



Research Note

Understanding Management Decisions of Absentee Landowners: More Than Just Presence–Absence[☆]

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ARTICLE INFO

Article history:

Received 5 June 2017

Received in revised form 29 November 2017

Accepted 4 December 2017

Key Words:

absentee landowners

amenity landowners

involvement

woody plant encroachment

ABSTRACT

Ownership and management of North American rangelands has become increasingly diverse, prompting a need to better understand how changing demographics and values relate to individual land management decisions and land cover. Absentee landowners, who reside away from their rural property, are a growing segment of this changing social landscape. The implications of absentee ownership are not clearly understood, perhaps because the absentee concept is ambiguously defined and inconsistently specified. We introduce the construct of involvement with one's land to clarify and reframe the absentee landowner concept. We analyzed data from a mail survey of rangeland owners in central Texas to explore the relationship between absentee land ownership and the use of brush management to restore woody-plant invaded grasslands. We employed an information-theoretic approach to compare candidate models using indicators of absenteeism (permanent residence on land and distance of permanent residence from land) and involvement. We measured involvement with one's land as hours per week operating or working one's land. We conducted path analysis to examine the relationship between absenteeism and brush management as a function of involvement. Involvement in land management was the best predictor of brush management behavior. Absenteeism, as measured through presence-absence or as distance from land, had no relationship with brush management unless mediated by the involvement construct. Segmenting landowners based solely on the location of their full-time residence provides little information on brush management behavior because it neglects the relationship that landowners may have with their land, regardless of residency. The absentee landowner concept is central to understanding the dynamics of rangeland management and important to get right. Our analysis suggests that getting it right means knowing more than the location of the residence of the landowner.

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Introduction

In response to changing demographics on rural rangelands, a body of research has emerged focusing on identifying, characterizing, and understanding the implications of the increased presence of landowners who favor natural and cultural amenities over the production potential of their land. These lifestyle-oriented landowners are characterized as differing from production-oriented landowners in their culture, values, and vision for rural areas. Compared with production-oriented landowners, lifestyle-oriented landowners are often characterized by higher incomes (Hunter et al., 2005) and alternate ways of interacting with the local community (Yung and Belsky, 2007). In addition, they tend to have

different preferences for the use of their land and consequently manage it differently than landowners who use their land primarily for income generation (Sorice et al., 2014).

One subset of lifestyle-oriented landowners that receives considerable attention is the absentee landowner, who does not reside full-time on his or her rural land. Absentee land ownership is an increasing component of the rangeland ownership matrix in the American West (Haggerty and Travis, 2006; Redmon et al., 2004). Absentee landowners have been studied as a distinct group (Petzelka, 2012; Petzelka and Armstrong, 2015), and absenteeism is often used as an attribute to characterize differences in land management preferences that have varying implications for maintaining healthy ecosystems (Gosnell et al., 2006; Ferranto et al., 2013). Petzelka et al.'s (2013, p. 161) review summarizes the literature on rangeland absentee landowners:

Absentee owners of rangeland are often affluent, purchase land for investment and recreation opportunities over productive reasons, and may desire to engage in what they deem “environmentally friendly” practices such as construction of ponds, not treating weeds, and increasing wildlife populations.

[☆] This research was funded by grant 2008-51130-19562 from the US Dept of Agriculture National Institute of Food and Agriculture Conservation Effects Assessment Project and supported by the US National Science Foundation, Dynamics of Coupled Natural and Human Systems program (DEB-1413900).

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Table 1

Model ranking using Akaike's information criterion (AIC) with Akaike weights (w_i). Variables with a “-Q” indicate that a quadratic term was included in the model; “+” indicates a main effects model; and, “x” indicates an interaction.

