2007

Liability, institutions, and determinants of landowner access policies for fee-based recreation on private lands

James Emery Henderson
Louisiana State University and Agricultural and Mechanical College, jhend19@lsu.edu

LIABILITY, INSTITUTIONS, AND DETERMINANTS OF LANDOWNER ACCESS POLICIES FOR FEE-BASED RECREATION ON PRIVATE LANDS

A Dissertation
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Agricultural Economics and Agribusiness

by
James E. Henderson
B.S.F., Louisiana Tech University, 2001
M.B.A., Mississippi State University, 2003
M.S., Mississippi State University, 2004
December 2007

ACKNOWLEDGMENTS

The completion of this dissertation and Ph.D. program would not be possible without the support and friendship of a number of very special people to whom I will be eternally grateful. Foremost among these are my parents, Tommy and Nelda Henderson, who have made all things possible with their loving support. I would also like to thank my fellow Ph.D. students that started the program with me and have shared in many of the same struggles. These very dear friends of mine include Tina Willson, Pramod Sambidi, and Young-Jae Lee. I hope I was as much of an encouragement to them as they have been to me.

In addition, I have great appreciation for my dissertation director Michael A. Dunn who continually went above and beyond the call of duty in his support of me. The contributions of my dissertation committee members are also greatly appreciated and I would like to thank each of them for having served on my committee. They are Richard F. Kazmierczak, Jr., Steven A. Henning, John V. Westra, Margaret A. Reams, and W. Douglas McMillin, who served as my minor professor.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Landowners in the Lower Mississippi Valley or Delta may be willing to consider alternative land uses for some acreage, particularly for marginal agricultural lands. Recreational hunting, fishing, and wildlife watching opportunities on private land for public use may be a possible way to provide income to landowners and restore marginal lands as a contributor to the local economy. Previous studies have identified that landowners often chose not to engage in recreational leasing due to liability concerns. Thus, an institutional change that reduces liability risk to landowners may increase the amount of private land available for public recreation and reduce transaction costs associated with liability mitigation. These possibilities were examined using primary data obtained from a mailed questionnaire sent to agricultural landowners in the Delta region of Arkansas and Louisiana.

About 14% of landowners indicated that they would be willing to allow fee-based recreation under the current institutional environment. If the Arkansas and Louisiana recreational use statutes were amended giving greater liability protection to landowners, the number of landowners that would be willing to allow fee-based recreation on their lands would increase to over 20% in Arkansas and nearly 24% of owners in Louisiana. Clearly, an institutional change that reduces the liability risk to landowners can increase the potential amount of private land that could be used for fee-based recreation, again particularly so for Louisiana. Over 40% of landowners have land that is marginal for agricultural purposes with the average ownership of marginal land being slightly more than 100 acres. Owners of marginal land were particularly responsive to an institutional change providing greater liability protection.

Risk averse landowners were more unlikely and risk seeking landowners were more likely to allow fee-based recreation under the current institutional environment. Following an institutional change it was observed that risk preference was no longer a significant predictor of the willingness to allow fee-based recreation indicating that the element of risk was diminished. Transaction costs associated with liability are evident and amending the recreational use statute appears to produce a reduction in expected WTA reflecting a transaction cost savings to landowners.

CHAPTER 1. INTRODUCTION

The Lower Mississippi Valley or Delta, which encompasses parts of Arkansas and Louisiana, has been dominated by agriculture over the better part of two centuries. However, there are a number of factors, such as increasing demand for environmental amenities and downward price pressure from growing world trade of agricultural commodities, which may entice agricultural landowners to consider other land uses for some acreage in the Delta, particularly for marginal agricultural lands. Given the problems with agricultural profitability combined with increasing demand for recreational sites, some landowners may consider alternative sources of income, such as commercially developing wildlife, fish and habitat resources, and charging for recreational access (Schenck et al., 1987; Thomas et al., 1989). Marginal agricultural lands that are no longer utilized in an income generating capacity could be utilized in such an alternative entrepreneurial application. Marginal agricultural land is land that will produce barely enough products to pay the cost of production (Ise, 1940). Removing marginal farm lands from agricultural applications has been encouraged by the U.S. Federal Government through incentive programs such as the Conservation Reserve Program, Grassland Reserve Program, and the Wetland Reserve Program (2002 Farm Bill). Many of these lands are no longer utilized in a productive capacity that would contribute to the local economy.

1.1. Research Problem

Recreational hunting, fishing, and wildlife watching opportunities on private land for public use may be a possible way to provide income to landowners and restore marginal lands as a contributor to the local economy. Additionally, such an enterprise can draw recreationists from outside the local economy benefiting local business. According to the 2001 National Survey of Fishing, Hunting, and Wildlife Associated Recreation, expenditures on wildlife-associated

recreation by state residents and nonresidents in Arkansas and Louisiana amounted to$1.3 billion and $1.5 billion, respectively. Clearly, the ability to attract recreationists could benefit small local economies in the Delta region. The 2001 survey also revealed that the number of residents and nonresidents that fished, hunted, or watched wildlife was 1.4 million in Arkansas and nearly 1.6 million in Louisiana. However, the amount of public land available for recreation is limited. There are approximately 746 million acres of public land in the United States; yet, the vast majority of the public land is in the western United States (Copeland, 1998). This is problematic for public outdoor recreation, particularly in the eastern United States, where there is only 9 percent of the nation's public land and 78 percent of the population (Langer, 1989). It has long been recognized that the solution to the lack of public land for recreation is increasing access to private lands for public outdoor recreation (Copeland, 1998; Wright et al., 2002).

1.2. Justification

Given that the outlook for outdoor recreation is ever increasing demand with no or limited change in the amount of public land, private land must become more available if the supply of recreational opportunities is to meet demand (Langer, 1989). Even though wildlife is held in trust by individual state governments, the access to enjoy wildlife is a clear right of control that is exercised by the landowner. Landowners control the wildlife habitat granting them *de facto* control over wildlife (Benson, 2001). Marion (1989) noted that there is a trend toward reduction in free public access to private lands for recreation and suggested that this was due to increasing urbanization, a growing number of recreationists, increasing property damage resulting from trespassers, and the recognition on the part of landowners that providing access to private land for recreation can generate income. Leopold (1930), the father of U.S. wildlife habitat management, recommended that the private landowner should be encouraged to pursue

potential profits from access fees since this would ultimately benefit wildlife by promoting wildlife habitat management on private land.

Given the demand for outdoor recreation and the limited availability of public land, the potential may exist for private landowners in rural areas to develop fee-based recreational access on private land. What factors serve as incentives or disincentives to the landowner regarding public use of private land? In addition, what form of wildlife based recreational enterprise would or do landowners prefer? There are several options. Landowners can operate individually, cooperatively with other landowners, or contract management to an outfitter that can serve as a broker between landowners and recreationists. The potential willingness of landowners to use marginal agricultural lands for fee-based recreational applications in the Delta region and the factors that may influence that decision is an area deserving of more research.

1.3. Objectives

The primary objective of this study is to understand the attitudes and perceptions of landowners in the Lower Mississippi River Delta regarding 1) fee-based wildlife-associated recreation, 2) to determine what management organizational form landowners prefer to manage and market fee-based recreation: independent, cooperative, or outfitter, and 3) how liability concerns and other possible disincentives collectively influence landowners' access decisions. Using a survey and econometric techniques, the study will seek to identify land and landowner characteristics that may have a positive or negative effect on a landowner's probability of choosing to offer fee-based recreation and the choice of organizational form to manage and market fee-based recreation.

CHAPTER 2. LITERATURE REVIEW

2.1. Fee-Based Recreation and Landowners

Landowners that prefer to manage fee-based recreation may choose to lease their lands to an individual hunter or group of hunters for a specified period of time such as hunting season or year, or offer permit hunting where land access is granted for a day in exchange for a fee. Recreational leasing may not be practical for some landowners since wildlife habitat management on private land is often limited by tract size (Hrivnak, 1995).

Seymour (1985) discussed the concept of resource-controlled recreation cooperatives that develop and market recreational opportunities. Cooperation among local landowners allows for improved wildlife habitat management by increasing the manageable land area (Benson et al., 1999). This cooperation could also be extended to marketing and management of fee-based recreation. Using a cooperative management model would allow landowners to collectively engage in a fee-based recreational enterprise that could result in economies of both scale and scope. The concept of using landowner cooperatives for natural resource management and marketing over traditional forms of business organization of proprietorship, partnership, and corporations was advanced by Yarrow (1989). Advantages of landowner cooperatives for wildlife and timber include formation of a larger manageable land base, increased recreational opportunities for the public, increased income to landowners, greater awareness of the value of wildlife, and increased investment in wildlife habitat management on private lands. Disadvantages of landowner cooperatives are inability of landowners to agree on objectives and the efforts required for landowners to coordinate management activities. Yarrow (1989) concluded that the cooperative approach may not be applicable where there is insufficient

interest, interest and objectives of landowners conflict, there is local resistance, and individual tracts of land are large enough for individual management.

A third option that landowners may prefer is the use of outfitters, which can serve as intermediaries between recreationists and landowners. Sun et al. (2005) in a study of hunting outfitters operating in Mississippi found that nearly half of their land base was leased from other landowners. Payment to landowners by outfitters is generally either an annual fee or a percentage of the outfitter's gross revenue.

2.2. Landowner Liability

Generating additional income for landowners by allowing recreational activities brings with it the possibility of legal action as landowners may be sued if bodily injury results to a recreational user of the property (Copeland, 1998). If a recreationist is injured while on private property, it is possible that a lawsuit will be filed by the injured party against the landowner. The level of duty owed by the landowner to the injured party depends on whether the person enters the premises as a trespasser, licensee, or invitee (Copeland, 1998). "An invitee is one who enters the premises upon business which concerns the occupier, and upon his invitation express or implied, the latter is under an affirmative duty to protect them, a licensee is one who has permission to enter upon the land of another, but comes for his own purposes rather than for any purpose or interest of the possessor of the land, and a trespasser is one who enters or remains upon land in the possession of another without a privilege to do so, created by the possessor's consent or otherwise" (Direnfeld-Michael, 1987). A recreationist that is allowed access to private property by the landowner for free is a licensee, but if a fee is charged by the landowner then the recreationist is considered to be an invitee (Copeland, 1998). A landowner who charges a fee for the recreational use of his or her property owes special legal duties to the invitee, since the

invitee enters the land under the implied representation that reasonable care has been taken by the landowner to make the property safe for recreational use (Copeland, 1998).

The need for greater access to private land for public recreation and the concern that private landowners have over liability was recognized by the Council of State Governments and addressed when they drafted a model Recreational Use Statute in 1965 (Kozlowski and Wright, 1989). The idea behind the model act was if landowners were protected from liability more landowners would allow recreational use of their property which would reduce the need and expense to state governments to provide recreation areas to the public (Wright et al., 2002). State legislatures have passed recreational use statutes designed to encourage landowners to open up their lands to the public promising private landowners immunity from lawsuits over accidental injury to recreational users while on a landowner's property (Copeland, 1998). Most state recreational use statutes insulate landowners from liability if access is granted without a charge. However, there are an increasing number of states allowing landowners to charge a fee and retain the liability protection (Wright, 1989; Wright et al., 2002). Today all 50 states have adopted recreational use statutes that are intended to encourage landowners to make their lands available for public recreational use by providing greater liability protection to the landowner (Wright et al., 2002).

However, liability issues or at least perceived liability continue to be a major concern to landowners. Ruff and Isaac (1987) noted that one of the primary reasons why woodland owners in Wisconsin owning 20 acres or more do not lease their land for hunting was fear of personal injury lawsuit, and only 3 percent of Wisconsin's landowners actually leased land for hunting. This is interesting considering that Wisconsin's recreational use statute (Wisc. Stat. § 895.52) allows property owners to collect fees for recreational activities not exceeding a total of $2,000

each year. This may indicate that landowners are not aware of the liability protections afforded to them by state recreational use statutes. Marion (1989) noted that liability remains to be a major area of confusion on the part of landowners. Kaiser and Wright (1985) reported that recreational use statutes have been "splendidly ineffective" in increasing public access to private lands. Owen et al. (1985) surveyed private forest landowners in Arkansas owning more than 1,000 acres about public use policies. Owen et al. (1985) reported that hunting was the most common public use of private land; however, several of the survey respondents expressed concern about user liability. The authors pointed to a 1965 code amended in 1983 and noted that the state law provides liability protection. Owen et al. (1985) concluded that much of the remaining fear expressed by landowners may be more perceived than real. Heberlein and Davis (1987) in their study of hunter participation and fee access hunting recognized the importance and need for further research in the area of institutional issues associated with fee hunting that included legal liability for landowners.

Even with the liability protection afforded to landowners by state recreational use statutes, there remains a significant gap between landowners' perceptions regarding liability and the reality of liability (Wright et al., 2002). In their survey of recreation use statutes Wright et al. (2002) observed that researchers have clearly identified that landowners are concerned about liability but have only documented that it is perceived as a problem. Wright et al. (2002) indicated that a better understanding is needed of how liability and various other disincentives collectively influence landowners' access decisions. Mozumder et al. (2004) suggested that the necessary institutions for hunters and landowners may not be in place to promote recreational leasing, and that institutional changes that facilitate more exchanges would shift the supply curve outward. The effects of institutional change on landowner leasing behavior can be explored by

asking if landowners would allow recreational access and/or leasing if liability was limited by state law. The Louisiana recreational use statute (La. R.S. § 9:2791) does not extend liability protection if a fee is charged for access. Arkansas' recreational use statute (Ark. State. Ann. § 18-11-301) also does not extend liability protection if a fee is charged for access; yet, the term "charge" is defined to be "an admission fee for permission to go upon or use the land," but does not include "cash paid to reduce or offset costs and eliminate losses from recreational use." The Louisiana and Arkansas recreational uses statutes are similar in that both do not allow for the charging of an access fee intended to generate a financial return to the landowner.

It would be interesting to see how landowner leasing policies may change by expanding the liability protection of recreational use statutes to allow for the charging of a fee intended to generate a return to the landowner. Investigating the effect of such an institutional change can provided insight into landowner leasing behavior and possible effects on the supply of available recreational land.

2.3. Risk Preference

One factor that may influence the behavior of landowners regarding fee based recreation is that of risk preference, given that there is an inherent element of risk associated with recreation and liability. Daniel Bernoulli, an eighteenth century mathematician, was the first to formalize an understanding of risk aversion in his explanation of the St. Petersburg paradox (Bernoulli, 1954). Bernoulli sought to explain why some individuals would not pay to play a simple game where a coin is flipped and the player is paid when the head side of the coin appears. The reward is 2^n units when the head appears on the nth flip of the coin. When this game is played with an infinite number of tosses the expected value of the St. Petersburg paradox game is infinite. With an expected value of infinity one would expect players to gamble large sums of money; thus, the

paradox is why some will not accept the gamble. Bernoulli argued that the gamble is not accepted since players were less interested in the money reward than in the utility of those rewards, and he hypothesized that due to the diminishing marginal utility of income the game has a finite expected value of unity even though it has an expected money value of infinity (Pearce, 1999).

The concepts developed by Bernoulli were expounded upon by von Neumann and Morgenstern (1944) to demonstrate the hypothesis that individuals make choices in conditions of uncertainty based on expected utility. The work by von Neumann and Morgenstern provide the first axiomatic treatment for examining decisions under conditions of uncertainty forming the basis of modern expected utility theory (Hardaker et al., 1997 and Nicholson, 2002). Empirical studies addressing risk rely on two basic approaches to measure risk-attitudes. The two major approaches that have been developed to elicit risk preference include 1) techniques based upon expected utility theory and 2) methods of direct elicitation of risk preference (Pennings and Garcia, 2001).

Expected utility theory models usually involve the estimation of a single valued utility function, which include the von Neumann-Morgenstern, the modified von Neumann-Morgenstern, and the Ramsey approaches (Officer and Halter, 1968), and models of decision making under risk as a choice between different alternatives. Expected utility analysis and the derived utility function can be used to make inferences about the risk preference of the individual as the shape or curvature of the utility function can be used as measure or indicator of risk preference. Hardaker et al. (1997) demonstrate graphically the three risk preferences based upon a simple function in terms of the second derivative demonstrating the utility derived from wealth

where $U''(W) < 0$ implies risk averse, $U''(W) = 0$ implies risk neutral, and $U''(W) > 0$ implies risk seeking (See Figure 1).

Results of risk preference elicitation techniques based upon expected utility theory have been mixed and are often attributed to interviewer bias, hypothetical nature of questions, and respondents' lack of understanding of questions (Officer and Halter, 1968; Fausti and Gillespie, 2000).

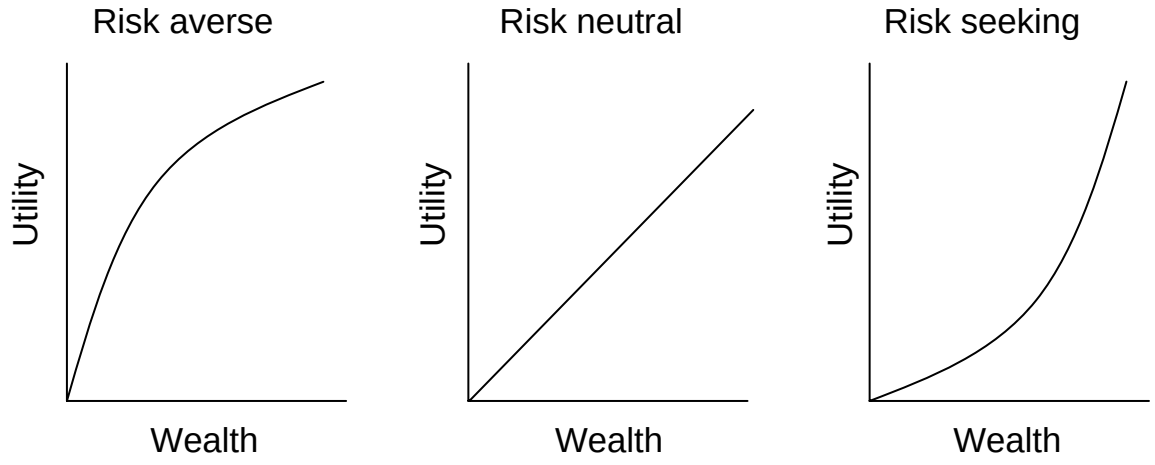

Figure 2.1. Risk attitudes and the shape of the utility function depicting risk averse, risk neutral, and risk seeking.

An alternative method to elicit risk preference is that of direct risk preference elicitation. This method does not require the specification of a functional form for the utility function and thus avoids some of the problems associated with using expected utility hypotheses as the underlying theory. One method of direct risk preference elicitation is the self-rank method where respondents are asked to indicate their risk attitude or preference. Kastens and Featherstone (1996) utilize a 10 point risk attitude scale and five point Likert self-assessment scale to gauge risk preference where respondents are asked to rate their risk preference. Cardona (1999) and Basarir (2002) both utilized a self-rank procedure for risk preference in a mail survey where

respondents are asked to characterize themselves relative to other investors as taking on substantial levels of risk, tend to avoid substantial levels of risk, or neither seek nor avoid risk in their investment decisions. A number of studies have compared the various direct elicitation techniques with mixed results regarding consistency among elicitation procedures (Schurle and Tierney, 1990; Bard and Barry, 2001; Fausti and Gillespie, 2000). A recent study by Fausti and Gillespie (2006) compared mail survey results for five commonly used methods to elicit risk preference and examined the consistency of the elicitation procedures. Fausti and Gillespie (2006) noted that a simpler elicitation method (such as the self-rank risk preference question) performs relatively well and may be a better choice for elicitation of risk when mail survey respondents are not offered rewards or incentives for spending time to correctly answer questions.

2.4. Contingent Valuation of Lease and Fee Recreation

Landowners that are currently leasing land or allowing some form of permit based access can be surveyed to determine lease values directly. However, the level of incentives needed by landowners not leasing land can not be assessed by looking only at revealed preference (i.e., existing lease prices). Contingent valuation can be used to assess landowners' perceived values for recreational leasing. The contingent valuation method is a simple nonmarket valuation technique that was originally proposed by Ciriancy-Wantrup (1947), who suggested that the prevention of soil erosion generated an extra market benefit to the public that could be valued by eliciting individual's willingness to pay. The first empirical use of contingent valuation was Davis (1963) in estimating willingness to pay of goose hunters. Contingent valuation method has since been used widely and for a variety of non-market applications (Venkatachalam, 2004).

The National Oceanic and Atmospheric Administration (NOAA) convened a panel of experts to access the reliability of the contingent valuation method following criticisms of the government's use of the method in the wake of the Exxon Valdez disaster. A summary of the NOAA panel report (Arrow et al., 1993) findings and recommendations can be found in Randall (1997) and in Bishop (1998). The panel concluded that contingent valuation studies convey useful information for judicial and administrative decisions provided they are carefully designed and implemented (Loomis, 1999). The report conveyed to some that all contingent valuation studies need to adhere to the set of standards they proposed, which has had a negative impact on contingent valuation studies due to the higher cost of attaining these standards (Loomis, 1999; Carson, et al., 2001).

The four common elicitation techniques used in contingent valuation studies include the bidding game, payment card, open-ended, and dichotomous choice approach (Boyle et al., 1996; Venkatachalam, 2004). All of these approaches have certain drawbacks. The bidding game approach is often criticized for starting point bias that can influence the respondent's stated willingness to pay. The starting point initiates the bidding process, and a bias exists when the initial bid, as stated by the interviewer, affects the finial bid of the respondent (Bishop and Heberlein, 1990). The payment card approach, proposed by Mitchell and Carson (1981), presents a range of values for the respondent to choose their maximum willingness to pay, yet the approach may be affected by range and centering bias. Range bias can occur when the payment card range is too large or too small affecting the willingness to pay mean and standard deviation, and centering bias results when respondents exhibit a tendency to pick the middle value (Gardner et al., 2003). An alternative that avoids the biases previously described is the open-ended approach where the respondent is asked for their maximum willingness to pay value. However,

the open-ended approach is subject to protest bids and higher non-responses. Protest bids include both zero bids and positive bids that represent outliers in the distribution of responses (Jorgensen, et al., 1999). The dichotomous choice technique randomly assigns each respondent a specific dollar amount and asks them whether or not they would be willing to accept that amount (Bishop and Heberlein, 1990).

Open-ended contingent valuation questions can be appropriate if the respondent is familiar with the good being valued and has a reasonable understanding of its value. Kealy and Turner (1993) found that there was no statistical difference between results derived from open-ended and dichotomous choice questions for a private good but there was a significant difference in the case of a public good. Mitchell and Carson (1989) found that open-ended questions work well in situations where respondents are familiar with paying for the good. Ultimately, the choice of elicitation technique in a contingent valuation study depends on the nature of the good being valued, survey cost, statistical technique used, and the nature of the survey respondents (Venkatachalam, 2004).

The contingent valuation method has been used to assess the willingness to pay for hunting opportunities (Goodwin et al., 1993; Adams et al., 1989; Berrens and Adams, 1989; Fried et al., 1995; Hussain et al., 2004). Most studies of leasing of private lands for public access focus only on observable leasing behavior (Ruff and Isaac, 1987; Marion, 1989; Schenck; 1987; Owen et al., 1985, Jones et al., 2005). Mozumder et al. (2004) lamented there was not yet enough empirical studies that estimate hunters' willingness to pay for private hunting lease or landowners' willingness to accept compensation to allowing hunting. Wright et al. (2002) recommended that contingent valuation methods be used to determine the level of incentives required by landowners to overcome disincentives to leasing land for public recreational access

(Wright et al., 2002). Also, disincentives both perceived and real can be explored, which may indicate a need for landowner education about liability and recreation that could improve public access to private lands. For example, if landowners were better informed about liability and the income potential of fee-based recreation the amount of private land available for public recreation may increase. This would benefit the public seeking recreational opportunities, private landowners seeking additional income, and local economies by the expenditures of out of area recreationists.

Using an open-ended style contingent valuation question to assess landowner valuation of leasing should produce acceptable results. However, in the case of absentee landowners or passive landowners the results may not be as acceptable since some landowners may be less familiar with the revenue generating potential of their land. Alternatively, farmers and other non-passive landowners should have a greater awareness of their land's ability to generate revenue.

CHAPTER 3. ECONOMIC FRAMEWORK

3.1. Theoretical Basis of Landowner Access Decision

A landowner's decision to allow fee-based recreational access is not purely determined by revenue generation, since there are certain non-monetary benefits to the landowner. A primary non-monetary benefit of owning land is the exclusive use value from which that landowner derives utility. Thus, a utility function can better explain the landowner's access decision than a profit function.

The landowner's utility function for land usage not currently used for income generating purposes (e.g., fallow or marginal agricultural, bottomland forests) that could be used for fee-based recreation is:

U_A = U(exclusive use of land)

U_B = U(collecting of fees for recreational access)

A more formal representation is of the utility generated for individual *i* from allowing or not allowing recreational access is:

$$U_{A,i} = \eta V_{A,i} - \varepsilon_{A,i}$$

$$U_{B,i} = \eta V_{B,i} - \varepsilon_{B,i}$$

where η is the total acreage of marginal land owned by each landowner, V is the deterministic per acre utility associated with allowing or not allowing fee-based recreational access, and ε is the error term . A possible specification for the deterministic utility functions ($V_{A,i}$ and $V_{B,i}$) associated with the two uses for marginal land could be:

$$V_{A,i} = f(A,E)$$

$$V_{B,i} = f(P,C,L)$$

where E represents the value to the landowner of having exclusive property rights, A denotes altruism associated with granting free access, P is the fee charged for recreational access to the property, C is the cost associated to make the property usable for recreational access, and L is the liability faced by the landowner that results from allowing recreational access. The cost associated to make the property usable for recreational access (C) could include the cost of recreational lease insurance to offset liability risk; however, the liability concern may still serve as a disincentive and have a negative impact on the landowner's utility.

Let Y represent the decision to allow recreational access (Y = 1 if allow recreational access, Y = 0 if recreational not allowed). The landowner's total utility from unused marginal land is then

$$V = YV_{B,i} + (1-Y)V_{A,i}$$

$$V = Y[f(P,C,L)] + (1-Y)[f(A,E)]$$

The landowner's objective function is to maximize the utility from unused marginal land.

Max $V = Y[f(P,C,L)] + (1-Y)[f(A,E)]$

Taking the derivative of the objective function with respect to Y indicates how utility is maximized with respect to the access decision.

$$\partial V / \partial Y = f(P,C,L) - f(A,E) = 0$$

It is assumed that P, A, and E have a positive effect on utility while C and L have a negative effect on utility. If C and L were reduced then P could be less in value ceteris paribus and maximize utility from allowing recreational access. If A and E were larger in value then P would have to be greater in value ceteris paribus to maximize utility by allowing recreational access. For each landowner there may exist an indifference or transition price (P) such that the landowner is indifferent between allowing and not allowing fee-based recreational access. Thus

the utility associated with collecting of fees for recreational access is greater than the utility of maintaining exclusive use of land.

The potential for a law suit, whether real or perceived, creates a disincentive for fee-based recreation to the landowner and an opportunity cost. To mitigate the disincentive of liability the landowner may incur costs associated with seeking legal information, consulting lawyers, having contracts drafted to protect property rights and reduce liability, and/or securing commercial liability insurance. All of these actions create a transaction cost for fee-based recreation. The transaction cost could be reduced through institutional change. If the Louisiana legislature amended the recreational use statute to allow the charging of an access fee and also retain the liability protection accorded to free access granting landowners, then the transaction cost could be reduced. Nineteen other states have amended their recreational use statutes to allow landowners to charge a fee and retain liability protection. Amending the recreational use statute in Louisiana would be an example of institutional change that facilitated transactions between private landowners and recreationists. If such an institutional change occurred and the transaction cost to the landowner were reduced, then the access price should reflect that savings to the landowner. So if L were reduced in magnitude then P would also be reduced where utility is maximized. This could be observed by comparing the mean willingness to accept value for the pre and post institutional change contingent valuation responses.

CHAPTER 4. METHODOLOGY

4.1. Data and Methods

This study utilizes primary data obtained from a mail survey questionnaire. The target population for the study is agricultural landowners in the Delta region of Arkansas and Louisiana. The following counties and parishes are included in the Delta. Arkansas counties are as follows: Arkansas, Chicot, Clay, Craighead, Crittenden, Cross, Desha, Greene, Jackson, Jefferson, Lawrence, Lee, Lincoln, Lonoke, Mississippi, Monroe, Phillps, Poinsett, Prairie, St. Francis, and Woodruff. Louisiana parishes are as follows: Catahoula, Concordia, East Carroll, Franklin, Madison, Morehouse, Richland, Tensas, and West Carroll. A mailing list of agricultural landowners in the Delta region of Arkansas and Louisiana was obtained from the United States Department of Agriculture Farm Service Agency under the provisions of the Freedom of Information Act. The U.S.D.A Farm Service Agency responded to the Freedom of Information Act request and supplied 35,657 names and mailing address for the previously defined Delta counties and parishes of Arkansas and Louisiana. This list was reduced to 29,245 of usable contacts after limiting the list to individuals and removing of duplicate records. A mailing list of 5,000 landowners was randomly selected and questionnaires were mailed with 2,500 each being Arkansas or Louisiana landowners.

4.2. Survey Design

The questionnaire instrument involves the use of a mail survey developed according to the tailored design method (Dillman, 2000). Questions will focus on current land uses, landowner access policies, and landowner attitudes and perceptions regarding the potential for allowing fee-based recreational access. The survey will seek to determine the current level of recreational leasing and the revenue per acre it generates. For those landowners that do not

practice recreational leasing, they will be asked to indicate why they have not or do not allow fee-based recreational access. Previous studies have identified that landowners often chose not to engage in recreational leasing due to liability concerns. The importance of liability as a factor in landowner access policies will be assessed. Landowners will also be asked to indicate their knowledge of the recreational use statute and how possible changes in the use statute would impact their access policies. Would an institutional change increase the amount of private land available for public recreation? Another limiting factor for allowing fee-based recreational access on marginal land is acreage limitations. Given that some landowners may only have small tracts of land available for recreational uses, they may be interested in alternatives to offering recreational access independently. Thus, landowners will be allowed to indicate their preferred organizational form to manage and market recreational access from the options of independently, cooperatively, or by means of a recreational broker (i.e., outfitter). For those landowners that currently do not offer recreational leasing of their land, contingent valuation questions will be asked to determine the level of incentive required to allow such usage of their land. A contingent valuation question will be used to estimate landowner willingness to accept (WTA) to allow recreational access. An open-ended style question will ask landowners to indicate the dollar value per acre they require to allow public recreational use of their land. Thus, the survey will include an open-ended WTA question that will ask landowners to indicate the dollar value per acre they would require to allow recreational access. Additional questions will address land tenure and usage and landowner demographics.

Possible landowner concerns over the risk of liability associated with allowing recreational access necessitates an assessment of landowner risk preference. Information on landowner risk preference may be a useful variable in understanding recreational access

decisions. Therefore, the survey instrument will include an elicitation of landowner risk preference. The mail survey instrument used in this study will attempt to assess landowner risk preference by using a self-rank risk preference elicitation method that asks respondents to indicate if the tend to avoid, take on, or neither seek nor avoid risk in their investment decisions.

In accordance with the Tailored Design Method (Dillman, 2000) and to achieve a higher response rate, the survey will be preceded by a pre-notice letter and followed by a reminder postcard. Additionally, a replacement survey will be sent to all non respondents. The survey will be pre-tested to refine and improve the survey on a sample of Delta landowners. This was conducted at the conclusion of a LSU AgCenter sponsored field day. The survey instrument was distributed to all in attendance and thirty-five surveys were completed.

4.3. Survey Analysis and Empirical Models

Analysis of possible relationships between dependent and independent variables will be investigated using qualitative choice and limited dependent variables models. A number of the dependent variables of interest are essentially yes or no responses, such as the decision to allow recreational access.

4.3.1. Binary Probit

When the dependent variable involves only two values, a Binary Probit model can be used to examine how various independent variables (X_i) influence the probability of observing a certain outcome ($Y_i = 1$) in a binomial dependent variable. The general form of this relationship using a Probit model is (Franses and Paap, 2001):

$$\Pr[Y_i = 1 | X_i] = \int_{-\infty}^{X_i\beta} \frac{1}{\sqrt{\pi}} \exp\left(-\frac{z^2}{2}\right) dz$$

The decision to allow recreational access can be modeled as a binary variable (Y_1=1, 0 otherwise). A Binomial Probit model can be used to examine how the yes or no decision to allow public access is influenced by landowner characteristics. It is hypothesized that landowner liability concerns and understanding are important determinants of the access decision. A second Binomial Probit model will be used to examine the access decision following a hypothetic institutional change. This will be examined using responses to a second access question that will include a hypothetical scenario. The question will examine how the access decision changes if the recreational use statute were amended to allow fee-based access and also allow landowners to retain liability protection. The probability of a yes/no choice will be examined for the following scenarios (Table 2).

Table 4.1. Applications of the binomial probit model investigating the probability of a yes/no choice under six scenarios for the dependent variable.

Choice	State	RUS
Yes/No	Arkansas	current law
		modified law
	Louisiana	current law
		modified law
	Combined with state dummy variable	current law
		modified law

4.3.2. Multinomial Logit

Some landowners may be interested in offering fee-based recreation using organizational forms other than an independent approach. Possible reason why some landowners may prefer using differing organization forms may be insufficient land base, time, or capital resources. The survey will allow respondents to select from three types of organizational forms for managing and marketing fee-based recreation. The options for organizational forms will include independently, cooperatively, or through an outfitter. A Multinomial Logit model can allow for an understanding of which landowner characteristics influence the probability to decide to offer

recreation independently, cooperatively, or through a recreation broker (i.e., outfitter). The Multinomial Logit (MNL) model indicates the probability that individual i will choose category j given explanatory variables (X_i). The basic framework of the analysis is provided by the random utility model which assumes that landowners maximize their utility by choosing among discrete alternatives for the management of recreational access. The Multinomial Logit model can be used to correlate the dependent choice variable with explanatory variables and is given by (Greene, 2003):

$$\Pr[Y_i = j \mid X_i] = \frac{\exp(\beta_j' x_i)}{1 + \sum_{j=1}^{J} \exp(\beta_j' x_i)} \quad \text{for j=1,….,J-1}$$

Where Yi is the dependent variable and J is the number of alternatives. The parameter estimates for explanatory variables are given by the vector β_j and $\Pr[Y_i=j]$ indicates the probability of landowner i choosing alternative j. The model is estimated using three alternatives that include cooperatively (j=1), independently (j=2), or through a recreation broker (j=3). The reference choice will be the second alternative j=2. The log-likelihood function for the MNL is given by

$$\ln L = \sum_{i=1}^{n} \sum_{j=0}^{J} d_{ij} \ln \Pr(Y_i = j)$$

where d_{ij}=1 if landowner i chooses alternative j and d_{ij}=0 if not for the J+1 possible outcomes (Greene, 2003).

The multinomial logit model is used to investigate the significance of various factors on an individual landowner's choice of management organizational form to supervise recreational access. Possible independent variables that are hypothesized to influence a landowners choice may be absentee landowner, personal land use, liability concern, distance of land from home, risk preference, and demographic variables. A direct interpretation of the MNL model parameter estimates is not straightforward since the effect of x_i on the choice is a nonlinear function in the

model parameter β_j (Franses and Paap, 2001). Therefore, the results of the MNL model will be interpreted using the odds ratio and will be calculated by contrasting each category with the reference category. The odds ratio of category j versus category l given x_i specified as $\Omega_{j|l}(x)$ is defined as (Franses and Paap, 2001):

$$\Omega_{j|l}(x_i) = \frac{\Pr[Y_i = j \mid X_i]}{\Pr[Y_i = l \mid X_i]} = \frac{\exp(\beta_{0,j} + \beta_{1,j} x_i)}{\exp(\beta_{0,l} + \beta_{1,l} x_i)} \text{ for } l = 1, \ldots, J\text{-}1$$

where j is one of the three possible choices and l is the reference category and the corresponding log odds ratio is

$$\ln \Omega_{j|l}(x_i) = x_i(\beta_j - \beta_l)$$

The effect of x on the logit of outcome j versus outcome l is referred to as the contrast and is the difference between β_j and β_l. The interpretation of the contrast can be expressed as a unit change in x that results in a change of $\beta_j - \beta_l$ units of the logit of outcome j versus outcome l holding all other variables constant. The probability of choosing among the three options will be examined for Louisiana landowners, Arkansas landowners, and for all landowners with a state dummy variable.

4.3.3. Tobit Model and Willingness to Accept

Responses to the open-ended willingness to accept (WTA) question will produce a continuous variable; however, the variable will also be censored since some respondents will not allow fee-based recreational access. Thus, the survey data may have a number of zero values for the WTA question since landowners not willing to allow fee-based recreation will be recorded as a zero value indicating an unwillingness to accept compensation to allow recreational access. Including censored observations as zero values in a standard OLS regression model results in biased parameter estimates and simply deleting the censored observations can result in a lost of

efficiency in estimation (Franses and Paap, 2001). Thus, to avoid such problems this study employs a Tobit censored regression model.

The relationship between a censored dependent variable and explanatory variables can be investigated using a Tobit model. In the Tobit model the censored variable Y_i is 0 if the unobserved latent variable y_i* is positive. The censored regression model or Tobit model and its general formulation is represented by the following general form (Franses and Paap, 2001):

$$Y_i = X_i\beta + \varepsilon_i \ \ if \ \ y_i^* = X_i\beta + \varepsilon_i > 0$$
$$Y_i = 0 \qquad if \ \ y_i^* = X_i\beta + \varepsilon_i \le 0,$$
$$\text{with } \varepsilon_i \sim \mathrm{N}(0, \sigma^2)$$

where y_i^* represents the WTA value of the i^{th} landowner to allow recreational access and it can be interpreted as the value that maximized the landowner's utility. Values of zero for landowners not willing to allow recreational access are not observed as are negative values. Thus the y_i is observed WTA value for landowners willing to allow recreational access which is censored at zero. Survey response to the open-ended willingness to accept question will be modeled as a function of independent variables (X_i) representing landowner attributes and land uses. Using Tobit censored regression allows for information on landowners not willing to accept compensation for recreational access to be included in the model that would otherwise not be included.

The log-likelihood for the Tobit model is given by

$$\ln L = \sum_{y_i>0} -\frac{1}{2}[\log(2\pi) + \log\sigma^2 + \frac{(y_i - x_i\beta)^2}{\sigma^2}] + \sum_{y_i=0} \ln[1 - \Phi(\frac{x_i'\beta}{\sigma})]$$

The two terms on the right hand side of the equation correspond to the classical regression for nonlimit observations and the relevant probabilities for the limit observations, respectively (Greene, 2003). Possible independent variables hypothesized to influence a landowners choice

may be absentee landowner, personal land use, liability concern, distance of land from home, risk preference, past leasing, and demographic variables. The influence of explanatory variables on the willingness to accept value will be examined for the following scenarios (Table 2).

Table 4.2. Applications of the Tobit model for willingness to accept (WTA) under six possible scenarios for the dependent variable.

Choice	State	RUS
WTA	Arkansas	current law
		modified law
	Louisiana	current law
		modified law
	Combined with state dummy variable	current law
		modified law

CHAPTER 5. EMPIRICAL RESULTS

5.1. Survey Responses and Empirical Data

The survey followed a modified version of the Tailored Design Method (Dillman, 2000) to maximize survey response rates. The process involved four contacts that included a pre-notification postcard, first mailing of a survey questionnaire, a thank you reminder postcard, and a replacement questionnaire sent to all first mailing non-respondents. The pre-notification postcard was sent on July 9, 2007 and was followed by the survey questionnaire that was mailed on July 13. The thank you reminder postcard was mailed a week later on July 20. All non respondents were sent a replacement questionnaire on August 6, 2007. Surveys received by August 24 were tabulated and included in the sample data set. The final response rate for Arkansas landowners was 19.4% and 26.9% for Louisiana landowners yielding an overall response rate of 23.1% (Table 5.1).

Table 5.1. Survey response rates from Arkansas and Louisiana Delta landowners.

	State		
	Louisiana	Arkansas	Total
Sample Size for desired level of precision	369	377	746
Surveys mailed	2,500	2,500	5,000
First mailing surveys returned	488	343	831
Second mailing surveys returned	184	142	326
Total surveys returned	672	485	1157
First mailing response rate	0.1952	0.1372	0.1662
Second mailing response rate	0.0736	0.0568	0.0652
Total response rate (%)	26.88%	19.40%	23.14%

Survey responses for both Arkansas and Louisiana respondents were noted and summarized by question. The response information summarized by question for both Arkansas and Louisiana survey versions (See Appendix G and Appendix H). Also, responses to each survey question are depicted graphically indicating responses from both Arkansas and Louisiana landowners. (See Appendix I). A number of statistical tests were conducted to look for

relationships and differences between survey questions, regional responses, and first and second mailings. These test included chi-square tests for categorical variable associations, t-tests for significant differences between Arkansas and Louisiana responses (Appendix J), and t-test for significant differences between first and second mailings for Arkansas and Louisiana responses (Appendix J)

5.2. Descriptive Analysis

Within this section responses to each of the survey questions are reported and graphs are also presented to aid in the presentation of the results for select questions involving multiple response categories. In addition, t-tests were conducted to determine if there is statistically significant difference between Arkansas and Louisiana respondents. The following descriptive analysis reports survey responses by each of the six sections of the survey instrument for both Arkansas and Louisiana respondents.

5.2.1. Demographics

The majority of survey respondents were male with Arkansas having a higher percentage of male respondents at just over 71% (n = 474) while Louisiana respondents were nearly 52% male (n = 616). There was a significant difference at the 5% level between the gender response for Arkansas and Louisiana respondents The average age of survey respondents was also significantly different at the 10% level with the average age of Arkansas respondents (n = 464) at 63.3 years and Louisiana respondents (n = 603) at 61.2 years with a standard deviation in years of 13.6 and 14, respectively. The ethnic background for the vast majority of respondents was Caucasian as indicated by 95.5% of Arkansas respondents (n = 468) and by just over 94.2% of Louisiana respondents (n = 616) indicating they are Caucasian. The next largest ethnic group was African American at 3.6% for Arkansas and 3.3% for Louisiana. When respondents

indicated their primary occupation, the majority selected the retired option with 37% of Arkansas respondents and 36.7% of Louisiana respondents indicating that they were retired (Figure 5.1).

