0.56–0.97	4.93	0.0321	0.508	8,159
Owsley	-0.65	-1.10– -0.21	0.52	0.33–0.81	9.71	0.0039	0.521	2,657

MLE = maximum likelihood estimation; HP = heirs' property; CI = confidence interval.

^a Sample size is smaller than total county parcels because only residential, non-industrial farm, and condominium parcels were retained for logistic regression, and parcels with missing values were not included in the regression models. A large number of Letcher County parcels (>10,000) had no indication of parcel type which accounts for the large reduction in sample size for that county.

Table 4—Mean^a assessed property values for heirs' and non-heirs' properties for Clay, Harlan, Knox, Lee, Leslie, Letcher, McCreary, and Owsley Counties, KY.

County	Heirs' property ^b (dollars)	Non-heirs' property ^b (dollars)	t-value	p-value	N
Clay	24,658 (29,745)	36,139 (44,604)	6.87	<0.0001	10,084
Harlan	12,356 (16,155)	35,923 (44,107)	25.21	<0.0001	14,580
Knox	19,044 (34,245)	44,869 (56,369)	9.05	<0.0001	14,995
Lee	18,664 (31,920)	34,549 (41,946)	5.71	<0.0001	3,561
Leslie	18,530 (22,632)	27,657 (47,764)	10.62	<0.0001	8,219
Letcher	25,672 (27,249)	32,223 (43,922)	1.82	0.0738	3,142
McCreary	23,007 (23,522)	39,928 (40,521)	14.28	<0.0001	7,960
Owsley	27,679 (28,498)	42,913 (44,846)	7.27	<0.0001	2,650

^a Mean for parcels with assessed values >0.

^b Number in parenthesis is standard deviation.

DISCUSSION

I presented a simplified model examining the relationship between heirs' properties and manufactured homes. Although the association in most of the counties was contrary to my hypothesis, I suspect that there are fewer structural improvements to heirs' property in general, and this relative lack is reflected in the lower incidence of manufactured housing on heirs' parcels.

Alternatively, it may be that manufactured housing was sporadically indicated by the counties. The lack of uniformity in land parcel data is a common problem, which limits the use of these data to address landscape-scale problems. Pippin et al. (2017: 12) address this issue in a call for consistency in parcel data collection and reporting:

In 2015, the Coalition of Geospatial Organizations gave the United States a D+ for its poor investment in the development and maintenance of parcel data, noting that more than “3,200 counties and equivalent units of local government maintain 150 million non-Federal land parcels” in a piecemeal and nonstandard manner.... From zoning decisions to transportation planning to national disaster response, land parcel data underlies multiple areas of government and private decision making. Yet good and consistent data about property ownership and parcel boundaries remain unavailable.

Despite these limitations, manufactured home prevalence is a key vulnerability indicator to examine vis-à-vis heirs' property because it demonstrates a potential *outcome* resulting from heirs' property prevalence rather than an antecedent of the phenomenon (e.g., as minority status or poverty may be). There are a number of other factors associated with people's abilities to purchase homes, none of which may have to do with unclear land titles; for instance, property owners might be a high credit risk due to low income or non-payment of bills, or sufficient credit may not have been established. Again, the parcel data focus exclusively on indicators associated with the property rather than on individual qualities of property owners such as their creditworthiness. Unfortunately, the parcel data do not allow for an examination of these important human factors in the model.

It could be argued that limitations on asset building or leveraging are somewhat less important if the property in question is used primarily for residential rather than income-generating purchases such as agricultural production or rental income. Again, heirs' properties may play important social roles in the lives of co-heirs, often providing a physical living space as well as intangible connections to place. If this is the primary goal for most rural heirs' property owners, then long-term appreciation of homes may be relatively unimportant, compared to the goal of simply providing a home for family members during their lifetime. I did not speak to property owners about their goals and purposes for land ownership. However, the data for each of the counties show that >50 percent of heirs' parcels are either identified as single-family residence or nonindustrial farm, suggesting that credit access to undergird an income-generating enterprise is less important for a significant percentage of these property owners.

More broadly, results are relevant to the discussion and theorization of persistent poverty in rural America because the identification of heirs' parcel concentration helps to illuminate an exact factor (heirs' status) that contributes to social marginalization but which may not be readily apparent or identified and thus not captured in vulnerability assessments. Existing studies examining social vulnerability to natural disturbances like wildfire or climate change include generalized indicators of vulnerability (e.g., income, education, race) (Johnson Gaither et al. 2011, Walton et al. 2016); however, aggregate-level census measures may not be specific enough to capture people's abilities to adapt to or resist economic or physical disaster. For instance, while women or some minority groups may be more socially vulnerable, these descriptive factors alone are insufficient to explain heightened levels of vulnerability. Rather, the fact that minorities are more likely to have tenuous property titles such as heirs' property may be the underlying reason for higher vulnerability rates among these populations. As a more defined indicator of vulnerability, heirs' status represents a constraint with more predictable outcomes than general demographic characteristics when considering adaptation and resilience to disaster events. Lessons learned in the aftermath of U.S. Gulf Coast storms such as Hurricanes Katrina, Rita, and Maria demonstrate the role of property delineations in the recovery effort. From an applied perspective, the identification of heirs' properties alone at the county level could help authorities to develop *a priori* action plans to help property owners clear title so that problems are minimized in the event of a shock.

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