Model number	Model	AIC	Δ AIC	w_i
1	Involvement-Q	238.19	0.00	0.48
2	Involvement-Q + Distance-Q	238.33	0.14	0.45
3	Involvement	244.52	6.33	0.02
4	Involvement + Distance	244.96	6.76	0.02
5	Absent \times Involvement	245.95	7.75	0.01
6	Absent + Involvement	246.09	7.90	0.01
7	Involvement \times Distance	246.95	8.76	0.01
8	Absent	258.95	20.76	0.00
9	Distance	260.05	21.86	0.00
10	Distance-Q	261.72	23.52	0.00

Despite sustained interest in the absentee landowner concept in the rangeland literature, definition and measurement of the concept vary. The terms *nonresident*, *part-time resident*, *weekend resident*, or *seasonal landowners* have been used to characterize different forms of absenteeism (Gosnell et al., 2007; Abrams and Bliss, 2012; Ferranto et al., 2013; Stroman and Kreuter, 2015). Other scholars have noted a wide range of measures for absenteeism including distance to full-time residence from one's land, simply residing off property, as well as researcher-defined categorical approaches such as living at least 1 mi away, at least 50 mi away, or in a county separate from one's property (e.g., Petrzelka et al., 2013). As a result of the many definitions and measurement approaches, there are inconsistent findings that inhibit a clear understanding of the relationship between absentee landowners and land management (Gosnell and Travis, 2005; Haggerty and Travis, 2006; Huntsinger et al., 2010; Petrzelka, 2012; Ferranto et al., 2013; Petrzelka et al., 2013; Petrzelka and Armstrong, 2015; Stroman and Kreuter, 2015).

We examine the construct of involvement as a way to clarify the absentee landowner concept. Involvement is the degree to which people devote themselves to operating or managing their land. The common understanding is that absentee landowners differ in values and land management behavior from those who live full-time on their land. However, the measurement of absenteeism as simple presence-absence, distance from land, or duration of residence on the land may be neither necessary nor sufficient to understand land management behavior. Although researchers have measured the amount of time absentee landowners live on (Ferranto et al., 2013) and visit (Petrzelka, 2012) their property, these measures do not explicitly consider how absentee landowners engage with their land. For example, an individual who lives on his or her land year-round but owns it primarily to experience the rural lifestyle and enjoy nature may lease out the land for hunting or livestock grazing and not be involved with land management decisions or actions. Conversely, an individual who lives 50 mi away and commutes to his or her property regularly may be engaged with the land on a daily basis. In these cases, both landowners would be misclassified by a simple presence-or-absence measure of absenteeism, increasing error in statistical models.

We hypothesized that involvement with land management acts as a common underlying variable that discriminates between land management behavior of those who do and do not live on their land. That is, involvement mediates the relationship between absenteeism and land management.

We examined a series of candidate models using an information-theoretic approach to explore the relationship between absentee land ownership and brush management. Specifically, we compared the utility of simple indicators of absenteeism, presence-absence and distance from land, as well as involvement to explain land management behavior. We focused on brush management in Texas as a specific example of land management because woody plant invasion is a major issue faced by rangeland landowners.

Methods

The dataset comes from a survey of rangeland owners in central Texas conducted in 2010 (see Sorice et al., 2012 for details on survey methods). We focused on landowners in the Cowhouse Creek watershed in central Texas. Land cover in this area consists almost exclusively of rangelands that are dominated by livestock grazing. We randomly selected 767 landowners owning at least 20 ha using county tax appraisal rolls. We conducted a mail survey to obtain information on land use, land ownership motivations, landowner characteristics, and demographics (Dillman et al., 2009).

We operationalized absenteeism in two ways. First, we asked landowners: “Do you reside full-time on your place?” Second, we asked landowners who did not live full-time on their land to indicate the distance of their full-time residence from their closest rural property. For this measure, we considered landowners who live full-time on their land to live 0 miles from their property, providing a continuous distance-based measure of absenteeism. Our indicator of involvement focused on time devoted to land management. We asked landowners to indicate the number of hours they spend “operating or working on” their place in “a typical week.” We deliberately chose this broad language to capture the many ways that landowners, from producers to lifestyle-oriented owners, engage in management activities on their land.