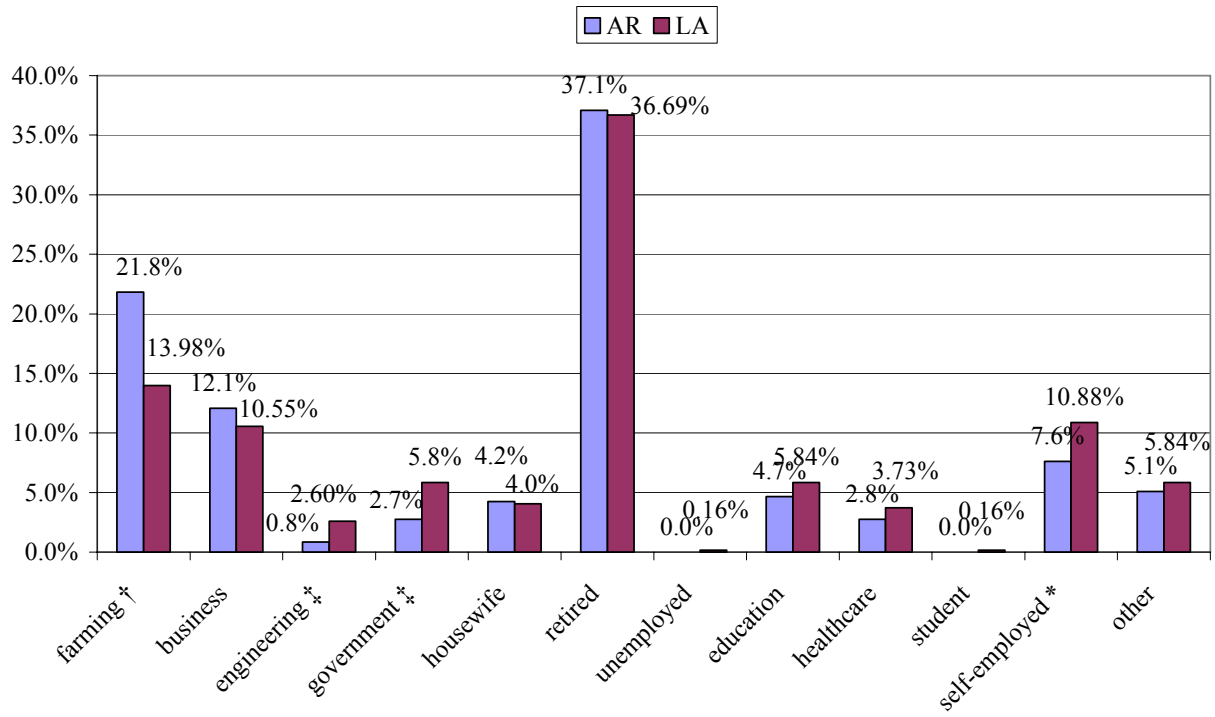

Figure 5.1. Question 51. Choose one category that most closely describes your primary occupation. (n=1088) (AR n=472) (LA n=616) (†, ‡, and * indicates statistically significant differences between mean values at the 1%, 5%, and 10% levels, respectively)

The next most common occupation was farming with Arkansas reporting 21.8% and Louisiana reporting nearly 14% as farming as their primary occupation (Figure 5.1). The average house size was similar for both Arkansas and Louisiana respondents. The mean number of individuals living in a respondents household was 2.08 for Arkansas (n = 407) and 2.13 for Louisiana (n = 606) with associated standard deviations of 0.96 and 1.01, respectively.

The highest educational level attained by survey respondents varied by state (Figure 5.2). The majority of Arkansas respondents indicated that they had completed high (25.9%), some college but no degree (25%), or had completed a bachelor degree (24.2%), while the majority of

Louisiana respondents indicated they had completed high school (29.8%), completed a bachelor degree (22.5%), or had attended college but did not complete a degree (20.1%).

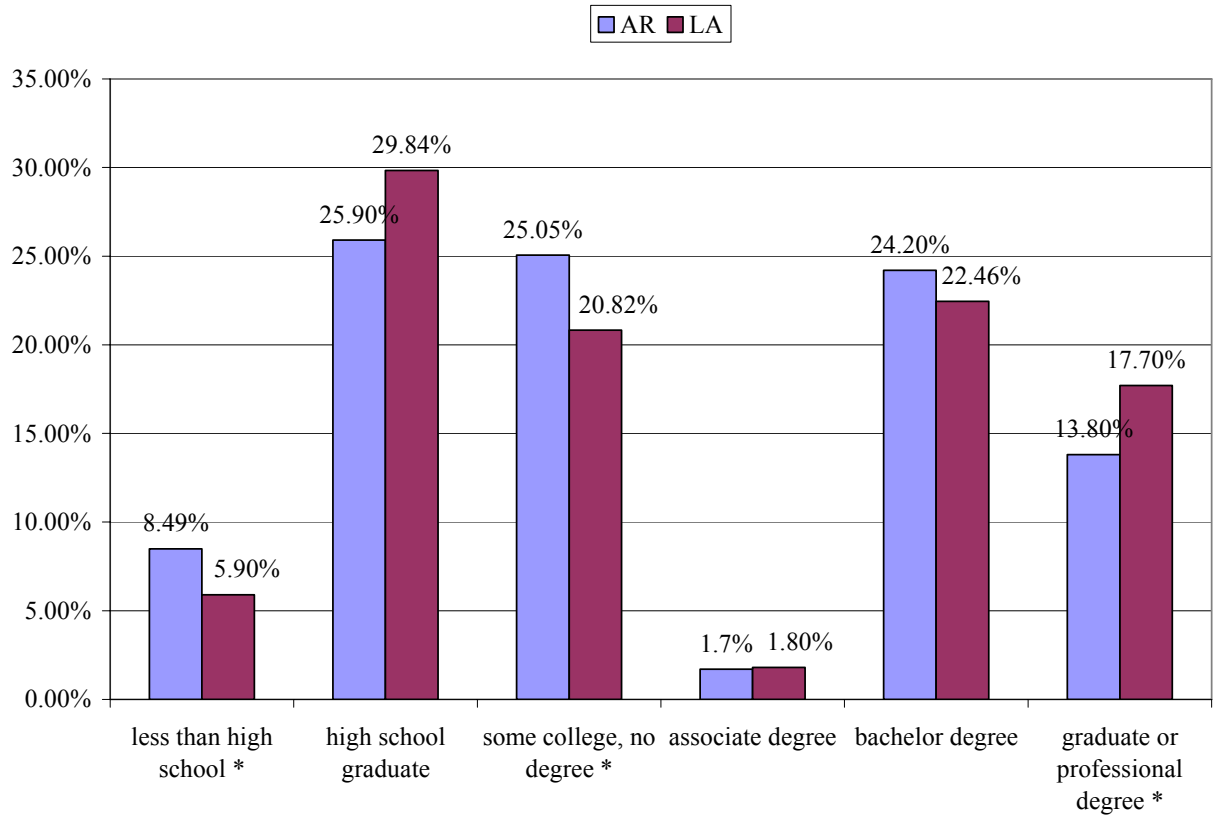

Figure 5.2. Question 53. Indicate your highest level of education attained. (n=1081) (AR n=471) (LA n=610) (* indicates statistically significant differences between mean values at the 10% level)

Of all the demographic questions the question relating to household income was the most commonly omitted by survey respondents; however, over 900 respondents answered the question (Figure 5.3). The most common responses of the ten household income options for Arkansas respondents was 21.5% indicating $50 to $74.9 thousand and 20.76% in the $100 to $199.9 thousand range. For Louisiana respondents the first most common responses was also $50 to $74.9 thousand at 19.7%, yet next highest percentage response option was for $35 to $49.9 thousand at 15.52%.

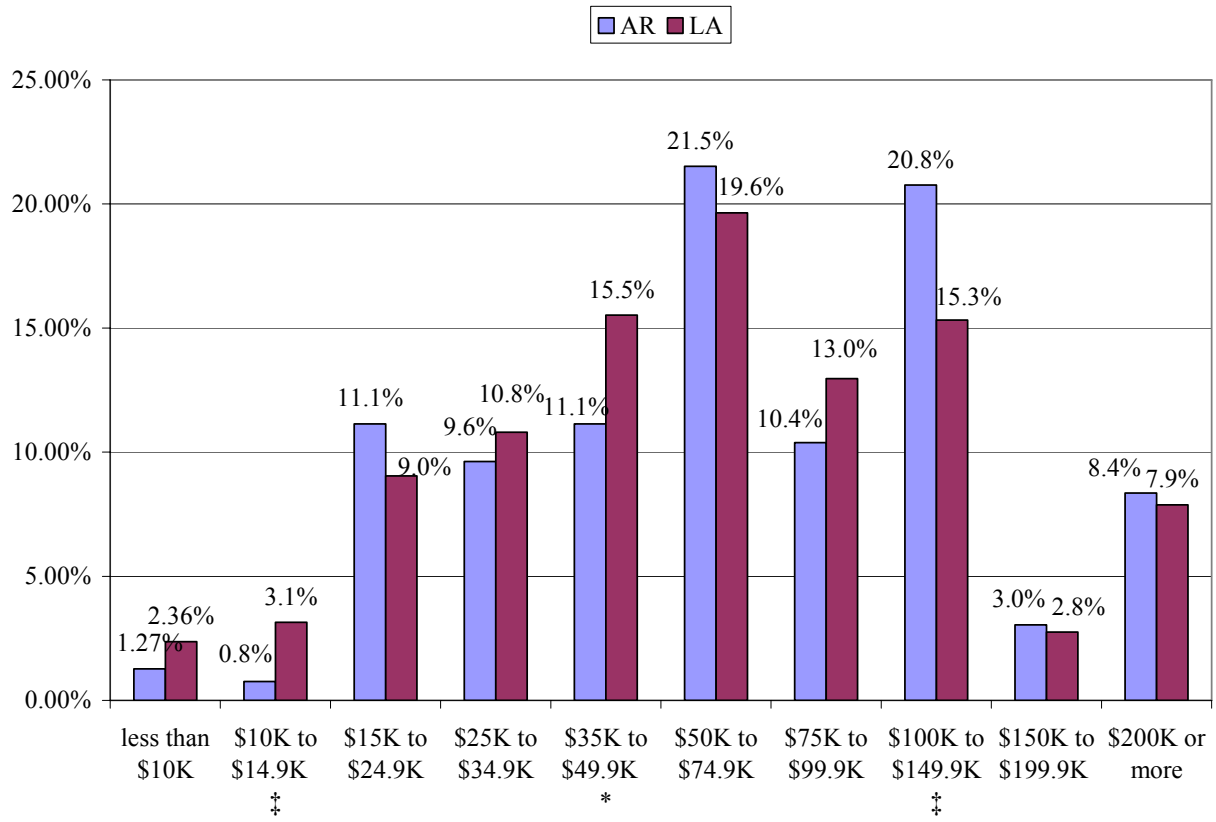

Figure 5.3. Question 54. Which best describes your annual household income? (n=904) (AR n=395) (LA n=509) (‡ and * indicates statistically significant differences between mean values at the 5% and 10% levels, respectively)

5.2.2. Recreational Use and Land Access Practices

The majority of respondents indicated that they use their land for their recreational purposes with 55.7% of Arkansas (n = 485) and nearly 60% of Louisiana (n = 631) respondents answering yes. When asked to indicate specific recreational activities, various hunting categories and ATV riding were the most common (Figure 5.4). The top three most common recreational activities for which survey respondents use their own land differed by state. The most common activities for Arkansas respondents was hunting small game (63%), hunting migratory bird or waterfowl (53.7%), and hunting big game (52.25), while Louisiana respondents

indicated that they used their land for hunting big game (69.4%), hunting small game (63%), and hunting dove (54.4%).

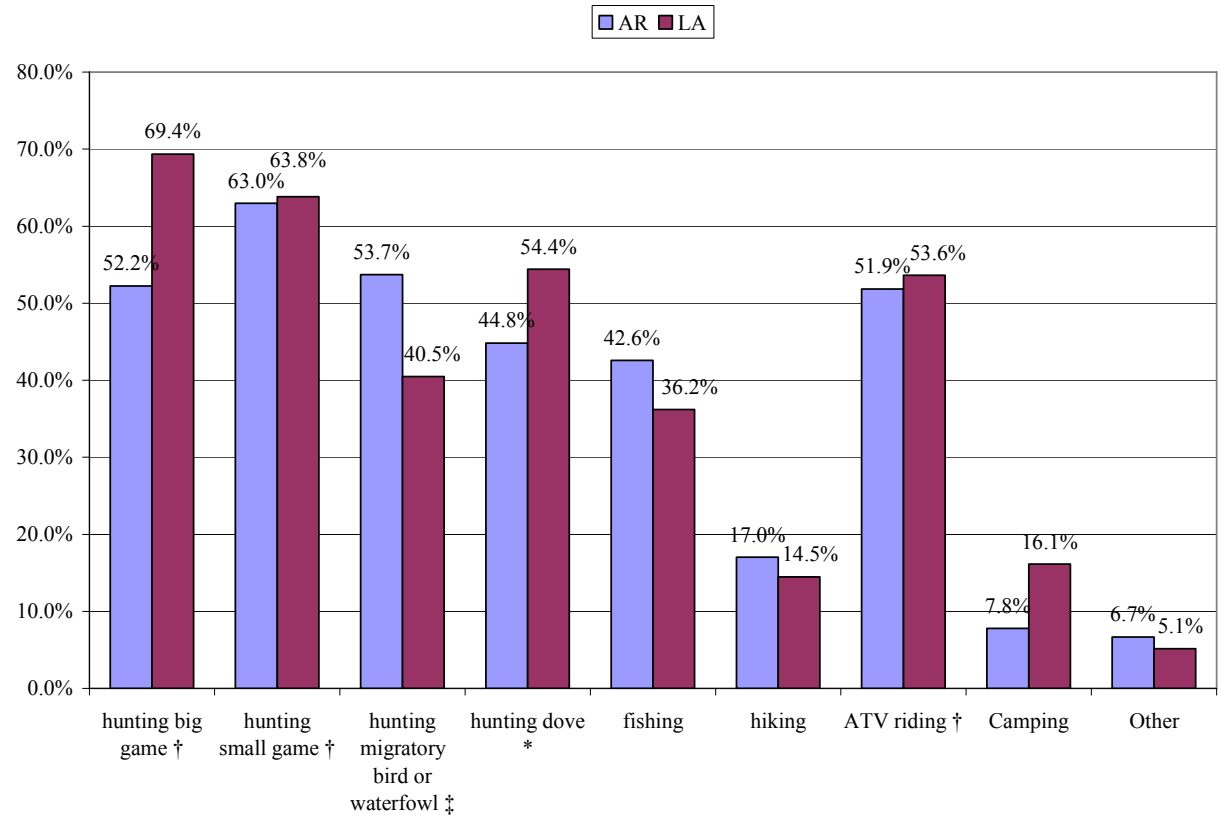

Figure 5.4. Question 2. Do you or any members of your household use your land for any of the following recreational purposes? (n=1116) (AR n=485) (LA n=631) (†, ‡, and * indicates statistically significant differences between mean values at the 1%, 5%, and 10% levels, respectively)

T-test results for the response categories of hunting big game, hunting small game, hunting migratory bird or waterfowl, hunting dove and ATV riding indicate that there is a statistically significant difference between the mean value for Arkansas and Louisiana respondents.

Allowing individuals who are not part of the respondents' immediate household to use their land for recreational purposes is apparently a common practice as 55.7% of Arkansas (n = 485) and 56.3% of Louisiana (n = 632) respondents indicated that they have granted access. When the respondents were asked to classify these individuals 80.8% of Arkansas and 73.9% of

Louisiana respondents allowed friends to use their land, which was significantly different at the 5% level of significance, while only 11.4% of Arkansas and 10.4% of Louisiana respondents had allowed individuals they did not know personally to use their land for recreational purposes (Figure 5.5). Common responses for the other category were allowing people who rented or leased their land for farming to use their land for recreation.

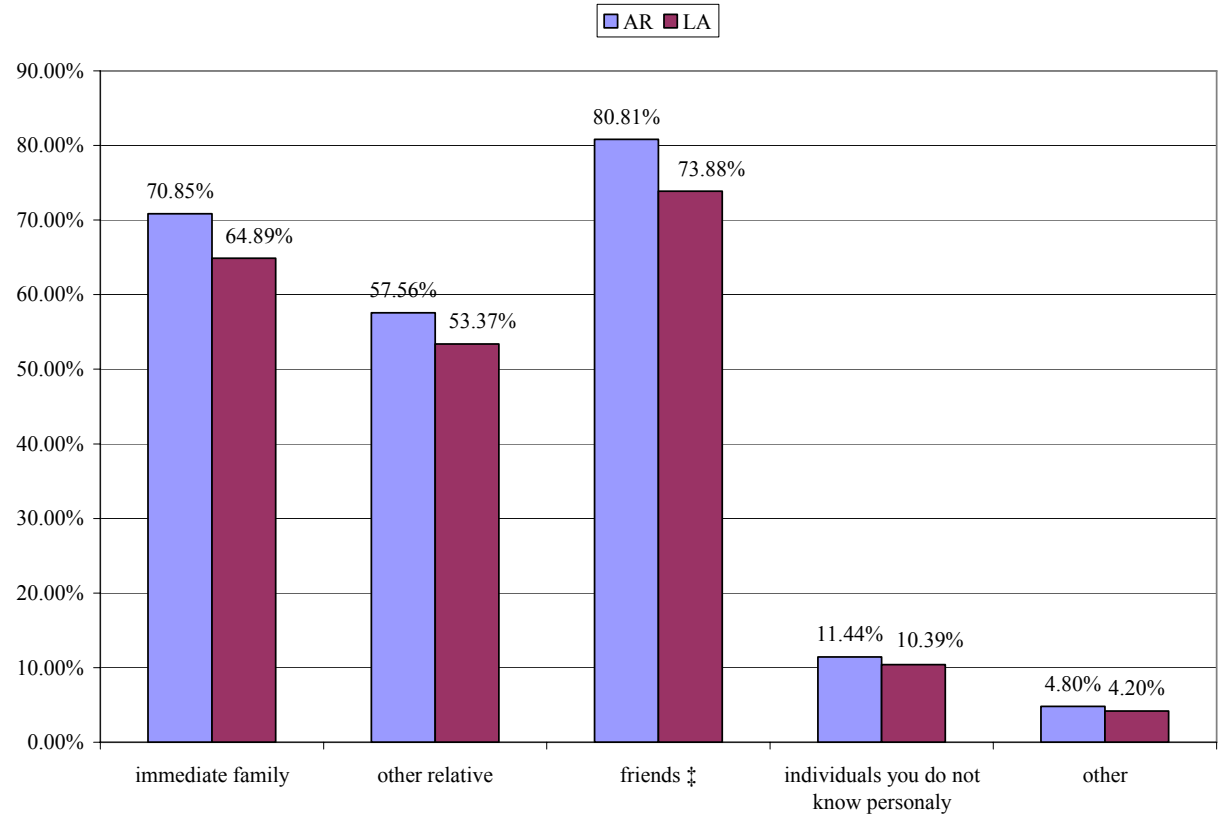

Figure 5.5. Question 4. Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes? (n=627) (AR n=271) (LA n=356) (‡ indicates statistically significant differences between mean values at the 5% level)

When respondents were asked if they have ever leased their land for hunting or recreational access only 11.5% and 11.2% of Arkansas (n = 485) and Louisiana (n = 632) landowners had ever leased their land for recreational uses.

Landowners that have leased their land for hunting or recreational access were asked to provide information about revenue and acres leased. Arkansas landowners (n=11) allowing big

game hunting (e.g., deer and/or turkey) reported average lease revenues of $1,362.10 and an average 270.8 acres being leased, which is about $5 per acre per year. Louisiana landowners (n=35) on average collected about $7.90 per acre leasing about 344.5 acres on average with lease revenues of $2,719.21. Migratory bird or waterfowl hunting has an average lease value of $20 per acre with about 430 acres being leased on average for Arkansas landowners (n=28), while Louisiana landowners (n=17) generated a higher per acre rate of $34.60 by leasing an average of 328 acres. Lease for small game and dove hunting were much less common. Small game reported by Arkansas respondents (n-=2) has an average per acre lease value of $3 and lease size of 240 acres. One Louisiana respondent indicated leasing for small game but did not report any values. Dove hunting in Arkansas (n=2) has an average value per acre lease value of $26 per acre with an average of 140 acres leased, and only one respondent in Louisiana reported dove leasing at a revenue of $2,000 for 30 acres which is about $67 per acre. A number of Arkansas and Louisiana respondents selected the "other" category for recreation leasing typically listing it as big game and waterfowl hunting combined or unspecified hunting. For Arkansas landowners (n=9) the average per acre revenue was about $9.75 with an average acreage of 1,156, and the average per acre lease rate was $14 for Louisiana (n=12) with about 630 acres being leased for recreational hunting.

5.2.3. Risk and Liability Issues

The vast majority of landowners are very concerned about liability issues associated with allowing people onto their land. When respondents were asked how much they disagree or agree with the statement "I am very concerned about the liability issues associated with allowing people on my land," 75% of Arkansas and 80% of Louisiana respondents indicated that they either somewhat or strongly agreed with that statement (Figure 5.6).

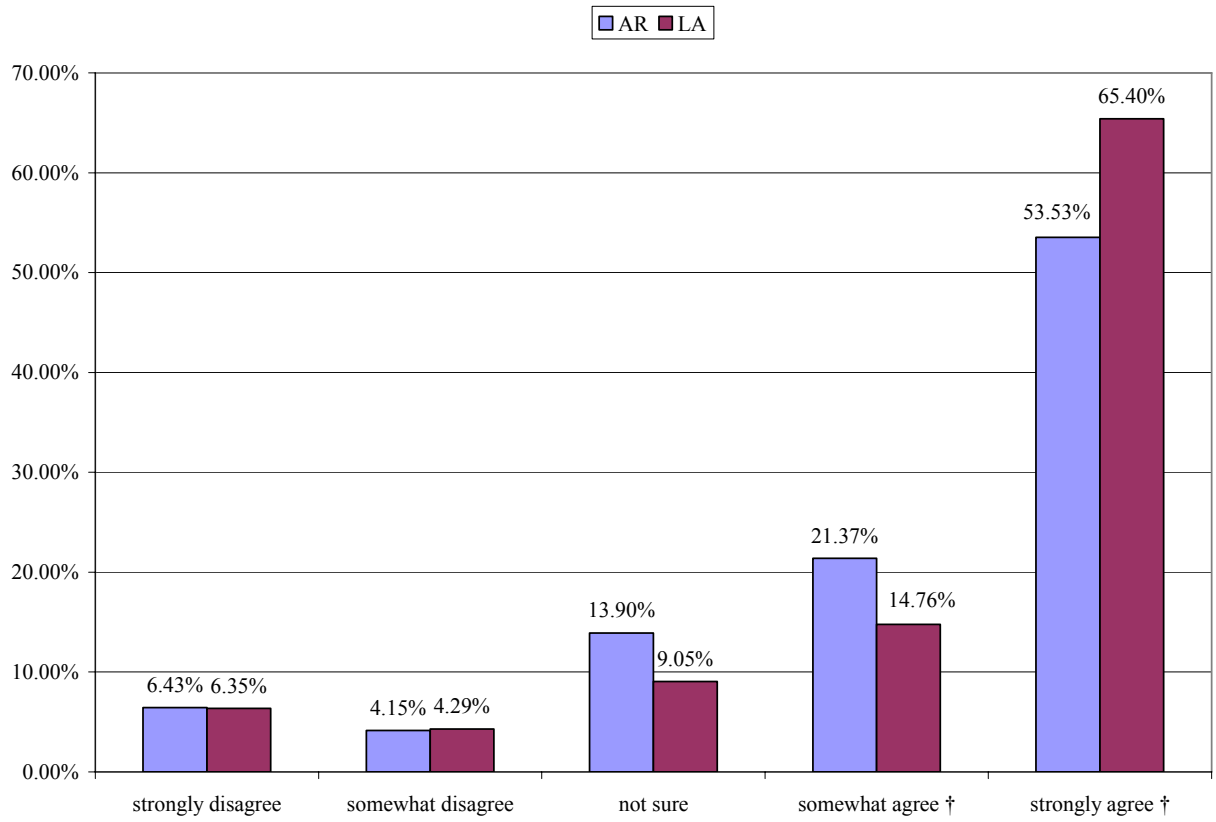

Figure 5.6. Question 7. I am very concerned about the liability issues associated with allowing people on my land. (n=1112) (AR n=482) (LA n=630) († indicates statistically significant differences between mean values at the 1% level)

Landowners were asked how much they disagree or agree with the statement "It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability." The majority of respondents, 41.3% for Arkansas and 40.2% for Louisiana, indicated that they were not sure if they disagreed or agreed with the statement (Figure 5.7). When landowners were asked how much they disagree or agree with the statement "If my liability concerns were eased I would be much more likely to allow people to use my land for recreational purposes," 44% of Arkansas and 41% of Louisiana respondents indicated that they strongly disagreed or somewhat disagreed. (Figure 5.8).

Respondents continually indicated that they are unsure about liability, insurance, and legal issues associated with recreational use of their land. When respondents were asked if they

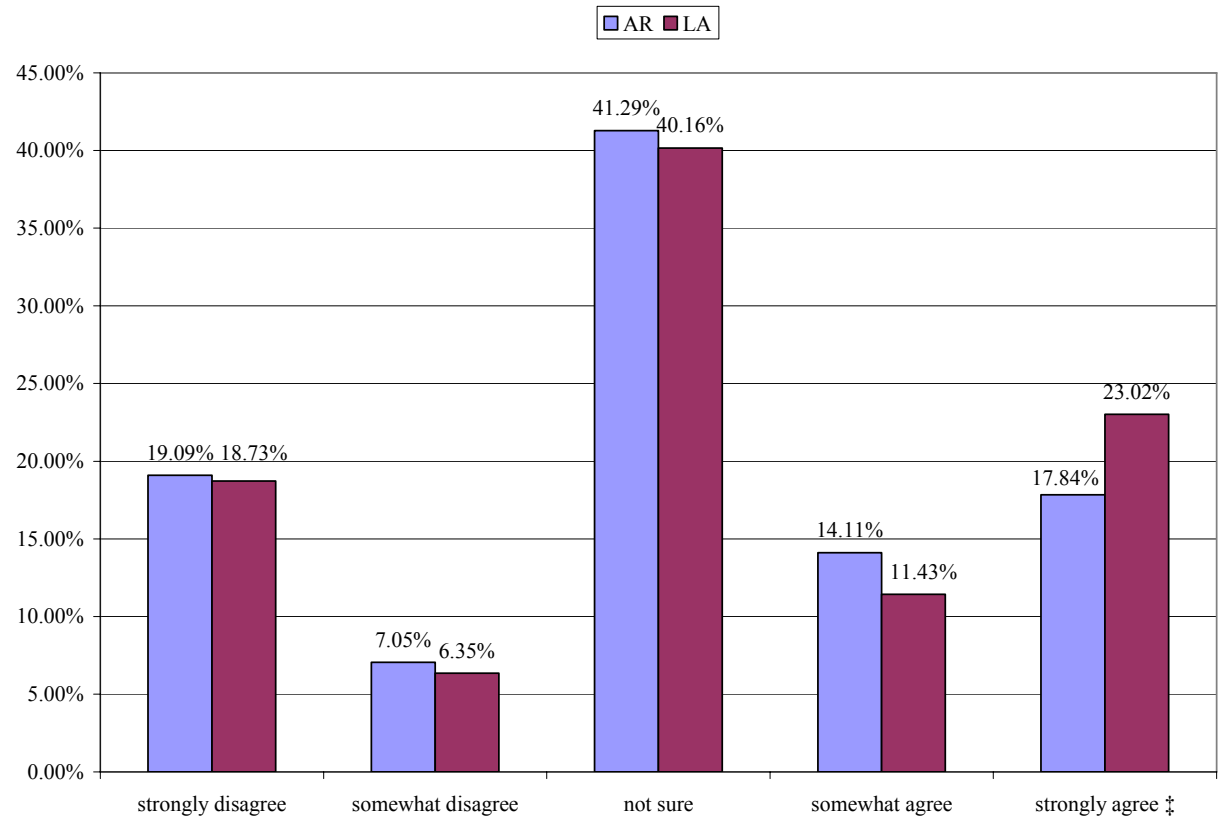

Figure 5.7. Question 8. It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability. (n=1112) (AR n=482) (LA n=630) (‡ indicates statistically significant differences between mean values at the 5% level)

are required by state law to post their land with "no trespassing" signs to protect themselves from liability associated with trespassers, 56% of Arkansas (n = 485) and 46.4% of Louisiana (n = 631) respondents indicated they were unsure, 31.6% of Arkansas and 22.19% of Louisiana selected true, and 12.4% of Arkansas and 31.4% of Louisiana respondents selected false. The means values for Arkansas and Louisiana respondents for this question were significantly different at the 5% level of significance. The sizable difference between Arkansas and Louisiana respondents selecting false reflects the fact that law regarding the posting of "no trespassing" signs was recently changed in Louisiana so that Louisiana landowners do not have to post their land to protect themselves from liability associated with trespassers.

When landowners were asked to indicate whether it is true or false that state law protects

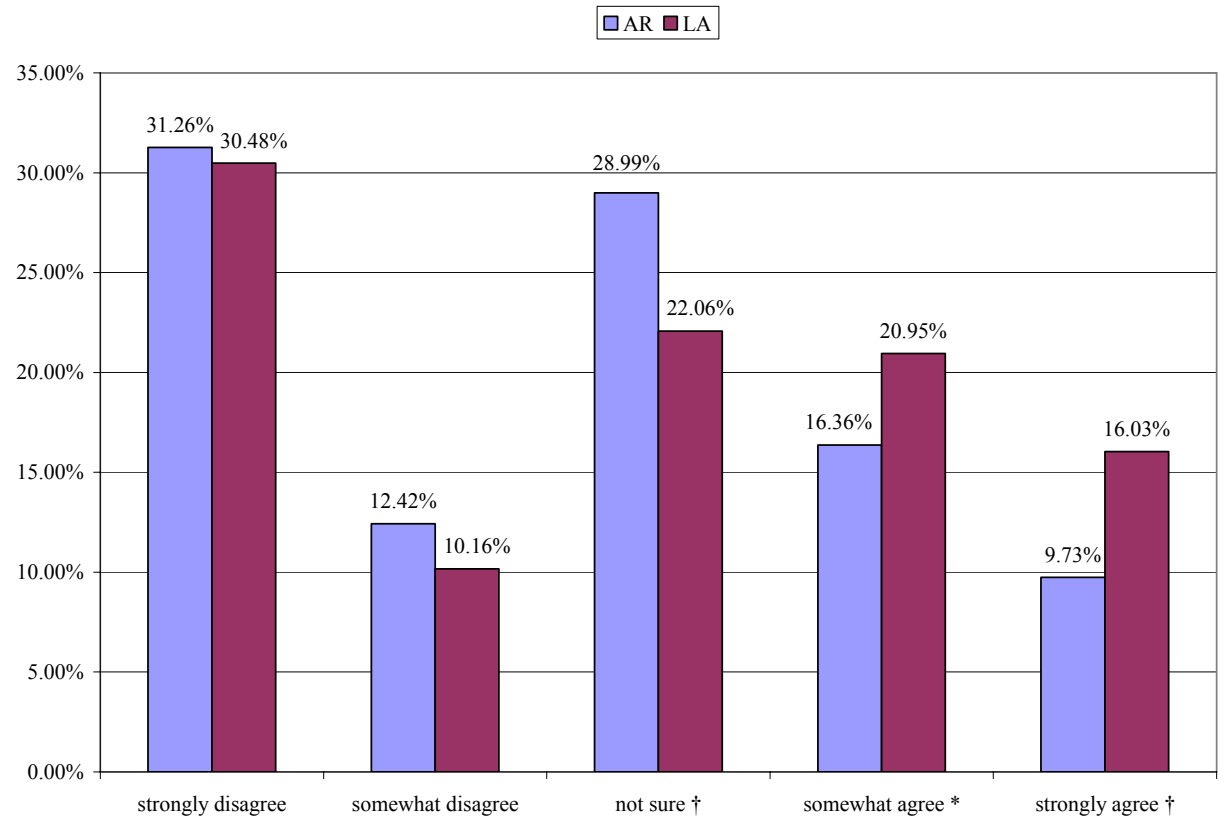

Figure 5.8. Question 9. If my liability concerns were eased I would by much more likely to allow people to use my land for recreational purposes. (n=1113) (AR n=483) (LA n=630) († and * indicates statistically significant differences between mean values at the 1% and 10% levels, respectively)

landowners from liability claims that may result from recreational use of their land so long as they do not charge a fee, 73.7% of Arkansas (n = 483) and 66.2% of Louisiana (n = 631) respondents indicated that they were unsure, less than 8% of Arkansas and Louisiana respondents knew it to be true, and 19.3% of Arkansas and of Louisiana 25.9% respondents incorrectly indicated the statement to be false. There was a statistically significant difference between Arkansas and Louisiana respondents selecting the unsure category.

Respondents appeared to be better informed about the availability of insurance. When landowners were asked to indicate whether it is true or false that liability insurance is available specifically for private landowners who charge a fee for recreational access, 66.1% of Arkansas

(n = 480) and 61.8% of Louisiana (n = 631) respondents indicated that they were unsure, 30.9% of Arkansas and 34.5% Louisiana respondents correctly selected true, and 2.91% of Arkansas and of Louisiana 3.66% respondents indicated the statement to be false.

Landowners responding to the survey were asked to characterize themselves regarding risk in their financial decisions. Respondents were asked the following question and given three response options. "Compared to other landowners you know, how would you characterize yourself? I tend to take on substantial levels of risk in my financial decision. I tend to avoid risk when possible in my financial decisions. I neither seek nor avoid risk in my financial decisions." The vast majority of respondents indicated they were risk averse at 72% for Arkansas and 75.5% for Louisiana (Figure 5.9). Less than 8% of respondents indicated they are risk seekers and 19.5% of Arkansas and 15.8% of Louisiana respondents indicated they are risk neutral.

5.2.4. Marginal Lands

Ownership of land that was considered to be marginal for agricultural purposes was slightly more common among Louisiana landowners as 40.1% of Arkansas (n = 484) and 44.6% of Louisiana (n = 632) landowners indicated they own marginal land. The average number of acres considered to be marginal by landowners was 108.7 acres for Arkansas (n = 192) and 106.8 for Louisiana (n = 274) with standard deviations of 169.5 acres and 176.6 acres, respectively. When comparing the acreage of marginal land to total land it was observed that Louisiana landowners consider more of their land to be marginal for agriculture than do Arkansas landowners. Louisiana landowners believed that 33.3% of their total land was marginal while Arkansas landowners only considered 25.2% of their land to be marginal. When landowners were asked how many miles their nearest tract of marginal land is from their home, the average response was 81.1 miles for Arkansas (n = 193) and 60.1 for Louisiana (n = 280) with standard

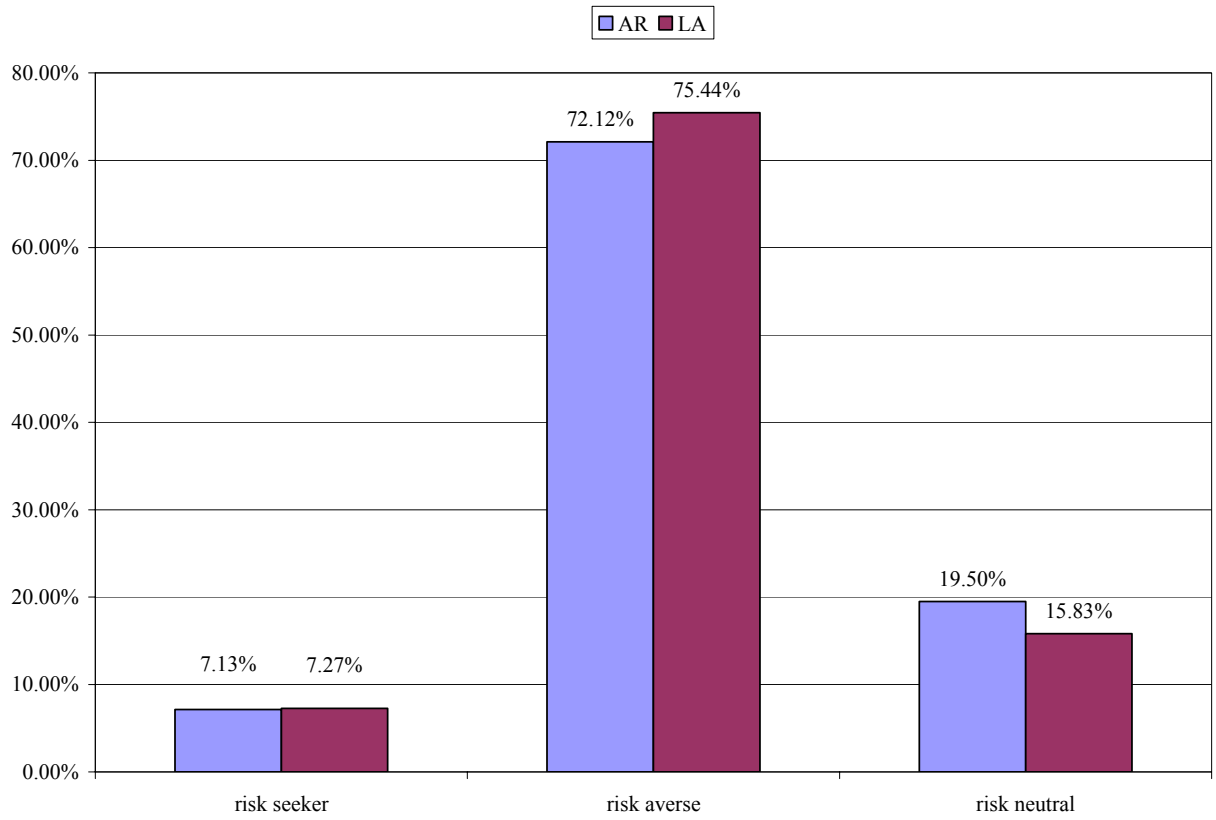

Figure 5.9. Question 13. Compared to other landowners you know, how would you characterized yourself? (n=1096) (AR n=477) (LA n=619)

deviations of 248.5 acres and 230.6 acres, respectively. Landowners were asked to describe their marginal land by selecting from four land classifications. The most common classification for marginal land was forested or wooded areas with as indicated by 79.5% of Arkansas and 81.2% of Louisiana respondents (Figure 5.10). Arkansas respondents differed from Louisiana respondents as to describing their marginal land as used for row crops or hay production as indicated by 38.97% of Arkansas and 23.8% of Louisiana landowners, which was statistically significant at the 1% level of significance.

Respondents were asked to describe their current land management practice if any (Figure 5.11). The most common response was self-managed by 60% and 61.4% of Arkansas

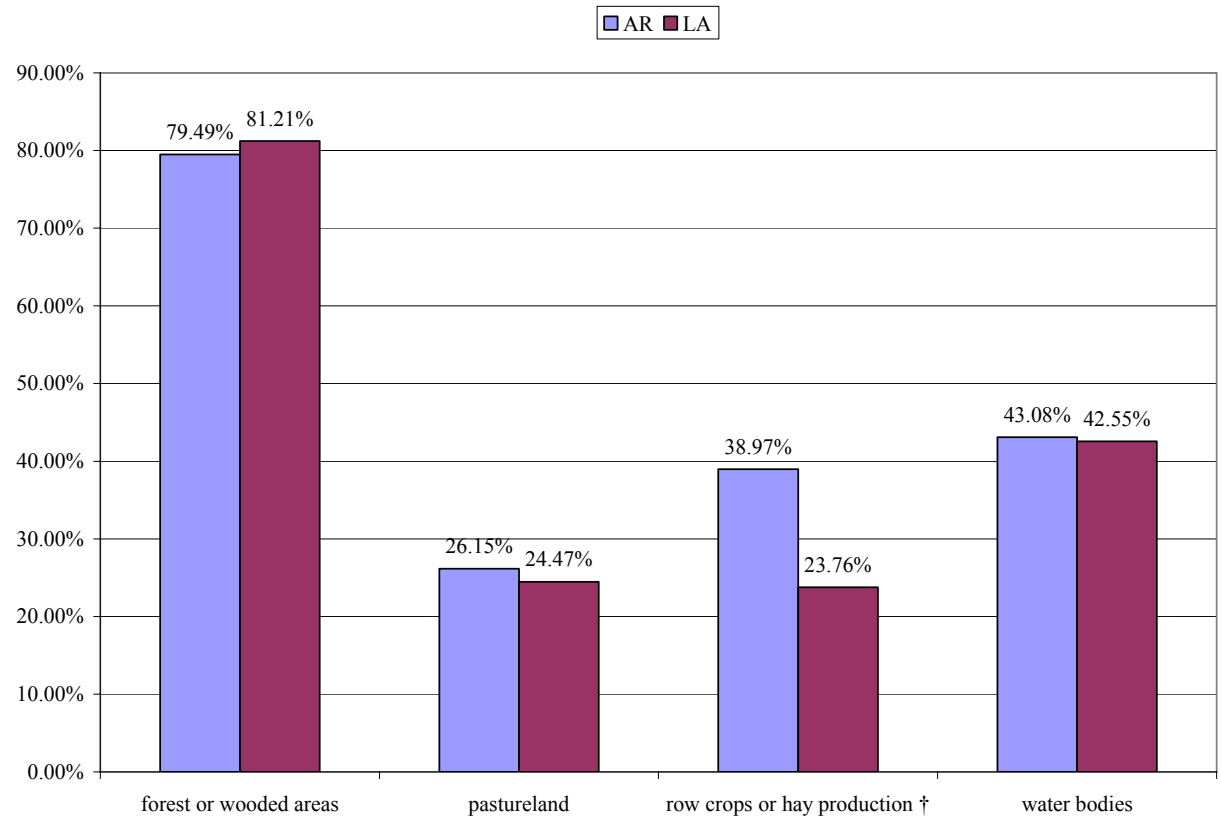

Figure 5.10. Question 17. Could any of the following land classifications be used to describe all or part of you marginal land? (n=477) (AR n=195) (LA n=282) (Showing percentage of respondents selecting each category) († indicates statistically significant differences between mean values at the 1% level)

and Louisiana respondents followed by leasing the land as reported by 23.1% and 21.63 of Arkansas and Louisiana question respondents. There was a statistically significant difference at the 5% level of significant between Arkansas and Louisiana landowners that used hired professional to manage their land with the practice apparently being more common in Arkansas.

When asked on average how often do you visit or check on your marginal land, the most common response was weekly as selected by 46.7% and 44.1% or Arkansas and Louisiana respondents with the percentage declining as the time option increased (Figure 5.12). Landowners were asked what dollar amount they could get per acre if they were to sell their marginal land. Arkansas respondents, on average, valued their marginal land slightly higher than

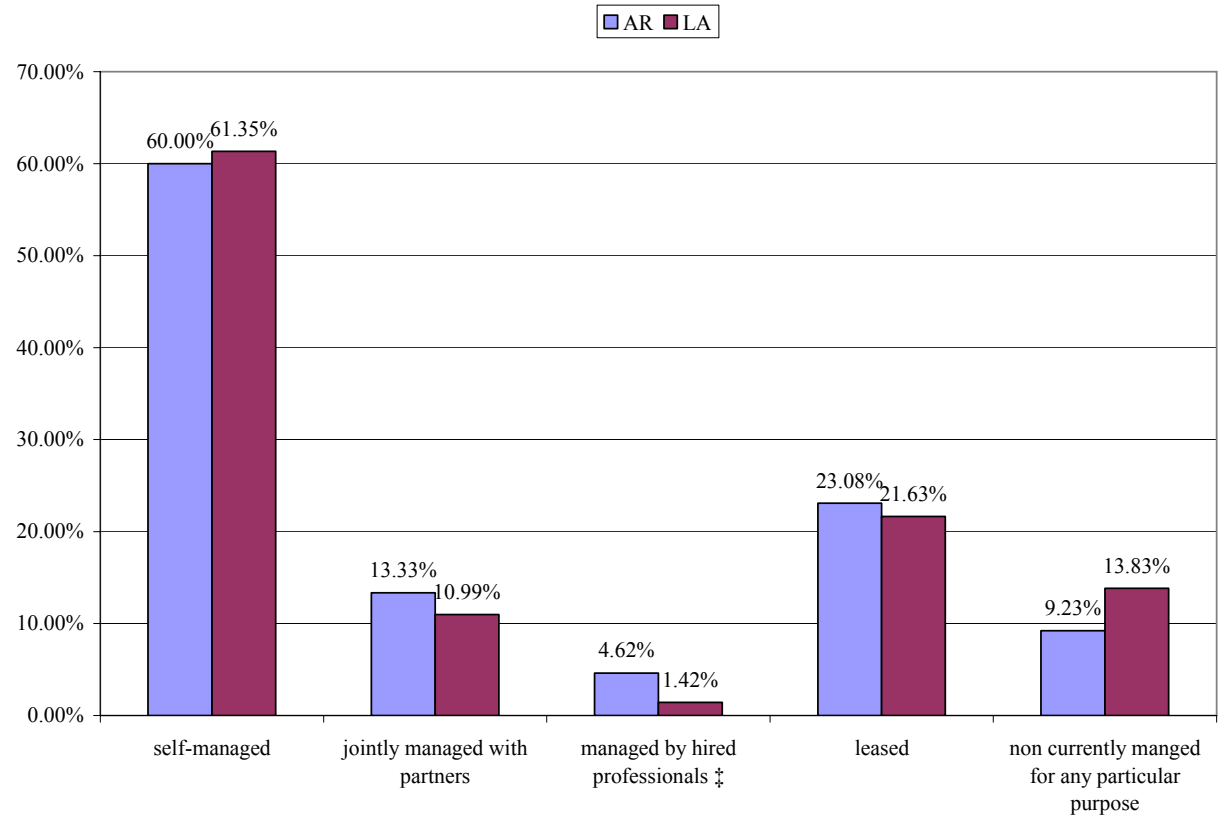

Figure 5.11. Question 18. Which of these best described your current land management? (n=477) (AR n=195) (LA n=282) (‡ indicates statistically significant differences between mean values at the 5% level)

Louisiana landowners. The mean response for Arkansas landowners (n = 154) was $1,368.50 with a standard deviation of $957, and the mean response for Louisiana landowners (n = 193) was $1,277.41 with a standard deviation of $902.33.