Our ongoing research program examines the conversion of rangelands from grasslands to woodlands (Sorice et al., 2012; Hurst et al., 2017) leading us to select woody plant reduction (brush management) as the dependent variable of interest. Brush management can be a continuous process (e.g., through manual or mechanical removal) but may also be periodic (e.g., through the application of prescribed fire at 3- to 5-yr intervals). We dichotomized this variable to include all landowners who indicated that they currently manage brush or have done so in the past using any combination of herbicide, mechanical control, or prescribed fire.

We used the Akaike's information criterion (AIC) to compare the goodness of fit of several logistic regression models. We constructed 10 candidate models based on the literature and results of exploratory

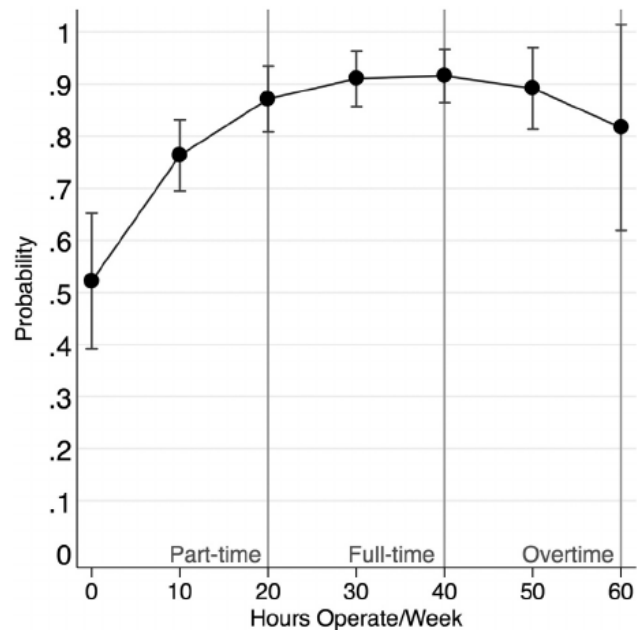


Figure 1. Predicted probability of engaging in brush management based on involvement. Note: Part-time, Full-time, and Overtime markers are used for illustrative purposes to provide benchmarks related to a typical work week.

data analysis. We ranked the models based on the AIC and calculated Akaike weights to examine the probability that each particular model provides the best fit to the data. This approach to model selection is based on minimizing information loss and identifying a model, or set of models, that best fits the empirical data (Anderson et al., 2000). Models with AIC values differing by < 2 are considered to be equally plausible models (Burnham and Anderson, 2002).

Finally, we explored the hypothesis that rather than a direct effect, the relationship between absenteeism and brush management behavior is mediated by involvement. To do so, we conducted a path analysis using generalized linear models (Acock, 2013).

Results

On the basis of surveys distributed to 767 landowners, 61 were undeliverable and 455 were returned (adjusted response rate = 64%; see Sorice et al., 2012). Of the 455 returned questionnaires, 394 were useable. An additional 35 were eliminated for this analysis because they were not the key decision maker for the land, 7 were identified as multivariate outliers and removed, and 116 observations were dropped due to missing data. Therefore, the sample size used for data analysis was 236 landowners. Of these responses, 42% reported

that they did not live on their land full-time (Mean distance from land = 96 miles, standard deviation [SD] = 76, Median = 80, Min = 1, Max = 300). Overall, respondents reported typically managing their land 18 hr per wk (SD = 17, Median = 15, Min = 0, Max = 61). Absentee landowners were less involved (10 hr/wk, SD = 12) than full-time landowners (25 hr/wk, SD = 17, $t = 7.2$, $P < 0.001$).

The salience of woody plant encroachment to landowners in central Texas was reflected by the high percentage of full-time landowners (79%) and absentee landowners (73%) who have engaged in brush management. There was no statistically significant difference between these two groups ($Wald X^2 = 1.31$, $df = 1$, $P = 0.25$). Further, using the distance to one's land as an indicator of absenteeism does not help explain brush management behavior ($Wald X^2 = 0.23$, $df = 1$, $P = 0.63$). In sum, simply knowing whether landowners reside on their land full-time or how far they live from their land does not provide insight into brush management behavior.