5.2.5. Fee Based Recreational Use of Land

Landowners were asked if they would be willing to allow people to pay them a fee to access their land for recreational purposes. Only 14.2% of Arkansas (n = 485) and 14.1% of Louisiana (n=632) landowners indicated they would allow recreational access with the remainder indicating no. Respondents indicating they would allow recreational access were then asked how much money per acre they would be willing to accept each year to allow someone to lease their

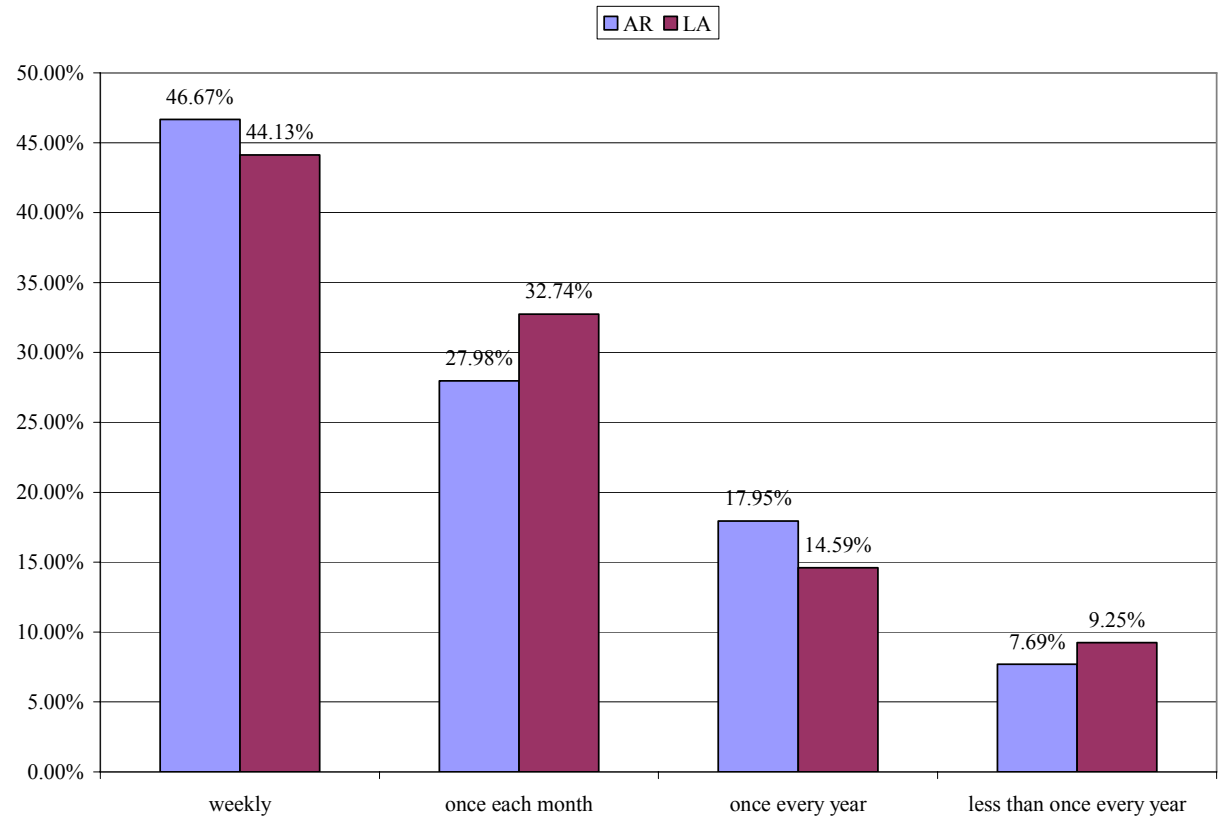

Figure 5.12. Question 19. On average how often do you visit or check on your marginal land? (n=476) (AR n=195) (LA n=281)

land for recreational purposes. The mean response was $279.25 for Arkansas (n = 56) and $175.99 for Louisiana (n = 69) with standard deviations of $1.349.05 and $551.30, respectively which was significantly different at the 5% level of significance. Each respondent was then asked to indicate how certain they are, on a scale of 0% to 100%, about the dollar value they specified to allow fee-based recreational access (Figure 5.13). The most common response was the 50% with certainty level with the 80% and 100% certainty level being the second most common for Louisiana and Arkansas respondents, respectively.

For respondents that indicated they were less than 80% certain about accepting the dollar value, they were asked to provide a dollar amount that they would be at least 80% of accepting. The mean dollar value for Arkansas respondents (n = 30) was $110.33 with a standard deviation

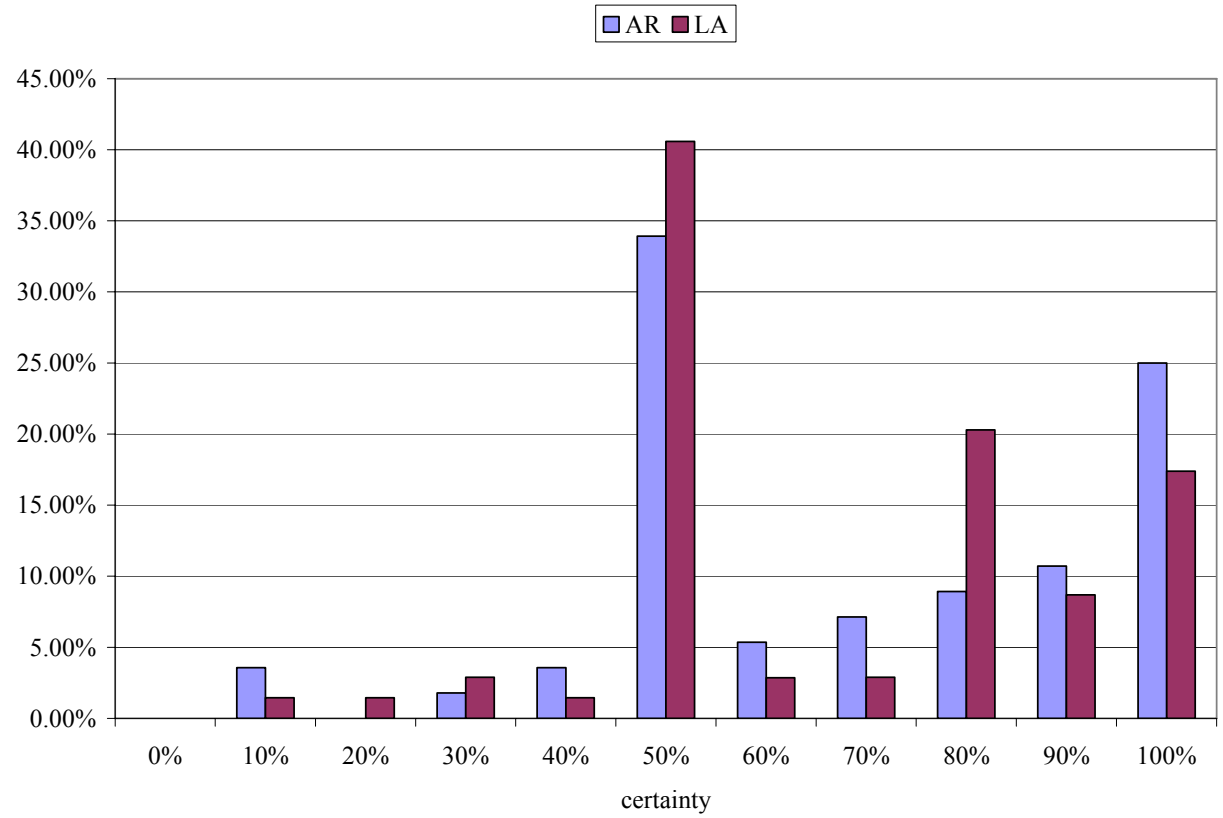

Figure 5.13. Question 23. How certain are you that you would accept the dollar value you indicated in the previous question? (Question 22)? (n=125) (AR n=56) (LA n=69)

of $88.65, and the mean dollar value for Louisiana respondents (n = 36) was $163.72 with a standard deviation of $362.69. These values were used to adjust willingness to accept values for analysis that respondents were at least 80% certain of accepting.

Survey participants were presented with a hypothetical describing a change to state law. The current Arkansas and Louisiana recreational use statute was described and respondents were asked if current law were changed to allow landowners to charge a fee for recreational use of their land and keep the liability protection afforded to free access granting landowners would they then allow people to pay them a fee for recreational use of their land. The number of respondents saying yes was 20.62% of Arkansas respondents (n = 485) and 23.93% of Louisiana respondents (n = 632). When asked how much money per acre they would be willing to accept if

the law was amended, the mean was $210.11 for Arkansas (n = 87) and $132.76 for Louisiana (n = 126) with associated standard deviations of $1,083.57 and $430.79. Again, respondents were asked to indicate how certain they were as to the dollar value indicated (Figure 5.14).

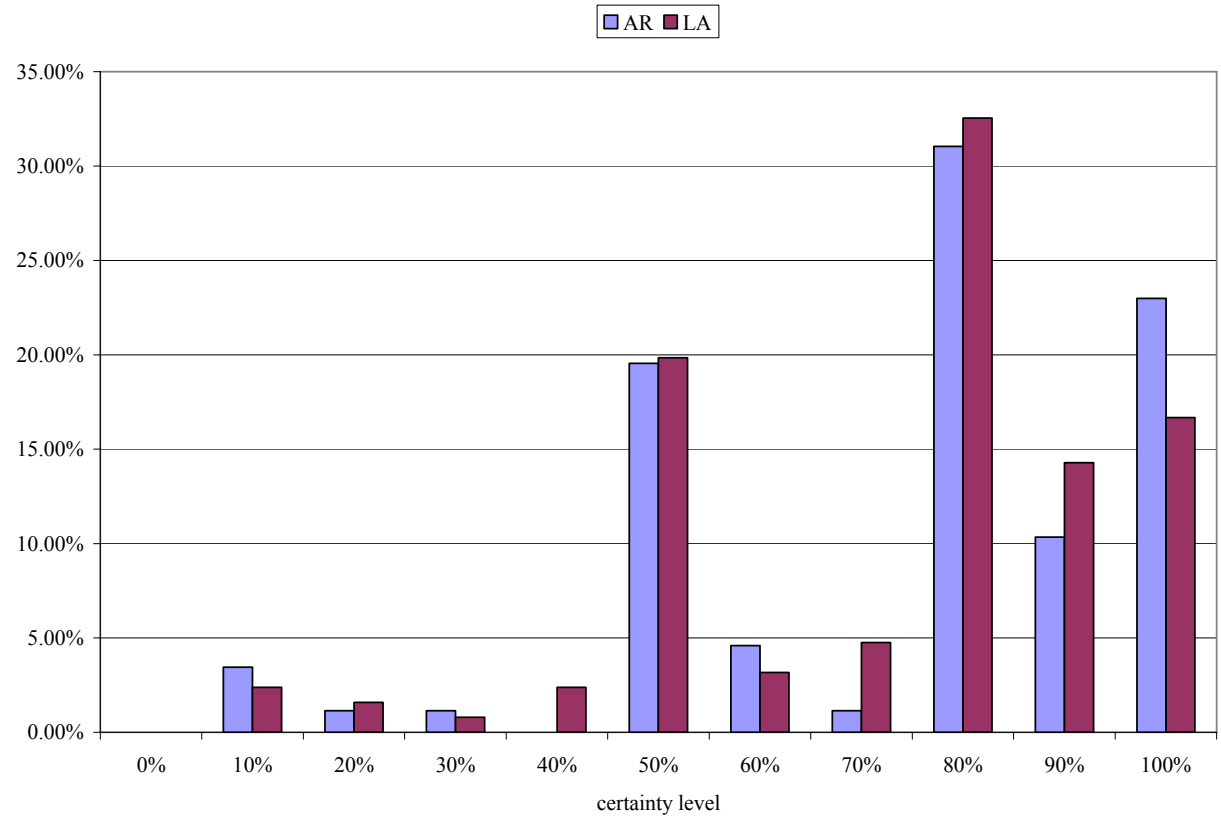

Figure 5.14. Question 27. How certain are you that you would accept the dollar value you indicated in the previous question? (n=213) (AR n=87) (LA n=126)

The most common response was 80% certainty with 100% and 50% certainty being the second most common response for Arkansas and Louisiana respondents, respectively. Respondents selecting a certain level less than 80% were again asked to consider a dollar value they would be at least 80% sure of accepting. The mean dollar value for Arkansas respondents (n = 33) was $369.64 with a standard deviation of $792.59, and the mean dollar value for Louisiana respondents (n = 50) was $106.92 with a standard deviation of $191.63, and these mean values were significantly different at the 5% level of significance.

For respondents indicating that they would allow fee-based recreation, they were asked to estimate how many acres of land they would be willing to use for such purposes. The mean number of acres was 259.3 for Arkansas (n = 94) and 256.6 for Louisiana (n = 137) with an associated standard deviation of 419.3 and 494.4 acres, respectively. Respondents indicating that they would allow fee-based recreation were asked to indicate the types of recreational uses that they would not allow on their land (Figure 5.15).

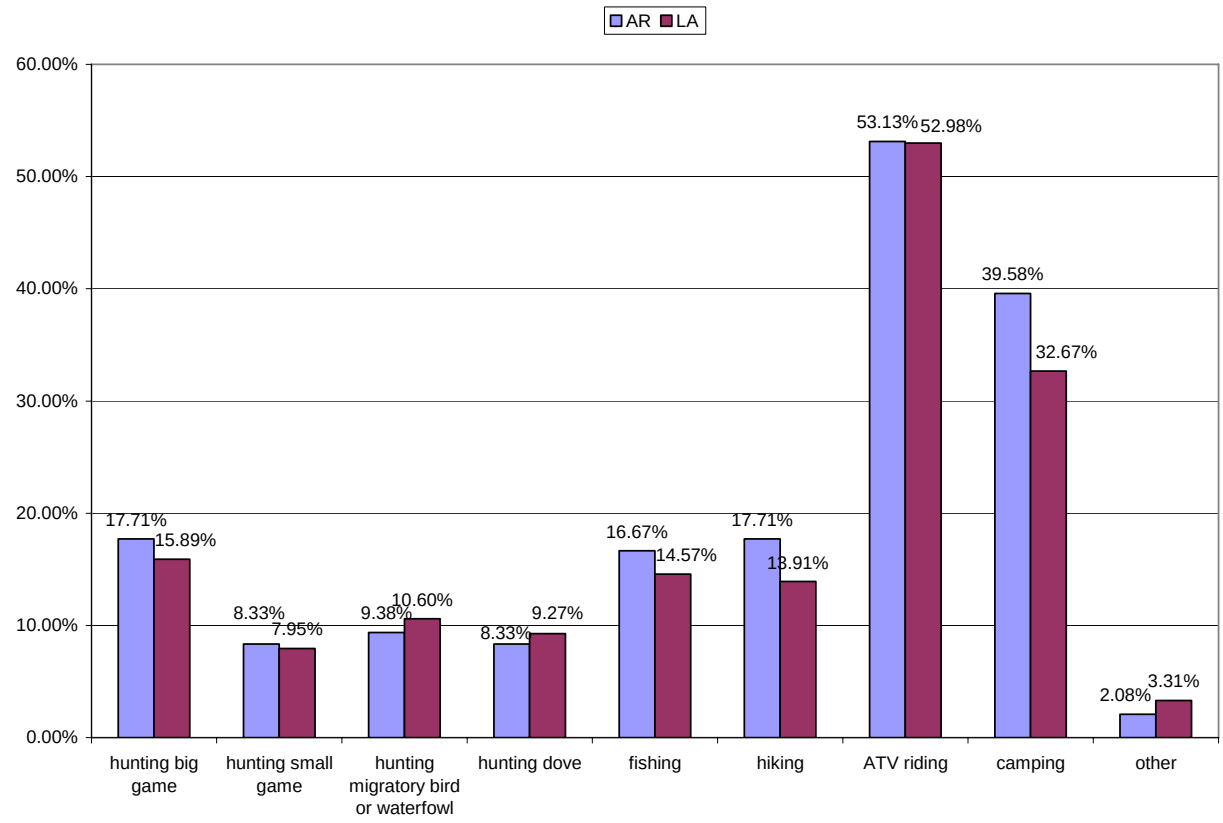

Figure 5.15. Question 30. Which of the following recreational activities would you NOT allow on you land? (n=247) (AR n=96) (LA n=151)

The most common two activities that landowners would not allow were ATV riding as indicated by 53.1% of Arkansas and 53% of Louisiana respondents and camping as indicated by 39.58% of Arkansas and 32.67% of Louisiana respondents. The vast majority of landowners indicated a preference for managing fee-based recreation independently at 58.8% for Arkansas and 57% for

Louisiana respondents as opposed to using an outfitter or managing cooperatively with other area landowners (Figure 5.16).

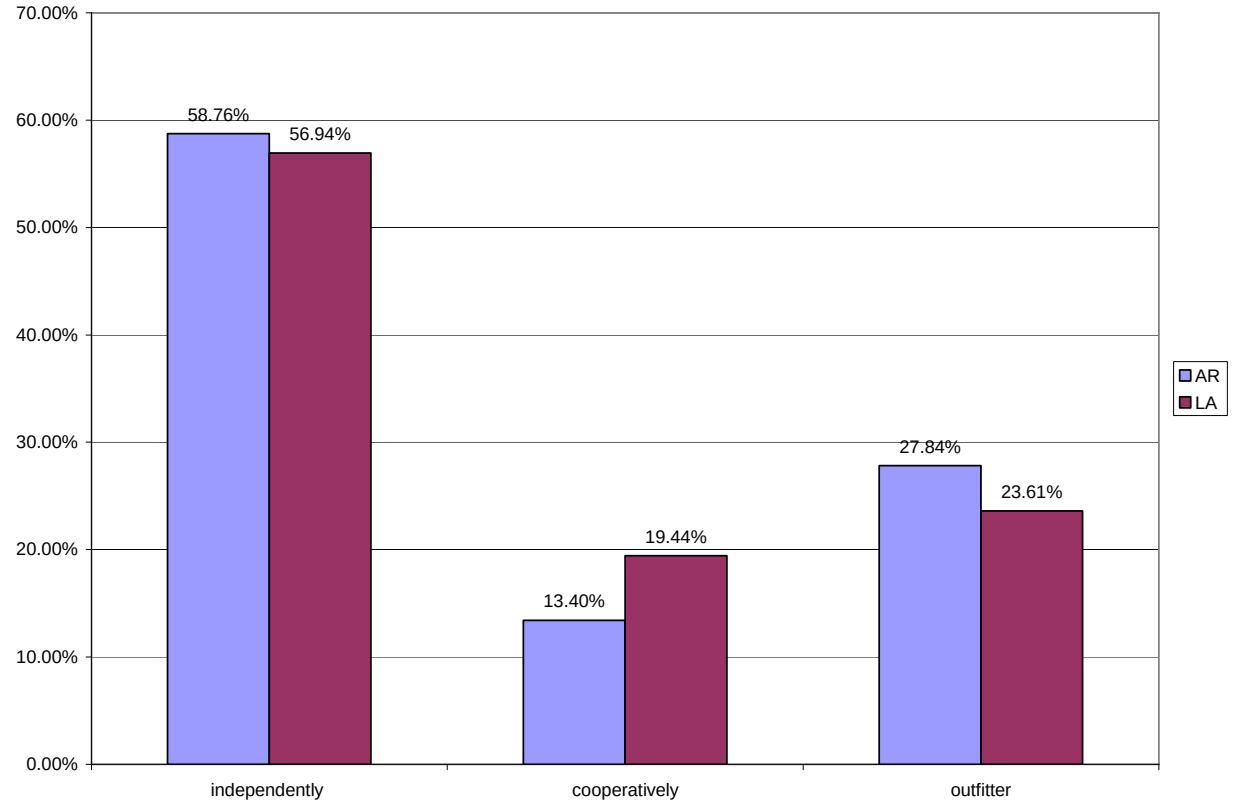

Figure 5.16. Question. 31. If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer? (n=241) (AR n=97) (LA n=144)

5.2.6. Current Land Uses

Respondents were asked if they had ever worked with their adjacent or local landowners in any way such as fence maintenance or crop dusting. Only 28.4% of Arkansas (n = 482) and 25.8% of Louisiana (n = 629) respondents had worked with their adjacent or local landowners. Of the respondents having worked with other landowners, 96.4% of Arkansas (n = 138) and 95% of Louisiana (n = 162) respondents indicated that they found such cooperation to be effective. Landowners were also asked if they had ever been involved with a cooperative. More Arkansas landowners (31.3%, n = 482) than Louisianan landowners (14.2%, n = 629) indicated that they

have participated with a cooperative, which was significantly different at the 1% level of significance, and of that number 91.5% of Arkansas (n = 152) and 96.6% of Louisiana (n = 87) landowners indicated that their involvement was beneficial to them.

Participation in government conservation programs such as the Conservation Reserve Program and Wetland Reserve Program appear to be more common among Louisiana respondents (58.3%) than Arkansas respondents (32.5%) (Figure 5.17).

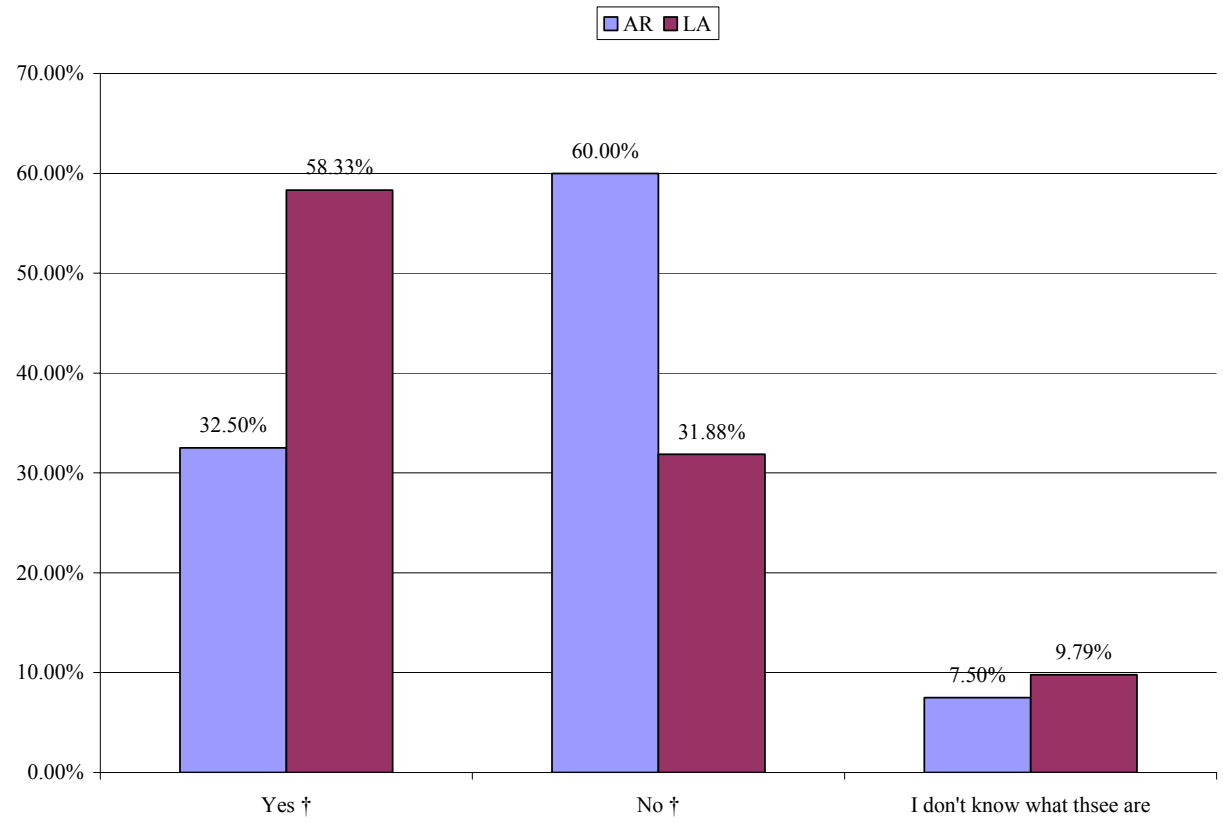

Figure 5.17. Question 36. Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program? (n=1109) (AR n=480) (LA n=631) († indicates statistically significant differences between mean values at the 1% level)

Arkansas respondents on average own more individual tracts of land than do Louisiana landowners. The mean number of tracts was 2.68 for Arkansas landowners (n = 462) with a standard deviation of 3.85, and the mean number of tracts was 2.07 for Louisiana landowners (n

= 608) with a standard deviation of 2.08. The difference in the mean number of tracts is significantly different at the 1% level of significance. More Louisiana landowners (43.2%, n = 613) indicated that their nearest tract of non-residential land was adjacent to their primary residence as compared to Arkansas landowners (34.5%, n = 473), which was significantly different at the 1% level of significance. Landowners indicated that their nearest tract of land not adjacent to their primary residence was 86.8 miles on average for Arkansas landowners (n = 465) with a standard deviation of 255.7 while the average distance was 70.3 miles for Louisiana landowners (n = 602) with a standard deviation of 238.1 miles. The mean volume of land owned was greater for Arkansas respondents than for Louisiana and significantly different at the 5% level of significance. The mean total acreage was 432.1 for Arkansas (n = 465) and 324.8 for Louisiana (n = 601) with standard deviations of 835.5 and 634.1, respectively. The length of landownership was similar with the average being 27.4 years for Arkansas (n = 474) and 28 for Louisiana (n = 610) with an associated standard deviation of 31.4 and 22.6 years, respectively.

The most common ownership structure was single ownership with joint ownership being second most common (Figure 5.18). Single ownership was indicated by 53.1% of Arkansas respondents followed closely by 45.4% for joint ownership, while single ownership was indicated by 64.2% of Louisiana respondents with only 36.9% of Louisiana respondents also indicating they owned land through joint ownership.

The manner in which landowners acquired their land was very similar across states with 55.8% of Arkansas respondents indicating that they had acquired land by purchasing it and an additional 46.1% of Arkansas respondents indicating they had acquired land through inheritance (Figure 5.19). As noted this was also characteristic of Louisiana landowners as 55.2% of respondents indicated they had purchased land and 46.7% indicating they had inherited land.

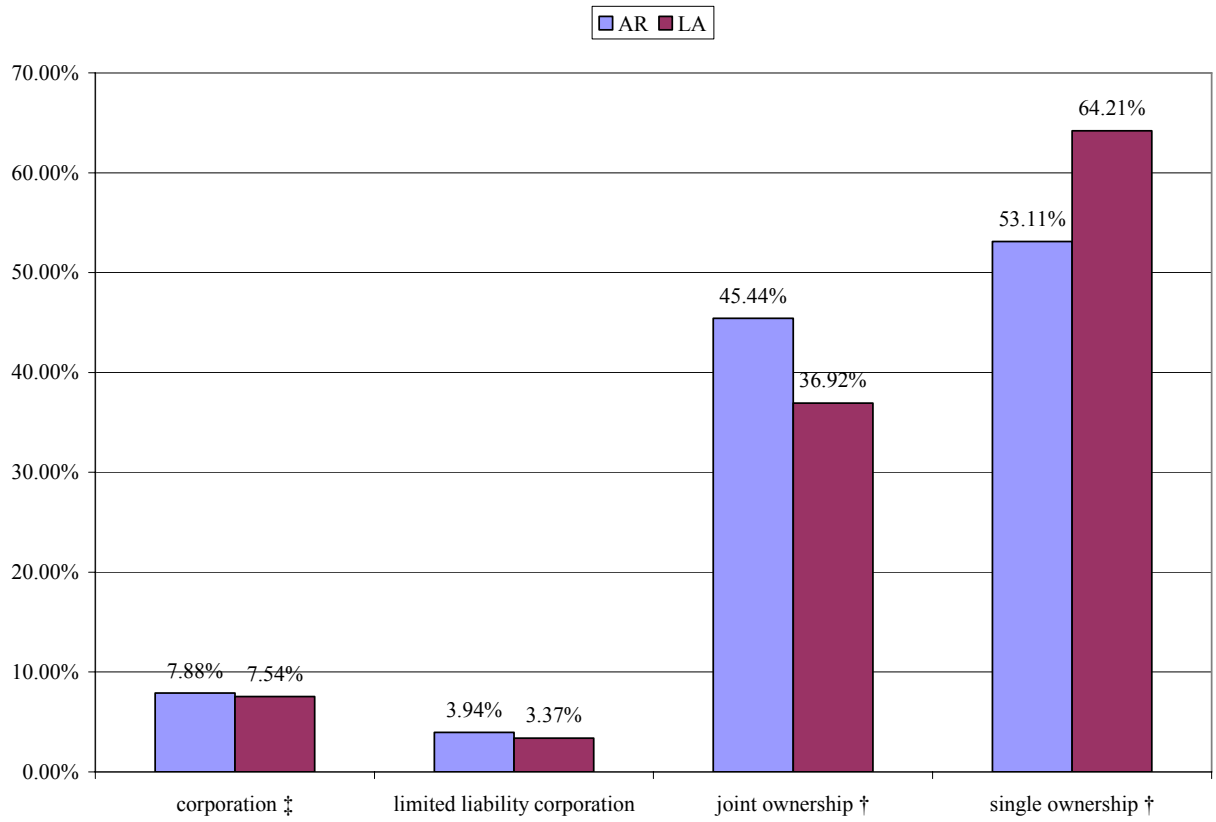

Figure 5.18. Question 42. How is the ownership of your land organized? (n=1105) (AR n=482) (LA n=623) (Showing percentage of respondents selecting each category) († and ‡ indicates statistically significant differences between mean values at the 1% and 5% levels)

Very few respondents indicated that they had acquired land through marriage or other means. Respondents that selected other indicated that the land was gifted to them.

More Arkansas landowners (81.7%, n = 485) indicated they used at least some of their land for agricultural production of row crops as compared with Louisiana landowners (57.4%, n = 631) which was significantly different at the 1% level of significance. The types of agricultural row crops historically produced on land owned by survey respondents varied by state and the majority were significantly different. (Figure 5.20).

Of the Arkansas respondents the top three most common row crops were soybeans (89.5%), wheat (63%), and rice (59.3%). Among Louisiana respondents the most common row crops were cotton (79.4%), soybeans (69%), and corn (67.9%). Both Arkansas and Louisiana

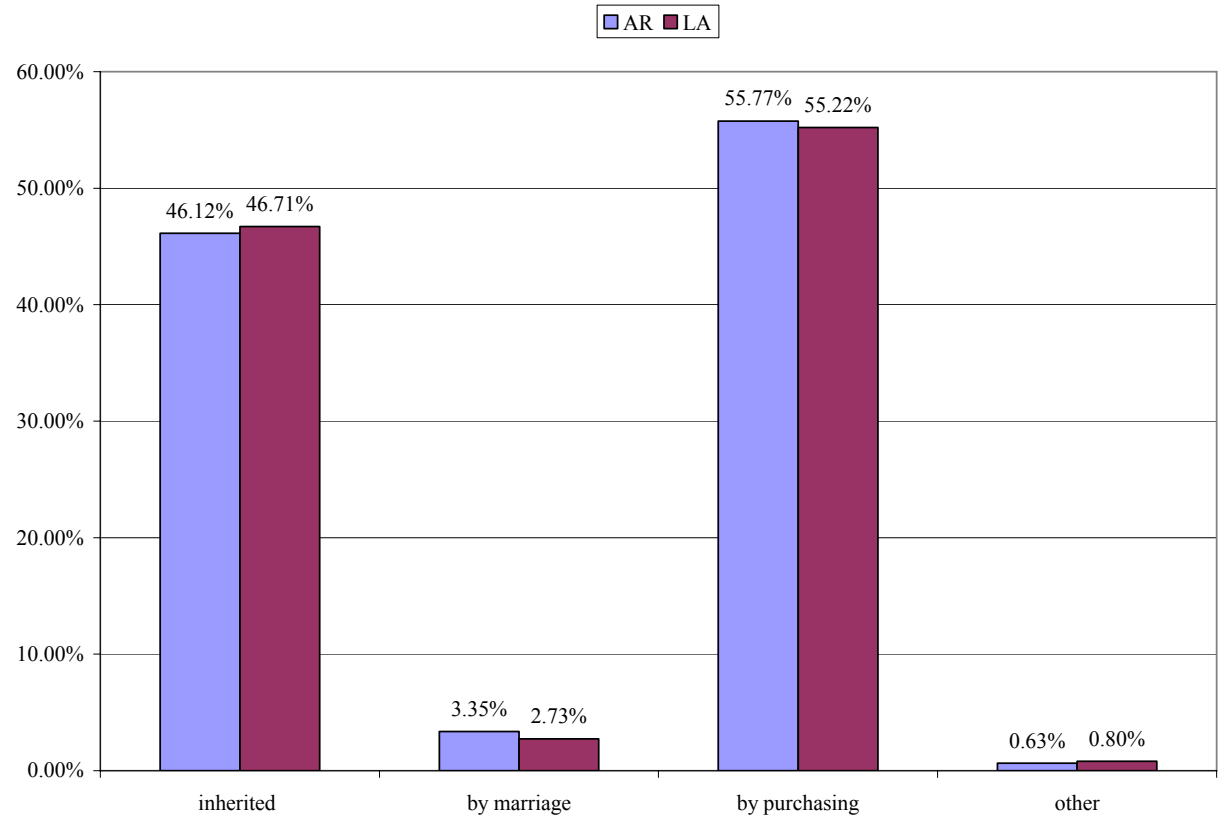

Figure 5.19. Question 43. How did you acquire the majority of you non residence, non commercial land? (n=1100) (AR n=477) (LA n=623) (Showing percentage of respondents selecting each category)

respondents indicated that they had leased at least some of their land for agricultural uses with respondents from both states indicating at similar affirmative rates at 66.8% for Arkansas (n = 482) and 67.4% for Louisiana (n = 632).

Landowners were asked to indicate if they owned land for any number of specific reasons. They were asked to select any that applied to them and indicate if they owned land for any other reasons not listed (Figure 5.21). The most common reasons for owning land given by Arkansas respondents were leasing to others (36.2%), to provide a place for wildlife (29.1%), and for personal recreation (23.2%).

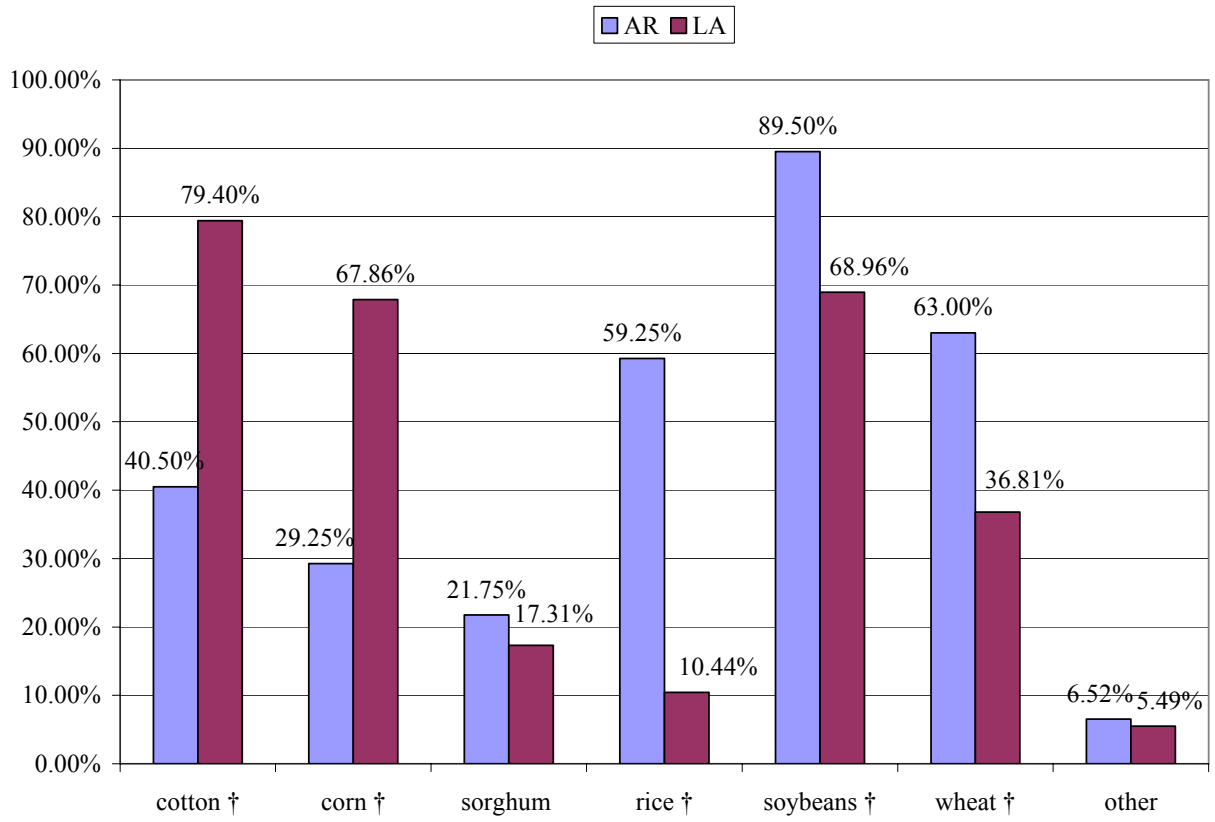

Figure 5.20. Question 45. Which of the following agricultural crops are historically produced on your land? (n=764) (AR n=400) (LA n=364) (Showing percentage of respondents selecting each category) († indicates statistically significant differences between mean values at the 1% level)

Louisiana respondents indicated that they owned land to provide a place for wildlife (32.9%), for timber production (31.4%), and for leasing to others (29.8%). Some of the most common reasons that were listed by respondents for the other category were farming and to provide a source of income. The least common reason selected for owning land was the same for both Arkansas and Louisiana respondents which was to provide recreational access for others as indicated 4.96% and 4.3% of Arkansas and Louisiana respondents, respectively.

5.3. Cross-Reference Analysis

A cross-reference analysis was used to examine possible relationships between various categorical variables. This analysis utilized the chi-square test to determine if a statistically significant relationship exists between categorical variables (Appendix J).

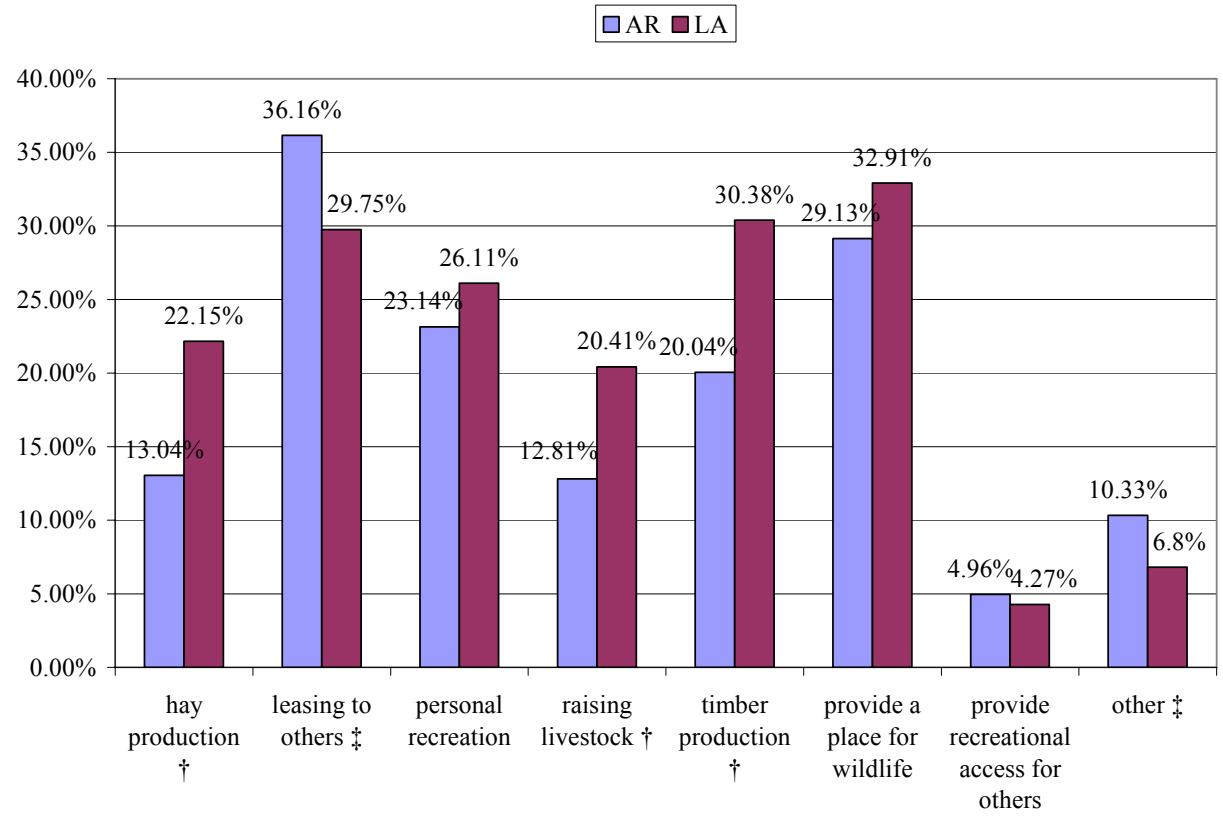

Figure 5.21. Question 47. Do you own land for any of the following reasons? (n=1116) (AR n=484) (LA n=632) (Showing percentage of respondents selecting each category) († and ‡ indicates statistically significant differences between mean values at the 1% and 5% levels, respectively)

As noted in the descriptive analysis 14.2% and 14.1% of Arkansas and Louisiana landowners indicated that they would be willing to allow fee-based recreation. Additionally, if the recreational use statue were modified the percentage of Arkansas and Louisiana landowners willing to allow fee-based recreation was 20.62% and 23.9%, respectively. The decision to allow fee-based recreation could be associated with a number of possible factors. Associations between the decision to allow recreation by Arkansas landowners under the current recreational use statue and other categorical variables was examined (Table 5.2)

Results indicate failure to reject the null hypothesis of no association between the decision to

Table 5.2. A summary of chi-square tests for landowners that would allow recreation under Arkansas' current Recreational Use Statute cross-referenced with other variables.

Variables	Obs.	DF	Chi-square	Probability	
Landowners that would allow Recreation under Arkansas' current Recreational Use Statute by:					
Possible to obtain a written agreement that would protect me from liability.	478	4	8.5809	0.072	*
If liability concerns eased, much more likely to allow recreation	477	4	63.0448	0.000	†
Liability insurance is available for landowners who charge a fee for recreational access.	480	1	7.1409	0.008	†
Compared to other landowners, how would you characterize yourself regarding risk?	470	2	18.6269	0.000	†
Would you consider any of your land to be "marginal" for agricultural purposes?	484	1	16.5676	0.000	†
Have you ever worked with any of your adjacent or local landowners in any way?	482	1	4.5379	0.033	‡
Have you ever been involved with a cooperative?	482	1	8.4772	0.004	†
Have you ever enrolled land in a government conservation program?					
yes	478	1	14.0019	0.000	†
I don't know what these are	480	1	6.5338	0.011	‡
How is the ownership of your land organized?					
corporation	482	1	13.2099	0.000	†
limited liability corporation	482	1	23.6745	0.000	†
joint ownership	482	1	2.7515	0.097	*
single ownership	482	1	0.7635	0.382	
How did you acquire the majority of you non residential land?					
inherited	477	1	0.0463	0.830	
by marriage	477	1	0.0517	0.820	
by purchasing	477	1	3.8864	0.049	‡
other	477		0.5106	0.475	
Which best describes your annual household income?	387	9	23.2591	0.006	†

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level,

allow fee-based recreation and the following variables. There was an association with the belief that it was possible to obtain a written agreement that would protect landowners that were unsure or somewhat agree and the decision to allow fee-base recreation. The chi-square test suggested that there was a strong association with the decision to allow fee-base recreation and with the easing of liability concerns, risk preference and the ownership of marginal land and the decision to allow fee-base recreation. An association was also indicated if landowners had experience with cooperatives, working with adjacent landowners, having enrolled land in government

programs or being unfamiliar with such programs, and household income. Lastly, there was also an association with certain land ownership structures and the manner in which land was acquired.

Associations between the decision to allow recreation by Louisiana landowners under the current recreational use statue and other categorical variables was examined (Table 5.3)

Table 5.3. A summary of chi-square tests for landowners that would allow recreation under Louisiana's current Recreational Use Statute cross-referenced with other variables.

Variables	Obs.	DF	Chi-square	Probability	
Landowners that would allow Recreation under Arkansas' current Recreational Use Statute by:					
Possible to obtain a written agreement that would protect me from liability.	628	4	9.8203	0.044	‡
If liability concerns eased, much more likely to allow recreation	628	4	69.7133	0.000	†
Liability insurance is available for landowners who charge a fee for recreational access.	629	1	22.2772	0.000	†
Compared to other landowners, how would you characterize yourself regarding risk?	610	2	38.2884	0.000	†
Would you consider any of your land to be "marginal" for agricultural purposes?	632	1	12.3693	0.000	†
Have you ever worked with any of your adjacent or local landowners in any way?	629	1	6.0216	0.014	†
Have you ever been involved with a cooperative?	629	1	3.3484	0.067	*
Have you ever enrolled land in a government conservation program?					
yes	627	1	30.0472	0.000	†
I don't know what these are	626	1	0.4917	0.483	‡
Is your nearest tract of non-residential land adjacent to your primary residence?	613	1	6.5924	0.010	†
How is the ownership of your land organized?					
corporation	623	1	0.3344	0.953	
limited liability corporation	623	1	14.4884	0.000	†
joint ownership	623	1	1.4887	0.222	†
single ownership	623	1	1.5086	0.219	
How did you acquire the majority of you non residential land?					
inherited	623	1	0.3482	0.555	
by marriage	623	1	0.0907	0.763	
by purchasing	623	1	1.2506	0.263	†
other	623	1	0.8401	0.359	
Indicate your highest level of education attained.	559	6	13.3117	0.038	‡

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level,

Results indicate all of the same associations for Louisiana landowners under the current recreational use statue that were observed for Arkansas landowners with only two exceptions. For Louisiana landowners there is a strong association between allowing fee-based recreation and landowners' nearest tract of non-residential land being adjacent to their primary residence. Also, for Louisiana landowners, there is an association between education and the decision to allow fee-based recreation and not with income as was the case for Arkansas landowners.

To examine any possible association that may exist between the decision to allow fee-based recreation under a modified recreational use statute and other variables in the survey the chi-square test was conducted for both Arkansas and Louisiana respondents (Table 5.4 and 5.5).

Table 5.4. A summary of chi-square tests for landowners that would allow recreation under an amended Arkansas Recreational Use Statute cross-referenced with other variables.

Variables	Obs.	DF	Chi-square	Probability	
Landowners that would allow under an amended Louisiana Recreational Use Statute by:					
Possible to obtain a written agreement that would protect me from liability.	475	4	10.7278	0.030	‡
If liability concerns eased, much more likely to allow recreation	474	4	85.2645	0.000	†
Liability insurance is available for landowners who charge a fee for recreational access.	477	1	6.3556	0.012	†
Compared to other landowners, how would you characterized yourself regarding risk?	482	1	303.5195	0.000	†
Would you consider any of your land to be "marginal" for agricultural purposes?	481	1	21.6704	0.000	†
Would you be willing to let people pay you a fee to access your land for recreational purposes?	482	1	303.5195	0.000	†
Have you ever worked with any of your adjacent or local landowners in any way?	479	1	7.0909	0.008	†
Have you ever been involved with a cooperative?	479	1	14.2425	0.000	†
Have you ever enrolled land in a government conservation program?					
yes	475	1	13.8804	0.000	†
I don't know what these are	477	1	7.4096	0.006	†
How is the ownership of your land organized?					
corporation	479	1	10.4942	0.001	†

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table 5.4 (continued)

Variables	Obs.	DF	Chi-square	Probability	
limited liability corporation	479	1	17.3606	0.000	†
joint ownership	479	1	0.8961	0.344	
single ownership	479	1	0.0099	0.921	
Your gender (female = 1, male=0)	471	1	2.9383	0.087	*
Which best describes your annual household income?	385	9	19.4351	0.022	‡

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

There is a strong association between the decision to allow fee-based recreation by Louisiana landowners under the modified recreation use statute and the decision to allow it under the current use statute. All of the associations that exist for Louisiana landowners and the decision to allow fee-based recreation as noted previously remain, with one omission. There was no significant association with the belief that it was possible to obtain a written agreement that would protect landowners from liability.

Table 5.5. A summary of chi-square tests for landowners that would allow recreation under an amended Louisiana Recreational Use Statute cross-referenced with other variables.

Variables	Obs.	DF	Chi-square	Probability	
Landowners that would allow under an amended Louisiana Recreational Use Statute by:					
If liability concerns eased, much more likely to allow recreation	625	4	91.8746	0.000	†
Liability insurance is available for landowners who charge a fee for recreational access.	626	1	24.0223	0.000	†
Compared to other landowners, how would you characterize yourself regarding risk?	607	2	25.9469	0.000	†
Would you consider any of your land to be "marginal" for agricultural purposes?	629	1	18.3037	0.000	†
Would you be willing to let people pay you a fee to access your land for recreational purposes?	629	1	311.2199	0.000	†
Have you ever worked with any of your adjacent or local landowners in any way?	626	1	3.4915	0.062	*
Have you ever been involved with a cooperative?	626	1	3.5131	0.061	*
Have you ever enrolled land in a government conservation program?					
yes	624	1	34.6005	0.000	†
I don't know what these are	623	1	0.1516	0.697	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table 5.5 (continued)

Variables	Obs.	DF	Chi-square	Probability	
Is your nearest tract of non-residential land adjacent to your primary residence?	610	1	3.8484	0.050	‡
How is the ownership of your land organized?					
corporation	620	1	0.3684	0.544	
limited liability corporation	620	1	9.5681	0.002	†
joint ownership	620	1	0	0.995	
single ownership	620	1	1.1008	0.294	
How did you acquire the majority of you non residential land?					
inherited	620	1	0.704	0.401	
by marriage	620	1	0.3903	0.532	
by purchasing	620	1	2.6248	0.105	*
other	620	1	1.5946	0.207	
Indicate your highest level of education attained.	596	6	12.738	0.047	‡

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

5.4. First and Second Mailing Respondents

Independent sample t-tests was used to compare the mean responses of first and second mailing responses to see if there was a significant difference. T-tests were performed for both Arkansas and Louisiana respondents (Appendix J). Of particular interest are any differences in responses to the demographic questions. There were only four demographic questions that were significantly different between first and second mailings for Louisiana respondents. (Table 5.6).

Table 5.6. A summary of t-tests for differences between mean values of demographic variables for first and second mailings sent to Louisiana landowners.

	first mailings			second mailings					
Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
healthcare	438	0.0479	0.2139	178	0.0112	0.1057	2.1832	0.0294	‡
high school graduate	437	0.2632	0.4409	173	0.3815	0.4872	-2.8992	0.0039	†
graduate or professional degree	437	0.1968	0.3980	173	0.1272	0.3341	2.0343	0.0424	‡
$100K to $149.9K	373	0.1689	0.3752	136	0.1103	0.3144	1.6252	0.1047	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

For Arkansas respondents the number of differences in responses to the demographic questions that were significantly different between first and second mailings was higher (Table 5.7).

Table 5.7. A summary of t-tests for differences between mean values of demographic variables for first and second mailings sent to Arkansas landowners.

	first mailings			second mailings					
Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Your age in years	329	62.1155	13.7935	135	66.141	12.7807	-2.9155	0.0037	†
African American	334	0.0269	0.1622	134	0.0597	0.2378	-1.7138	0.0872	*
healthcare	336	0.0387	0.1931	136	0.0000	0.0000	2.3346	0.0200	‡
less than high school	336	0.0625	0.2424	135	0.1407	0.3490	-2.7709	0.0058	†
high school graduate	336	0.2262	0.4190	135	0.3407	0.4757	-2.5786	0.0102	†
bachelor degree	336	0.2798	0.4496	135	0.1481	0.3566	3.0386	0.0025	†
graduate or professional degree	336	0.1637	0.3705	135	0.0741	0.2629	2.5622	0.0107	†
less than $10K	290	0.0069	0.0829	105	0.0286	0.1674	-1.7042	0.0891	*
$15K to $24.9K	290	0.0862	0.2812	105	0.1810	0.3868	-2.6610	0.0081	†
$75K to $99.9K	290	0.1207	0.3263	105	0.0571	0.2332	1.8325	0.0676	*
$100K to $149.9K	290	0.2310	0.4222	105	0.1429	0.3516	1.9128	0.0565	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

5.5. Willingness to Accept and Transaction Cost

To improve the quality of the willingness to accept analysis, survey respondents were asked to gauge their certainty as to the value they indicated they would be willing to accept. If respondents indicated less than 80% certainty, they were asked to indicate a dollar value they would be at least 80% certain of accepting. The willingness to accept values for both contingent valuation questions in the survey instrument were adjusted to reflect values that respondents are at least 80% certain of accepting. Survey response for the willingness to accept questions had values that ranged from $5 to $10,000 per acre; however, values in the several thousand dollars were uncommon occurrences. Outliers were identified as values that were greater than the mean WTA value plus the two standard deviations.

It was hypothesized that an institutional change that reduced the liability to landowners willing to allow fee-based recreation would reduce the transaction cost associated with liability

borne by the landowner. The mean willingness to accept values were compared by state and by response category to examine if a hypothetical institutional change could reduce the transaction cost associated with fee-based recreation (Table 5.8).

Table 5.8. Willingness to accept (WTA) values by state and by variable indicating level of significance for difference between mean values by state and indicating change by variable.

	Louisiana			Arkansas				
Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value
Current RUS WTA	64	$107.98	$187.89	53	$97.36	$83.46	0.3815	0.7035
Amended RUS WTA	122	$91.58	$154.35	80	$115.91	$149.24	-1.1101	0.2683
Amended only RUS WTA	58	$61.74	$69.58	25	$160.20	$222.99	-3.0555	0.003 †
Change for Ammended		-$16.40	-$33.54		$18.55	$65.78		
Change for Ammended only		-$46.24	-$118.31		$62.84	$139.53		

† indicates significant differences between mean values at the 1% level

The change in mean willingness to accept if negative may be attributable to reduced transaction cost associated with liability mitigation that is achieved by an institutional change. The change was negative for Louisiana respondents; however, the change in willingness to accept was positive for Arkansas. A more telling indicator of possible reduced transaction costs is obtained by examining the change in willingness to accept for respondents willing to allowing fee-based recreation under both the current and modified recreational use statues (Table 5.9).

Table 5.9. Willingness to accept (WTA) values by state and by variable for respondents answering both of the WTA questions associated with the current and amended recreational use statute by state indicating level of significance for difference between mean values by state and indicating change by variable.

	Louisiana			Arkansas				
Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value
Current RUS WTA	63	$109.30	$189.10	53	$97.36	$83.46	0.426	0.6709
Amended RUS WTA	63	$104.63	$166.51	53	$98.87	$72.36	0.2227	0.8241
Change in WTA		-$4.67	-$22.59		$1.51	-$11.10		

The change in mean willingness to accept again is negative for Louisiana and positive for Arkansas; however, the change in standard deviation for Arkansas is negative.

5.6. Econometric Results

5.6.1. Variable Definitions

There are five variables that are of interest as dependent variables for this analysis. These include the yes/no decision to allow fee-based recreation under the current and modified recreational use statutes, the willingness to accept compensation to allow fee-based recreation under the current and modified recreational use statutes, and landowners' preferred management regime to manage for fee-based recreation.

ACCESSCUR is a dummy variable for the yes or no decision to allow fee-based recreation under the current recreational use statute. Respondents were asked "would you be willing to let people pay you a fee to access your land for recreational purposes?"

ACCESSAMEND is a dummy variable for the yes or no decision to allow fee-based recreation under the amended recreational use statute. Respondents were asked if they would allow fee-based recreation if the current law were changed to allow landowners to charge a fee and keep the liability protection afforded to landowners that allow use of their land for free.

WTACURRENT is a continuous variable for the open-ended willingness to accept question relating to the yes/no question to allow fee-based recreation under the current recreational use statute. Respondents were asked how much money per acre they would be willing to accept each year to allow someone to lease your land for recreational uses.

WTAAMENDED is a continuous variable for the open-ended willingness to accept question relating to the yes/no question to allow fee-based recreation under the amended recreational use statute. The question asked how much how much money per acre they would be willing to accept each year to allow someone to lease your land for recreational

uses if current law changed to allow landowners to charge a fee and avoid liability claims related to recreational use of their land.

MGTCHOICE is a categorical variable indicating the respondents preferred management choice for fee-based recreational use of their land. The choices were coded as 1 = independently, 2 = cooperatively, 3 = outfitter, and 4 = no choice for all respondents not willing to offer fee-based recreation.

The previously described dependent variables may be influenced by a number of possible explanatory or independent variables. These variables include categorical variables coded as dummy variables and continuous variables.

STATE is a dummy variable indicating if a respondent owns land in Louisiana or Arkansas. The variables are coded as 1 = Louisiana and 0 = Arkansas. The effect of state on the decision to allow fee-based recreation is unknown; however, it is possible that landowner views may differ by state.

PERSONALUSE is a dummy variable indicating if landowners or members of their household use their land for recreational purposes. It is hypothesized that landowners who use their land for personal recreational use would be less willing to lease their lands for recreation.

FRIENDSFAMILY is a dummy variable indicating if landowners allow individuals who are not part of their household to use their land for recreational purposes. A negative relationship is expected between use by FRIENDSFAMILY and the decision to allow fee-based recreation.

LEASEDREC is a dummy variable indicating if landowners have ever leased their land for recreational access or use. A positive relationship is expected between previous leasing of land for recreation and the decision to allow fee-based recreation.

LIABILITYCONCERN is a categorical variable for landowner concern regarding liability issues associated with allowing people on their land. Response options included strongly disagree, somewhat disagree, not sure, somewhat agree, and strongly agree. A negative relationship is expected with liability concern and the decision to allow fee-based recreation.

WRITTENAGREE is a categorical variable for landowner belief that it is possible to obtain a written agreement from anyone coming onto their land that would protect them from liability. Response options included strongly disagree, somewhat disagree, not sure, somewhat agree, and strongly agree. Landowners that believe that a written agreement protects them form liability may be more likely to allow fee-based recreation access.

CONCERNEASED is a categorical variable indicating how much more likely landowners would be willing to allow people to use their land for recreational purposes if their liability concerns were eased. Response options included strongly disagree, somewhat disagree, not sure, somewhat agree, and strongly agree. A negative relationship is expected between the decision to allow fee-based recreation and disagreeing with liability concerns eased.

NOTRESSPASS is a dummy variable indicating whether landowners are sure or unsure about state law dealing with the posting of land with "no trespassing" signs. Perhaps landowners that are more sure of the legal issues associated land access would be more likely to allow fee-based recreational access.

RUSPROTECTS is a dummy variable indicating whether landowners are sure or unsure about state recreational use statute. A negative relationship is expected between being unsure about the recreational use statute and the decision to allow fee-based recreational access.

INSURACEKNOW is a dummy variable indicating whether landowners are sure or unsure about the availability of commercial liability insurance for private landowners who charge a fee for recreational use of their land. A negative relationship is expected between being unsure and the decision to allow fee-based recreational access.

RISKPREFERENCE is a categorical variable for landowner risk preference. Respondents were asked to characterize themselves regarding risk in their financial decisions as compared to other landowners they know. Response options included tend to take to take on substantial levels, tend to avoid, neither seek nor avoid risk in my financial decisions. A negative relationship is expected between being risk averse and the decision to allow fee-based recreational access.

MARGINALLAND is a dummy variable for ownership of land that is marginal for agricultural purposes. It is hypothesized that owners of marginal land would be more likely to allow fee-based recreational access.

MARGINALACRES is a continuous variable for the number of acres that are marginal for agricultural purposes. It is hypothesized that owners of larger amounts marginal land would be more likely to allow fee-based recreational access.

LANDOWNERCOOPER is a dummy variable indicating if respondents have ever cooperated or worked with any of their adjacent or local landowners in any way. A positive effect is expected between the choice of using a cooperative form of fee-based recreational management and past cooperation with local landowners.

COOPERATIVE is a dummy variable indicating if landowners have ever been involved with a cooperative. A positive effect is expected between the choice of using a cooperative

form of fee-based recreational management and past involvement with agricultural cooperatives.

CONSERVATION is a dummy variable indicating if landowners have ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program. A positive effect is expected between the decision to allow fee-based recreational access and involvement in alternative land application such as land conservation programs.

TRACTS is a continuous variable for the number of separate tracts of non-residential land that is owned. A positive effect is expected between the number tracts owned and the decision to allow fee-based recreation.

ADJACENT is a dummy variable indicating if a respondent's nearest tract of non residential land is adjacent to their primary residence. A negative effect is expected between land being adjacent to a primary residence and the willingness to allow fee-based recreation.

DISTANCE is a continuous variable for the number of miles the landowners' primary residence is from their nearest tract of land not adjacent to their primary residence. A positive effect is expected between distance from home and the decision to allow fee-based recreation.

TOTALACREAGE is a continuous variable for the total number of all tracts of land. Larger landowners may be more willing to generate revenue to help offset property taxes. Thus, a positive effect is expected between total acres and allowing fee-based recreation.

YEARSOWNERSHIP is a continuous variable for the number of years respondents have been a land owner. A negative effect is expected between allowing fee-based recreation and the

length of time an individual has been a landowner given that longer tenured landowners may be less willing to adopt new practices.

OWNERSHIP is a categorical variable indicating how the ownership of respondents land is organized. Response options included land ownership organized as a corporation, limited liability corporation, joint ownership, and single ownership. Certain ownership categories of single ownership is expected to have a positive effect while the joint ownership is expected to be negative reflecting multiple parities to decision making.

ACQUIRE is a categorical variable indicating how landowners acquired the majority of their non-residential land. Response options included acquiring land by inheritance, marriage, purchasing, and by other means that the respondent could list. Inheritance is expected to have a negative effect and purchasing a positive effect each reflect less or more involvement with land interest.

ROWCROPS is a dummy variable indicating if land is used for agricultural production of row crops. A negative relationship is expected between land allowing fee-based recreation and having productive land.

COTTON is a dummy variable indicating if land is used for cotton production. A chi-square test suggested that there was a strong association with the decision to allow fee-based recreation and with cotton production.

LEASEDFORAG is a dummy variable indicating if land has ever been leased for agricultural uses. The effect may be negative since landowners are already generating revenue from their land through agricultural applications.

HAYLAND is a dummy variable indicating if land is owned for hay production. It is expected to have a negative effect on allowing fee-based recreation since the land is used for a specific purpose of producing hay.

LIVESTOCKLAND is a dummy variable indicating if land is owned for raising livestock. A negative effect is expected since most recreational activities involve hunting and firearms near livestock may be undesirable.

GENDER is a dummy variable indicating if the respondent is male or female. The effect of gender is unknown.

AGE is a continuous variable for age by number of years. The effect of age is unknown; however, older landowners may be less willing to adopt new practices.

ETHNIC is a dummy variable indicating landowners' ethnic background. The effect of ethnicity is unknown.

OCUPATION is a dummy variable indicating if landowners' primary occupation is farming. It is expected that farmers may be less willing to allow recreation is since they already use their land to generate revenue.

EDUCATION is a categorical variable indicating respondents' level of education. Response options range from less than high school to graduate level education. It is expected that better educated respondents may be more willing to allow fee-based recreation following an institutional change.

INCOME is a categorical variable indicating respondents' level of annual household income. Response options range from less than $10,000 to $200,000 or more. The effect of income is unknown.

5.6.2. Description of Variables

The previously defined variables were used in a number of econometric models including probits, tobits, and multinomial logits. These dependent and independent variables are further described and their mean and standard deviation values are presented in table 5.10.

5.6.3. Probit Model for Decision to Allow Access

Probit models were used to analyze the probability for the yes/no decision to allow fee-based recreation under both the current and a modified recreational use statutes for Louisiana, Arkansas, and for both regions combined. Probit parameter estimates and marginal effects for the decision to allow fee-based recreational access under the current recreational use statue for Arkansas and Louisiana landowners are presented in table 5.11. Results indicate that the estimated coefficient for STATE is statistically significant at the 0.05 level and suggests that the decision to allow fee-based recreation is influenced by location of landownership. The marginal effect for STATE implies that Louisiana landowners have a 4% lower probability of allowing fee-based recreation. The two variables indicating landowner disagreement (CONCERNEASED2) or agreement (CONCERNEASED3) with the statement "If my liability concerns were eased I would be more likely to allow recreational use of my land" are statistically significant at the 0.01 level and are negative and positive in sign, respectively. Being unsure about the availability of commercial liability insurance (INSURACEKNOW) has a negative effect on the decision to allow fee-based recreation, is significant at the 0.01 level, and landowners induce a decrease in the event probability of allowing fee based recreation by 0.07. The two dummy variables for risk preference given by RISKPREFERENCE1, indicating risk seeking behavior, and RISKPREFERENCE2, indicating risk averse behavior, have both a

Table 5.10. Description of variables.

Variable	Description	Combined		Arkansas		Louisiana	
Dependent Variable		**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
ACCESSCURRENT	Access allow under current RUS (1=yes)	0.141	0.349	0.142	0.350	0.141	0.348
WTACURRENT	Willingness to accept allow under current RUS	12.427	82.725	10.485	40.666	13.918	104.066
ACCESSAMEND	Access allow under amended RUS (1=yes)	0.221	0.415	0.201	0.401	0.237	0.426
WTAAMENDED	Willingness to accept allow under amended RUS	18.098	82.997	16.625	64.990	19.229	94.555
MGTCHOICE	Management choice (1=independently, 2=cooperatively, 3=outfitter)	1.676	0.853	1.691	0.882	1.667	0.836
Independent Variable							
STATE	Landownership in state (1=Louisiana, 0=Arkansas)	0.566	0.496	0	0	1	0
PERSONALUSE	Land is used for personal recreational use (1=yes)	0.574	0.495	0.557	0.497	0.588	0.493
FRIENDSFAMILY	Land is used for recreation by family or friends (1=yes)	0.560	0.497	0.557	0.497	0.563	0.496
LEASEDREC	Land has been leased for recreational use (1=yes)	0.114	0.318	0.115	0.320	0.112	0.316
LIABILITYCONCERN2	Liability concern over recreational use, disagree (1=yes)	0.106	0.308	0.105	0.307	0.106	0.308
LIABILITYCONCERN1	Liability concern over recreational use, not sure (1=yes)	0.111	0.314	0.138	0.345	0.090	0.287
LIABILITYCONCERN3	Liability concern over recreational use, agree (1=yes)	0.775	0.418	0.744	0.437	0.799	0.401
WRITTENAGREE2	Written agreement protects from liability, disagree (1=yes)	0.254	0.436	0.260	0.439	0.250	0.433
WRITTENAGREE1	Written agreement protects from liability, not sure (1=yes)	0.405	0.491	0.410	0.492	0.400	0.490
WRITTENAGREE3	Written agreement protects from liability, agree (1=yes)	0.332	0.471	0.318	0.466	0.343	0.475
CONCERNEASE2	Liability concern eased, allow recreation, disagree (1=yes)	0.418	0.493	0.435	0.496	0.405	0.491
CONCERNEASE1	Liability concern eased, allow recreation, not sure (1=yes)	0.250	0.433	0.289	0.454	0.220	0.415
CONCERNEASE3	Liability concern eased, allow recreation, agree (1=yes)	0.321	0.467	0.260	0.439	0.369	0.483
NOTRESSPASS	Protection from liability requires me to post, unsure (1=yes)	0.507	0.500	0.562	0.497	0.464	0.499
RUSPROTECTS	Protected from recreational liability if free, unsure (1=yes)	0.693	0.461	0.735	0.442	0.661	0.474
INSURACEKNOW	Insurance exists for allowing recreation, unsure (1=yes)	0.638	0.481	0.663	0.473	0.618	0.486
RISKPREFERENCE1	substantial levels of risk in my financial decisions (1=yes)	0.072	0.259	0.071	0.258	0.073	0.260
RISKPREFERENCE2	I tend to avoid risk in my financial decisions (1=yes)	0.740	0.439	0.721	0.449	0.754	0.431
RISKPREFERENCE3	I neither seek nor avoid risk in financial decisions (1=yes)	0.174	0.380	0.195	0.397	0.158	0.365
MARGINALLAND	Any land "marginal" for agricultural purposes? (1=yes)	0.427	0.495	0.401	0.491	0.446	0.497
MARGINALACRES	Number of acres marginal for agricultural purposes	44.870	123.947	43.029	119.057	46.283	127.649
LANDOWNERCOOOPER	Ever worked with your adjacent or local landowners (1=yes)	0.269	0.444	0.284	0.452	0.258	0.438
COOPERATIVE	Ever been involved with a cooperative (1=yes)	0.216	0.412	0.313	0.464	0.141	0.349
CONSERVATION	Enrolled land in a government conservation program (1=yes)	0.395	0.489	0.326	0.469	0.447	0.498

Table 5.10. (continued)

Variable	Description	Combined		Arkansas		Louisiana	
Independent Variable		**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
TRACTS	Number of separate tracts of non-residential land	2.329	2.991	2.675	3.855	2.066	2.077
ADJACENT	Non-residential land adjacent to primary residence (1=yes)	0.394	0.489	0.345	0.476	0.432	0.496
DISTANCE	Number of miles to nearest tract of land	77.505	245.964	86.809	255.732	70.319	238.110
TOTALACRE	Total acreage of all tracts of land	371.597	739.426	432.069	853.537	324.809	634.085
YEARSOWNERSHIP	Number of years you have been a land owner	27.698	26.791	27.298	31.340	28.010	22.637
OWNERSHIP1	Ownership of land organized as corporation (y=1)	0.020	0.140	0.031	0.174	0.011	0.105
OWNERSHIP2	Ownership of land organized as LLC (y=1)	0.036	0.187	0.039	0.195	0.034	0.181
OWNERSHIP3	Ownership of land organized as joint ownership (y=1)	0.406	0.491	0.454	0.498	0.369	0.483
OWNERSHIP4	Ownership of land organized as single ownership (y=1)	0.594	0.491	0.531	0.500	0.642	0.480
ACQUIRE 1	Acquire non-residential land by inheritance (y=1)	0.465	0.499	0.461	0.499	0.467	0.499
ACQUIRE 2	Acquire non-residential land by marriage (y=1)	0.030	0.171	0.034	0.180	0.027	0.163
ACQUIRE 3	Acquire non-residential land by purchasing (y=1)	0.555	0.497	0.558	0.497	0.552	0.498
ACQUIRE 4	Acquire majority of non-residential land by other (y=1)	0.007	0.085	0.006	0.079	0.008	0.089
ROWCROPS	land for agricultural production of row crops (y=1)	0.679	0.467	0.816	0.387	0.574	0.495
COTTON	land for cotton production (y=1)	0.403	0.490	0.334	0.472	0.457	0.499
LEASEDFORAG	leased any of your land for agricultural uses	0.671	0.470	0.668	0.471	0.674	0.469
HAYLAND	Own land for hay production (y=1)	0.182	0.386	0.130	0.337	0.222	0.416
LIVESTOCKLAND	Own land for raising livestock (y=1)	0.171	0.377	0.128	0.335	0.204	0.403
GENDER	Gender (female=1)	0.323	0.468	0.289	0.454	0.349	0.477
AGE	Age in years	62.487	13.656	63.287	13.617	61.872	13.666
ETHNIC	Ethnic background: Caucasian (1=yes)	0.942	0.234	0.938	0.241	0.945	0.229
OCUPATION1	Primary occupation: farming (1=yes)	0.174	0.379	0.218	0.413	0.140	0.347
OCUPATION2	Primary occupation: business (1=yes)	0.108	0.311	0.117	0.321	0.102	0.303
OCUPATION3	Primary occupation: self-employed (1=yes)	0.095	0.293	0.076	0.266	0.109	0.312
EDUCATION1	Education: high school graduate or less (1=yes)	0.339	0.474	0.334	0.472	0.343	0.475
EDUCATION2	Education: some college to college graduate (1=yes)	0.461	0.499	0.495	0.500	0.435	0.496
EDUCATION3	Education: graduate or professional degree (1=yes)	0.155	0.362	0.134	0.341	0.171	0.377
INCOME1	Less than $25K (1=yes)	0.113	0.316	0.107	0.310	0.117	0.322
INCOME2	Income $25K to $75K (1=yes)	0.359	0.480	0.344	0.476	0.370	0.483
INCOME3	Income $75K or more (1=yes)	0.328	0.470	0.346	0.476	0.313	0.464

Table 5.11. Probit estimates for the decision to allow fee-based recreational access under the current recreational use statute for Arkansas and Louisiana landowners.

ACCESSCUR	Coef.	Std. Err.	dF/dx	Std. Err.	z	P>|z|
STATE	**-0.32647‡**	0.14628	-0.04970	0.02304	-2.230	0.026
PERSONALUSE	-0.01882	0.16069	-0.00277	0.02373	-0.120	0.907
FRIENDSFAMILY	-0.09596	0.15733	-0.01427	0.02368	-0.610	0.542
LEASEDREC	0.00706	0.19808	0.00104	0.02935	0.040	0.972
LIABILITYCONCERN2	-0.34230	0.31268	-0.04144	0.03050	-1.090	0.274
LIABILITYCONCERN3	-0.10293	0.22537	-0.01579	0.03602	-0.460	0.648
WRITTENAGREE2	0.13159	0.17133	0.02023	0.02746	0.770	0.442
WRITTENAGREE3	0.19921	0.14615	0.03080	0.02372	1.360	0.173
CONCERNEASED2	**-0.60773†**	0.19027	-0.08439	0.02422	-3.190	0.001
CONCERNEASED3	**0.68004†**	0.15657	0.11756	0.03207	4.340	0.000
NOTRESSPASS	**0.29411‡**	0.13860	0.04343	0.02081	2.120	0.034
RUSPROTECTS	0.11914	0.15050	0.01698	0.02075	0.790	0.429
INSURACEKNOW	**-0.41604†**	0.13699	-0.06624	0.02344	-3.040	0.002
RISKPREFERENCE1	**0.50374‡**	0.23380	0.09863	0.05840	2.150	0.031
RISKPREFERENCE2	**-0.39239†**	0.15956	-0.06605	0.03009	-2.460	0.014
MARGINALLAND	**0.35164†**	0.14018	0.05358	0.02208	2.510	0.012
MARGINALACRES	0.00058	0.00047	0.00009	0.00007	1.240	0.216
LANDOWNERCOOPER	0.11971	0.13973	0.01828	0.02217	0.860	0.392
COOPERATIVE	0.03757	0.15305	0.00561	0.02318	0.250	0.806
CONSERVATION	**0.40186†**	0.13354	0.06270	0.02207	3.010	0.003
TRACTS	0.01623	0.02155	0.00239	0.00319	0.750	0.451
ADJACENT	-0.15803	0.13387	-0.02273	0.01894	-1.180	0.238
DISTANCE	-0.00012	0.00028	-0.00002	0.00004	-0.450	0.655
TOTALACREAGE	0.00011	0.00009	0.00002	0.00001	1.180	0.239
YEARSOWNERSHIP	0.00275	0.00248	0.00040	0.00037	1.110	0.267
OWNERSHIP1	0.49090	0.38641	0.09826	0.09900	1.270	0.204
OWNERSHIP2	**0.45450***	0.28048	0.08828	0.06899	1.620	0.105
OWNERSHIP3	**-0.22864***	0.13100	-0.03253	0.01807	-1.750	0.081
ACQUIRE1	**0.38950***	0.21407	0.05902	0.03361	1.820	0.069
ACQUIRE2	-0.01948	0.39332	-0.00283	0.05636	-0.050	0.961
ACQUIRE3	0.25324	0.22062	0.03651	0.03129	1.150	0.251
ROWCROPS	-0.14531	0.19450	-0.02220	0.03088	-0.750	0.455
COTTON	0.24722	0.16328	0.03749	0.02567	1.510	0.130
LEASEDFORAG	-0.01885	0.14976	-0.00279	0.02223	-0.130	0.900
HAYLAND	-0.07261	0.20294	-0.01034	0.02798	-0.360	0.721
LIVESTOCKLAND	-0.13575	0.20261	-0.01879	0.02641	-0.670	0.503
GENDER	-0.18909	0.15062	-0.02647	0.02015	-1.260	0.209
AGE	-0.00586	0.00486	-0.00086	0.00071	-1.200	0.228
ETHNIC	0.02718	0.27710	0.00393	0.03937	0.100	0.922
OCUPATION1	-0.13797	0.19001	-0.01902	0.02457	-0.730	0.468
OCUPATION2	-0.24286	0.21720	-0.03125	0.02425	-1.120	0.263
OCUPATION3	0.09783	0.20545	0.01522	0.03374	0.480	0.634
EDUCATION1	0.20019	0.14892	0.03090	0.02414	1.340	0.179
EDUCATION3	**0.36201‡**	0.17588	0.06308	0.03542	2.060	0.040
INCOME1	**-0.85401†**	0.28161	-0.07835	0.01569	-3.030	0.002
INCOME3	-0.20061	0.13768	-0.02834	0.01876	-1.460	0.145
CONSTANT	**-1.04126‡**	0.49849			-2.090	0.037

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 938; Chi-square = 56.66; Log-L= -278.93375; Prob>chi2 = 0.0000; Pseudo R-squared: 0.315

positive and negative effect on landowner access decisions and both are significant at the 0.05 and 0.01 levels, respectively. The coefficient for MARGINALLAND is positive in sign and significant at the 0.01 level indicating that ownership of marginal land has a positive effect on the probability of allowing fee-based recreation. Marginal landowners have a 5.4% higher probability of allowing fee-based recreation. Ownership of the land as a limited liability corporation is positive in sign and significant at the 0.10 level, while joint ownership is negative in sign and significant at the 0.10 level indicating that fee-based recreation is more likely if land is owned as a LLC and less likely if land is owned jointly as compared with single ownership of land. Land acquired through inheritance has a positive effect and is significant at the 0.10 level. EDUCATION3 has a positive relationship with the probability of allowing fee-based recreation while INCOME1 has a negative relationship.

Probit parameter estimates for the decision to allow fee-based recreational access under the current recreational use statue for Louisiana landowners are presented in table 5.12. The dummy variables indicating if landowners disagree or agree with allowing recreational use of their land if their liability concerns were eased are significant at the 0.05 level and are negative and positive in sign for disagree and agree, respectively. The variable representing if landowners are unsure about the availability of commercial liability insurance (INSURACEKNOW) is negative in sign and significant at the 0.10 level. The marginal effect implies that landowners that are unsure about the availability of commercial liability insurance have a 5% lower probability of allowing fee-based recreation. The variable for landowners indicating that they are risk averse (RISKPREFERENCE2) has a negative effect on the probability of allowing fee-based recreation and is significant at the 0.01 level. MARGINALLAND and CONSERVATION are both positive in sign and significant at the 0.05 level indicating positive effect on the

Table 5.12. Probit estimates for the decision to allow fee-based recreational access under the current recreational use statute for Louisiana landowners.

ACCESSCUR	Coef.	Std. Err.	dF/dx	Std. Err.	z	P>|z|
PERSONALUSE	-0.093507	0.221599	-0.012353	0.029679	-0.42	0.673
FRIENDSFAMILY	0.080768	0.213254	0.010409	0.027174	0.38	0.705
LEASEDREC	0.023169	0.274595	0.003055	0.036689	0.08	0.933
LIABILITYCONCERN2	-0.388816	0.476823	-0.040141	0.038075	-0.82	0.415
LIABILITYCONCERN3	0.078379	0.375110	0.009839	0.045367	0.21	0.834
WRITTENAGREE2	0.360093	0.237933	0.053686	0.040244	1.51	0.13
WRITTENAGREE3	0.311215	0.203367	0.043767	0.031002	1.53	0.126
CONCERNEASED2	**-0.67924‡**	0.284530	-0.081479	0.030880	-2.39	0.017
CONCERNEASED3	**0.486406‡**	0.226416	0.068780	0.035831	2.15	0.032
NOTRESSPASS	0.283615	0.190248	0.037708	0.026279	1.49	0.136
RUSPROTECTS	0.032826	0.201386	0.004242	0.025799	0.16	0.871
INSURACEKNOW	**-0.33424***	0.197762	-0.045890	0.028806	-1.69	0.091
RISKPREFERENCE1	0.301500	0.333392	0.047304	0.062010	0.9	0.366
RISKPREFERENCE2	**-0.77701†**	0.225991	-0.135883	0.049129	-3.44	0.001
MARGINALLAND	**0.477448‡**	0.195757	0.064758	0.027421	2.44	0.015
MARGINALACRES	-0.000241	0.000665	-0.000031	0.000086	-0.36	0.717
LANDOWNERCOOPER	0.226347	0.198820	0.031968	0.030538	1.14	0.255
COOPERATIVE	-0.146936	0.247039	-0.017667	0.027417	-0.59	0.552
CONSERVATION	**0.416684‡**	0.190247	0.055903	0.026633	2.19	0.029
TRACTS	-0.025994	0.047352	-0.003384	0.006149	-0.55	0.583
ADJACENT	**-0.42865‡**	0.191252	-0.053972	0.023972	-2.24	0.025
DISTANCE	-0.000423	0.000377	-0.000055	0.000049	-1.12	0.262
TOTALACREAGE	**0.000294***	0.000155	0.000038	0.000020	1.89	0.058
YEARSOWNERSHIP	0.000929	0.004335	0.000121	0.000564	0.21	0.83
OWNERSHIP1	-0.226444	0.851523	-0.024909	0.077808	-0.27	0.79
OWNERSHIP2	0.189810	0.389312	0.028124	0.065314	0.49	0.626
OWNERSHIP3	0.007583	0.185743	0.000989	0.024264	0.04	0.967
ACQUIRE1	0.252032	0.303739	0.033418	0.041007	0.83	0.407
ACQUIRE2	0.160295	0.554645	0.023336	0.089610	0.29	0.773
ACQUIRE3	0.192070	0.310752	0.024613	0.039156	0.62	0.537
ROWCROPS	-0.415796	0.325248	-0.057451	0.047964	-1.28	0.201
COTTON	0.470485	0.313448	0.063031	0.043931	1.5	0.133
LEASEDFORAG	-0.021367	0.207201	-0.002797	0.027263	-0.1	0.918
HAYLAND	-0.258995	0.251751	-0.030387	0.026630	-1.03	0.304
LIVESTOCKLAND	0.018172	0.254865	0.002384	0.033685	0.07	0.943
GENDER	-0.167212	0.207152	-0.020912	0.024983	-0.81	0.42
AGE	-0.000861	0.007308	-0.000112	0.000951	-0.12	0.906
ETHNIC	-0.148494	0.372592	-0.021332	0.058824	-0.4	0.69
OCUPATION1	0.100250	0.289564	0.013777	0.041891	0.35	0.729
OCUPATION2	0.269369	0.288588	0.040879	0.050373	0.93	0.351
OCUPATION3	**0.466254***	0.264091	0.079097	0.056177	1.77	0.077
EDUCATION1	0.175392	0.205421	0.023843	0.029140	0.85	0.393
EDUCATION3	**0.464431‡**	0.242182	0.075453	0.047225	1.92	0.055
INCOME1	**-0.65335***	0.366203	-0.058458	0.021959	-1.78	0.074
INCOME3	**-0.35624***	0.199143	-0.042628	0.022113	-1.79	0.074
CONSTANT	-1.253742	0.787720			-1.59	0.111

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 531; Chi-square = 145.80; Log-L= -153.88486; Prob>chi2 = 0.0000; Pseudo R-squared: 0.3215

probability of allowing recreational use of their land if they own marginal agricultural land or have land in a government conservation program. The probability of allowing fee-based

recreation is 6.5% higher for marginal landowners and 5.5% higher for landowners participating in a government conservation program. Having land adjacent to their primary residence has a negative effect and is significant at the 0.05 level, while owning more land has a positive effect and is significant at the 0.10 level. The estimated coefficient for OCUPATION3 (i.e., self-employed) is positive and significant at the 0.10 level possibly indicating that entrepreneurial minded landowners are more likely to allow fee-based recreational use of their land. EDUCATION3 has a positive effect on the probability of allowing fee-based recreation and is significant at the 0.05 level. The coefficients for INCOME1 and INCOME3 are both significantly different from zero at the 0.10 level and are negative in sign indicating that landowners from these two income groups are less likely to allow fee-based recreation as compared with landowners from the middle income group.

Probit parameter estimates and marginal effects for the decision to allow fee-based recreational access under the current recreational use statue for Arkansas landowners are presented in table 5.13. As noted in the previous two models the variables indicating if landowners disagree (CONCERNEASED2) or agree (CONCERNEASED3) with allowing recreational use of their land if their liability concerns could be eased has a negative effect for landowners that disagree and a positive effect if landowners agree and is significant that 0.05 and 0.01 levels, respectively. The parameter estimate for RUSPROTECTS is positive in sign while the estimate for INSURACEKNOW is negative and both are significantly different from zero at the 0.10 level of significant. For Arkansas landowners, being unsure about the recreational use statute has a positive effect on the probability of allowing fee-based recreation; however, being unsure about the availability of commercial liability insurance has a negative effect. The marginal effects for these two variables indicates that landowners that are unsure about the

Table 5.13. Probit estimates for the decision to allow fee-based recreational access under the current recreational use statute for Arkansas landowners.