The best-fit model from the AIC model selection procedure shows a curvilinear relationship between the number of hours landowners work on their land in a typical week and their engagement in brush management (Model 1 in Table 1). The strength of evidence (w_i) that this is truly the best model is 0.48, indicating that other models may also provide a good fit to the data. Including both hours worked and one-way

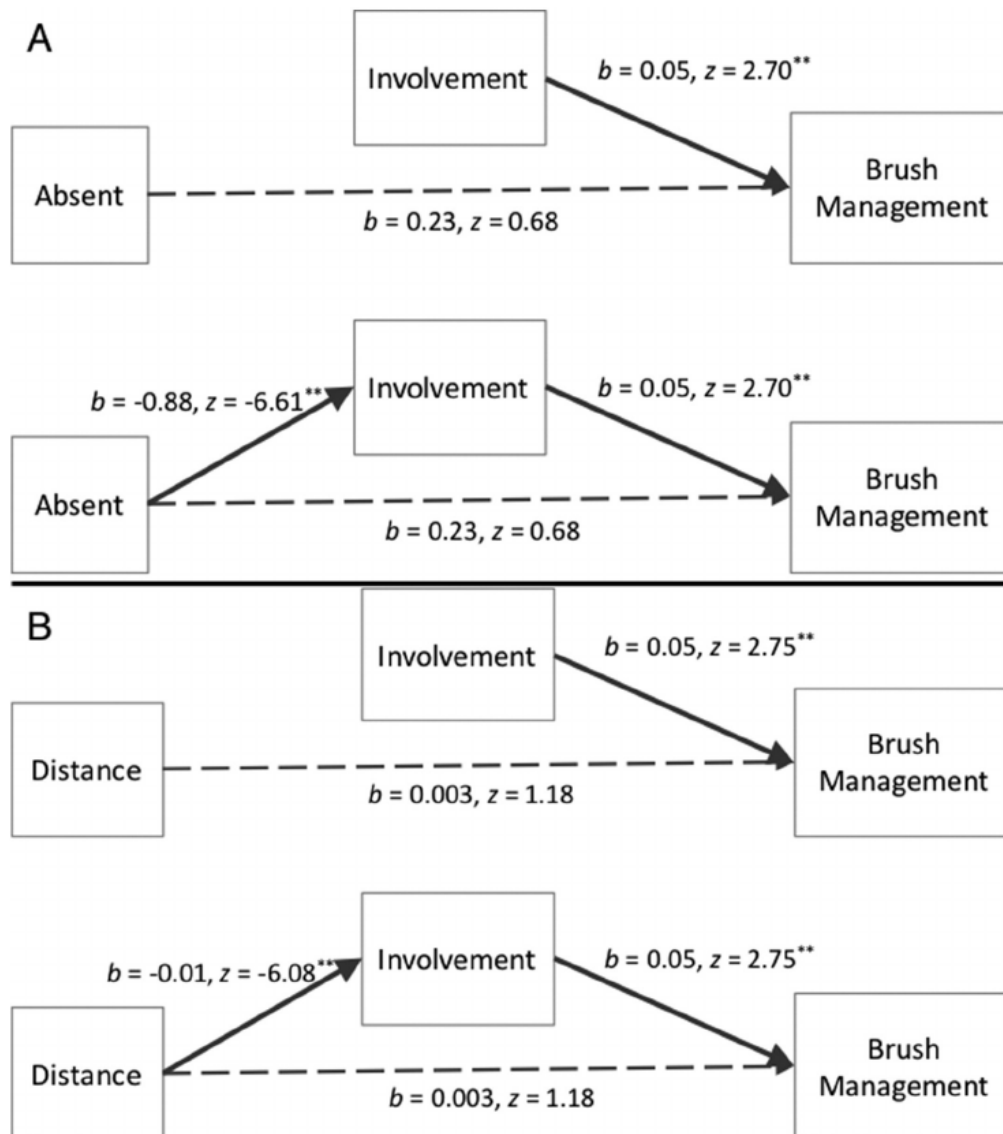


Figure 2. Path analysis examining the mediating role of involvement and **a**, non-full-time residence on one's land (*Absent*) (McKelvey & Zavoina's $pseudo R^2 = 0.15$) and **b**, distance a landowner lives from nearest parcel of land (*Distance*) (McKelvey & Zavoina's $pseudo R^2 = 0.16$). $^{**} = p < 0.01$.

distance (Model 2) to a landowner's nearest parcel of land has similar support ($w_i = 0.45$). In this case, preference for the more parsimonious solution leads to the choice of Model 1 because it has two fewer parameters and performs equally as well as the second-best model. All models with $w_i > 0$ indicate that the number of hours worked per week (*Involvement*) is required for a model to be plausible. In addition, all models measuring only residence on one's land (*Absent*) lack support.

To illustrate the role of involvement, we modeled the probability of a landowner engaging in brush management for Model 1. The probability of brush management increases at a diminishing rate, reaching the highest likelihood between 30 and 40 hours per week and slightly decreasing once involvement with the land exceeds more time than typical permanent employment (Fig. 1).

We also found that involvement fully mediates the relationship between residence on land and engagement in brush management (Fig. 2). There was no direct relationship between full-time residence on land (see Fig. 2A) or distance one lives from their land (see Fig. 2B) and brush management. In both models, residence on land helps to explain involvement rather than brush management behavior.

Discussion

The quest for simple and reliable indicators to help explain land management behavior is worthwhile and important for understanding how changes in land ownership demographics may affect land management decisions and the corresponding provision of ecosystem services that are fundamentally important for rangeland health and human well-being. While the assumed relationship between residence and land management is not always incorrect, it is incomplete. Through the AIC model fit and the mediation analysis, we demonstrate that involvement with one's land is better at explaining brush management than residence on or off the land.