ACCESSCUR	Coef.	Std. Err.	dF/dx	Std. Err.	z	P>|z|
PERSONALUSE	-0.18693	0.29227	-0.01904	0.03016	-0.640	0.522
FRIENDSFAMILY	-0.06757	0.29756	-0.00680	0.03036	-0.230	0.820
LEASEDREC	0.27050	0.35821	0.03206	0.04948	0.760	0.450
LIABILITYCONCERN2	-0.39129	0.53476	-0.03021	0.03098	-0.730	0.464
LIABILITYCONCERN3	-0.28569	0.34659	-0.03239	0.04407	-0.820	0.410
WRITTENAGREE2	-0.37280	0.32121	-0.03271	0.02539	-1.160	0.246
WRITTENAGREE3	0.29047	0.27932	0.03198	0.03375	1.040	0.298
CONCERNEASED2	**-0.64442‡**	0.32246	-0.06225	0.03126	-2.000	0.046
CONCERNEASED3	**1.03316†**	0.28876	0.15743	0.06130	3.580	0.000
NOTRESSPASS	0.31480	0.24586	0.03085	0.02466	1.280	0.200
RUSPROTECTS	**0.50438***	0.30325	0.04166	0.02192	1.660	0.096
INSURACEKNOW	**-0.44726***	0.24180	-0.05104	0.03198	-1.850	0.064
RISKPREFERENCE1	**1.07982‡**	0.46969	0.21461	0.14284	2.300	0.022
RISKPREFERENCE2	0.17056	0.30538	0.01601	0.02698	0.560	0.576
MARGINALLAND	0.19269	0.25553	0.01984	0.02744	0.750	0.451
MARGINALACRES	**0.00222†**	0.00085	0.00022	0.00009	2.600	0.009
LANDOWNERCOOPER	0.05999	0.24863	0.00611	0.02593	0.240	0.809
COOPERATIVE	0.41159	0.26030	0.04667	0.03280	1.580	0.114
CONSERVATION	**0.70792†**	0.24075	0.08848	0.03771	2.940	0.003
TRACTS	0.06879	0.05366	0.00687	0.00553	1.280	0.200
ADJACENT	**0.44509***	0.24684	0.05024	0.03090	1.800	0.071
DISTANCE	0.00045	0.00041	0.00005	0.00004	1.100	0.271
TOTALACREAGE	-0.00003	0.00015	0.00000	0.00001	-0.180	0.856
YEARSOWNERSHIP	0.00285	0.00354	0.00029	0.00036	0.810	0.420
OWNERSHIP1	0.76289	0.63209	0.13135	0.16097	1.210	0.227
OWNERSHIP2	**0.97056***	0.51522	0.18730	0.15239	1.880	0.060
OWNERSHIP3	**-0.59174‡**	0.24433	-0.05801	0.02519	-2.420	0.015
ACQUIRE1	**0.72571***	0.43454	0.07948	0.05405	1.670	0.095
ACQUIRE2	-0.22100	0.73376	-0.01856	0.05089	-0.300	0.763
ACQUIRE3	0.47282	0.44385	0.04562	0.04257	1.070	0.287
ROWCROPS	-0.37447	0.35426	-0.04552	0.05124	-1.060	0.290
COTTON	0.32015	0.25445	0.03490	0.03001	1.260	0.208
LEASEDFORAG	-0.31633	0.28384	-0.03475	0.03410	-1.110	0.265
HAYLAND	**0.85481***	0.52537	0.13995	0.12060	1.630	0.104
LIVESTOCKLAND	**-1.32430‡**	0.56629	-0.06708	0.02172	-2.340	0.019
GENDER	-0.16568	0.27499	-0.01560	0.02472	-0.600	0.547
AGE	-0.01402	0.00900	-0.00140	0.00095	-1.560	0.119
ETHNIC	0.89552	0.66204	0.04726	0.01902	1.350	0.176
OCUPATION1	-0.43425	0.32519	-0.03553	0.02279	-1.340	0.182
OCUPATION2	**-1.23714†**	0.46631	-0.06118	0.01855	-2.650	0.008
OCUPATION3	-0.57195	0.44398	-0.03838	0.02027	-1.290	0.198
EDUCATION1	0.10882	0.27043	0.01123	0.02906	0.400	0.687
EDUCATION3	0.33253	0.31369	0.04045	0.04539	1.060	0.289
INCOME1	**-1.55317†**	0.60124	-0.06424	0.01914	-2.580	0.010
INCOME3	-0.04197	0.24120	-0.00416	0.02380	-0.170	0.862
CONSTANT	**-2.18883‡**	0.90368			-2.420	0.015

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 407; Chi-square = 166.00; Log-L= -97.397; Prob>chi2 = 0.0000; Pseudo R-squared: 0.4601

recreational use statute have a 4% higher probability of allowing fee-based recreation while landowners that are unsure about the availability of commercial liability insurance have a 5%

lower probability of allowing fee-based recreation. Landowners that consider themselves to be risk seekers are 21.5% more likely than risk neutral landowners to allow fee-based recreation as indicated by the marginal effect for RISKPREFERENCE1 which is significant at the 0.05 level. The parameter estimate for MARGINALLAND is positive and significant at the 0.01 level indicating a positive relationship with owning marginal land and allowing fee-based recreation. Land ownership that is organized as a limited liability corporation (OWNERSHIP2) has a positive effect and it significant at the 0.10 level; however joint ownership (OWNERSHIP3) has a significant effect at the 0.50 level and has negative effect on the probability of a landowner's decision to allow fee-based recreation. Land that is acquired by inheritance has a positive effect and the coefficient is significantly different from zero at the 0.10 level. The variables HAYLAND and LIVESTOCKLAND are both significant at the 0.10 and 0.05 levels and positive and negative in sign respectively. Two of the demographic variables are significant at the 0.05 level (OCUPATION2 and INCOME1) and negative in sign.

The following three tables present probit parameter estimates for the probability of allowing fee-based recreation if recreational use statutes were amended to allow landowners to charge a fee for recreational access and retain the liability protection afforded to free access granting landowner as is allowed by the current Louisiana and Arkansas recreational use statutes (Tables 5.14, 5.15, and 5.16).

Probit estimates for landowners from both states combined are presented in table 5.14. Notice that the variable for STATE is significant at the 0.10 level and positive in sign indicating that Louisiana landowners are more likely to allow fee-based recreation. The marginal effect for STATE implies that Louisiana landowners have a 7.3% higher probability of allowing fee-based recreation under a modified recreational use statue. The coefficient for ACCESSCUR is

Table 5.14. Probit estimates for the decision to allow fee-based recreational access under the amended Recreational Use Statute for Arkansas and Louisiana landowners.

ACCESSAMEND	Coef.	Std. Err.	dF/dx	Std. Err.	z	P>|z|
STATE	**0.25330***	0.16119	0.07313	0.04571	1.570	0.116
ACCESSCUR	**3.64631†**	0.40108	0.89950	0.01676	9.090	0.000
PERSONALUSE	-0.17542	0.16794	-0.05192	0.05002	-1.040	0.296
FRIENDSFAMILY	-0.02713	0.16885	-0.00796	0.04961	-0.160	0.872
LEASEDREC	0.11919	0.21310	0.03611	0.06669	0.560	0.576
LIABILITYCONCERN2	0.50327	0.31518	0.16789	0.11570	1.600	0.110
LIABILITYCONCERN3	0.28312	0.25146	0.07744	0.06397	1.130	0.260
WRITTENAGREE2	-0.04437	0.17985	-0.01289	0.05178	-0.250	0.805
WRITTENAGREE3	0.07691	0.15489	0.02276	0.04627	0.500	0.620
CONCERNEASED2	**-0.56506†**	0.17742	-0.15865	0.04708	-3.180	0.001
CONCERNEASED3	**0.44556†**	0.16416	0.13729	0.05311	2.710	0.007
NOTRESSPASS	0.20690	0.14661	0.06057	0.04298	1.410	0.158
RUSPROTECTS	-0.21271	0.15649	-0.06421	0.04870	-1.360	0.174
INSURACEKNOW	-0.12128	0.14787	-0.03594	0.04427	-0.820	0.412
RISKPREFERENCE1	-0.04377	0.31371	-0.01263	0.08911	-0.140	0.889
RISKPREFERENCE2	-0.10845	0.17539	-0.03241	0.05339	-0.620	0.536
MARGINALLAND	**0.35386‡**	0.15182	0.10520	0.04571	2.330	0.020
MARGINALACRES	-0.00118	0.00079	-0.00035	0.00023	-1.490	0.135
LANDOWNERCOOPER	-0.03698	0.15592	-0.01076	0.04507	-0.240	0.813
COOPERATIVE	0.20247	0.17400	0.06183	0.05512	1.160	0.245
CONSERVATION	**0.32153‡**	0.13941	0.09622	0.04257	2.310	0.021
TRACTS	0.03424	0.03435	0.01003	0.01008	1.000	0.319
ADJACENT	-0.10655	0.13921	-0.03093	0.04004	-0.770	0.444
DISTANCE	0.00010	0.00024	0.00003	0.00007	0.410	0.685
TOTALACREAGE	0.00014	0.00014	0.00004	0.00004	1.020	0.309
YEARSOWNERSHIP	-0.00213	0.00288	-0.00062	0.00085	-0.740	0.461
OWNERSHIP1	-0.41863	0.58860	-0.10262	0.11637	-0.710	0.477
OWNERSHIP2	-0.26300	0.41628	-0.06946	0.09768	-0.630	0.528
OWNERSHIP3	**-0.23848***	0.14424	-0.06836	0.04033	-1.650	0.098
ACQUIRE1	0.05972	0.25529	0.01752	0.07504	0.230	0.815
ACQUIRE2	0.16570	0.38787	0.05141	0.12682	0.430	0.669
ACQUIRE3	0.02018	0.26234	0.00590	0.07666	0.080	0.939
ROWCROPS	0.06153	0.20802	0.01786	0.05986	0.300	0.767
COTTON	0.08762	0.17518	0.02580	0.05186	0.500	0.617
LEASEDFORAG	0.03407	0.16126	0.00993	0.04678	0.210	0.833
HAYLAND	-0.21380	0.21477	-0.05926	0.05617	-1.000	0.319
LIVESTOCKLAND	**0.36413***	0.20625	0.11560	0.06992	1.770	0.077
GENDER	-0.01025	0.15223	-0.00300	0.04445	-0.070	0.946
AGE	0.00724	0.00567	0.00212	0.00167	1.280	0.202
ETHNIC	0.59796	0.37172	0.13719	0.06290	1.610	0.108
OCUPATION1	-0.08261	0.19667	-0.02367	0.05512	-0.420	0.674
OCUPATION2	-0.20204	0.22662	-0.05546	0.05799	-0.890	0.373
OCUPATION3	-0.16974	0.25074	-0.04695	0.06515	-0.680	0.498
EDUCATION1	-0.14013	0.15953	-0.04027	0.04495	-0.880	0.380
EDUCATION3	-0.26530	0.19831	-0.07203	0.04971	-1.340	0.181
INCOME1	-0.20292	0.24503	-0.05560	0.06237	-0.830	0.408
INCOME3	0.17962	0.14967	0.05367	0.04546	1.200	0.230
CONSTANT	**-2.65875†**	0.64696			-4.110	0.000

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 933; Chi-square = 568.16; Log-L= -239.20; Prob>chi2 = 0.0000; Pseudo R-squared: 0.5429

positive in sign and significant at the 0.01 level indicating that landowners allowing recreation under the current recreational use statue have a 90% higher probability of allowing recreation

under an amended recreational use statue. Again, the dummy variables indicating if landowners disagree (CONCERNEASED2) or agree (CONCERNEASED3) with allowing recreational use of their land if their liability concerns were eased are significant at the 0.01 level and are negative and positive in sign for disagree and agree, respectively. Having land that is considered to be marginal for agricultural purposes (MARGINALLAND) and having land in a government conservation program (CONSERVATION) both have a positive effect on the probability of allowing fee-based recreation and these two variables are significant at the 0.05 level. The probability of allowing fee based recreation under an amended recreational use statue is 10.5% higher for marginal landowners and 9.6% higher for landowners participating in a government conservation program. The coefficient for OWNERSHIP3 (i.e., joint ownership of land) is negative in sign and significantly different from zero at the 0.10 level of significance indicating a negative effect on the probability of allowing fee-based recreation for landowners that own land jointly as compared with single ownership landowners. Under an amended recreational use statute owning land for livestock production (LIVESTOCKLAND) has a positive effect on the probability to allow fee-based recreational access and is significant at the 0.10 level with a marginal effect implying a 11.6% higher probability.

Probit parameter estimates for the decision to allow fee-based recreational access under a modified recreational use statue for Louisiana landowners are presented in table 5.15. Again, if landowners allowed recreation under the current use statute they would also be likely to allow access under a modified law as is indicated by ACCESSCUR being positive in sign and significant at the 0.01 level with a marginal effect indicating an 86.8% higher probability. The two dummy variables that indicate if landowners disagrees (CONCERNEASED2) or agrees (CONCERNEASED3) with allowing recreational use of their land if their liability concerns

Table 5.15. Probit estimates for the decision to allow fee-based recreational access under the amended Recreational Use Statute for Louisiana landowners.

ACCESSAMEND	Coef.	Std. Err.	dF/dx	Std. Err.	z	P>|z|
ACCESSCUR	**3.24197†**	0.440187	0.868092	0.029223	7.360	0.000
PERSONALUSE	-0.171585	0.212467	-0.052391	0.065481	-0.810	0.419
FRIENDSFAMILY	0.113663	0.214483	0.034035	0.063682	0.530	0.596
LEASEDREC	0.063558	0.276840	0.019506	0.086443	0.230	0.818
LIABILITYCONCERN2	0.072253	0.416813	0.022254	0.131015	0.170	0.862
LIABILITYCONCERN3	0.215002	0.322644	0.061538	0.087324	0.670	0.505
WRITTENAGREE2	-0.079261	0.231540	-0.023553	0.067709	-0.340	0.732
WRITTENAGREE3	-0.074148	0.197148	-0.022164	0.058381	-0.380	0.707
CONCERNEASED2	**-0.62856†**	0.236170	-0.179312	0.062294	-2.660	0.008
CONCERNEASED3	**0.38330***	0.214742	0.118667	0.068202	1.780	0.074
NOTRESSPASS	0.099882	0.187082	0.030217	0.056817	0.530	0.593
RUSPROTECTS	-0.204836	0.198734	-0.063136	0.062643	-1.030	0.303
INSURACEKNOW	-0.142831	0.190677	-0.043518	0.058645	-0.750	0.454
RISKPREFERENCE1	-0.106906	0.410501	-0.031135	0.115163	-0.260	0.795
RISKPREFERENCE2	-0.311508	0.236488	-0.099270	0.078865	-1.320	0.188
MARGINALLAND	**0.37550‡**	0.193584	0.114330	0.059255	1.940	0.052
MARGINALACRES	-0.001052	0.000956	-0.000317	0.000289	-1.100	0.271
LANDOWNERCOOPER	-0.123564	0.206976	-0.036441	0.059584	-0.600	0.551
COOPERATIVE	0.052979	0.256622	0.016207	0.079605	0.210	0.836
CONSERVATION	0.280984	0.181879	0.085268	0.055544	1.540	0.122
TRACTS	-0.006128	0.049607	-0.001849	0.014966	-0.120	0.902
ADJACENT	-0.062809	0.176587	-0.018887	0.052923	-0.360	0.722
DISTANCE	-0.000473	0.000454	-0.000143	0.000136	-1.040	0.297
TOTALACREAGE	**0.00031***	0.000190	0.000093	0.000057	1.620	0.104
YEARSOWNERSHIP	-0.001733	0.004221	-0.000523	0.001273	-0.410	0.681
OWNERSHIP1	-2.073588	1.599861	-0.231901	0.032751	-1.300	0.195
OWNERSHIP2	-0.509130	0.504167	-0.125114	0.096016	-1.010	0.313
OWNERSHIP3	-0.303876	0.191556	-0.088220	0.053316	-1.590	0.113
ACQUIRE1	0.187048	0.332507	0.056712	0.101092	0.560	0.574
ACQUIRE2	-0.453394	0.635552	-0.113751	0.126814	-0.710	0.476
ACQUIRE3	0.194002	0.338737	0.057949	0.099993	0.570	0.567
ROWCROPS	0.074300	0.279447	0.022308	0.083531	0.270	0.790
COTTON	-0.032246	0.266303	-0.009720	0.080205	-0.120	0.904
LEASEDFORAG	-0.127525	0.198968	-0.039076	0.061865	-0.640	0.522
HAYLAND	**-0.43477***	0.265936	-0.119024	0.065237	-1.630	0.102
LIVESTOCKLAND	0.369618	0.264460	0.119484	0.090432	1.400	0.162
GENDER	0.175312	0.190302	0.053994	0.059580	0.920	0.357
AGE	**0.01464***	0.007739	0.004414	0.002323	1.890	0.059
ETHNIC	**0.84554***	0.512817	0.179991	0.067466	1.650	0.099
OCUPATION1	0.205958	0.264847	0.065457	0.087957	0.780	0.437
OCUPATION2	-0.049416	0.297296	-0.014692	0.087080	-0.170	0.868
OCUPATION3	0.114996	0.298603	0.035836	0.095990	0.390	0.700
EDUCATION1	-0.162749	0.197495	-0.048113	0.057225	-0.820	0.410
EDUCATION3	-0.179449	0.243937	-0.051702	0.067054	-0.740	0.462
INCOME1	-0.266425	0.296012	-0.073958	0.074683	-0.900	0.368
INCOME3	0.046025	0.202344	0.013964	0.061708	0.230	0.820
CONSTANT	**-2.68543†**	0.920132			-2.920	0.004

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 528; Chi-square = 300.32; Log-L= -155.225; Prob>chi2 = 0.0000; Pseudo R-squared: 0.4917

were eased have a positive and negative effect on allowing fee-based recreation and are significant at the 0.01 and 0.10 levels, respectively. Also, as noticed in the previous probit models, the coefficient for MARGINALLAND is positive in sign and is significantly different from zero at the 0.05 level with a marginal effect indicating a 11% higher probability of allowing fee-based recreation. Owning more land (TOTALACREAGE) increases the probability of allowing fee-based recreational access and is significant at the 0.10 level of significance. Owning land for hay production (HAYLAND) is negative in sign and significant at the 0.10 level. Landowners that owned land for hay production have a 12% lower probability of allowing fee-based recreation. Two of the demographic variables are significant, AGE and ETHNIC, which are both significant at the 0.10 level and positive in sign indicating landowners that are older or white are more likely to allow fee-based recreation under a modified recreational use statue that allows landowners to charge a fee and enjoy liability protection that is currently afforded to free access granting landowners.

Probit model parameter estimates for the decision to allow fee-based recreational access under a modified recreational use statue for Arkansas landowners are presented in table 5.16. The coefficient for the variable LEASEDREC is positive in sign and significant at the 0.10 level. This suggests that Arkansas landowners that have leased their land for recreation in the past would be inclined to do so again under a modified recreational use statute. The variables indicating if landowners are not concerned with the liability issues associated with allowing people on their land (LIABILITYCONCERN2) and that landowners believe a written agreement can protect them from liability (WRITTENAGREE3) have a positive effect on allowing fee-based recreation and is significant at the 0.05 level. Landowners that are not concerned with the liability issues associated with allowing people onto there land have a 20% higher probability of

Table 5.16. Probit estimates for the decision to allow fee-based recreational access under the amended Recreational Use Statute for Arkansas landowners.

ACCESSAMEND	Coef.	Std. Err.	dF/dx	Std. Err.	z	P>|z|
PERSONALUSE	-0.67502	0.47787	-0.010102	0.011312	-1.410	0.158
FRIENDSFAMILY	-0.56381	0.50158	-0.008229	0.010261	-1.120	0.261
LEASEDREC	**1.12039***	0.61695	0.046299	0.053545	1.820	0.069
LIABILITYCONCERN2	**2.03584‡**	0.87008	0.200995	0.202332	2.340	0.019
LIABILITYCONCERN3	0.71300	0.77829	0.006195	0.007667	0.920	0.360
WRITTENAGREE2	-0.05175	0.47029	-0.000617	0.005467	-0.110	0.912
WRITTENAGREE3	**0.96124‡**	0.43415	0.023688	0.021997	2.210	0.027
CONCERNEASED2	**-1.12382‡**	0.47224	-0.018110	0.015277	-2.380	0.017
CONCERNEASED3	**1.00668‡**	0.40343	0.031895	0.029039	2.500	0.013
NOTRESSPASS	**0.67430***	0.37150	0.008502	0.009035	1.820	0.070
RUSPROTECTS	-0.49419	0.40198	-0.008624	0.012016	-1.230	0.219
INSURACEKNOW	0.35190	0.35333	0.003703	0.004344	1.000	0.319
RISKPREFERENCE1	0.45748	0.80940	0.009944	0.027413	0.570	0.572
RISKPREFERENCE2	0.44753	0.49224	0.004333	0.004858	0.910	0.363
MARGINALLAND	0.57606	0.47166	0.009240	0.012290	1.220	0.222
MARGINALACRES	-0.00596	0.00483	-0.000073	0.000083	-1.230	0.217
LANDOWNERCOOPER	-0.09610	0.35759	-0.001115	0.004036	-0.270	0.788
COOPERATIVE	0.47509	0.38947	0.007833	0.010116	1.220	0.223
CONSERVATION	**1.02117†**	0.37633	0.026087	0.020943	2.710	0.007
TRACTS	0.13615	0.09047	0.001667	0.001687	1.500	0.132
ADJACENT	-0.19397	0.34170	-0.002211	0.004051	-0.570	0.570
DISTANCE	**0.00124†**	0.00046	0.000015	0.000013	2.710	0.007
TOTALACREAGE	-0.00033	0.00048	-0.000004	0.000006	-0.680	0.494
YEARSOWNERSHIP	-0.01854	0.01345	-0.000227	0.000238	-1.380	0.168
OWNERSHIP1	0.50407	1.51706	0.011914	0.060046	0.330	0.740
OWNERSHIP2	1.01112	1.33527	0.045640	0.133138	0.760	0.449
OWNERSHIP3	-0.47185	0.35035	-0.005893	0.006616	-1.350	0.178
ACQUIRE1	-0.03228	0.68851	-0.000394	0.008347	-0.050	0.963
ACQUIRE2	1.23470	0.79846	0.070571	0.108461	1.550	0.122
ACQUIRE3	-0.34662	0.75128	-0.004554	0.011300	-0.460	0.645
ROWCROPS	0.50571	0.67808	0.004273	0.005342	0.750	0.456
COTTON	**0.63659***	0.36613	0.011078	0.011028	1.740	0.082
LEASEDFORAG	0.56188	0.45946	0.005690	0.006334	1.220	0.221
HAYLAND	**1.46992‡**	0.66730	0.084674	0.081836	2.200	0.028
LIVESTOCKLAND	-0.06217	0.58117	-0.000718	0.006347	-0.110	0.915
GENDER	-0.49250	0.42122	-0.004869	0.005560	-1.170	0.242
AGE	-0.01978	0.01450	-0.000242	0.000262	-1.360	0.173
ETHNIC	1.38422	1.12573	0.005216	0.005345	1.230	0.219
OCUPATION1	-0.47229	0.45327	-0.004263	0.004983	-1.040	0.297
OCUPATION2	-0.69149	0.51390	-0.004759	0.005056	-1.350	0.178
OCUPATION3	**-2.00272‡**	0.85485	-0.006438	0.006429	-2.340	0.019
EDUCATION1	-0.01807	0.43004	-0.000219	0.005176	-0.040	0.966
EDUCATION3	-0.64519	0.53653	-0.004702	0.004871	-1.200	0.229
INCOME1	-1.39614	0.95784	-0.006442	0.006454	-1.460	0.145
INCOME3	0.15034	0.35216	0.001938	0.005130	0.430	0.669
CONSTANT	**-3.7429‡**	1.7059			-2.190	0.028

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 341; Chi-square = 83.55; Log-L= -55.034566; Prob>chi2 = 0.0004; Pseudo R-squared: 0.4315

allowing fee-based recreation. The variables indicating if landowners disagree (CONCERNEASED2) or agree (CONCERNEASED3) with allowing recreational use of their

land if their liability concerns were eased have a positive or negative effect on allowing fee-based recreational use of their land and are both significant at the 0.05 level. The coefficient for NOTRESSPASS is positive in sign and significant at the 0.10 level indicating that landowners who are unsure about trespass law are more likely to allow fee-based recreation under a modified recreational use statute. This may indicate that landowners that are unsure about trespass law are comfortable enough with the liability protection of modified recreational use statute to allow fee-based recreation. As noted in previous models, having land in a government conservation program has a positive effect on the probability of allowing fee-based recreation and is significant at the 0.01 level. The marginal effect for CONSERVATION indicates that the probability of allowing fee-based recreation is 2.6% higher for landowners participating in a government conservation program. The coefficient for DISTANCE is positive in sign and significantly different from zero at the 0.01 level of significance indicating that having land farther from the primary residence has a positive effect on allowing fee-based recreation. Landowners that produce cotton or have land in hay production are more likely to allow fee-based recreation. The marginal effect for HAYLAND indicates that landowners owning land for hay production have a 8.5% higher probability of allowing recreational uses of their land under a modified recreational use statute. The only demographic variable that is significant is OCUPATION3 indicating that landowners that are self-employed are less likely to allow recreation under a modified recreational use statute.

5.6.4. Tobit Model for Willingness to Accept Compensation to Allow Access

Tobit models were used to analyze the potential relationship between landowners' willingness to accept (WTA) compensation to allow fee-based recreational access and various explanatory variables under both the current and modified recreational use statutes for Louisiana, Arkansas,

and for both regions combined.

Tobit parameter estimates for WTA associated with the decision to allow fee-based recreational access under the current recreational use statues for Arkansas and Louisiana landowners are presented in table 5.17. Results indicate that the estimated coefficient for STATE is statistically significant at the 0.05 level and is negative in sign. This suggests that the WTA to allow fee-based recreation is influenced by location (i.e., Louisiana or Arkansas) and that the expected WTA for Louisiana landowners is $7.18 lower than the WTA of Arkansas landowners. The coefficient for WRITTENAGREE3 is positive in sign and significant at the 0.10 level of significance and indicates that landowners believing that a written agreement can protect them from liability have an expected WTA that is $7.23 higher than landowners that are unsure. The two variables indicating if landowners disagree (CONCERNEASED2) or agree (CONCERNEASED3) with allowing recreational use of their land if their liability concerns were eased are significant at the 0.05 and 0.01 levels, indicating a decrease in WTA of $11.82 or an increase of $15.10 in expected WTA as compared with landowners that are unsure, respectively. Landowners allowing fee-based recreation that are unsure about the availability of commercial liability insurance for recreation decreases WTA by $10.44 and is significant at the 0.01 level. The two dummy variables for risk preference given by RISKPREFERENCE1, indicating risk seeker, and RISKPREFERENCE2, indicating risk averse, have both a positive and negative effect on landowner access decisions and are both significant at the 0.05 level. This indicates that a landowner that is a risk seeker has a predicted WTA that is $15.48 greater than a risk neutral landowner, and a landowner that is risk averse has an expected WTA that is $10.11 lower than a risk neutral landowner. Owning marginal land increases the predicted WTA by $7.61 and the variable coefficient for MARGINALLAND is significant at the 0.10 level. Having land in a

Table 5.17. Tobit estimates for the decision to allow fee-based recreational access under the current Recreational Use Statute for Arkansas and Louisiana landowners.

WTACURRENT	Coef.	Std. Err.	t	P>|t|	dF/dx	Std. Err	z	P>|z|
STATE	**-50.682***	30.528	-1.66	0.10	**-7.182***	4.283	-1.68	0.09
PERSONALUSE	-0.951	33.211	-0.03	0.98	-0.133	4.659	-0.03	0.98
FRIENDSFAMILY	-26.230	31.797	-0.82	0.41	-3.701	4.461	-0.83	0.41
LEASEDREC	-55.199	44.663	-1.24	0.22	-7.331	6.266	-1.17	0.24
LIABILITYCONCERN2	-70.181	66.313	-1.06	0.29	-9.151	9.303	-0.98	0.33
LIABILITYCONCERN3	-24.502	48.938	-0.50	0.62	-3.505	6.866	-0.51	0.61
WRITTENAGREE2	55.535	35.126	1.58	0.11	**8.086***	4.928	1.64	0.10
WRITTENAGREE3	**50.248***	30.533	1.65	0.10	**7.226***	4.283	1.69	0.09
CONCERNEASED2	**-85.673‡**	39.980	-2.14	0.03	**-11.816‡**	5.609	-2.11	0.04
CONCERNEASED3	**102.451†**	33.513	3.06	0.00	**15.095†**	4.702	3.21	0.00
NOTRESSPASS	38.620	28.129	1.37	0.17	5.422	3.946	1.37	0.17
RUSPROTECTS	1.526	30.191	0.05	0.96	0.214	4.235	0.05	0.96
INSURACEKNOW	**-72.461†**	28.425	-2.55	0.01	**-10.444†**	3.988	-2.62	0.01
RISKPREFERENCE1	**97.935‡**	44.958	2.18	0.03	**15.477†**	6.307	2.45	0.01
RISKPREFERENCE2	**-68.710‡**	33.831	-2.03	0.04	**-10.107‡**	4.746	-2.13	0.03
MARGINALLAND	**53.716***	29.453	1.82	0.07	**7.612***	4.132	1.84	0.07
MARGINALACRES	0.112	0.094	1.19	0.23	0.016	0.013	1.19	0.23
LANDOWNERCOOPER	30.306	28.412	1.07	0.29	4.332	3.986	1.09	0.28
COOPERATIVE	23.029	31.278	0.74	0.46	3.288	4.388	0.75	0.45
CONSERVATION	**60.318‡**	28.269	2.13	0.03	**8.606‡**	3.966	2.17	0.03
TRACTS	4.201	3.478	1.21	0.23	0.589	0.488	1.21	0.23
ADJACENT	-9.463	27.356	-0.35	0.73	-1.324	3.838	-0.34	0.73
DISTANCE	-0.084	0.081	-1.04	0.30	-0.012	0.011	-1.04	0.30
TOTALACREAGE	0.011	0.016	0.70	0.48	0.002	0.002	0.70	0.48
YEARSOWNERSHIP	0.260	0.328	0.79	0.43	0.037	0.046	0.79	0.43
OWNERSHIP1	63.312	67.440	0.94	0.35	9.666	9.461	1.02	0.31
OWNERSHIP2	48.212	50.029	0.96	0.34	7.194	7.019	1.03	0.31
OWNERSHIP3	**-61.661‡**	27.103	-2.28	0.02	**-8.507‡**	3.802	-2.24	0.03
ACQUIRE1	58.121	44.263	1.31	0.19	8.221	6.210	1.32	0.19
ACQUIRE2	21.109	72.121	0.29	0.77	3.043	10.118	0.30	0.76
ACQUIRE3	40.652	45.734	0.89	0.37	5.667	6.416	0.88	0.38
ROWCROPS	-41.491	40.724	-1.02	0.31	-5.946	5.713	-1.04	0.30
COTTON	**74.300‡**	34.129	2.18	0.03	**10.618‡**	4.788	2.22	0.03
LEASEDFORAG	8.474	31.190	0.27	0.79	1.184	4.376	0.27	0.79
HAYLAND	-7.411	42.804	-0.17	0.86	-1.033	6.005	-0.17	0.86
LIVESTOCKLAND	**-76.695***	44.519	-1.72	0.09	-10.103	6.246	-1.62	0.11
GENDER	**-55.034***	31.613	-1.74	0.08	**-7.516***	4.435	-1.69	0.09
AGE	-0.321	1.027	-0.31	0.76	-0.045	0.144	-0.31	0.76
ETHNIC	-5.063	56.450	-0.09	0.93	-0.715	7.919	-0.09	0.93
OCUPATION1	2.506	39.857	0.06	0.95	0.352	5.591	0.06	0.95
OCUPATION2	-7.507	42.354	-0.18	0.86	-1.045	5.942	-0.18	0.86
OCUPATION3	-17.225	45.231	-0.38	0.70	-2.371	6.345	-0.37	0.71
EDUCATION1	49.344	30.433	1.62	0.11	**7.086***	4.269	1.66	0.10
EDUCATION3	**108.204†**	36.140	2.99	0.00	**16.864†**	5.070	3.33	0.00
INCOME1	**-142.240†**	58.049	-2.45	0.01	**-17.319‡**	8.144	-2.13	0.03
INCOME3	-42.569	28.852	-1.48	0.14	-5.876	4.048	-1.45	0.15
CONSTANT	**-269.381†**	108.010	-2.49	0.01	**-37.791†**	15.153	-2.49	0.01
SIGMA	202.001	15.181						

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 938; Chi-square = 193.78; Log-L= -888.3663; Prob>chi2 = 0.0000; Pseudo R-squared: 0.098

government conservation program increased the predicted WTA by $8.61, as is indicated by the coefficient for CONSERVATION, which is significant at the 0.05 level. The variable

OWNERSHIP3 is significant at the 0.05 level and is negative in sign, indicating that joint ownership of land reduces expected WTA by $8.51 as compared with single ownership of land. The coefficients for COTTON and LIVESTOCKLAND are both significant at the 0.05 level indicating that using land for cotton production increases WTA by $10.620 while owning land for raising livestock reduces WTA by $10.10. Three of the demographic variables are significant. Landowners that are women have a WTA that is $7.52 lower than men, which is significant at the 0.10 level. Landowners that are more highly educated have WTA that is greater by $16.86 and landowners that have lower annual household income have an expected WTA that is $17.32 lower.

Tobit parameter estimates for the WTA associated with the decision to allow fee-based recreational access under the current recreational use statue for Louisiana landowners are presented in table 5.18. The parameter estimates for WRITTENAGREE2 and WRITTENAGREE3 are both positive in sign and significant at the 0.01 and 0.05 levels of significance, respectively. Landowners that do not believe a written agreement can protect them from liability and landowners that do believe a written agreement can protect them from liability have an expected WTA that is $20.41 and $13.40 greater, respectively, than landowners that are not sure if a written agreement can protect them from liability. The coefficient for CONCERNEASED2 is negative in sign and significant at the 0.05 level, indicating that landowners who agree to allow fee-based recreation that also indicated that they disagree with allowing recreational use of their land if their liability concerns were eased have an expected WTA that is lower by $20.12. Also, landowners that consider themselves to be risk averse have a predicted WTA that is $18.65 lower than landowners that consider themselves to be risk neutral. Owning marginal land increases expected WTA by $12.18 and is significant at the 0.05

Table 5.18. Tobit estimates for the decision to allow fee-based recreational access under the current Recreational Use Statute for Louisiana landowners.

WTACURRENT	Coef.	Std. Err.	t	P>|t|	dF/dx	Std. Err	z	P>|z|
PERSONALUSE	-25.585	51.826	-0.49	0.62	-3.204	6.447	-0.50	0.62
FRIENDSFAMILY	39.472	49.530	0.80	0.43	4.873	6.161	0.79	0.43
LEASEDREC	-71.815	69.522	-1.03	0.30	-8.396	8.648	-0.97	0.33
LIABILITYCONCERN2	-22.447	128.309	-0.17	0.86	-2.734	15.961	-0.17	0.86
LIABILITYCONCERN3	60.117	111.656	0.54	0.59	7.161	13.890	0.52	0.61
WRITTENAGREE2	**148.880†**	58.438	2.55	0.01	**20.413†**	7.270	2.81	0.01
WRITTENAGREE3	**103.216‡**	51.008	2.02	0.04	**13.404‡**	6.345	2.11	0.04
CONCERNEASED2	**-167.206‡**	72.418	-2.31	0.02	**-20.117‡**	9.009	-2.23	0.03
CONCERNEASED3	49.832	54.148	0.92	0.36	6.279	6.736	0.93	0.35
NOTRESSPASS	35.387	44.423	0.80	0.43	4.419	5.526	0.80	0.42
RUSPROTECTS	-4.850	47.362	-0.10	0.92	-0.604	5.892	-0.10	0.92
INSURACEKNOW	-33.895	48.115	-0.70	0.48	-4.251	5.985	-0.71	0.48
RISKPREFERENCE1	107.077	73.948	1.45	0.15	**14.936***	9.199	1.62	0.10
RISKPREFERENCE2	**-136.842‡**	56.809	-2.41	0.02	**-18.651†**	7.067	-2.64	0.01
MARGINALLAND	**96.698‡**	47.309	2.04	0.04	**12.183‡**	5.885	2.07	0.04
MARGINALACRES	-0.002	0.143	-0.01	0.99	0.000	0.018	-0.01	0.99
LANDOWNERCOOPER	**73.716***	45.539	1.62	0.11	**9.584***	5.665	1.69	0.09
COOPERATIVE	-36.033	58.758	-0.61	0.54	-4.347	7.309	-0.59	0.55
CONSERVATION	**80.082***	47.350	1.69	0.09	**10.049***	5.890	1.71	0.09
TRACTS	-10.551	11.412	-0.92	0.36	-1.313	1.420	-0.92	0.36
ADJACENT	**-79.818***	45.516	-1.75	0.08	**-9.822***	5.662	-1.73	0.08
DISTANCE	-0.155	0.120	-1.29	0.20	-0.019	0.015	-1.29	0.20
TOTALACREAGE	**0.059***	0.034	1.72	0.09	**0.007***	0.004	1.72	0.09
YEARSOWNERSHIP	-0.156	1.177	-0.13	0.89	-0.019	0.146	-0.13	0.89
OWNERSHIP1	-12.747	183.157	-0.07	0.95	-1.562	22.784	-0.07	0.95
OWNERSHIP2	28.171	80.412	0.35	0.73	3.618	10.003	0.36	0.72
OWNERSHIP3	-45.460	44.418	-1.02	0.31	-5.562	5.525	-1.01	0.31
ACQUIRE1	105.965	73.837	1.44	0.15	13.364	9.185	1.45	0.15
ACQUIRE2	68.442	118.502	0.58	0.56	9.225	14.741	0.63	0.53
ACQUIRE3	96.623	75.687	1.28	0.20	11.884	9.415	1.26	0.21
ROWCROPS	**-174.466‡**	88.129	-1.98	0.05	**-22.695‡**	10.963	-2.07	0.04
COTTON	**185.150‡**	82.737	2.24	0.03	**23.540‡**	10.292	2.29	0.02
LEASEDFORAG	3.668	49.322	0.07	0.94	0.456	6.136	0.07	0.94
HAYLAND	-5.387	59.055	-0.09	0.93	-0.668	7.346	-0.09	0.93
LIVESTOCKLAND	**-113.490***	65.055	-1.74	0.08	-13.134	8.093	-1.62	0.11
GENDER	-65.224	50.424	-1.29	0.20	-7.918	6.273	-1.26	0.21
AGE	1.609	1.923	0.84	0.40	0.200	0.239	0.84	0.40
ETHNIC	-19.435	86.729	-0.22	0.82	-2.469	10.789	-0.23	0.82
OCUPATION1	**111.769***	68.859	1.62	0.11	**15.405***	8.566	1.80	0.07
OCUPATION2	92.661	67.418	1.37	0.17	12.610	8.387	1.50	0.13
OCUPATION3	**108.615***	61.827	1.76	0.08	**15.054‡**	7.691	1.96	0.05
EDUCATION1	78.418	49.501	1.58	0.11	**10.076***	6.158	1.64	0.10
EDUCATION3	**144.384†**	57.434	2.51	0.01	**20.271†**	7.145	2.84	0.01
INCOME1	-76.477	80.481	-0.95	0.34	-8.882	10.012	-0.89	0.38
INCOME3	**-92.757***	48.810	-1.90	0.06	**-11.144***	6.072	-1.84	0.07
CONSTANT	**-579.998†**	227.362	-2.55	0.01	**-72.151†**	28.283	-2.55	0.01
SIGMA	221.144	22.448						

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 531; Chi-square = 120.73; Log-L= -476.95; Prob>chi2 = 0.0000; Pseudo R-squared: 0.1123

level. The coefficient for LANDONWERCOOPER is significant at the 0.10 level and is positive in sign, indicating that landowners that have worked with adjacent or local landowners have a

predicted WTA that is $9.58 greater than landowners that have not worked with adjacent or local landowners. Having land in a government conservation program has a positive effect on expected WTA and is significant at the 0.10 level indicating an increase in expected WTA of $10.05. The coefficient for ADJACENT is significant at the 0.10 level and negative in sign indicating that landowners that have their nearest tract of non-residential land adjacent to their home have an expected WTA that is $9.82 lower than landowners not having land adjacent to their homes. With each one acre increase in total acreage results in an increase in predicted WTA by $0.01 which is significant at the 0.10 level. Landowners that indicated that they use their land for agricultural production of row crops reduces predicted WTA by $22.70 while having land used for cotton production increases WTA by $23.54, which are both significant at the 0.05 level of significance. The coefficient for LIVESTOCKLAND is significant at the 0.10 level and negative in sign indicating that owning land for livestock production reduces expected WTA by $13.13. Four of the demographic variables are significant. Landowners that consider their primary occupation to be either business or to be self-employed have an expected WTA that is $15.41 and $15.05 greater than other landowners and both are significant at the 0.10 level of significance. The coefficients for EDUCATION3 and INCOME3 are both significant at the 0.10 and 0.10 levels, respectively. This indicates that landowners that are more highly educated have a predicted WTA that is greater by $20.27 that the WTA of landowners that attended college (EDUCATION2) while landowners that have a higher annual household income have a WTA is lower by $11.14 as compared with landowners having a annual household income in the $25 to $75 thousand range (INCOME2).

Tobit parameter estimates for WTA associated with the decision to allow fee-based recreational access under the current recreational use statue for Arkansas landowners are

presented in table 5.19. The parameter estimate for WRITTENAGREE3 is positive in sign and significant at the 0.10 level, indicating that landowners believing that a written agreement can protect them from liability have an expected WTA that is $6.43 greater than landowners that are not sure about written agreements. The coefficient for CONCERNEASED3 is positive in sign and significant at the 0.01 level, suggesting that landowners who agree to allow fee-based recreation that also agree with allowing recreational use of their land if their liability concerns are eased, have predicted WTA that is $14.67 greater than landowners that are unsure over the easing of their liability concerns. Arkansas landowners predicted WTA increases by $0.02 with each one acre increase in total marginal land owned and the coefficient for MARGINALACRES is significant at the 0.10 level. Landowners that have worked with their adjacent or local landowners have an expected WTA that is greater by $6.68 than landowners not having this experience, which is significant at the 0.10 level. The coefficient for CONSERVATION is significant at the 0.05 level and positive in sign suggesting that having land in a government conservation program results in a predicted WTA is $7.72 greater than landowners not having land in a such a program. Each one unit increase in total number of tracts of land owned increases predicted WTA by $0.77 and is significant at the 0.05 level. The coefficient for ADJACENT is significant at the 0.05 level and is positive in sign indicating that having land adjacent to the primary residence increases a landowner's WTA by $8.68 as compared with landowners not having their nearest tract of non-residential land adjacent to their home. The variables for organization of land ownership as a limited liability corporation (OWNERSHIP2) or as joint ownership (OWNERSHIP3) are both significant at the 0.10 and 0.05 levels, respectively. Landowners having land organized as a LLC or joint ownerships have a predicted

Table 5.19. Tobit estimates for the decision to allow fee-based recreational access under the current Recreational Use Statute for Arkansas landowners.

WTACURRENT	Coef.	Std. Err.	t	P>|t|	dF/dx	Std. Err	z	P>|z|
PERSONALUSE	-6.529	35.233	-0.19	0.85	-0.7803	4.2040	-0.19	0.85
FRIENDSFAMILY	-30.320	35.391	-0.86	0.39	-3.6533	4.2229	-0.87	0.39
LEASEDREC	-1.553	48.406	-0.03	0.97	-0.1848	5.7759	-0.03	0.97
LIABILITYCONCERN2	-94.076	69.492	-1.35	0.18	-9.6579	8.2919	-1.16	0.24
LIABILITYCONCERN3	-51.341	39.733	-1.29	0.20	-6.5120	4.7410	-1.37	0.17
WRITTENAGREE2	-22.035	36.930	-0.60	0.55	-2.5756	4.4065	-0.58	0.56
WRITTENAGREE3	**51.512***	31.295	1.65	0.10	**6.4345***	3.7341	1.72	0.09
CONCERNEASED2	-24.476	36.533	-0.67	0.50	-2.9038	4.3591	-0.67	0.51
CONCERNEASED3	**108.400†**	34.346	3.16	0.00	**14.6689†**	4.0982	3.58	0.00
NOTRESSPASS	25.609	27.267	0.94	0.35	3.0407	3.2536	0.93	0.35
RUSPROTECTS	19.982	33.006	0.61	0.55	2.3355	3.9383	0.59	0.55
INSURACEKNOW	-41.965	28.050	-1.50	0.14	-5.1697	3.3469	-1.54	0.12
RISKPREFERENCE1	76.992	48.546	1.59	0.11	**10.7061***	5.7926	1.85	0.07
RISKPREFERENCE2	-25.663	34.347	-0.75	0.46	-3.1416	4.0983	-0.77	0.44
MARGINALLAND	11.756	30.865	0.38	0.70	1.4091	3.6829	0.38	0.70
MARGINALACRES	**0.194***	0.103	1.89	0.06	**0.0231***	0.0123	1.89	0.06
LANDOWNERCOOPER	-26.428	29.487	-0.90	0.37	-3.0845	3.5184	-0.88	0.38
COOPERATIVE	**53.639***	30.091	1.78	0.08	**6.6828***	3.5904	1.86	0.06
CONSERVATION	**61.537‡**	27.689	2.22	0.03	**7.7199‡**	3.3039	2.34	0.02
TRACTS	**6.483‡**	3.311	1.96	0.05	**0.7736‡**	0.3951	1.96	0.05
ADJACENT	**69.142‡**	28.455	2.43	0.02	**8.6745†**	3.3953	2.55	0.01
DISTANCE	-0.012	0.078	-0.15	0.88	-0.0014	0.0093	-0.15	0.88
TOTALACREAGE	-0.006	0.013	-0.42	0.68	-0.0007	0.0016	-0.42	0.68
YEARSOWNERSHIP	0.209	0.234	0.90	0.37	0.0250	0.0279	0.90	0.37
OWNERSHIP1	55.744	56.892	0.98	0.33	7.4762	6.7884	1.10	0.27
OWNERSHIP2	**93.747***	55.036	1.70	0.09	**13.6523‡**	6.5669	2.08	0.04
OWNERSHIP3	**-63.849‡**	27.588	-2.31	0.02	**-7.5540‡**	3.2918	-2.29	0.02
ACQUIRE1	27.711	51.976	0.53	0.59	3.3281	6.2019	0.54	0.59
ACQUIRE2	-15.618	72.825	-0.21	0.83	-1.8063	8.6896	-0.21	0.84
ACQUIRE3	-17.095	53.565	-0.32	0.75	-2.0502	6.3914	-0.32	0.75
ROWCROPS	-41.233	41.149	-1.00	0.32	-5.2132	4.9099	-1.06	0.29
COTTON	**48.523***	29.462	1.65	0.10	**5.9939***	3.5154	1.71	0.09
LEASEDFORAG	5.536	31.619	0.18	0.86	0.6578	3.7728	0.17	0.86
HAYLAND	23.635	60.839	0.39	0.70	2.9293	7.2594	0.40	0.69
LIVESTOCKLAND	-82.573	59.575	-1.39	0.17	-8.7414	7.1085	-1.23	0.22
GENDER	-14.902	32.470	-0.46	0.65	-1.7536	3.8743	-0.45	0.65
AGE	-1.464	1.052	-1.39	0.17	-0.1746	0.1255	-1.39	0.16
ETHNIC	112.694	80.834	1.39	0.16	11.0317	9.6451	1.14	0.25
OCUPATION1	-50.181	41.071	-1.22	0.22	-5.6413	4.9006	-1.15	0.25
OCUPATION2	-62.562	44.938	-1.39	0.17	-6.7636	5.3621	-1.26	0.21
OCUPATION3	**-389.157‡**	168.691	-2.31	0.02	-27.1581	20.1283	-1.35	0.18
EDUCATION1	-5.256	31.133	-0.17	0.87	-0.6247	3.7148	-0.17	0.87
EDUCATION3	52.623	35.718	1.47	0.14	6.8354	4.2620	1.60	0.11
INCOME1	**-221.989†**	88.769	-2.50	0.01	**-19.160***	10.5920	-1.81	0.07
INCOME3	-8.414	28.421	-0.30	0.77	-0.9997	3.3912	-0.29	0.77
CONSTANT	-167.143*	97.051	-1.72	0.09	**-19.944***	11.5802	-1.72	0.09
SIGMA	121.784	13.527						

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 407; Chi-square = 141.22; Log-L= -374.38698; Prob>chi2 = 0.0000; Pseudo R-squared: 0.1587

WTA that is $13.65 greater and $7.55 lower than the WTA of single landowners, correspondingly. The coefficient for COTTON is significant at the 0.10 level indicating that if

landowners use their land for cotton production their expected WTA increases by $5.99. Two demographic variables, OCUPATION3 and INCOME1, have coefficients that are both negative in sign and significant at the 0.05 and 0.01 levels, respectively. So landowners that consider themselves to be self-employed have a predicted WTA that is $27.17 lower than other landowners, and landowners that have annual household incomes of less that $25,000 have an expected WTA that is $19.16 lower that landowners with annual household incomes in the $25,000 to $75,000 range.

Tobit parameter estimates for WTA associated with the decision to allow fee-based recreational access under an amended recreational use statue for Arkansas and Louisiana landowners are presented in table 5.20. The coefficient for ACCESSCUR and WTACURRENT are both significant at the 0.01 level of significance and positive in sign. Landowners allowing fee-based recreation under the current recreational use statute have an expected WTA that is $24.52 greater than landowners that did not allow fee-based recreation under the current recreational use statute. Each $1 increase in WTA indicated under the current recreational use statue results in an increase of $0.17 for WTA under the modified use statute. The coefficient for LIABILITYCONCERN2 is significant at the 0.05 level and positive in sign indicating that landowners not concerned with the liability issues associated with allowing people on their land have an expected WTA that is $15.83 greater than landowners that are not sure about their liability concerns. Parameter estimates for CONCERNEASED2 (i.e., disagree with allowing recreational use of their land if their liability concerns were eased) and CONCERNEASED3 (i.e., agree with allowing recreational use of their land if their liability concerns were eased) are significant at the 0.01 and 0.05 levels, respectively. Landowners that disagree with allowing recreational use of their land if their liability concerns were eased have a WTA that is $10.53

Table 5.20. Tobit estimates for the decision to allow fee-based recreational access under the amended Recreational Use Statute for Arkansas and Louisiana landowners.

WTAAMENDED	Coef.	Std. Err.	t	P>|t|	dF/dx	Std. Err	z	P>|z|
STATE	13.740	18.766	0.73	0.46	2.530	3.4674	0.73	0.47
ACCESSCUR	**112.766†**	21.689	5.20	0.00	**24.516†**	4.0075	6.12	0.00
WTACURRENT	**0.928†**	0.098	9.45	0.00	**0.171†**	0.0181	9.45	0.00
PERSONALUSE	-27.825	20.306	-1.37	0.17	-5.190	3.7519	-1.38	0.17
FRIENDSFAMILY	17.937	20.053	0.89	0.37	3.297	3.7052	0.89	0.37
LEASEDREC	14.383	24.772	0.58	0.56	2.715	4.5770	0.59	0.55
LIABILITYCONCERN2	**75.729‡**	39.251	1.93	0.05	**15.826‡**	7.2524	2.18	0.03
LIABILITYCONCERN3	44.453	31.441	1.41	0.16	7.825	5.8093	1.35	0.18
WRITTENAGREE2	-18.461	21.333	-0.87	0.39	-3.354	3.9416	-0.85	0.40
WRITTENAGREE3	6.653	18.295	0.36	0.72	1.235	3.3803	0.37	0.72
CONCERNEASED2	**-57.976†**	22.644	-2.56	0.01	**-10.534†**	4.1839	-2.52	0.01
CONCERNEASED3	**48.622‡**	20.145	2.41	0.02	**9.280†**	3.7221	2.49	0.01
NOTRESSPASS	6.690	17.025	0.39	0.69	1.236	3.1456	0.39	0.69
RUSPROTECTS	**-42.872‡**	17.838	-2.40	0.02	**-8.191†**	3.2959	-2.49	0.01
INSURACEKNOW	-20.236	17.075	-1.19	0.24	-3.778	3.1550	-1.20	0.23
RISKPREFERENCE1	**-58.502***	31.158	-1.88	0.06	**-9.834***	5.7570	-1.71	0.09
RISKPREFERENCE2	-29.757	20.154	-1.48	0.14	-5.660	3.7237	-1.52	0.13
MARGINALLAND	**29.924***	17.524	1.71	0.09	**5.573***	3.2379	1.72	0.09
MARGINALACRES	0.002	0.064	0.03	0.98	0.000	0.0118	0.03	0.98
LANDOWNERCOOPER	0.701	17.704	0.04	0.97	0.130	3.2712	0.04	0.97
COOPERATIVE	19.503	19.823	0.98	0.33	3.682	3.6626	1.01	0.32
CONSERVATION	9.024	16.911	0.53	0.59	1.673	3.1246	0.54	0.59
TRACTS	1.687	2.403	0.70	0.48	0.312	0.4440	0.70	0.48
ADJACENT	-12.330	16.558	-0.74	0.46	-2.267	3.0595	-0.74	0.46
DISTANCE	-0.002	0.033	-0.07	0.94	0.000	0.0061	-0.07	0.94
TOTALACREAGE	0.005	0.011	0.44	0.66	0.001	0.0020	0.44	0.66
YEARSOWNERSHIP	-0.171	0.224	-0.76	0.45	-0.032	0.0413	-0.76	0.45
OWNERSHIP1	0.862	47.969	0.02	0.99	0.160	8.8632	0.02	0.99
OWNERSHIP2	-11.786	35.250	-0.33	0.74	-2.132	6.5131	-0.33	0.74
OWNERSHIP3	-24.661	16.682	-1.48	0.14	-4.511	3.0823	-1.46	0.14
ACQUIRE1	14.534	28.209	0.52	0.61	2.693	5.2121	0.52	0.61
ACQUIRE2	18.045	44.729	0.40	0.69	3.448	8.2645	0.42	0.68
ACQUIRE3	11.503	29.133	0.39	0.69	2.120	5.3829	0.39	0.69
ROWCROPS	-6.057	24.281	-0.25	0.80	-1.124	4.4864	-0.25	0.80
COTTON	11.821	20.598	0.57	0.57	2.193	3.8059	0.58	0.57
LEASEDFORAG	16.638	18.781	0.89	0.38	3.041	3.4702	0.88	0.38
HAYLAND	-2.395	25.130	-0.10	0.92	-0.441	4.6432	-0.10	0.92
LIVESTOCKLAND	-0.992	25.182	-0.04	0.97	-0.183	4.6528	-0.04	0.97
GENDER	-12.031	18.648	-0.65	0.52	-2.204	3.4455	-0.64	0.52
AGE	0.728	0.660	1.10	0.27	0.135	0.1220	1.10	0.27
ETHNIC	36.228	37.933	0.96	0.34	6.292	7.0089	0.90	0.37
OCUPATION1	-1.570	23.606	-0.07	0.95	-0.290	4.3616	-0.07	0.95
OCUPATION2	**-44.978***	27.600	-1.63	0.10	-7.780	5.0996	-1.53	0.13
OCUPATION3	**-53.366***	28.744	-1.86	0.06	**-9.082***	5.3110	-1.71	0.09
EDUCATION1	-7.180	18.371	-0.39	0.70	-1.321	3.3945	-0.39	0.70
EDUCATION3	-28.363	23.009	-1.23	0.22	-5.051	4.2514	-1.19	0.24
INCOME1	18.299	28.808	0.64	0.53	3.479	5.3228	0.65	0.51
INCOME3	**33.183***	17.871	1.86	0.06	**6.255***	3.3021	1.89	0.06
CONSTANT	**-271.959†**	71.925	-3.78	0.00	**-50.249†**	13.2895	-3.78	0.00
SIGMA	148.454	8.284						

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 938; Chi-square = 344.22; Log-L= -1412.684; Prob>chi2 = 0.0000; Pseudo R-squared: 0.1086

lower than landowners that are unsure, while landowners that agree with allowing recreational use of their land if their liability concerns were eased have a WTA that is $9.28 higher than landowners that are unsure about allowing recreational use of their land if their liability concerns were eased. The coefficient for RUSPROTECTS is significant at the 0.05 level of significance and negative in sign indicating that that the expected WTA of landowners that are unsure about the recreational use statute is $8.19 lower. Landowners allowing fee-based recreation under an amended recreational use statute that also consider themselves to be risk seekers have an expected WTA that is $9.83 lower than landowners considering themselves to be risk neutral, which is significant at the 0.10 level. The coefficient for MARGINALLAND is positive in sign and significant at the 0.10 level indicating that owning marginal land increases the predicted WTA by $5.57 as compared with landowners not owning marginal land. Landowners who consider their primary occupation to be either business or to be self-employed have an expected WTA that is $7.78 and 9.08 lower that other landowners and is significant at the 0.10 level. The coefficient for INCOME3 is significant at the 0.10 level and positive in sign indicating that landowners who have a household income of $75K or more have a predicted WTA that is $6.26 greater than landowners having a household income of $25 to $75 thousand.

Tobit parameter estimates for WTA associated with the decision to allow fee-based recreational access under an amended recreational use statue for Louisiana landowners are presented in table 5.21. The coefficeint for ACCESSCUR is significant at the 0.01 level indicating that landowners allowing fee-based recreation under the current Louisiana recreational use statute have an expected WTA that is $19.20 greater than landowners that did not allow fee-based recreation under the current recreational use statute. The coefficient for WTACURRENT is significant at the 0.01 level of significance and positive in sign indicating that for each $1

Table 5.21. Tobit estimates for the decision to allow fee-based recreational access under the amended Recreational Use Statute for Louisiana landowners.

WTAAMENDED	Coef.	Std. Err.	t	P>|t|	dF/dx	Std. Err	z	P>|z|
ACCESSCUR	**86.793†**	24.927	3.48	0.00	**19.2071†**	4.7892	4.01	0.00
WTACURRENT	**0.861†**	0.099	8.66	0.00	**0.1654†**	0.0191	8.66	0.00
PERSONALUSE	-33.596	23.429	-1.43	0.15	-6.5607	4.5014	-1.46	0.15
FRIENDSFAMILY	22.851	22.909	1.00	0.32	4.3548	4.4015	0.99	0.32
LEASEDREC	8.672	29.536	0.29	0.77	1.6902	5.6747	0.30	0.77
LIABILITYCONCERN2	71.113	51.198	1.39	0.17	15.5626	9.8366	1.58	0.11
LIABILITYCONCERN3	69.092	43.491	1.59	0.11	12.1423	8.3559	1.45	0.15
WRITTENAGREE2	-5.329	25.154	-0.21	0.83	-1.0180	4.8328	-0.21	0.83
WRITTENAGREE3	-0.115	21.651	-0.01	1.00	-0.0221	4.1598	-0.01	1.00
CONCERNEASED2	**-61.630‡**	27.755	-2.22	0.03	**-11.5512‡**	5.3326	-2.17	0.03
CONCERNEASED3	29.113	24.595	1.18	0.24	5.6708	4.7254	1.20	0.23
NOTRESSPASS	-3.491	19.916	-0.18	0.86	-0.6703	3.8264	-0.18	0.86
RUSPROTECTS	-22.652	21.087	-1.07	0.28	-4.4199	4.0515	-1.09	0.28
INSURACEKNOW	-8.548	21.174	-0.40	0.69	-1.6484	4.0681	-0.41	0.69
RISKPREFERENCE1	-35.239	37.610	-0.94	0.35	-6.3478	7.2260	-0.88	0.38
RISKPREFERENCE2	**-44.035***	24.881	-1.77	0.08	**-8.9112***	4.7804	-1.86	0.06
MARGINALLAND	30.694	20.483	1.50	0.14	5.9363	3.9353	1.51	0.13
MARGINALACRES	-0.012	0.076	-0.16	0.87	-0.0023	0.0145	-0.16	0.87
LANDOWNERCOOPER	-10.107	21.931	-0.46	0.65	-1.9216	4.2137	-0.46	0.65
COOPERATIVE	-33.222	27.417	-1.21	0.23	-6.0622	5.2676	-1.15	0.25
CONSERVATION	10.744	20.142	0.53	0.59	2.0678	3.8698	0.53	0.59
TRACTS	0.528	5.205	0.10	0.92	0.1014	1.0000	0.10	0.92
ADJACENT	-15.049	19.857	-0.76	0.45	-2.8792	3.8150	-0.75	0.45
DISTANCE	**-0.155***	0.091	-1.71	0.09	**-0.0299***	0.0174	-1.71	0.09
TOTALACREAGE	0.013	0.017	0.79	0.43	0.0025	0.0032	0.79	0.43
YEARSOWNERSHIP	-0.359	0.487	-0.74	0.46	-0.0690	0.0936	-0.74	0.46
OWNERSHIP1	-119.011	104.503	-1.14	0.26	-18.0273	20.0779	-0.90	0.37
OWNERSHIP2	-11.295	42.616	-0.27	0.79	-2.1208	8.1877	-0.26	0.80
OWNERSHIP3	**-34.806***	20.843	-1.67	0.10	**-6.5355***	4.0046	-1.63	0.10
ACQUIRE1	31.918	34.277	0.93	0.35	6.1734	6.5855	0.94	0.35
ACQUIRE2	-18.500	61.634	-0.30	0.76	-3.4213	11.8417	-0.29	0.77
ACQUIRE3	31.713	35.334	0.90	0.37	6.0468	6.7886	0.89	0.37
ROWCROPS	16.762	31.525	0.53	0.60	3.2014	6.0568	0.53	0.60
COTTON	-19.640	30.014	-0.65	0.51	-3.7665	5.7664	-0.65	0.51
LEASEDFORAG	-15.250	21.581	-0.71	0.48	-2.9644	4.1463	-0.71	0.48
HAYLAND	-27.769	26.715	-1.04	0.30	-5.1647	5.1327	-1.01	0.31
LIVESTOCKLAND	-11.858	27.400	-0.43	0.67	-2.2454	5.2643	-0.43	0.67
GENDER	-1.630	21.233	-0.08	0.94	-0.3128	4.0794	-0.08	0.94
AGE	**1.710‡**	0.853	2.00	0.05	**0.3286‡**	0.1640	2.00	0.05
ETHNIC	50.611	44.289	1.14	0.25	8.8253	8.5093	1.04	0.30
OCUPATION1	33.755	29.757	1.13	0.26	6.8536	5.7171	1.20	0.23
OCUPATION2	-1.691	31.007	-0.05	0.96	-0.3239	5.9573	-0.05	0.96
OCUPATION3	-14.785	30.611	-0.48	0.63	-2.7693	5.8812	-0.47	0.64
EDUCATION1	-5.057	21.083	-0.24	0.81	-0.9681	4.0506	-0.24	0.81
EDUCATION3	-25.956	26.540	-0.98	0.33	-4.8085	5.0991	-0.94	0.35
INCOME1	16.165	31.286	0.52	0.61	3.1935	6.0109	0.53	0.60
INCOME3	12.698	21.903	0.58	0.56	2.4631	4.2081	0.59	0.56
CONSTANT	**-294.720†**	100.293	-2.94	0.00	**-56.6241†**	19.2692	-2.94	0.00
SIGMA	132.498	9.461						

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 531; Chi-square = 209.67; Log-L= -846.63; Prob>chi2 = 0.0000; Pseudo R-squared: 0.110

indicated under the current recreational use statue results in an increase of $0.17 for WTA under the modified use statute. Parameter estimates for CONCERNEASED2 is significant at the 0.05 level and negative in sign indicating that landowners that disagree with allowing recreational use of their land if their liability concerns were eased have a WTA that is $11.55 lower than landowners that are unsure about allowing recreational use of their land if their liability concerns were eased. The coefficients for RISKPREFERENCE2, DISTANCE, and OWNERSHIP3 are all negative in sign and significant at the 0.10 level of significance. Landowners considering themselves to be risk averse have an expected WTA that is $8.91 lower than risk neutral landowners. The greater the distance a landowners' nearest tract of non-residential land is from their primary residence the lower their WTA, since with each one mile increase in distance results in a $0.03 reduction in the expected WTA. If a landowner owns land jointly and allows fee-based recreation, the effect on predicted WTA is a reduction of $6.54 as compared with landowners that are single owners. AGE was the only significant demographic variable, which is significant at the 0.05 level and is positive in sign indicating that with each one year increase in age increases the expected WTA by $0.33.

Tobit parameter estimates for WTA associated with the decision to allow fee-based recreational access under an amended recreational use statue for Arkansas landowners are presented in table 5.22. The coefficients for ACCESSCUR and WTACURRENT are both positive in sign and significant at the 0.01 level of significance. This suggests that landowners who allow fee-based recreation under the current recreational use statute have a WTA that is $23.80 greater than landowners that did not allow fee-based recreation under the current recreational use statute but indicated they would allow it under a modified use statute. The result for WTACURRENT indicates that for each $1 increase specified for WTA under the current

Table 5.22. Tobit estimates for the decision to allow fee-based recreational access under the amended Recreational Use Statute for Arkansas landowners.

WTAAMENDED	Coef.	Std. Err.	t	P>|t|	dF/dx	Std. Err	z	P>|z|
ACCESSCUR	**140.983†**	42.437	3.320	0.001	**23.7948†**	5.8836	4.04	0.00
WTACURRENT	**1.096†**	0.272	4.030	0.000	**0.1519†**	0.0377	4.03	0.00
PERSONALUSE	-53.493	40.267	-1.330	0.185	-7.5147	5.5828	-1.35	0.18
FRIENDSFAMILY	53.973	41.652	1.300	0.196	7.3975	5.7748	1.28	0.20
LEASEDREC	64.864	47.117	1.380	0.169	9.9064	6.5326	1.52	0.13
LIABILITYCONCERN2	**127.217‡**	65.592	1.940	0.053	**21.6779‡**	9.0940	2.38	0.02
LIABILITYCONCERN3	11.910	50.036	0.240	0.812	1.6324	6.9373	0.24	0.81
WRITTENAGREE2	-4.081	41.243	-0.100	0.921	-0.5639	5.7182	-0.10	0.92
WRITTENAGREE3	**74.792‡**	36.206	2.070	0.040	**10.9926‡**	5.0198	2.19	0.03
CONCERNEASED2	**-86.657‡**	41.619	-2.080	0.038	**-11.8469‡**	5.7702	-2.05	0.04
CONCERNEASED3	**100.649†**	36.127	2.790	0.006	**15.3998†**	5.0088	3.07	0.00
NOTRESSPASS	13.707	31.613	0.430	0.665	1.8958	4.3830	0.43	0.67
RUSPROTECTS	**-101.868†**	34.331	-2.970	0.003	**-15.6364†**	4.7599	-3.29	0.00
INSURACEKNOW	-23.029	30.791	-0.750	0.455	-3.2400	4.2690	-0.76	0.45
RISKPREFERENCE1	**-119.491‡**	57.580	-2.080	0.039	**-13.8467***	7.9832	-1.73	0.08
RISKPREFERENCE2	-30.144	36.774	-0.820	0.413	-4.2896	5.0985	-0.84	0.40
MARGINALLAND	30.129	34.109	0.880	0.378	4.2213	4.7291	0.89	0.37
MARGINALACRES	0.064	0.118	0.540	0.588	0.0089	0.0164	0.54	0.59
LANDOWNERCOOPER	-2.680	32.260	-0.080	0.934	-0.3708	4.4727	-0.08	0.93
COOPERATIVE	39.589	33.645	1.180	0.240	5.6381	4.6647	1.21	0.23
CONSERVATION	27.470	31.924	0.860	0.390	3.8792	4.4261	0.88	0.38
TRACTS	2.761	3.094	0.890	0.373	0.3828	0.4290	0.89	0.37
ADJACENT	-16.863	31.507	-0.540	0.593	-2.3164	4.3683	-0.53	0.60
DISTANCE	**0.123†**	0.046	2.640	0.009	**0.0170†**	0.0064	2.64	0.01
TOTALACREAGE	-0.009	0.016	-0.560	0.579	-0.0012	0.0022	-0.56	0.58
YEARSOWNERSHIP	-0.291	0.276	-1.050	0.292	-0.0404	0.0383	-1.05	0.29
OWNERSHIP1	-12.380	64.575	-0.190	0.848	-1.6802	8.9530	-0.19	0.85
OWNERSHIP2	51.495	66.401	0.780	0.439	7.8200	9.2061	0.85	0.40
OWNERSHIP3	0.149	29.781	0.010	0.996	0.0207	4.1289	0.01	1.00
ACQUIRE1	-26.706	54.815	-0.490	0.626	-3.6869	7.5998	-0.49	0.63
ACQUIRE2	10.548	72.818	0.140	0.885	1.4898	10.0959	0.15	0.88
ACQUIRE3	-36.828	56.858	-0.650	0.518	-5.1570	7.8831	-0.65	0.51
ROWCROPS	-22.709	47.082	-0.480	0.630	-3.2348	6.5277	-0.50	0.62
COTTON	**84.254†**	32.868	2.560	0.011	**12.3273†**	4.5569	2.71	0.01
LEASEDFORAG	**83.996‡**	38.163	2.200	0.028	**11.0973‡**	5.2911	2.10	0.04
HAYLAND	60.278	56.829	1.060	0.290	9.1047	7.8791	1.16	0.25
LIVESTOCKLAND	57.747	57.093	1.010	0.312	8.6804	7.9156	1.10	0.27
GENDER	-8.392	37.063	-0.230	0.821	-1.1556	5.1386	-0.22	0.82
AGE	-1.635	1.251	-1.310	0.192	-0.2266	0.1735	-1.31	0.19
ETHNIC	98.451	92.295	1.070	0.287	11.7104	12.7962	0.92	0.36
OCUPATION1	-64.118	43.754	-1.470	0.144	-8.3246	6.0662	-1.37	0.17
OCUPATION2	**-151.285†**	60.643	-2.490	0.013	**-17.2375‡**	8.4078	-2.05	0.04
OCUPATION3	**-217.145†**	80.855	-2.690	0.008	**-22.3181‡**	11.2102	-1.99	0.05
EDUCATION1	-17.325	34.999	-0.500	0.621	-2.3755	4.8525	-0.49	0.62
EDUCATION3	-34.683	42.561	-0.810	0.416	-4.5961	5.9008	-0.78	0.44
INCOME1	-24.382	72.298	-0.340	0.736	-3.2609	10.0238	-0.33	0.75
INCOME3	45.956	32.373	1.420	0.157	6.5137	4.4883	1.45	0.15
CONSTANT	**-237.039‡**	103.623	-2.290	0.023	**-32.8643‡**	14.3668	-2.29	0.02
SIGMA	146.218	12.818						

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 407; Chi-square = 197.61; Log-L= -533.99; Prob>chi2 = 0.0000; Pseudo R-squared: 0.1561

recreational use statue results in an increase of $0.16 for WTA associated with allowing fee-based recreation under an amended use statute. The parameter estimate for LIABILITYCONCERN2 is significant at the 0.05 level and positive in sign indicating that landowners not concerned with the liability issues associated with allowing people on their land have an expected WTA that is $21.68 greater than landowners that are not sure about their liability concerns. The coefficient for WRITTENAGREE3 is positive and significant at the 0.05 level of significance. This result indicates that landowner who believe that a written agreement can protect them from liability have a WTA that is $10.99 higher than landowners who are unsure about written agreements.

The parameter estimates for CONCERNEASED2 and CONCERNEASED3 are both significant at the 0.05 and 0.01 levels and negative and positive in sign, respectively. Landowners that disagree (CONCERNEASED2) with allowing recreational use of their land if their liability concerns were eased have a predicted WTA that is $11.85 lower than landowners that are unsure, while landowners that agree (CONCERNEASED2) would have an expected WTA that would be $15.40 higher than a landowner that are unsure about allowing recreational use of their land if their liability concerns were eased. The parameter estimated for RUSPROTECTS is negative in sign and significant at the 0.01 level of significance. This suggests that the expected WTA of landowners that are unsure about the recreational use statute is $15.64 lower than landowners indicating knowledge of the recreational use statute. The coefficient for RISKPREFERENCE1 is significant at the 0.05 level of significance and negative in sign; thus, landowners describing themselves as risk seekers (RISKPREFERENCE1) have an expected WTA that is $13.85 lower than landowners that consider themselves to be risk neutral. The effect of DISTANCE is positive in sign and significant at the 0.01 level of significance

indicating that with each one mile increase in distance of the nearest tract of non-residential land increases the expected WTA by $0.017 per acre. The coefficient for COTTON is significant at the 0.01 level and is positive in sign suggesting that land used for cotton production results in landowners having a WTA that is $12.33 greater than landowners not having used their land for cotton production. Landowners that have leased their land for agricultural purposes (LEASEDFORAG), which is significant at the 0.05 level, have a predicted WTA that is $11.10 greater than landowners not having leased their land for agricultural purposes. The parameter estimates for OCUPATION2 and OCUPATION3 are both negative in sign and significant at the 0.01 level. This result implies that the WTA for landowners that consider their primary occupation to be business or self-employed would be $17.24 and $22.32 lower than other landowners that do not consider their primary occupation to be business or self-employed.

5.6.5. Multinomial Logit Model for Choice of Management Format for Offering Fee-Based Recreation

A multinomial logit model was used to analyze the probability of landowners specifying one of three management regimes for offering fee-based recreation. The multinomial logit model requires the assumptions of independence of irrelevant alternatives (IIA), which means that adding or deleting choice alternatives does not affect the relative odds of choosing among the existing alternatives. The Hausman test for IIA did not indicate a violation of the of the IIA assumption. Multinomial logit parameter estimates and odds ratios for the choice between management regimes for managing fee-based recreation are presented in table 5.23.

Cooperatively vs. Independently

The coefficients for RUSPROTECTS and GENDER are both negative in sign and significant at the 0.01 level of significance. The result for RUSPROTECTS implies that the odds

Table 5.23. Parameter estimates for the multinomial logit regression analysis of the choice between management regimes for fee-based recreation.

Variable	Cooperatively vs. Independently			Outfitter vs. Independently			Cooperatively vs. Outfitter		
CHOICE	Coef.	Std. Err	RRR	Coef.	Std. Err	RRR	Coef.	Std. Err	RRR
WTACURRENT	0.0032	0.0024	1.0032	0.0023	0.0030	1.0023	0.0009	0.0031	1.0009
WTAAMENDED	-0.0016	0.0020	0.9984	-0.0023	0.0031	0.9977	0.0006	0.0034	1.0006
STATE	0.2567	0.5241	1.2927	0.4186	0.4226	1.5198	-0.1618	0.5884	0.8506
PERSONALUSE	-0.0857	0.6123	0.9179	-0.6316	0.5139	0.5317	0.5459	0.7001	1.7262
FRIENDSFAMILY	0.0173	0.5782	1.0175	0.6247	0.4988	1.8678	-0.6074	0.6715	0.5448
LEASEDREC	0.5762	0.7350	1.7793	-0.3328	0.6090	0.7169	0.9090	0.8436	2.4818
LIABILITYCONCERN2	-0.7349	1.5442	0.4795	-0.4348	1.0112	0.6474	-0.3001	1.7060	0.7408
LIABILITYCONCERN3	0.7490	0.9435	2.1149	0.3123	0.7428	1.3666	0.4367	1.0773	1.5475
WRITTENAGREE2	-1.0172	0.7372	0.3616	**-0.8979***	0.5590	0.4074	-0.1193	0.8371	0.8875
WRITTENAGREE3	-0.0491	0.5186	0.9521	-0.1395	0.4328	0.8698	0.0904	0.5962	1.0946
NOTRESSPASS	0.7065	0.5281	2.0270	0.6026	0.4057	1.8269	0.1039	0.5914	1.1095
RUSPROTECTS	**-1.5701†**	0.5485	0.2080	-0.1992	0.4464	0.8194	**-1.3709‡**	0.6277	0.2539
INSURACEKNOW	0.2189	0.5032	1.2447	0.4824	0.4040	1.6199	-0.2635	0.5743	0.7684
RISKPREFERENCE1	-0.8841	0.9001	0.4131	0.8791	0.6223	2.4086	**-1.7632***	0.9756	0.1715
RISKPREFERENCE2	-0.0759	0.5904	0.9269	0.0854	0.4977	1.0891	-0.1612	0.6710	0.8511
MARGINALLAND	-0.2177	0.5202	0.8043	-0.1460	0.4519	0.8642	-0.0718	0.6055	0.9307
MARGINALACRES	0.0008	0.0017	1.0008	0.0023	0.0015	1.0023	-0.0016	0.0019	0.9984
COOPERATIVE	-0.0548	0.5765	0.9467	0.6765	0.4327	1.9669	-0.7312	0.6263	0.4813
CONSERVATION	-0.2029	0.5196	0.8164	-0.1898	0.4087	0.8271	-0.0131	0.5866	0.9870
TRACTS	-0.1882	0.1436	0.8284	0.0298	0.0396	1.0303	-0.2180	0.1453	0.8041
ADJACENT	**-1.0894***	0.5732	0.3364	-0.0801	0.4000	0.9231	-1.0093	0.6365	0.3645
DISTANCE	**0.0019***	0.0010	1.0019	0.0014	0.0009	1.0014	0.0005	0.0009	1.0005
TOTALACREAGE	-0.0002	0.0004	0.9998	-0.0001	0.0002	0.9999	-0.0001	0.0004	0.9999
YEARSOWNERSHIP	-0.0129	0.0148	0.9872	0.0074	0.0073	1.0074	-0.0203	0.0155	0.9799
Q41	-0.0667	0.5700	0.9354	-0.0487	0.4658	0.9525	-0.0181	0.6474	0.9821
ROWCROPS	-0.7474	0.5145	0.4736	-0.1565	0.4394	0.8551	-0.5909	0.5994	0.5538
GENDER	**-1.6792†**	0.7051	0.1865	0.1356	0.4485	1.1452	**-1.8148‡**	0.7689	0.1629
AGE	0.0297	0.0210	1.0301	0.0199	0.0160	1.0201	0.0098	0.0231	1.0098
ETHNIC	-0.7139	1.3579	0.4897	**-2.0287‡**	0.9578	0.1315	1.3148	1.3011	3.7239
OCUPATION1	-0.4991	0.7435	0.6071	0.3641	0.5396	1.4392	-0.8632	0.8112	0.4218
EDUCATION1	0.6071	0.5533	1.8351	0.2626	0.4457	1.3003	0.3445	0.6332	1.4113
EDUCATION3	-0.0125	0.6493	0.9876	0.0277	0.5197	1.0281	-0.0402	0.7312	0.9606
INCOME1	1.1038	0.8820	3.0156	**-2.2990***	1.3537	0.1004	**3.4028‡**	1.5011	30.0476
INCOME3	-0.2349	0.5314	0.7907	0.0034	0.4236	1.0034	-0.2382	0.6085	0.7880
CONSTANT	-0.4741	2.0674		-1.5117	1.4177		1.0376	2.1970	

†, ‡, *, indicates significance at the 1, 5, and 10 percent level, respectively. N = 229; Chi-square = 85.44; Log-L= -175.331; Prob>chi2 = 0.0749; Pseudo R-squared: 0.19

of choosing to manage for fee-based recreation cooperatively rather than independently is decreased by 0.21 if landowners are unsure about the recreational use statute. Also, the odds of choosing to manage for fee-based recreation cooperatively rather than independently are 0.19 less for females than males. The parameter estimate for ADJACENT is significant at the 0.10 level and negative in sign. This suggests that landowners having their nearest tract non-residential land adjacent to their primary residence decreases the odds of choosing to manage fee-based recreation cooperatively rather than independently by 0.34. The effect of DISTANCE is positive and significant at the 0.10 level of significance suggesting that with each one unit increase in distance, the odds of choosing to manage for fee-based recreation cooperatively rather than independently is increased by 1.

Outfitter vs. Independently

Parameter estimates for WRITTENAGREE2, ETHNIC, and INCOME1 are negative in sign and significant at the 0.10, 0.05, and 0.10 levels, respectively. For landowners that disagree that a written agreement can protect them from liability, the odds of choosing to manage for fee-based recreation using an outfitter rather than choosing to offer fee-based recreation independently is decreased by 0.41 as compared to landowners that are unsure about written agreements. The odds of white landowners choosing to use an outfitter rather than opting to manage independently is 0.13 less as compared to non-whites. For landowners with annual household incomes of less than $25 thousand, the odds of choosing the outfitter management option over managing independently are decreased by 0.10 as compared with landowners with annual household incomes in the $25 to $75 thousand range.

Cooperatively vs. Outfitter

The coefficients for RUSPROTECTS, RISKPREFERENCE1, and GENDER are negative

in sign and significant at the 0.05, 0.10, and 0.05 levels, respectively. The result for RUSPROTECTS indicates that the odds of choosing to manage for fee-based recreation cooperatively rather than using an outfitter are decreased by 0.23 for landowners who are unsure about the recreational use statute. The odds of choosing to manage for fee-based recreation cooperatively rather than using an outfitter are 0.16 less for females than males indicating that females are more likely to prefer an outfitter. For landowners with annual household incomes of less than $25 thousand, the odds are increased by 30.04 to choosing to manage for fee-based recreation cooperatively rather than using an outfitter as compared with landowners with annual household incomes in the $25 to $75 thousand range. The result for RISKPREFERENCE1 suggests that the odds of selecting the management option of cooperatively as opposed to outfitter are decreased by 0.17 if landowners consider themselves to be risking seekers as compared with landowners that consider themselves to be risk neutral.

CHAPTER 6. DISCUSSION, SUMMARY, AND CONCLUSIONS

6.1. Discussion of Descriptive Analysis Results

6.1.1. Demographics

The significant differences between Arkansas and Louisiana landowner educational levels indicate that Louisiana respondents are better educated than Arkansas respondents. A higher percentage of Arkansas respondents have less than a high school education and more Louisiana respondents have attained a graduate or professional degree. Arkansas respondents appear to have higher household incomes than Louisiana respondents as indicated by Arkansas respondents dominating income categories above $50 thousand and Louisiana respondents have higher percentages for nearly all of the income categories below $50 thousand.

6.1.2. Recreational Use and Land Access Practices

More than half of both Arkansas and Louisiana respondents have allowed individuals outside of their immediate households to use their land for recreational purposes; however, such access is not commonly allowed for individuals that landowners do not know personally, as just over 10% of landowners have allowed recreational access to individuals they do not know personally. And when it comes to allowing fee-based recreational access, only 11.5% and 11.2% of all Arkansas and Louisiana respondents indicated they had accepted money to allow recreational use of their land.

6.1.3. Risk and Liability Issues

The vast majority of respondents indicated that they are very concerned about the liability issues associated with allowing people on their land. This concern may explain in part why so few landowners have allowed recreational access to individuals they do not know personally. However, when asked if their liability concerns were eased would they be more inclined to allow recreational access, 26% of Arkansas and 36% of Louisiana landowners indicated that they either

somewhat or strongly agreed. This Indicates that an institutional change may increase recreational access to private lands, particularly so for Louisiana. However, over 40% respondents either somewhat or strongly disagreed with allowing recreational access if their liability concerns were eased indicating that liability concern may not be a major factor in the decision not to allow recreational access for some landowners.

The results indicated that there exists a clear need for more landowner education. When it came to having a knowledge of liability and legal issues, the vast majority of respondents either do not know or are unsure about matters regarding written agreements between landowners and land entrants, posting of "no trespassing" signs, state recreational use statutes, and the availability of liability insurance for fee-based recreation.

Another possible factor that may influence the decision to allow fee-based recreation is that of risk preference. Allowing recreational use of land introduces the risk associated with liability, and over 70% of respondents indicate that they are risk averse and that they tend to avoid risk in their financial decisions. The implications are that many landowners may choose not to allow fee-based recreation because of the liability risk but it may also indicate that an institutional change reducing landowner liability may increase landowner willingness to allow fee-based recreation.

6.1.4. Marginal Lands

Fee-based recreation may be more attractive to respondents having land that they consider to be marginal for agricultural purposes, and more than 40% of respondents indicated ownership of marginal land. There seems to be potential for developing such opportunities as results indicate a high volume of marginal land, particularly in Louisiana. Louisiana respondents considered 33.3% of their lands to be marginal for agricultural purposes as compared with Arkansas landowners viewing 25.2% of their land as marginal on average. About 80% of

respondents described their marginal land as forest or wooded areas, which would be ideal for certain types of wildlife associated fee-based recreation.

6.1.5. Fee Based Recreational Use of Land

When landowners were asked if they would be willing to allow fee-based recreation on their land, Arkansas and Louisiana landowners responded very similarly with 14.2% and 14.1% indicating yes, respectively. An institutional change that reduces the liability risk to the landowner does seem to increase the responsiveness of landowners to allowing fee-based recreation. When landowners were presented with a hypothetical scenario describing a change to the recreational use statute that would allow them to charge a fee for recreational access and keep the liability protection afforded to free access landowners, the number of landowners indicating a willingness to allow access increased to 20.6% for Arkansas and 24% for Louisiana. That is a 45% increase for Arkansas respondents and a 70% increase for Louisiana. Clearly, an institutional change that reduces the liability risk to landowners can increase the potential amount of private land that could be used for fee-based recreation, again particularly so for Louisiana. The average amount of land that landowners would be willing to use for fee-based recreation was 259.3 acres for Arkansas and 256.6 for Louisiana landowners. So under the current recreational use statute or with a modification to the Louisiana and Arkansas recreational use statute, the potential exists to make available a sizable amount land for public fee-based recreational use.

It was interesting to note the various activities that landowners indicated that they would not allow on their land if they did allow fee-based recreation. The top two banned activities were ATV riding and camping. Not allowing ATV riding and camping may reflect concerns over liability associated with potential injury (i.e., accidental injury resulting from ATV riding) or this

may reflect landowner concerns for damage to property due to soil compaction from ATV riding or littering by campers.

When this research project was first proposed, it was considered that a cooperative form of land management might be a possible way to allow landowners with marginal land or small tracts of land to pool their land resources together to increase their total volume of manageable land. However, of the three management options presented to landowners, managing fee-based recreation cooperatively was the least favored option with the vast majority of landowners indicating a preference for managing for fee-based recreation independently followed by using an outfitter. This lack of preference for the cooperative management option is interesting given that the over 25% of landowners have worked with their neighboring or adjacent landowners and over 95% indicated that it was a beneficial to them.

6.1.6. Current Land Uses

One interesting difference between Arkansas and Louisiana landowners was the level of participation in government conservation programs. Having land, either currently or in the past, in programs such as the Conservation Reserve Program or Wetland Reserve Program were much more common among Louisiana (60%) than Arkansas (32.5%) landowners. This suggests that Louisiana landowners in the Delta may have a greater willingness than Arkansas landowners to adopt non-agricultural uses of their land.

While most landowners are single owners, 45 % of Arkansas and 37% of Louisiana landowners indicated they owned the land jointly. Such joint owners of land responding to the survey may not be comfortable with allowing fee-based recreation since they may lack autonomy in the decision process. In addition, there may be costs involved such as the cost of having to deal with their co-owners, the cost of bargaining and negotiating. Alternative land uses may also not be as attractive to individuals that purchased land, which was indicated by over 55% of

respondents, with the assumption that they purchased the land for some specific purpose or use in mind. However, 46% of respondents indicated that they acquired land through inheritance and may be more inclined to consider alternative uses of the land if it is not already used to generate revenue.

Certain agricultural commodities tended to be more common in each state. For example, in the northeast section of Louisiana cotton and corn were more common while in delta counties of Arkansas commodities such as rice, soybeans, and wheat were more common. Also, agricultural production of row crops was much more common for Arkansas landowners, 81.7%, as compared to as compared with Louisiana landowners, 57.4%. This difference suggests that more Louisiana landowners might be willing to consider alternative land uses since nearly half are not using their land for agriculture.

6.2. Discussion of First and Second Mailing Respondents

The potential for non-response bias is always a concern for survey data. This results when people who respond to a survey are different from sampled individuals that did not respond in a way relevant to the study (Dillman, 2000). One approach to test for the presence of non response bias is the comparison of early to late respondents with late respondents serving as a proxy for non-respondents. T-tests comparing demographics of first and second mailing respondents provided little evidence of non-response bias. Out of 41 possible responses, only 4 were significantly different between first and second mailing for Louisiana respondents. There was slightly more evidence of non-response bias for Arkansas respondents as indicated by 11 of the 41 responses being significantly different.