Involvement reflects the degree to which people devote themselves to an activity. We measured it as time spent working on one's land in general. In our study, the involvement indicator is more closely related to the specific behavior of brush management because it reflects actual engagement with the land. In contrast, absenteeism is a characteristic of the landowner. Involvement improves upon the simple absenteeism indicator because it can capture landowners who do not live on their land but are still highly engaged in land management, thus reducing error in statistical models.

Although involvement performs better than the simple measures of absenteeism, the indicator is too broad to have high explanatory power. Increasing the ability of involvement to explain behavior requires that the involvement question correspond more closely to the target behavior (Fishbein and Ajzen, 2010). For example, the explanatory power of our model may have been greater had we specified the involvement indicator to measure the amount of time spent "working on" their grasslands rather than the broader indicator of all time spent "working on or operating" their place. The former represents a more specific subset of behaviors than the latter and corresponds more closely to the specific behavior of brush removal.

Implications

The impetus for this research note was to add clarity to a concept that is commonly used in research. The simple "absentee landowner" indicator is based on the fixed characteristic of one's location of residence. In a model, this indicator assumes that absentee landowners have a uniform and static relationship with their land despite research showing substantive differences in management behavior among these landowners (Haggerty and Travis, 2006; Petrzalka, 2012;

Petrzalka and Armstrong, 2015). While descriptive changes in landowner demographics are readily accessible, they may not be sufficient for explaining behavior without intervening variables, notably involvement (Fortmann and Huntsinger, 1989). Research that employs multiple indicators (e.g., regression models or typologies) can and does incorporate more characteristics that identify the many ways landowners relate to their land. To better understand heterogeneity in rangeland management, we suggest focusing on the nature of landowners' relationships—the meanings they hold and the ways they interact—with their land, rather than the fixed characteristics of the landowners themselves (Masterson et al., 2017).

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