A more telling indicator of non-response bias and its possible influence on study results can be observed by examining responses to questions relating to the decision to allow fee-based recreation. Respondents having a greater interest in alternative land uses tended to respond to

the first mailing while late respondents demonstrated less interest in alternative land uses (Table 6.1.).

Table 6.1. Percentage of first and second mailing respondents indicating a willingness to allow fee-based recreation under the current and amended recreational use statutes.

Arkansas	1st mailing		2nd mailing	
Willing to allow fee-based recreation (current RUS)	n = 343	19.30%	n = 142	0.70%
Willing to allow fee-based recreation (amended RUS)	n = 340	27.90%	n = 142	1.40%
Louisiana	1st mailing		2nd mailing	
Willing to allow fee-based recreation (current RUS)	n = 448	18.10%	n = 184	4.40%
Willing to allow fee-based recreation (amended RUS)	n = 445	31.20%	n = 184	5.40%

The willingness to accept values for allowing fee-based recreation were only supplied by first mailings respondents as second mailing respondents consistently bypassed the questions asking how much money they would be willing to accept to allow fee-based recreational use of their land. This underscores that landowners not having an interest in alternative land uses were more likely not to respond to the survey.

6.3. Discussion of Willingness to Accept and Transaction Cost

It was hypothesized that an institutional change that reduced the potential for liability would reduce the transaction cost associated with offering fee-based recreation. If this is true then a reduction in the willingness to accept for landowners allowing fee-based recreation pre and post institutional change should reflect this transaction cost savings. The theory appears to hold for Louisiana landowners but not for Arkansas landowners. For Louisiana landowners allowing fee-based recreation pre- and post-institutional change the mean WTA was reduced by $4.67 per acre per year. For Arkansas respondents the change in mean WTA was an increase of $1.51 per acre pre year. Evidence from the demographic responses suggests that Louisiana survey respondents are better educated than Arkansas respondents, perhaps indicating that Louisiana respondents better understood the implications of reduced liability risk such that the compensation they required would be less post institutional change. The results of the Tobit

models discussed in the next section provide additional evidence of transaction cost reduction for both Louisiana and Arkansas that is based on expected value rather than simply comparing mean values.

6.4. Discussion of Econometric Results

6.4.1. Decision to Allow Access

The potential effect of easing the liability concern of landowners was a very significant predictor for the probability of allowing fee-based recreation whether pre- or post-institutional change. This is represented by the two variables that indicate if landowners disagree (CONCERNEASED2) or agree (CONCERNEASED3) with allowing recreational use of their land if their liability concerns were eased. This provided a very consistent theme across all six probit models where if they disagreed the effect was negative and if they agreed the effect was positive for the decision to allow recreational access. This provides a very clear indication that for many landowners the reason they chose not to allow fee-based recreational access is not related to liability concern but rather because of other exclusive uses whether it be purely agricultural application or because of the negative effect on their utility resulting from loss of exclusive use of their land for recreational purposes.

As for the positive effect of CONCERNEASED3 (i.e., agree with allowing recreational use of their land if their liability concerns were eased) and its significance in all six probit models, one would expect the magnitude of the positive effect to be greater in the post institutional change models, since the liability risk would be lower for landowners under the post-institutional change environment relative to the pre-institutional change conditions. This appears to be true in the Louisiana and combined states models but not for the Arkansas model. In the combined states and Louisiana pre- and post-institutional change models the probabilities of allowing fee-based recreation increase from 11.8% to 15.9% and 6.9% to 11.9%, respectively.

This reflects the responsiveness of landowners to an institutional change, meaning that landowners would be much more likely to allow fee-based recreation following an institutional change that reduces their liability concerns. However, in the Arkansas models this result is reversed. The percentages are 15.7% in the pre-institutional change environment and only 3.2% post- institutional change. This result for Arkansas is contrary to reason, similar to the transaction cost result noted previously, and may be attributable to some of the same reasons, such as a lack of understanding by Arkansas respondents proxied by their lower educational levels relative to Louisiana respondents.

The element of risk is inherent in allowing fee-based recreation. This risk exists as liability with the ever looming potential of a lawsuit, which can be a potentially powerful disincentive to a landowner depending on how a landowner perceives risk. The influence of risk preference was represented in the probit models by the two dummy variables of RISKPREFERENCE1, indicating risk seeking behavior, and RISKPREFERENCE2, indicating risk aversion. Given that the risk is far greater under the current institutional arrangements, it is not surprising that these two variables are significant only in the pre-institutional change probit models and not in the post-institutional change model scenario where the riskiness of allowing fee-based recreational access is substantially lessened. However, in the three pre-institutional change probit models these variables are significant and have the expected sign consistent with theory. An individual that is a risk seeker would be more likely to allow fee-based recreation under the current institutional environment. In the Arkansas and combined states probit models the probability of allowing fee-based recreation under the current institutional environment was 21.5% and 9.8% greater for risk seekers. However, in the Louisiana and combined states probit models the probability to allow fee-based recreation under the current institutional environment was 13.6% and 6.6% lower for risk averse landowners.

The fact that the variable indicating if landowners are aware about the availability of commercial liability insurance (INSURACEKNOW) is significant and negative in sign only in the pre-institutional change probit and not significant in the post-institutional change models is interesting. Being unsure about the availability of commercial liability insurance (INSURACEKNOW) has a negative effect on the decision to allow fee-based recreation and reduces the probability of allowing access by 4.6% for Louisiana, 5.1% for Arkansas, and 6.6% for both states combined. Having such insurance would reduce the risk of allowing fee-based recreation under the current institutional environment. The fact that this variable is not significant in the post-institutional change model is not surprising since the value of such insurance would be reduced following a change to the recreational use statute that extends liability protection to landowners charging a fee for recreational access.

It was hypothesized that marginal landowners might be more willing to use their land for fee-based recreation, since generating income through agricultural applications may not be practical or profitable. Therefore, it is not surprising that the variable indicating ownership of marginal land is significant and positive in sign for both the Louisiana and combined states probit models. In addition, marginal landowners appear to be very responsive to institutional change. Under the current recreational use statute marginal landowners have a 5.4% higher probability of allowing fee-based recreation than non-marginal landowners, which increases to 10.5% post-institutional change. It appears that Louisiana marginal landowners are also responsiveness to institutional change, since they have an increased probability of 6.5% for pre-institutional change and 11.4% post-institutional change.

Having land in government conservation programs, such as the Conservation Reserve Program and Wetland Reserve Program, has a positive effect on the probability of allowing fee based recreation under both the pre- and post-institutional change environments. It was

hypothesized that such a relationship may exist since such landowners have a demonstrated willingness to use their land for non-traditional agricultural uses. Therefore, it is not surprising to find that these landowners have a higher probability of adopting fee-based recreation and to find that these landowners are also responsive to an institutional change, which resulted in an increased probability of 6% pre-institutional change to 9.6% post-institutional change in the combined states model. Therefore individuals that use their land for alternative land applications such as conservation programs would be more likely to allow fee-based recreation.

The organization of land ownership seems to influence the decision to allow fee-based recreation. Joint ownership as compared with single ownership appears to have a negative effect on the probability of allowing fee based recreation under both the pre- and post-institutional change environments, whereas limited liability ownership has a positive effect as compared with single ownership on the probability of allowing fee based recreation under the current institutional environment. The negative effect of joint ownership may, as noted previously, be a result of joint owners having a lack of autonomy in the decision process and thus are not comfortable or able to make a decision regarding fee-based recreation. The result that LLC landownership has a positive effect on allowing fee-based recreation may be related to the legal structure of LLCs, in that the personal wealth of the individual is better protected from liability as compared with either single or joint ownership. Therefore, the higher probability of choosing to allow fee-based recreation under the current institutional setting by LLC landowners may likely result from that recognition on the part of the landowner. Also, for that same reason it is not surprising that the same variable is not significant in the post-institutional change model where liability issues and associated risk are greatly reduced and the comparative benefit to LLC landowners over joint or single landowners is also greatly reduced.

6.4.2. Willingness to Accept Compensation to Allow Access

The significance of the variable STATE and the result that the expected WTA for Louisiana landowners is $7.18 lower than the WTA of Arkansas landowners may be due in part the perceived higher value, quality, and use of Arkansas land as compared to the same perceptions of Louisiana landowners. For example, Arkansas respondents indicated that they believed on average that only 25% of their land was marginal for agricultural purposes as compared to Louisiana landowners indicating that about 33% of their land could be considered marginal. So the volume of non-marginal land is higher on average for Arkansas respondents while the amount of land that both Arkansas and Louisiana landowners would consider using for recreational purposes is nearly identical at about 259 acres for Arkansas and 256 acres for Louisiana respondents. Consider also that Arkansas landowners value their marginal land slightly higher than Louisiana landowners, which may also help explain the differential in expected WTA. Arkansas landowners on average reported the value of their marginal land at $1.4 thousand as compared to $1.3 thousand. Considering these factors it is not surprising that the expected WTA of Louisiana landowners is $7.18 per acre per year lower than the WTA of Arkansas landowners.

The significant and positive effect of the variables ACCESSCUR and WTACURRENT was a result that was consistent across all three of the post-institutional change tobit models. The significant and positive effect of ACCESSCUR indicates that landowners who choose to allow fee-based recreation under both pre- and post-institutional change environments have higher WTA values than landowners only opting to allow fee-based recreation post-institutional change. Landowners allowing fee-based recreation under the current recreational use statute have an expected WTA that is $24.52 greater than landowners that did not allow fee-based recreation under the current recreational use statute. This result suggests that the negative effect of liability

hypothesized in the theoretical model has a much higher impact on landowners choosing to allow recreation only under the post-institutional change environment as compared to those who would allow it pre- and post-institutional change. Apparently the potential transaction cost for landowners not allowing fee-based recreation pre-institutional change is perceived as being greater than it is by landowners opting to allow fee-based recreation pre-institutional change. Thus, when the effect of that transaction cost associated with liability is reduced by an institutional change the WTA of pre-institutional change non-access granting landowners is much lower than pre-institutional change access granting landowners. This implies that not only are transactions associated with liability evident but that transaction costs are perceived differently by pre-institutional change access and non-access granting landowners. The significant and positive effect of WTACURRENT also provides indication of a reduction in transaction cost that would be afforded to landowners under a modified recreational use statute, since with each $1 increase in WTA indicated under the current recreational use statute results in an increase of $0.17 for expected WTA under the modified use statute. These results imply that a modification to the recreational use statute that extended liability protection to fee-based recreational access granting landowner would reduce the transaction cost borne by landowners thus reducing the fee for recreation use of land and also potentially reducing the cost of fee-based recreation to the public.

Further possible evidence of a reduction in transaction costs can be seen in results for the variables CONCERNEASED3, MARGINALLAND, and RISKPREFERENCE2. The WTA of landowners that agree with allowing recreational use of their land if their liability concerns were eased (CONCERNEASED3) have a WTA that is $15.10 higher than landowners that are unsure about allowing recreational use of their land if their liability concerns were eased. The post-institutional change expected WTA is $9.28 higher than landowners that are unsure about

allowing recreational use of their land if their liability concerns were eased. The difference in the magnitude of the marginal effects seems to indicate that institutional change does reduce the transaction cost of fee-based recreation. A similar result can be observed for marginal landowners. Pre-institutional change marginal landowners have an expected WTA that is $7.61 higher than landowners not owning marginal land. Following an institutional change the WTA of marginal landowners is $5.57 higher than non-marginal landowners. A possible better indicator of the reduction in transaction costs may captured by the variable RISKPREFERENCE2 which indicates if a landowner is a risk seeker. Risk seekers derive greater utility from investments with higher returns and greater risk. Allowing fee-based recreation under the current recreational use statute is riskier than under a modified recreational use statute that would extend liability protection to landowners charging a fee for recreational access. Therefore, it is interesting to notice that under a pre-institutional change environment that risk seekers have an expected WTA that is $15.48 greater than risk neutral landowners, yet after an institutional change that substantially reduces the risk of liability it is observed that risk seekers have an expected WTA that is $9.83 lower than landowners considering themselves to be risk neutral. This difference in magnitude of the marginal effects seems to indicate that institutional change does reduce the risk of liability and the transaction cost associated with offering fee-based recreation.

6.4.3. Preference for Organizational Form

The cooperative management option appears to be the least appealing to landowners as is evidenced by the negative sign for all significant variable coefficients in the multinomial logit model for choice of organizational form to manage fee-based recreation. There is one exception, as indicated by the variable DISTANCE, which implies that the odds of choosing the cooperative management option increases by 1 with each one mile increase in distance. In other words the

farther landowners' nearest tract of land is from their home the more likely landowners would choose the cooperative management option over choosing to manage land independently. As a contrast to this observation, notice that the variable ADJACENT has a negative effect on the odds of choosing the cooperative management option over independently managing for fee-based recreation. This means that the odds of choosing to manage cooperative rather than independently are 0.34 times lower if a landowner's nearest tract of land is adjacent to their primary residence.

The variable GENDER indicates that the estimated odds of women choosing the cooperative over independent management option were 0.18 times lower than men and the odds of women choosing to manage cooperatively over using an outfitter were 0.16 lower then men. These results suggest that men rather than women would be more likely candidates for a cooperative approach to fee-based recreation. ETHNIC indicates that the odds of whites choosing the outfitter management option rather than managing independently are 0.13 times lower compared to non-whites. These results suggest that if the outfitter industry seeks to acquire private land to manage, they should target landowners that are women and of non-white ethnicity. The results for variable INCOME1 indicate that landowners with annual household incomes of less than $25 thousand are much more likely to choose to manage for fee-based recreation cooperatively rather than using an outfitter. In fact, the odds are 30 times higher that they would choose the cooperative option over using an outfitter as compared with landowners with annual household incomes in the $25 to $75 thousand range. These results suggest that the best candidates for the cooperative approach to fee-based recreation, in terms of demographics, would be men in the income lower income ranges.

Any management option other than managing independently was not preferred by landowners that were unsure about legal issues associated with land ingress. The odds of

choosing to manage for fee-based recreation cooperatively rather than independently is decreased by 0.21 if landowners are unsure about the recreational use statute, and the odds of choosing to manage for fee-based recreation using an outfitter rather than choosing to offer fee-based recreation independently is decreased by 0.41 for landowners that disagree (WRITTENAGREE2) that a written agreement can protect them from liability as compared to landowners that are unsure about written agreements. This suggests that educating landowners about legal issues associated with recreational use of their property might increase the willingness of landowners to consider a cooperative management approach. However, managing for fee-based recreation cooperatively was thought to be an ideal approach for smaller landowners interested in offering fee-based recreation, yet the variable indicating size of landownership was not a significant predictor of management choice. This may indicate a need for educational programs highlighting the value of increasing the volume of land used for wildlife management that could be achieved by managing cooperatively. Interestingly, landowners are apparently not choosing the cooperative option not because they believe it to be risky, since individuals that are risk seekers are more likely to prefer the outfitter option over the cooperative. The odds of selecting the cooperative management option over opting to use an outfitter are decreased by 0.17 if landowners consider themselves to be risk seeking as compared with landowners that consider themselves to be risk neutral.

6.5. Summary

Land in Delta counties and parishes of Arkansas and Louisiana have traditionally been used for agricultural purposes; however, other non-agricultural land uses such as fee-based recreation may be of interest to landowners, particularly for owners of lower quality marginal agricultural land. Such lands are often targeted for removal from agricultural applications by the U.S. Federal Government through incentive programs such as the Conservation Reserve

Program, Grassland Reserve Program, and the Wetland Reserve Program. The primary objectives of this study were to understand potential willingness of landowners to use marginal agricultural or productive lands for fee-based recreational applications, to determine the factors serving as incentives or disincentives to the landowner, what form of wildlife based recreational enterprise would or do landowners prefer, how liability concerns and other possible disincentives collectively influence landowners' access decisions, and how institutional change might influence landowners' willingness to allow fee-based recreation.

All 50 states have recreational use statutes that are intended to encourage landowners to make their lands available for free public recreational use by providing liability protection to the landowner; however, there are an increasing number of states allowing landowners to charge a fee and retain the liability protection. The recreational use statutes for Arkansas and Louisiana do not apply to landowners charging a fee for recreational use of their land. Might landowners be responsive to changes in the recreational use statute that expand the liability protection to allow the charging of fees for recreational access? Such an institutional change would reduce the risk to the landowners; thus, it was hypothesized that risk associated with liability would be a significant factor in the landowner decision to allow fee-based recreational use of their land. Does this risk create a cost to the landowner? The potential for a lawsuit, whether real or perceived, creates a disincentive for fee-based recreation to the landowner and an opportunity cost. To mitigate the disincentive of liability the landowner may incur costs associated with seeking legal information, consulting lawyers, having contracts drafted to protect property rights and reduce liability, and/or securing commercial liability insurance. All of these actions create a transaction cost for fee-based recreation. If this transaction cost exists there should be a reduction in the pre- and post-institutional change willingness to accept value to allow fee-based recreation.

This study surveyed delta landowners in Arkansas and Louisiana on their willingness to allow fee-based recreational use of their land, their current recreational use and land access practices, ownership of marginal land, current land uses, and demographic information. The data collected from the survey was analyzed descriptively and econometrically. Econometric models utilized in this study include probits (to analyze factors related to the probability of allowing fee-based recreation), tobits, (to analyze factors influencing the expected willingness to accept values associated with fee-based recreation) and multinomial logits (to examine factors that influence the probability of landowners choosing an organizational form to manage and market fee-based recreation).

Many landowners indicate that their family and friends use their land for recreational purposes; however, only slightly more than 11% of landowners had charged a fee for recreational use. Over 14% of landowners indicated they would be willing to allow people to pay them a fee to access their land for recreational purposes. So there is some existing potential for developing fee-based recreation on private land. As far as using marginal land for recreational purposes, probit model results indicate that marginal landowners have a higher probability of allowing fee-based recreation as do landowners having land in conservation programs. This indicates that landowners are desirous for alternatives ways to generate income using non-traditional non-agricultural means.

The perception of risk and liability seems to influence a landowner's decision to allow fee-based recreation. The vast majority of landowners indicated that they are concerned about the liability issues associated with allowing people on their land. It is also interesting that a great majority of landowners (over 70%) consider themselves to be risk averse. It would seem reasonable that a risk seeking landowner would be more likely and a risk averse landowner would be less likely to allow fee-based recreation under the current recreational use statute for

Louisiana and Arkansas, which does not extend liability protection to landowners that charge a fee for recreational access. Probit model results seem to confirm this indicating that risk seeking landowners have a higher and risk averse landowners have lower probability of choosing to allowing fee-based recreation.

Given the landowners' concern over liability, the inherent element of risk in allowing fee-based recreation, and the fact that the vast majority of landowners consider themselves to be risk averse, it would seem that an institutional change resulting in greater liability protection for landowners would increase the willingness of landowners to allow fee-based recreation. Survey results revealed that 26% of Arkansas and 36% of Louisiana respondents would be more likely to allow fee-based recreational access if their liability concerns were eased. So how effective would a change in the recreational use statute be in terms of easing the liability concerns of landowners. Probit models results indicate that landowners concerned about liability would have a much higher probability of allowing fee-based recreation under a modified recreational use statute with an 11.9% higher probability for Louisiana and only 3.2% higher probability for Arkansas landowners. This seems to indicate that Louisiana landowners concerned about liability issues would be more responsive to a change in the recreational use statute than Arkansas landowners.

One of the primary questions sought to be answered by this study was whether a transaction cost exists for fee-based recreation, which is borne by delta landowners, and can transaction costs be reduced by adopting a modified recreational use statute as has been done by 19 other states. When looking at the mean values reported by survey respondents it appears that the theory holds for Louisiana but not for Arkansas. However, results for the tobit models seem to indicate evidence of reduced transaction costs for both Louisiana and Arkansas landowners. Rather than examining simple means, the Tobit model results allow for a comparison of pre- and

post- institutional expected WTA by modeling post-institutional WTA as a function of pre-institutional WTA and the decision to allow recreational access in the pre-institutional change environment. Tobit model results indicate that landowners allowing fee-based recreation both pre- and post-institutional change have an expected WTA that is $24.52 greater than landowners that did not allow fee-based recreation under the current recreational use statute. This results implies that the perceived transaction cost is so high under the pre institutional environment that many landowners do not allow fee-based recreation, and when this transaction cost associated with liability is eliminated the expected WTA for landowners allowing recreation post-institutional change only is much lower than for landowners allowing both pre- and post-institutional change. Transaction costs are also evident in the relationship between expected WTA post-instructional change and WTA pre-institutional change. Tobit model results indicate that with each $1 increase in WTA under the current recreational use statute results in an increase of $0.17 for expected WTA under the modified use statute. This implies that there is a transaction cost savings resulting from the institutional change.

Study results indicated that the vast majority of landowners prefer to manage fee-based recreation themselves. Using an outfitter was much less preferred followed by managing cooperatively with other local landowners, and there were no significant differences between Arkansas and Louisiana landowners in terms of management choice. It appears that the only factor indicating a higher probability of preferring the cooperative management option was distance meaning that the farther a landowners nearest tract of land is from their home the more likely the landowner would choose the cooperative management option over choosing to manage the land independently. A higher probability of choosing to use an outfitter to manage land for fee-based recreation exists for landowners that are women or of non-white ethnicity, which is a result that may be of interest to the outfitter industry seeking to expand its manageable land base.

6.6. Conclusions

Amending the Arkansas and Louisiana recreational use statute can increase the number of private landowners willing to use their land for fee-based recreational use. About 14% of landowners indicated that they would be willing to allow fee-based recreation under the current institutional environment. If the Arkansas and Louisiana recreational use statutes were amended giving greater liability protection landowners, the number of landowners willing to allow fee-based recreation would increase to over 20% of Arkansas and nearly 24% of Louisiana landowners. That is a 45% increases for Arkansas respondents and a 70% increase for Louisiana. Clearly, an institutional change that reduces the liability risk to landowners can increase the potential amount of private land that could be used for fee-based recreation, again particularly so for Louisiana. Over 40% of landowners have land that is marginal for agricultural purposes with the average ownership of marginal land being slightly more than 100 acres. Owners of marginal land were particularly responsive to an institutional change providing greater liability protection. Amending the recreational use statute would increase the amount of land available for recreation by providing a needed incentive for landowners as landowners on average would be willing to allocate a little more than 250 acres for fee-based recreation.

A fee-based recreational enterprise under the current legal environment caries with it the risk of liability; thus, as expected, risk preference was a significant predictor of the decision to allow fee-based recreation. Risk averse landowners were more unlikely and risk seeking landowners were much more likely to allow fee-based recreation under the current institutional environment. Following an institutional change it was observed that risk preference was no longer a significant predictor of the willingness to allow fee-based recreation indicating that the element of risk was diminished. Transaction costs associated with liability are evident and amending the recreational use statute appears to produce a reduction in expected WTA reflecting

a transaction cost savings to landowners. However, the magnitude in the reduction of transactions cost is a matter of perception as landowners not allow recreation under the current recreational use statue have an expected willingness to accept post-institutional change that is lower than landowners opting to allow fee-based recreation under both pre- and post-institutional change environments.

Most landowners prefer to manage their land for fee-based recreation individually, with less than 30% and 20% of landowners indicating a preference for using an outfitter or working cooperatively with other landowners. This implies that the potential benefits of cooperatively managing for fee-based recreation are not readily apparent to landowners, indicating that outreach programs targeted at landowners of smaller tracts of land could be developed to help smaller landowners or marginal landowners recognize the potential benefits of different management alternatives for fee-based recreation. However, it is also possible that respondents perceive the costs of cooperative management to be greater than any potential benefits.

REFERENCES

Adams, R.M., O. Bergland, W.N. Musser, S.L. Johnson, and L.M. Musser. 1989. Use fee and equity issues in public hunting expenditures: the case of ring-necked pheasant in Oregon. Land Economics. 65(4):376-385.

Arrow, K., Solow, R., Portney, P., Leamer, E., Radner, R. and H. Schuman. 1993. Report of the NOAA Panel on Contingent Valuation. Federal Register. 58(10):4601-4614.

Bard, S. K. and P.J. Barry. 2001. Assessing farmers' attitudes toward risk using the closing-in method. Journal of Agricultural and Resource Economics. 26(1): 248-260.

Basarir, A. 2002. Multidimensional goals of farmers in the beef cattle and dairy industries, PhD Thesis, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge.

Benson, D.E., R. Shelton, and D.W. Steinbach. 1999. Wildlife stewardship and recreation on private lands, J.F. Winn (ed). College Station, Texas, Texas A&M University. 170p.

Benson, D.E. 2001. Wildlife and recreation management on private lands in the United States. Wildlife Society Bulletin. 29(1):359-371.

Bernoulli, D. 1954. Exposition of a new theory on the measurement of risk. Econometrica 22: 23-36.

Berrens, R.P. and R.M. Adams. 1989. Applying contingent valuation in the design of fee hunting programs: pheasant hunting in Oregon revisited. Human Dimensions of Wildlife. 3(3):11-25.

Bishop, R.C. and T.A. Heberlein. 1990. The contingent valuation method. In: Economic Valuation of Natural Resources: Issues, Theory, and Applications, R.L. Johnson and G.V. Johnson. editors. Boulder: Westview. pp.81-104.

Bishop, R.C., P.A. Champ, and D. J. Mullarkey. 1995. Contingent Valuation. In: Handbook of Environmental Economics. D.W. Bromly (ed). Cambridge: Blackwell Publishing. pp. 631-654.

Cardona, H. 1999. Analysis of policy alternatives in the implementation of a coastal nonpoint pollution control program for agriculture, PhD Thesis, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge.

Carson, R.T., N.E. Flores, and N.F. Meade. 2001. Contingent Valuation: Controversies and Evidence. Environmental and Resource Economics 19: 173–210.

Copeland, J.D. 1998. Recreational access to private lands: liability problems and solutions. Second edition. National Center for Agricultural Law Research and Information. Robert A. Leflar Law Center. University of Arkansas: Fayetteville. 212p.

Ciriancy-Wantrup, S.V. 1947. Capital returns from soil conservation practices. Journal of Farm Economics. 27:1181-1196.

Davis, R. 1963. The Value of Outdoor Recreation: An Economic Study of the Marine Woods. Ph.D. Dissertation, Harvard University.

Dillman, D.A. 2000. Mail and Internet Surveys: The Tailored Design Method. New York: Wiley. 464p.

Direnfeld-Michael, B.1987. Legal liabilities facing operators of shooting ranges. In: Transactions of the Fifty-second North American Wildlife and Natural Resource Conference. Wildlife Management Institute. Washington D.C. pp.143-160.

Fausti, S. and J. Gillespie. 2006. Measuring risk attitude of agricultural producers using a mail survey: how consistent are the methods? Australian Journal of Agricultural and Resource Economics. 50: 171–188

Franses P.H. and R. Paap. 2001. Quantitative Models in Marketing Research. Cambridge: Cambridge University Press. 206p.

Fried, B.M., R.M. Adams, R.P. Berrens, and O. Bergland. 1995. Willingness to pay for a change in elk hunting quality. Wildlife Society Bulletin. 23(4):680-686.

Fausti, S. and J. Gillespie. 2006. Measuring risk attitude of agricultural producers using a mail survey: how consistent are the methods? The Australian Journal of Agricultural and Resource Economics. 50:171-188.

Fausti, S. W., and J. M. Gillespie. 2000. A Comparative Analysis of Risk Preference Elicitation Procedures Using Mail Survey Results. Paper presented at SERA-IEG-31 Meeting, Gulf Shores, Alabama. March 23-25, 2000.

Gardner, J.G., D. B. Eastwood, J.R. Brooker, and W.E. Klingeman. 2003. Consumers' valuation of disease-resistant nursery stock: a case study of dogwoods. Journal of Agribusiness 21(1):103-116.

Goodwin, B.K., L.A. Offenback, T.T. Cable, and P.S. Cook. 1993. Discrete continuous valuation of private hunting access in Kansas. Journal of Environmental Management. 39(1):1.12.

Greene, W.H. 2003. Econometric Analysis. 5th ed. Prentice Hall: Upper Saddle River.

Hardaker, J.B., R.B.M. Huirne, and J.R. Anderson. 1997. Coping with Risk in Agriculture. Cab International: New York. 274pp.

Heberlein, T.A. and R.K. Davis. 1987. Hunter participation in fee access hunting. In: Transactions of the Fifty-second North American Wildlife and Natural Resource Conference. Wildlife Management Institute. Washington D.C. pp.475-482.

Henning, S.A., L.R. Vandeveer, G.A. Kennedy, P. Soto, and J.B. Breaux. 2001. Louisiana Rural Land Values and Tenure Arrangements 1998. Information Series No. 194. Department of Agricultural Economics and Agribusiness. Louisiana State University Agricultural Center.

Hrivnak, D. 1995. Fee hunting and fishing on private land. Rural Information Center Publication Series, no. 44 Revised Edition. Beltsville: U.S.D.A. National Agricultural Library. 32p.

Hussain, A. D. Zhang, and J.B. Armstrong. 2004. Willingness to pay for hunting leases in Alabama. Southern Journal of Applied Forestry. 28(1):21-27.

Ise, J. 1940. Monopoly elements in rent. The American Economic Review. Vol. 30 No.1. Part 1. pp. 33-45.

Jones, W.D., J.C. Jones, I.A. Munn, S.C. Grado. 2005. Wildlife Enterprises on Mississippi Private Lands. In: Proceedings of the 58th Annual Conference of the Southeastern Association of Fish and Wildlife Agencies 58:344-355.

Jorgensen, B.S., G.J. Syme, B.J. Bishop, B.E. Nancarrow. 1999. Protest responses in contingent valuation. Environmental and Resource Economics. 14: 131–150.

Kastens, T.L and A.M. Featherstone. 1996. Feedforward backpropagation neutral networks in prediction of farmer risk preferences. American Journal of Agricultural Economics. 78(2):400-415.

Kealy M.J. and R.W. Turner. 1993. A test of the equality of closed-ended and open-ended contingent valuations. American Journal of Agricultural Economics. 75:321-331.

Langer, L.L. 1989. Demand for outdoor recreation in the United States: Implications for private landowners in the eastern U.S. In: Income Opportunities for the Private Landowner through Management of Natural Resources and Recreational Access. W.N. Grafton, A. Ferrise, D. Colyer, D.K. Smith, and J.E. Miller (eds). Morgantown, West Virginia. West Virginia University Extension Service.

Leopold, A. 1930. Report to the American Game Conference on American game policy. In: Transactions of the American Game Conference. 17:284-308.

Loomis, J.B. 1999. Contingent valuation methodology and the US institutional framework. In: Valuing Environmental Preferences. I.J. Bateman and K.G. Willis (eds). Oxford University Press, Oxford.

Marion, W. R. 1989. Recreational access to private lands in Florida. In: Transaction of the Fifty-fourth North American Wildlife and Natural Resource Conference, Pp. 202-209, Wildlife Management Institute, Washington, DC.

Mitchell, R.C. and R.T. Carson. 1981. An experiment in determining willingness to pay for national water quality improvements. Report to the U.S. Environmental Protection Agency. Washington, D.C. June.

Mitchell R.C. and R.T. Carson. 1989. Using surveys to value public goods: the contingent valuation method. Washington, D.C.: Resources for the Future.

Mozumder P., M. Starbuck, R.P. Berrens, and S. Alexander. 2004. Lease and Fee Hunting on Private Lands in the U.S.: A Review and Synthesis of the Issues, With Annotated Bibliography. Final Report. USDA Forest Service. Corvallis, Oregon. 125p.

Nicholson, W. 2002. Microeconomic Theory: Basic Principles and Extensions. 8th ed. Thomson Learning: South Melbourne. 748 pp.

Officer, R.R. and A.N. Halter. 1968. Utility Analysis in a Practical Setting. American Journal of Agricultural Economics. 50(2):257-277.

Owen, C.N., T.B. Wigley, and D.L. Adams. 1985. Public use of large private forests in Arkansas. In: Transactions of the Fiftieth North American Wildlife and Natural Resource Conference. Wildlife Management Institute. Washington D.C. pp.232-241.

Pearce, D.W. 1999. The MIT Dictionary of Modern Economics. 4th ed. MIT Press: Cambridge. p.37.

Pennings, J.M. and P. Garcia. 2001. Measuring producers' risk preferences: A global risk-attitude construct. American Journal of Agricultural Economics. 83(4):993-1009.

Randall, A. 1997. The NOAA Panel Report: A New Beginning or the End of an Era? American Journal of Agricultural Economics. 79(5): 1489-1494

Ruff, R.L. and T.A. Isaac. 1987. Public access and fee hunting on private nonindustrial forests in Wisconsin. In: Transactions of the Fifty-second North American Wildlife and Natural Resource Conference. Wildlife Management Institute. Washington D.C. pp.483-495.

Schenck, E.W., W. Arnold, E.K. Brown and D.J. Witter. 1987. Commercial hunting and fishing in Missouri: Management implications of Fish and Wildlife markets. In: Transactions of the Fifty-second North American Wildlife and Natural Resource Conference. Wildlife Management Institute. Washington D.C. pp.516-524.

Schurle, B. and W.I. Tierney, Jr. 1990. A comparison of risk preference measurements with implications for extension programming. Staff paper no. 91-6. Department of Agricultural Economics, Kansas State University, Manhattan.

Seymour, W.R. 1985. Cooperative approach to outdoor recreation. In: Proceeding of the National Outdoor Recreation Trends Symposium II. pp.193-200.

Sun, X., I.A. Munn, E. Loden, A. Hussain, S.C. Grado. 2005. Assessment of the Economic Importance of Mississippi Outfitters and Opportunities for Expansion. In: Proceedings of the 35th Annual Southern Forest Economics Workshop. S, J. Chang and M.A. Dunn (eds). Baton Rouge, LA. pp.127-137.

Thomas, J. K., C. E. Adams, W. K. Knowles and D. W. Steinbach. 1989. Development of Wildlife Resources on Private Lands." Texas A&M University System, College Station, Texas.

Timber Mart-South. 2004.Quarterly report 1. Athens, GA: Daniel B. Warnell School of Forest Resources, University of Georgia. 4 p

Wright, B.A. 1989. Toward a better understanding of recreational access to the nation's private lands: supply, determinants, limiting factors. In: Income Opportunities for the Private Landowner through Management of Natural Resources and Recreational Access. W.N. Grafton, A. Ferrise, D. Colyer, D.K. Smith, and J.E. Miller, editor. Morgantown, West Virginia. West Virginia University Extension Service.

Wright, B.A., R.A. Kaiser, and S. Nicholas. 2002. Rural landowner liability for recreational injuries: myths, perceptions, and realities. Journal of Soil and Water Conservation. 57(3):183-191.

Yarrow, G.K. 1989. Forms of business organizations with emphasis on landowner cooperatives for natural resources. In: Income Opportunities for the Private Landowner through Management of Natural Resources and Recreational Access. W.N. Grafton, A. Ferrise, D. Colyer, D.K. Smith, and J.E. Miller, editor. Morgantown, West Virginia. West Virginia University Extension Service. pp.264-268.

Venkatachalam, L. 2004. The contingent valuation method: a review. Environmental Impact Assessment Review. 24:89-124.

von Neumann, J. and O. Morgenstern. 1944. The Theory of Games and Economic Behavior. Princeton University Press: Princeton, New Jersey.

APPENDIX A: PRENOTIFICATION POSTCARD

Dear Sir or Madam,

A few days from now you will receive in the mail a request to fill out a brief questionnaire for an important research project being conducted by Louisiana State University. It concerns the use of private land for public recreation, and how landowners view using land for recreational purposes. I am writing in advance because we have found many people like to know ahead of time that they will be contacted.

The study is an important one that will help government agencies understand the willingness of private landowners to allow the public use of their land and what incentives landowners require to do so. Upon receipt of a completed survey, we will check your name off our list to ensure that you do not receive subsequent surveys or phone calls. Thank you for your time and consideration. It's only with the generous help of people like you that our research can be successful.

Sincerely,

James E. Henderson
Student Research Assistant

Michael A. Dunn
Associate Professor

APPENDIX B: FIRST MAILING COVER LETTER

Department of Agricultural Economics and Agribusiness
101 Agricultural Administration Building
Louisiana State University
Baton Rouge, LA 70803-5604
(225) 578-3283
Fax: (225)578-2716

Dear Sir or Madam,

I am writing to ask your help in a study of recreational land use in the Delta. This study is part of an effort to learn how willing people are to allow recreational use of their land and to understand landowner and land manager concerns regarding public recreational use of private land.

It is my understanding that you own agricultural land. We are contacting a random sample of landowners in the Delta to ask about using their land for recreational purposes.

Results of this survey will be used to help state government understand how public use of private land for recreation can be encouraged by state government policies. By understanding landowner concerns and attitudes, public officials and policy makers can do a better job of helping landowners generate income from alternative land uses such as fee-based recreation. Also, your response can help public agencies and private business recognize potential markets for the use of private land, which can help improve your local economy.

Your answers are completely confidential and will be released only as summaries in which your or no other individual's answers can be identified. When you return your completed questionnaire, your name will be deleted from the mailing list and you will never be connected to your answers in any way. This survey is voluntary. However, you can help us very much by taking a few minutes to share your opinions as a Delta landowner about current and possible alternative land uses. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed stamped envelope.

If you have any questions or comments about this study, we would be happy to talk with you. Our number is 1-225-578-2758, or you can write to us at the address on the letterhead.

Thank you very much for helping with this important study.

Sincerely,

James E. Henderson
Student Research Assistant

Michael A. Dunn
Associate Professor

APPENDIX C: REMINDER AND THANK YOU POSTCARD

Dear Sir or Madam,

Last week a questionnaire seeking your opinions about recreational land use in the Delta was mailed to you. Your name was drawn randomly from a list of landowners in the Delta.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please consider completing it and mailing it back to us today. We are especially grateful for your help because it is only by asking people like you to share your experiences that we can understand landowner and land manager concerns regarding public recreational use of private land.

If you did not receive a questionnaire, or if it was misplaced, please call us at 1-225-578-2758 and we will get another one out to you today.

Sincerely,

James E. Henderson
Student Research Assistant

Michael A. Dunn
Associate Professor

APPENDIX D: SECOND MAILING COVER LETTER

LSU AgCenter Research & Extension

Department of Agricultural Economics and Agribusiness
101 Agricultural Administration Building
Louisiana State University
Baton Rouge, LA 70803-5604
(225) 578-3283
Fax: (225)578-2716

Dear Sir or Madam,

About three weeks ago I sent a questionnaire to you that asked about your concerns regarding public recreational use of private land. If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please consider completing it and mailing it back to us today.

The comments of landowners who have already responded include a wide variety of reasons for allowing and not allowing recreational use of their land. We think the results are going to be very useful to state government leaders, policy makers, and others.

We are writing again because of the importance that your questionnaire has for helping to get accurate results. Although we sent questionnaires to landowners throughout the Delta, it's only by hearing from nearly everyone in the sample that we can be sure that the results are truly representative.

A comment on our survey procedures. A questionnaire identification number is printed on the back of the cover of the questionnaire so that we can check your name off of the mailing list when it is returned. The list of names is then destroyed so that individual names can never be connected to the results in any way. Protecting the confidentiality of people's answers is very important to us, as well as the University.

We hope that you will fill out and return the questionnaire soon, but if for any reason you prefer not to answer it, please let us know by returning a note or blank questionnaire in the enclosed stamped envelope.

Thank you very much for helping with this important study.

Sincerely,

James E. Henderson
Student Research Assistant

Michael A. Dunn
Associate Professor

APPENDIX E: QUESTIONAIRE SENT TO LOUISIANA LANDOWNERS

A Survey of
Delta Landowner Concerns Regarding Alternative Land Uses

Please complete the questionnaire as soon as possible and return in the postage paid envelope.

Your answers are completely confidential.

LSU AgCenter
Research & Extension

Thanks for your help

Survey of Delta Landowners

Reminder: This information will be kept STRICTLY CONFIDENTIAL, and landowner names/addresses will not be attached to these answers.

Section I. Recreational Use and Land Access Practices

1. **Do you or any members of your household use your land for recreational purposes (For example: hunting, camping, fishing, bird watching)?** (Mark ☒ one)

   ☐ No → ***(Please skip to question 3)***

   ☐ Yes

2. **Do you or any members of your household use your land for any of the following recreational purposes?** (Mark ☒ all that apply)

   ☐ Hunting – big game

   ☐ Hunting – small game

   ☐ Hunting – migratory bird or waterfowl

   ☐ Hunting – dove

   ☐ Fishing

   ☐ Hiking

   ☐ ATV riding

   ☐ Camping

   ☐ Other (please list):_____

3. **Have you ever allowed individuals who are not part of your household to use your land for recreational purposes?** (Mark ☒ one)

   ☐ No → ***(Please skip to question 5)***

   ☐ Yes

4. **Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes?** (Mark ☒ all that apply)

   ☐ Immediate family (son, father, brother)

   ☐ Other relative (uncle, cousins, etc.)

   ☐ Friends

   ☐ Individuals you do not know personally

   ☐ Other (please list):_____

5. **Have you ever leased your land for hunting or recreational access?** (Mark ☒ one)

   ☐ No → ***(Please skip to Section II, question 7.)***

   ☐ Yes→ ***(Please continue to question 6.)***

6. **Please indicate the last year you leased your land, how many acres were leased, and the lease price for each of the following recreational use categories.**

Hunting – big game (deer and/or turkey)
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Hunting – small game
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Hunting – migratory bird or waterfowl
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Hunting – dove
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Other (please list):_____
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Section II. Risk and Liability Issues

For questions 7 to 9, please tell us how much you disagree or agree with the following statements.

7. **I am very concerned about the liability issues associated with allowing people on my land.** (Mark ☒ one)

☐ Strongly Disagree ☐ Somewhat Disagree ☐ Not Sure ☐ Somewhat Agree ☐ Strongly Agree

8. **It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability.** (Mark ☒ one)

☐ Strongly Disagree ☐ Somewhat Disagree ☐ Not Sure ☐ Somewhat Agree ☐ Strongly Agree

9. **If my liability concerns were eased I would be much more likely to allow people to use my land for recreational purposes.** (Mark ☒ one)

☐ Strongly Disagree ☐ Somewhat Disagree ☐ Not Sure ☐ Somewhat Agree ☐ Strongly Agree

10. **To protect myself from liability associated with trespassers, Louisiana law requires me to post my land with "no trespassing" signs.** (Mark ☒ one)

☐ True
☐ False
☐ Unsure

11. **Louisiana law protects me from liability claims that may result from recreational use of my land so long as I do not charge a fee.** (Mark ☒ one)

☐ True
☐ False
☐ Unsure

12. **Commercial liability insurance is available specifically for private landowners who charge a fee for recreational access. (For example: liability insurance for hunting leases)** (Mark ☒ one)

☐ True

☐ False

☐ Unsure

13. **Compared to other landowners you know, how would you characterize yourself?** (Mark ☒ one)

☐ I tend to take on substantial levels of risk in my financial decisions.

☐ I tend to avoid risk when possible in my financial decisions.

☐ I neither seek nor avoid risk in my financial decisions.

Section III. Marginal Lands

14. **Marginal agricultural land is land that will produce barely enough products to pay the cost of production. Marginal land can also include land not suitable for agricultural uses such as bottom lands and flood prone areas. Would you consider any of your land to be "marginal" for agricultural purposes?** (Mark ☒ one)

☐ No → *(Please skip to Section IV, question 21)*

☐ Yes

15. **How many acres of your land would you consider to be marginal for agricultural purposes?**
_____ # of acres

16. **How many miles is your nearest tract of marginal land from your home?**
_____ # of miles

17. **Could any of the following land classifications be used to describe all or part of your marginal land?** (Mark ☒ all that apply)

☐ forest or wooded areas

☐ pastureland

☐ row crops or hay production

☐ water bodies

18. **Which of these best describes your current land management:** (Mark ☒ all that apply)

☐ self-managed

☐ jointly managed with partners

☐ managed by hired professionals

☐ leased

☐ not currently managed for any particular purpose

19. **On average how often do you visit or check on your marginal land?** (Mark ☒ one)

☐ weekly

☐ once each month

☐ once every year

☐ less than once every year

20. If you were to sell your marginal land, how much do you think you could get per acre?
$_____ (per acre)

Section IV. Fee Based Recreational Use of Land

21. Would you be willing to let people pay you a fee to access your land for recreational purposes? (For example: hunting, camping, fishing, bird watching) (Mark ☒ one)

☐ No → *(Please skip to question 25.)*

☐ Yes

22. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (For example: hunting, camping, fishing, bird watching)?
$_____ (per acre per year)

23. How certain are you that you would accept the dollar value you indicated in the previous question?
(Where 0% indicates you are very uncertain and 100% indicates that you are very certain) (Mark ☒ one)
☐0% ☐10% ☐20% ☐30% ☐40% ☐50% ☐60% ☐70% ☐80% ☐90% ☐100%

Very uncertain ⟶ Very certain

[If you were less than 80% certain continue with the next question. Otherwise, please skip the next question and continue with question 25.]

24. If you selected a percentage less than 80% in question 23, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.
$_____ (per acre per year)

25. Current Louisiana law protects landowners from liability claims related to recreational use of their land IF landowners allow use of their land for free. If landowners charge a fee they are not protected from liability claims according to current Louisiana law.
IF current Louisiana law were changed to allow you to charge a fee and keep the liability protection, would you allow people to pay you for recreational use of your land? (Mark ☒ one)

☐ No → *(Please skip to Section V, question 32)*

☐ Yes

(Please answer question 26 as you would IF current Louisiana law were changed to allow landowners to charge a fee and avoid liability claims related to recreational use of their land)

26. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (For example: hunting, camping, fishing, bird watching)?
$_____ (per acre per year)

27. How certain are you that you would accept the dollar value you indicated in the previous question?
(Where 0% indicates you are very uncertain and 100% indicates that you are very certain) (Mark ☒ one)
☐0% ☐10% ☐20% ☐30% ☐40% ☐50% ☐60% ☐70% ☐80% ☐90% ☐100%

Very uncertain ⟶ Very certain

[If you were less than 80% certain continue with the next question. Otherwise, please skip the next question and continue with question 29.]

28. If you selected a percentage less than 80% in question 27, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.
$_____ (per acre per year)

29. **How many acres of land would you be willing to use for fee-based recreational activities?**
_____ # of acres

30. **Which of the following recreational activities would you NOT allow on your land?** (Mark ☒ all that apply)

- ☐ Hunting – big game
- ☐ Hunting – small game
- ☐ Hunting – migratory bird or waterfowl
- ☐ Hunting – dove
- ☐ Fishing
- ☐ Hiking
- ☐ ATV riding
- ☐ Camping
- ☐ Other (please list):_____

31. **If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer?** (Mark ☒ one)

☐ Independently (no partners and you assume all management responsibilities, income, and liabilities)

☐ Cooperatively (you partner with other local landowners to increase the amount of land for recreational use and share management responsibilities, costs, income, and liabilities)

☐ Outfitter (an intermediary between you and recreational users, the outfitter pays you a fee and collects fees from users while assuming all management responsibilities and liabilities)

Section V. Current Land Uses

32. **Have you ever worked with any of your adjacent or local landowners in any way? (For example: fence maintenance, crop dusting)** (Mark ☒ one)

- ☐ No → *(Please skip to question 34)*
- ☐ Yes

33. **If yes, did you find you cooperation with other landowners to be effective?** (Mark ☒ one)

- ☐ No
- ☐ Yes

34. **Have you ever been involved with a cooperative?** (Mark ☒ one)

- ☐ No → *(Please skip to question 36)*
- ☐ Yes

35. **If yes, did you find your involvement in the cooperative to be beneficial to you?** (Mark ☒ one)

- ☐ No
- ☐ Yes

36. **Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program?** (Mark ☒ one)

- ☐ Yes
- ☐ No
- ☐ I don't know what these are

37. **How many separate tracts of non-residential land do you own?**
_____ # of tracts

38. **Is your nearest tract of non-residential land adjacent to your primary residence?** (Mark ☒ one)

- ☐ Yes
- ☐ No

39. **How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence?**
_____ # of miles.

40. **What is the total acreage of all tracts of land?**
_____ # of acres

41. **How many years have you been a land owner?**
_____ years

42. **How is the ownership of your land organized?** (Mark ☒ one)

- ☐ corporation
- ☐ limited liability corporation LLC
- ☐ joint ownership
- ☐ single ownership

43. **How did you acquire the majority of your non residence, non commercial land?**

- ☐ Inherited it
- ☐ By marriage
- ☐ By purchasing it
- ☐ Other (please list):_____

44. **Do you use any of your land for agricultural production of row crops?**

- ☐ No → *(Please skip to question 46)*
- ☐ Yes

45. **Which of the following agricultural crops are historically produced on your land?**
(Mark ☒ all that apply)

- ☐ Cotton
- ☐ Corn
- ☐ Sorghum
- ☐ Rice
- ☐ Soybeans
- ☐ Wheat
- ☐ Other (please list):_____

46. **Have you ever leased any of your land for agricultural uses?** (Mark ☒ one)

☐ No

☐ Yes

47. **Do you own land for any of the following reasons?** (Mark ☒ all that apply)

☐ Hay production

☐ Leasing to others

☐ Personal recreational opportunities

☐ Raising livestock

☐ Timber production

☐ To provide a place for wildlife

☐ To provide recreational access for others

☐ Other (please list):_____

Section VI. Demographic Information (All of your information is kept strictly confidential. If you prefer not to answer this information, please leave it blank while completing the rest of the survey.)

48. **Your Gender** (Mark ☒ one)

☐ Female ☐ Male

49. **Your age in years?** _____

50. **Which of the following best describes your ethnic background?** (Mark ☒ one)

☐ Caucasian (white) ☐ African American ☐ Asian

☐ American Indian ☐ Hispanic ☐ Other _____

51. **Choose one category that most closely describes your primary occupation:** (Mark ☒ one)

☐ Farming ☐ Business ☐ Engineering ☐ Government

☐ Housewife ☐ Retired ☐ Unemployed ☐ Education

☐ Healthcare ☐ Student ☐ Self-employed ☐ Other (list):_____

52. **How many individuals live in your household?** (List):_____

53. **Indicate your highest level of education attained** (Mark ☒ one)

☐ Less than high school ☐ High school graduate ☐ Some college, no degree

☐ Associate Degree ☐ Bachelor Degree ☐ Graduate or Professional Degree

54. **Which best describes your annual household income?** (Mark ☒ one)

☐ Less than $10,000 ☐ $10,000 - $14,999

☐ $15,000 - $24,999 ☐ $25,000 - $34,999

☐ $35,000 - $49,999 ☐ $50,000 - $74,999

☐ $75,000 - $99,999 ☐ $100,000 - $149,999

☐ $150,000 - $199,999 ☐ $200,000 or more

APPENDIX F: QUESTIONAIRE SENT TO ARKANSAS LANDOWNERS

A Survey of
Delta Landowner Concerns Regarding Alternative Land Uses

Please complete the questionnaire as soon as possible and return in the postage paid envelope.

Your answers are completely confidential.

LSU AgCenter
Research & Extension

Thanks for your help

Survey of Delta Landowners

Reminder: This information will be kept STRICTLY CONFIDENTIAL, and landowner names/addresses will not be attached to these answers.

Section I. Recreational Use and Land Access Practices

1. **Do you or any members of your household use your land for recreational purposes (For example: hunting, camping, fishing, bird watching)?** (Mark ☒ one)

   ☐ No → ***(Please skip to question 3)***

   ☐ Yes

2. **Do you or any members of your household use your land for any of the following recreational purposes?** (Mark ☒ all that apply)

   ☐ Hunting – big game

   ☐ Hunting – small game

   ☐ Hunting – migratory bird or waterfowl

   ☐ Hunting – dove

   ☐ Fishing

   ☐ Hiking

   ☐ ATV riding

   ☐ Camping

   ☐ Other (please list):_____

3. **Have you ever allowed individuals who are not part of your household to use your land for recreational purposes?** (Mark ☒ one)

   ☐ No → ***(Please skip to question 5)***

   ☐ Yes

4. **Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes?** (Mark ☒ all that apply)

   ☐ Immediate family (son, father, brother)

   ☐ Other relative (uncle, cousins, etc.)

   ☐ Friends

   ☐ Individuals you do not know personally

   ☐ Other (please list):_____

5. **Have you ever leased your land for hunting or recreational access?** (Mark ☒ one)

   ☐ No → ***(Please skip to Section II, question 7.)***

   ☐ Yes→ ***(Please continue to question 6.)***

6. **Please indicate the last year you leased your land, how many acres were leased, and the lease price for each of the following recreational use categories.**

Hunting – big game (deer and/or turkey)
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Hunting – small game
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Hunting – migratory bird or waterfowl
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Hunting – dove
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Other (please list):_____
_____ (year)
_____ (number of leases)
_____ (total number of acres leased)
$_____ (total lease revenue)

Section II. Risk and Liability Issues

For questions 7 to 9, please tell us how much you disagree or agree with the following statements.

7. **I am very concerned about the liability issues associated with allowing people on my land.** (Mark ☒ one)

☐ Strongly Disagree ☐ Somewhat Disagree ☐ Not Sure ☐ Somewhat Agree ☐ Strongly Agree

8. **It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability.** (Mark ☒ one)

☐ Strongly Disagree ☐ Somewhat Disagree ☐ Not Sure ☐ Somewhat Agree ☐ Strongly Agree

9. **If my liability concerns were eased I would be much more likely to allow people to use my land for recreational purposes.** (Mark ☒ one)

☐ Strongly Disagree ☐ Somewhat Disagree ☐ Not Sure ☐ Somewhat Agree ☐ Strongly Agree

10. **To protect myself from liability associated with trespassers, Arkansas law requires me to post my land with "no trespassing" signs.** (Mark ☒ one)

☐ True
☐ False
☐ Unsure

11. **Arkansas law protects me from liability claims that may result from recreational use of my land so long as I do not charge a fee.** (Mark ☒ one)

☐ True
☐ False
☐ Unsure

12. **Commercial liability insurance is available specifically for private landowners who charge a fee for recreational access. (For example: liability insurance for hunting leases)** (Mark ☒ one)

☐ True

☐ False

☐ Unsure

13. **Compared to other landowners you know, how would you characterize yourself?** (Mark ☒ one)

☐ I tend to take on substantial levels of risk in my financial decisions.

☐ I tend to avoid risk when possible in my financial decisions.

☐ I neither seek nor avoid risk in my financial decisions.

Section III. Marginal Lands

14. **Marginal agricultural land is land that will produce barely enough products to pay the cost of production. Marginal land can also include land not suitable for agricultural uses such as bottom lands and flood prone areas. Would you consider any of your land to be "marginal" for agricultural purposes?** (Mark ☒ one)

☐ No → *(Please skip to Section IV, question 21)*

☐ Yes

15. **How many acres of your land would you consider to be marginal for agricultural purposes?**
_____ # of acres

16. **How many miles is your nearest tract of marginal land from your home?**
_____ # of miles

17. **Could any of the following land classifications be used to describe all or part of your marginal land?** (Mark ☒ all that apply)

☐ forest or wooded areas

☐ pastureland

☐ row crops or hay production

☐ water bodies

18. **Which of these best describes your current land management:** (Mark ☒ all that apply)

☐ self-managed

☐ jointly managed with partners

☐ managed by hired professionals

☐ leased

☐ not currently managed for any particular purpose

19. **On average how often do you visit or check on your marginal land?** (Mark ☒ one)

☐ weekly

☐ once each month

☐ once every year

☐ less than once every year

20. If you were to sell your marginal land, how much do you think you could get per acre?
$_____ (per acre)

Section IV. Fee Based Recreational Use of Land

21. Would you be willing to let people pay you a fee to access your land for recreational purposes? (For example: hunting, camping, fishing, bird watching) (Mark ☒ one)

☐ No → *(Please skip to question 25.)*

☐ Yes

22. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (For example: hunting, camping, fishing, bird watching)?
$_____ (per acre per year)

23. How certain are you that you would accept the dollar value you indicated in the previous question? (Where 0% indicates you are very uncertain and 100% indicates that you are very certain) (Mark ☒ one)
☐0% ☐10% ☐20% ☐30% ☐40% ☐50% ☐60% ☐70% ☐80% ☐90% ☐100%

Very uncertain → Very certain

[If you were less than 80% certain continue with the next question. Otherwise, please skip the next question and continue with question 25.]

24. If you selected a percentage less than 80% in question 23, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.
$_____ (per acre per year)

25. Current Arkansas law protects landowners from liability claims related to recreational use of their land IF landowners allow use of their land for free. If landowners charge a fee they are not protected from liability claims according to current Arkansas law.
IF current Arkansas law were changed to allow you to charge a fee and keep the liability protection, would you allow people to pay you for recreational use of your land? (Mark ☒ one)

☐ No → *(Please skip to Section V, question 32)*

☐ Yes

(Please answer question 26 as you would IF current Arkansas law were changed to allow landowners to charge a fee and avoid liability claims related to recreational use of their land)

26. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (For example: hunting, camping, fishing, bird watching)?
$_____ (per acre per year)

27. How certain are you that you would accept the dollar value you indicated in the previous question? (Where 0% indicates you are very uncertain and 100% indicates that you are very certain) (Mark ☒ one)
☐0% ☐10% ☐20% ☐30% ☐40% ☐50% ☐60% ☐70% ☐80% ☐90% ☐100%

Very uncertain → Very certain

[If you were less than 80% certain continue with the next question. Otherwise, please skip the next question and continue with question 29.]

28. If you selected a percentage less than 80% in question 27, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.
$_____ (per acre per year)

29. **How many acres of land would you be willing to use for fee-based recreational activities?**
_____ # of acres

30. **Which of the following recreational activities would you NOT allow on your land?** (Mark ☒ all that apply)

- ☐ Hunting – big game
- ☐ Hunting – small game
- ☐ Hunting – migratory bird or waterfowl
- ☐ Hunting – dove
- ☐ Fishing
- ☐ Hiking
- ☐ ATV riding
- ☐ Camping
- ☐ Other (please list):_____

31. **If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer?** (Mark ☒ one)

☐ Independently (no partners and you assume all management responsibilities, income, and liabilities)

☐ Cooperatively (you partner with other local landowners to increase the amount of land for recreational use and share management responsibilities, costs, income, and liabilities)

☐ Outfitter (an intermediary between you and recreational users, the outfitter pays you a fee and collects fees from users while assuming all management responsibilities and liabilities)

Section V. Current Land Uses

32. **Have you ever worked with any of your adjacent or local landowners in any way? (For example: fence maintenance, crop dusting)** (Mark ☒ one)

- ☐ No → *(Please skip to question 34)*
- ☐ Yes

33. **If yes, did you find you cooperation with other landowners to be effective?** (Mark ☒ one)

- ☐ No
- ☐ Yes

34. **Have you ever been involved with a cooperative?** (Mark ☒ one)

- ☐ No → *(Please skip to question 36)*
- ☐ Yes

35. **If yes, did you find your involvement in the cooperative to be beneficial to you?** (Mark ☒ one)

- ☐ No
- ☐ Yes

36. **Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program?** (Mark ☒ one)

- ☐ Yes
- ☐ No
- ☐ I don't know what these are

37. **How many separate tracts of non-residential land do you own?**
_____ # of tracts

38. **Is your nearest tract of non-residential land adjacent to your primary residence?** (Mark ☒ one)

- ☐ Yes
- ☐ No

39. **How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence?**
_____ # of miles.

40. **What is the total acreage of all tracts of land?**
_____ # of acres

41. **How many years have you been a land owner?**
_____ years

42. **How is the ownership of your land organized?** (Mark ☒ one)

- ☐ corporation
- ☐ limited liability corporation LLC
- ☐ joint ownership
- ☐ single ownership

43. **How did you acquire the majority of your non residence, non commercial land?**

- ☐ Inherited it
- ☐ By marriage
- ☐ By purchasing it
- ☐ Other (please list):_____

44. **Do you use any of your land for agricultural production of row crops?**

- ☐ No → *(Please skip to question 46)*
- ☐ Yes

45. **Which of the following agricultural crops are historically produced on your land?**
(Mark ☒ all that apply)

- ☐ Cotton
- ☐ Corn
- ☐ Sorghum
- ☐ Rice
- ☐ Soybeans
- ☐ Wheat
- ☐ Other (please list):_____

46. Have you ever leased any of your land for agricultural uses? (Mark ☒ one)

☐ No

☐ Yes

47. Do you own land for any of the following reasons? (Mark ☒ all that apply)

☐ Hay production

☐ Leasing to others

☐ Personal recreational opportunities

☐ Raising livestock

☐ Timber production

☐ To provide a place for wildlife

☐ To provide recreational access for others

☐ Other (please list):_____

Section VI. Demographic Information (All of your information is kept strictly confidential. If you prefer not to answer this information, please leave it blank while completing the rest of the survey.)

48. Your Gender (Mark ☒ one)

☐ Female ☐ Male

49. Your age in years? _____

50. Which of the following best describes your ethnic background? (Mark ☒ one)

☐ Caucasian (white) ☐ African American ☐ Asian

☐ American Indian ☐ Hispanic ☐ Other _____

51. Choose one category that most closely describes your primary occupation: (Mark ☒ one)

☐ Farming ☐ Business ☐ Engineering ☐ Government

☐ Housewife ☐ Retired ☐ Unemployed ☐ Education

☐ Healthcare ☐ Student ☐ Self-employed ☐ Other (list):_____

52. How many individuals live in your household? (List):_____

53. Indicate your highest level of education attained (Mark ☒ one)

☐ Less than high school ☐ High school graduate ☐ Some college, no degree

☐ Associate Degree ☐ Bachelor Degree ☐ Graduate or Professional Degree

54. Which best describes your annual household income? (Mark ☒ one)

☐ Less than $10,000 ☐ $10,000 - $14,999

☐ $15,000 - $24,999 ☐ $25,000 - $34,999

☐ $35,000 - $49,999 ☐ $50,000 - $74,999

☐ $75,000 - $99,999 ☐ $100,000 - $149,999

☐ $150,000 - $199,999 ☐ $200,000 or more

APPENDIX G: SURVEY RESPONSE SUMMARY OF LOUISIANA LANDOWNERS

Section I. Recreational Use and Land Access Practices

1. Do you or any members of your household use your land for recreational purposes?

n =631 No **(40.73%)**
Yes **(55.7%)**

2. Do you or any members of your household use your land for any of the following recreational purposes?

n =373 Hunting – big game **(69.4%)**
Hunting – small game **(63.8%)**
Hunting – migratory bird or waterfowl **(40.5%)**
Hunting – dove **(54.4%)**
Fishing **(36.2%)**
Hiking **(14.5%)**
ATV riding **(53.6%)**
Camping **(16.1%)**
Other **(5.1%)**

3. Have you ever allowed individuals who are not part of your household to use your land for recreational purposes?

n =632 No **(43.67%)**)
Yes **(56.33%)**

4. Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes?

n =356 Immediate family (son, father, brother) **(64.89%)**
Other relative (uncle, cousins, etc.) **(53.37%)**
Friends **(73.88%)**
Individuals you do not know personally **(10.39%)**
Other **(4.20%)**

5. Have you ever leased your land for hunting or recreational access?

n =632 No **(88.77%)**
Yes **(11.23%)**

6. Please indicate the last year you leased your land, how many acres were leased, and the lease price for each of the following recreational use categories.

Hunting – big game (deer and/or turkey)
_____ (year) **Mean =2005 Std. Dev. =2.3 n =37**
_____ (number of leases) **Mean =1.8 Std. Dev. =2.03 n =31**
_____ (total number of acres leased) **Mean =344.48 Std. Dev. =521.45 n =35**
$_____ (total lease revenue) **Mean =$2,719.21 Std. Dev. =$2976.25 n =38**

Hunting – small game
_____ (year) **Mean =1996 Std. Dev. =0 n =1**
_____ (number of leases) **Mean =0 Std. Dev. =0 n =0**
_____ (total number of acres leased) **Mean =0 Std. Dev. =0 n =0**
$_____ (total lease revenue) **Mean =$0 Std. Dev. =$0 n =0**

Hunting – migratory bird or waterfowl
_____ (year) **Mean =2004 Std. Dev. =3.9 n =19**
_____ (number of leases) **Mean =1.65 Std. Dev. =1.22 n =17**
_____ (total number of acres leased) **Mean =328.35 Std. Dev. =264.64 n =17**
$_____ (total lease revenue) **Mean =$11,360 Std. Dev. =$11,844.05 n =20**

Hunting – dove
_____ (year) **Mean =2006 Std. Dev. =7.7 n =1**
_____ (number of leases) **Mean =1 Std. Dev. =0 n =1**
_____ (total number of acres leased) **Mean =20 Std. Dev. =14.14 n =2**
$_____ (total lease revenue) **Mean =$2,000 Std. Dev. =0 n =1**

Other
_____ (year) **Mean =2006 Std. Dev. =2.4 n =10**
_____ (number of leases) **Mean =1.45 Std. Dev. =0.69 n =11**
_____ (total number of acres leased) **Mean =627.58 Std. Dev. =683.17 n =12**
$_____ (total lease revenue) **Mean =$8,868.18 Std. Dev. =$9,663.8 n =11**

Section II. Risk and Liability Issues

7. I am very concerned about the liability issues associated with allowing people on my land.

n =630
Strongly Disagree **(6.35%)**
Somewhat Disagree **(4.29%)**
Not Sure **(9.05%)**
Somewhat Agree **(14.76%)**
Strongly Agree **(65.40%)**

8. It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability.

n =630
Strongly Disagree **(18.73%)**
Somewhat Disagree **(6.35%)**
Not Sure **(40.16%)**
Somewhat Agree **(11.43%)**
Strongly Agree **(23.02%)**

9. If my liability concerns were eased I would be much more likely to allow people to use my land for recreational purposes.

n =630
Strongly Disagree **(30.48%)**
Somewhat Disagree **(10.16%)**
Not Sure **(22.06%)**
Somewhat Agree **(20.95%)**
Strongly Agree **(16.03%)**

10. To protect myself from liability associated with trespassers, Louisiana law requires me to post my land with "no trespassing" signs.

n =631 True **(22.19%)**
False **(31.38%)**
Unsure **(46.43%)**

11. Louisiana law protects me from liability claims that may result from recreational use of my land so long as I do not charge a fee.

n =631 True **(7.94%)**
False **(25.87%)**
Unsure **(66.19%)**

12. Commercial liability insurance is available specifically for private landowners who charge a fee for recreational access

n =631 True **(34.50%)**
False **(3.66%)**
Unsure **(61.84%)**

13. Compared to other landowners you know, how would you characterize yourself?

n =619 I tend to take on substantial levels of risk in my financial decisions. **(7.27%)**
I tend to avoid risk when possible in my financial decisions. **(75.44%)**
I neither seek nor avoid risk in my financial decisions. **(15.83%)**

Section III. Marginal Lands

14. Would you consider any of your land to be "marginal" for agricultural purposes?

n =632 No **(55.38%)**
Yes **(44.62%)**

15. How many acres of your land would you consider to be marginal for agricultural purposes?

_____ # of acres

n =274 **Mean =106.8** **Std. Dev. =176.6**

16. How many miles is your nearest tract of marginal land from your home?

_____ # of miles

n =280 **Mean =60.1** **Std. Dev. =230.6**

17. Could any of the following land classifications be used to describe all or part of your marginal land?

n =282 forest or wooded areas **(81.21%)**
pastureland **(24.47%)**
row crops or hay production **(23.76%)**
water bodies **(42.55%)**

18.Which of these best describes your current land management:

n =282 self-managed **(61.35%)**
jointly managed with partners **(10.99%)**
managed by hired professionals **(1.42%)**
leased **(21.63%)**
not currently managed for any particular purpose **(13.83%)**

19.On average how often do you visit or check on your marginal land?
n =281 weekly **(44.13%)**
once each month **(32.74%)**
once every year **(14.59%)**
less than once every year **(9.25%)**

20.If you were to sell your marginal land, how much do you think you could get per acre?
$_____ (per acre)
n =193 Mean =$1,27740 Std. Dev. =$902.33

Section IV. Fee Based Recreational Use of Land
21. Would you be willing to let people pay you a fee to access your land for recreational purposes? (For example: hunting, camping, fishing, bird watching)
n =632 No **(85.92%)**
Yes **(14.08%)**

22. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (For example: hunting, camping, fishing, bird watching)?
$_____ (per acre per year)
n =69 Mean =$175.99 Std. Dev. =$551.3

23. How certain are you that you would accept the dollar value you indicated in the previous question? (Where 0% indicates you are very uncertain and 100% indicates that you are very certain) **n =69**
0% **(0%)** 10% **(1.45%)** 20% **(1.45%)** 30% **(2.9%)** 40% **(1.45%)** 50% **(40.58%)** 60% **(2.86%)** 70% **(2.9%)** 80% **(20.29%)** 90% **(8.7%)** 100% **(17.39%)**

24. If you selected a percentage less than 80% in question 23, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.
$_____ (per acre per year)
n =36 Mean =163.72 Std. Dev. =362.7

25. IF current Louisiana law were changed to allow you to charge a fee and keep the liability protection, would you allow people to pay you for recreational use of your land?
n =632 No **(76.07%)**
Yes **(23.93%)**

26. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? $_____ (per acre per year)
n =126 Mean =132.76 Std. Dev. =430.78

27. How certain are you that you would accept the dollar value you indicated in the previous question? (Where 0% indicates you are very uncertain and 100% indicates that you are very certain) **n =126**
0% **(0%)** 10% **(2.38%)** 20% **(1.59%)** 30% **(0.79%)** 40% **(2.38%)** 50% **(19.8%)** 60% **(3.17%)** 70% **(4.76%)** 80% **(32.54%)** 90% **(14.29%)** 100% **(16.67%)**

28. If you selected a percentage less than 80% in question 27, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.

$_____ (per acre per year)

n =50 Mean =106.92 Std. Dev. =191.63

29. How many acres of land would you be willing to use for fee-based recreational activities?

_____ # of acres

n =137 Mean =256.55 Std. Dev. =494.4

30. Which of the following recreational activities would you NOT allow on your land?

n =151
Hunting – big game **(15.89%)**
Hunting – small game **(7.95%)**
Hunting – migratory bird or waterfowl **(10.6%)**
Hunting – dove **(9.27%)**
Fishing **(14.57%)**
Hiking **(13.91%)**
ATV riding **(52.98%)**
Camping **(32.67%)**
Other **(3.31%)**

31. If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer?

n = 141
Independently **(56.94%)**
Cooperatively **(19.44%)**
Outfitter **(23.61%)**

Section V. Current Land Uses

32. Have you ever worked with any of your adjacent or local landowners in any way?

n =629
No **(72.24%)**
Yes **(25.76%)**

33. If yes, did you find your cooperation with other landowners to be effective?

n =162
No **(4.94%)**
Yes **(95.06%)**

34. Have you ever been involved with a cooperative?

n =629
No **(85.85%)**
Yes **(14.15%)**

35. If yes, did you find your involvement in the cooperative to be beneficial to you?

n =87
No **(3.45%)**
Yes **(96.55%)**

36. Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program?

n =627
No **(31.88%)**
Yes **(58.33%)**
I don't know what these are **(9.79%)**

37. How many separate tracts of non-residential land do you own?

_____ # of tracts

n =608 Mean =2.06 Std. Dev. =2.07

38. Is your nearest tract of non-residential land adjacent to your primary residence?

n =613 No **(56.77%)**

Yes **(43.23%)**

39. How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence?

_____ # of miles.

n =602 Mean =70.3 Std. Dev. =238.1

40. What is the total acreage of all tracts of land?

_____ # of acres

n =601 Mean =324.8 Std. Dev. =634.08

41. How many years have you been a land owner?

_____ years

n =610 Mean =28 Std. Dev. =22.6

42. How is the ownership of your land organized?

n =623 corporation **(7.54%)**

limited liability corporation LLC **(3.37%)**

joint ownership **(36.92%)**

single ownership **(64.21%)**

43. How did you acquire the majority of your non residence, non commercial land?

n =623 Inherited it **(46.71%)**

By marriage **(2.73%)**

By purchasing it **(55.52%)**

Other **(0.8%)**

44. Do you use any of your land for agricultural production of row crops?

n =631 No **(42.63%)**

Yes **(57.37%)**

45. Which of the following agricultural crops are historically produced on your land?

n =364 Cotton **(79.40%)**

Corn **(67.86%)**

Sorghum **(17.31%)**

Rice **(10.44%)**

Soybeans **(68.96%)**

Wheat **(36.81%)**

Other **(5.49%)**

46. Have you ever leased any of your land for agricultural uses?

n =632 No **(32.59%)**
Yes **(67.41%)**

47. Do you own land for any of the following reasons?

n =632 Hay production **(22.15%)**
Leasing to others **(29.75%)**
Personal recreational opportunities **(26.11%)**
Raising livestock **(20.41%)**
Timber production **(30.38%)**
To provide a place for wildlife **(32.91%)**
To provide recreational access for others **(4.27%)**
Other **(6.80%)**

Section VI. Demographic Information

48. Your Gender

n =616 Female **(48.21%)**
Male **(51.79%)**

49. Your age in years? _____

n =603 **Mean =61.7** **Std. Dev. =14.04**

50. Which of the following best describes your ethnic background?

n =616 Caucasian (white) **(94.16%)**
African American **(3.25%)**
Asian **(0%)**
American Indian **(0.65%)**
Hispanic **(0.65%)**
Other **(0.16%)**

51. Choose one category that most closely describes your primary occupation:

n =616

Farming **(13.98%)**	Business **(10.55%)**
Engineering **(2.60%)**	Government **(5.84%)**
Housewife **(4.06%)**	Retired **(36.69%)**
Unemployed **(0.16%)**	Education **(5.84%)**
Healthcare **(3.76%)**	Student **(0.16%)**
Self-employed **(10.88%)**	Other **(5.84%)**

52. How many individuals live in your household? (List):_____

n =606 **Mean =2.13** **Std. Dev. =1**

53. Indicate your highest level of education attained

n =610 Less than high school **(5.9%)** High school graduate **(29.84%)**
Some college, no degree **(20.82%)** Associate Degree **(1.80%)**
Bachelor Degree **(22.46%)** Graduate/Professional Degree **(17.7%)**

54. Which best describes your annual household income?

n =509	Less than $10,000 **(2.36%)**	$10,000 - $14,999 **(3.14%)**
	$15,000 - $24,999 **(9.04%)**	$25,000 - $34,999 **(10.81%)**
	$35,000 - $49,999 **(15.52%)**	$50,000 - $74,999 **(19.65%)**
	$75,000 - $99,999 **(12.97%)**	$100,000 - $149,999 **(15.32%)**
	$150,000 - $199,999 **(2.75%)**	$200,000 or more **(7.87%)**

APPENDIX H: SURVEY RESPONSE SUMMARY OF ARKANSAS LANDOWNERS

Section I. Recreational Use and Land Access Practices

1. Do you or any members of your household use your land for recreational purposes?

n =485 No **(55.7%%)**
Yes **(44.3%)**

2. Do you or any members of your household use your land for any of the following recreational purposes?

n = 270 Hunting – big game **(52.2%)**
Hunting – small game **(63%)**
Hunting – migratory bird or waterfowl **(53.7%)**
Hunting – dove **(44.8%)**
Fishing **(42.6%)**
Hiking **(17%)**
ATV riding **(51.9%)**
Camping **(7.8%)**
Other **(6.7%)**

3. Have you ever allowed individuals who are not part of your household to use your land for recreational purposes?

n =485 No **(55.6%%)**)
Yes **(44.3%)**

4. Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes?

n =271 Immediate family (son, father, brother) **(70.85%)**
Other relative (uncle, cousins, etc.) **(57.56%)**
Friends **(xx%)**
Individuals you do not know personally **(80.81%)**
Other **(11.44%)**

5. Have you ever leased your land for hunting or recreational access?

n =485 No **(11.5%)**
Yes **(88.5%)**

6. Please indicate the last year you leased your land, how many acres were leased, and the lease price for each of the following recreational use categories.

Hunting – big game (deer and/or turkey)
_____ (year) **Mean =2005 Std. Dev. =3.4 n =11**
_____ (number of leases) **Mean =1.8 Std. Dev. =1.5 n =10**
_____ (total number of acres leased) **Mean =270.8 Std. Dev. =251.5 n =11**
$_____ (total lease revenue) **Mean =$1,362.10 Std. Dev. =$1,357.41 n =10**

Hunting – small game
_____ (year) **Mean =2006 Std. Dev. =1.4 n =2**
_____ (number of leases) **Mean =1 Std. Dev. =0 n =2**
_____ (total number of acres leased) **Mean =240 Std. Dev. =226.2 n =2**
$_____ (total lease revenue) **Mean =$750 Std. Dev. =$353.55 n =2**

Hunting – migratory bird or waterfowl
_____ (year) **Mean =2004.5 Std. Dev. =3.3 n =27**
_____ (number of leases) **Mean =1.4 Std. Dev. =0.97 n =27**
_____ (total number of acres leased) **Mean =429.85 Std. Dev. =613.02 n =28**
$_____ (total lease revenue) **Mean =$8,659.62 Std. Dev. =$9,166.07 n =26**

Hunting – dove
_____ (year) **Mean =2000.5 Std. Dev. =7.7 n =2**
_____ (number of leases) **Mean =1 Std. Dev. =0 n =2**
_____ (total number of acres leased) **Mean =140 Std. Dev. =84.8 n =2**
$_____ (total lease revenue) **Mean =$3,750 Std. Dev. =$4,596.19 n =2**

Other
_____ (year) **Mean =2005.5 Std. Dev. =1.9 n =8**
_____ (number of leases) **Mean =2.4 Std. Dev. =4.3 n =9**
_____ (total number of acres leased) **Mean =1156.2 Std. Dev. =1348.9 n =9**
$_____ (total lease revenue) **Mean =$1,1275 Std. Dev. =$9,161.52 n =8**

Section II. Risk and Liability Issues

7. I am very concerned about the liability issues associated with allowing people on my land.

n =482
Strongly Disagree **(6.43%)**
Somewhat Disagree **(4.15%)**
Not Sure **(13.9%)**
Somewhat Agree **(21.4%)**
Strongly Agree **(53.5%)**

8. It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability.

n =482
Strongly Disagree **(19.1%)**
Somewhat Disagree **(7.1%)**
Not Sure **(41.3%)**
Somewhat Agree **(14.1%)**
Strongly Agree **(17.8%)**

9. If my liability concerns were eased I would be much more likely to allow people to use my land for recreational purposes.

n =483
Strongly Disagree **(31.3%)**
Somewhat Disagree **(12.42%)**
Not Sure **(29%)**
Somewhat Agree **(16.4%)**
Strongly Agree **(9.7%)**

10. To protect myself from liability associated with trespassers, Arkansas law requires me to post my land with "no trespassing" signs.

n =485
True **(31.6%)**
False **(12.4%)**
Unsure **(56.1%)**

11. Arkansas law protects me from liability claims that may result from recreational use of my land so long as I do not charge a fee.

n = 483 True **(7.05%)**
False **(19.29%)**
Unsure **(73.65%)**

12. Commercial liability insurance is available specifically for private landowners who charge a fee for recreational access

n = 480 True **(30.98%)**
False **(2.91%)**
Unsure **(66.11%)**

13. Compared to other landowners you know, how would you characterize yourself?

n = 477 I tend to take on substantial levels of risk in my financial decisions. **(7.13%)**
I tend to avoid risk when possible in my financial decisions. **(72.12%)**
I neither seek nor avoid risk in my financial decisions. **(19.50%)**

Section III. Marginal Lands

14. Would you consider any of your land to be "marginal" for agricultural purposes?

n = 484 No **(59.92%)**
Yes **(40.08%)**

15. How many acres of your land would you consider to be marginal for agricultural purposes?

_____ # of acres

n =192 **Mean =108.7** **Std. Dev. = 169.5**

16. How many miles is your nearest tract of marginal land from your home?

_____ # of miles

n =193 **Mean =81.06** **Std. Dev. =248.5**

17. Could any of the following land classifications be used to describe all or part of your marginal land?

n =195 forest or wooded areas **(79.49%)**
pastureland **(26.15%)**
row crops or hay production **(38.97%)**
water bodies **(43.08%)**

18.Which of these best describes your current land management:

n =195 self-managed **(60%)**
jointly managed with partners **(13.33%)**
managed by hired professionals **(4.62%)**
leased **(23.08%)**
not currently managed for any particular purpose **(9.23%)**

19.On average how often do you visit or check on your marginal land?
n =195 weekly **(46.67%)**
once each month **(27.98%)**
once every year **(17.95%)**
less than once every year **(7.96%)**
20.If you were to sell your marginal land, how much do you think you could get per acre?
$_____ (per acre)
n =154 **Mean = $1,368.51** **Std. Dev. = $956.98**

Section IV. Fee Based Recreational Use of Land
21. Would you be willing to let people pay you a fee to access your land for recreational purposes? (For example: hunting, camping, fishing, bird watching)
n =485 No **(85.77%)**
Yes **(14.23%)**

22. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (For example: hunting, camping, fishing, bird watching)?
$_____ (per acre per year)
n =56 **Mean =279.25** **Std. Dev. =1,309.45**

23. How certain are you that you would accept the dollar value you indicated in the previous question? (Where 0% indicates you are very uncertain and 100% indicates that you are very certain) **n =56**
0% **(0%)** 10% **(3.57%)** 20% **(0%)** 30% **(1.79%)** 40% **(3.57%)** 50% **(33.93%)** 60% **(5.36%)** 70% **(7.14%)** 80% **(8.9%)** 90% **(10.7%)** 100% **(25%)**

24. If you selected a percentage less than 80% in question 23, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.
$_____ (per acre per year)
n =30 **Mean =$110.33** **Std. Dev. =$88.65**

25. IF current Arkansas law were changed to allow you to charge a fee and keep the liability protection, would you allow people to pay you for recreational use of your land?
n =485 No **(17.18%)**
Yes **(20.82%)**

26. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? $_____ (per acre per year)
n =87 **Mean =38.89** **Std. Dev. =471.14**

27. How certain are you that you would accept the dollar value you indicated in the previous question? (Where 0% indicates you are very uncertain and 100% indicates that you are very certain) **n =87**
0% **(0%)** 10% **(3.45%)** 20% **(1.15%)** 30% **(1.15%)** 40% **(0.00%)** 50% **(19.54%)** 60% **(4.60%)** 70% **(1.15%)** 80% **(31.09%)** 90% **(10.34%)** 100% **(22.99%)**

28. If you selected a percentage less than 80% in question 27, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting.

$_____ (per acre per year)

n =33 Mean =$369.34 Std. Dev. =$792.59

29. How many acres of land would you be willing to use for fee-based recreational activities?

_____ # of acres

n =94 Mean =259.34 Std. Dev. =419.33

30. Which of the following recreational activities would you NOT allow on your land?

n =96
Hunting – big game **(17.71%)**
Hunting – small game **(8.33%)**
Hunting – migratory bird or waterfowl **(9.38%)**
Hunting – dove **(8.33%)**
Fishing **(16.67%)**
Hiking **(17.71%)**
ATV riding **(53.13%)**
Camping **(39.58%)**
Other **(2.08%)**

31. If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer?

n =97
Independently **(58.76%)**
Cooperatively **(13.40%)**
Outfitter **(27.84%)**

Section V. Current Land Uses

32. Have you ever worked with any of your adjacent or local landowners in any way?

n =482
No **(**28.42**%)**
Yes **(**71.58**%)**

33. If yes, did you find your cooperation with other landowners to be effective?

n =138
No **(96.38%)**
Yes **(3.62%)**

34. Have you ever been involved with a cooperative?

n =482
No **(68.67%)**
Yes **(31.33%)**

35. If yes, did you find your involvement in the cooperative to be beneficial to you?

n =152
No **(91.45%)**
Yes **(8.55%)**

36. Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program?

n =480
No **(60%)**
Yes **(32.5%)**
I don't know what these are**(7.5%)**

37. How many separate tracts of non-residential land do you own?

_____ # of tracts

n =462 Mean =2.67 Std. Dev. =3.85

38. Is your nearest tract of non-residential land adjacent to your primary residence?

n =473 No **(65.54%)**

Yes **(34.46%)**

39. How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence?

_____ # of miles.

n =465 Mean =86.8 Std. Dev. =255.74

40. What is the total acreage of all tracts of land?

_____ # of acres

n =465 Mean =432.1 Std. Dev. =853.5

41. How many years have you been a land owner?

_____ years

n =474 Mean =27.36 Std. Dev. =31.38

42. How is the ownership of your land organized?

n =482 corporation **(7.88%)**

limited liability corporation LLC **(3.94%)**

joint ownership **(45.44%)**

single ownership **(53.11%)**

43. How did you acquire the majority of your non residence, non commercial land?

n =477 Inherited it **(46.12%)**

By marriage **(3.35%)**

By purchasing it **(55.77%)**

Other **(0.63%)**

44. Do you use any of your land for agricultural production of row crops?

n =485 No **(18.35%)**

Yes **(81.64%)**

45. Which of the following agricultural crops are historically produced on your land?

n =400 Cotton **(40.50%)**

Corn **(29.25%)**

Sorghum **(21.75%)**

Rice **(59.25%)**

Soybeans **(89.50%)**

Wheat **(63%)**

Other **(6.52%)**

46. Have you ever leased any of your land for agricultural uses?

n =482 No **(33.2%)**
Yes **(66.8%)**

47. Do you own land for any of the following reasons?

n =484 Hay production **(13.04%)**
Leasing to others **(36.16%)**
Personal recreational opportunities **(23.14%)**
Raising livestock **(12.81%)**
Timber production **(20.04%)**
To provide a place for wildlife **(29.13%)**
To provide recreational access for others **(4.96%)**
Other **(10.33%)**

Section VI. Demographic Information

48. Your Gender

n =474 Female **(28.9%)**
Male **(71.1%)**

49. Your age in years? _____

n =464 **Mean =63.6** **Std. Dev. =13.6**

50. Which of the following best describes your ethnic background?

n =468 Caucasian (white) **(95.51%)**
African American **(3.63%)**
Asian **(0.21%)**
American Indian **(0.64%)**
Hispanic **(0%)**
Other **(0%)**

51. Choose one category that most closely describes your primary occupation:

n =475

Farming **(21.82%)**	Business **(12.08%)**
Engineering **(0.85%)**	Government **(2.75%)**
Housewife **(4.24%)**	Retired **(37.08%)**
Unemployed **(0%)**	Education **(4.66%)**
Healthcare **(2.75%)**	Student **(0%)**
Self-employed **(7.63%)**	Other **(5.08%)**

52. How many individuals live in your household? (List):_____

n =470 **Mean =2.8** **Std. Dev. =0.96**

53. Indicate your highest level of education attained

n =471

Less than high school **(8.49%)**	High school graduate **(25.90%)**
Some college, no degree **(25.05%)**	Associate Degree **(1.70%)**
Bachelor Degree **(24.20%)**	Graduate/Professional Degree **(13.80%)**

54. Which best describes your annual household income?

n =395	Less than $10,000 **(1.27%)**	$10,000 - $14,999 **(0.76%)**
	$15,000 - $24,999 **(11.14%)**	$25,000 - $34,999 **(9.62%)**
	$35,000 - $49,999 **(11.14%)**	$50,000 - $74,999 **(21.52%)**
	$75,000 - $99,999 **(10.38%)**	$100,000 - $149,999 **(20.76%)**
	$150,000 - $199,999 **(3.04%)**	$200,000 or more **(8.35%)**

APPENDIX I: GRAPHICAL ANALYSIS OF SURVEY REPONSES

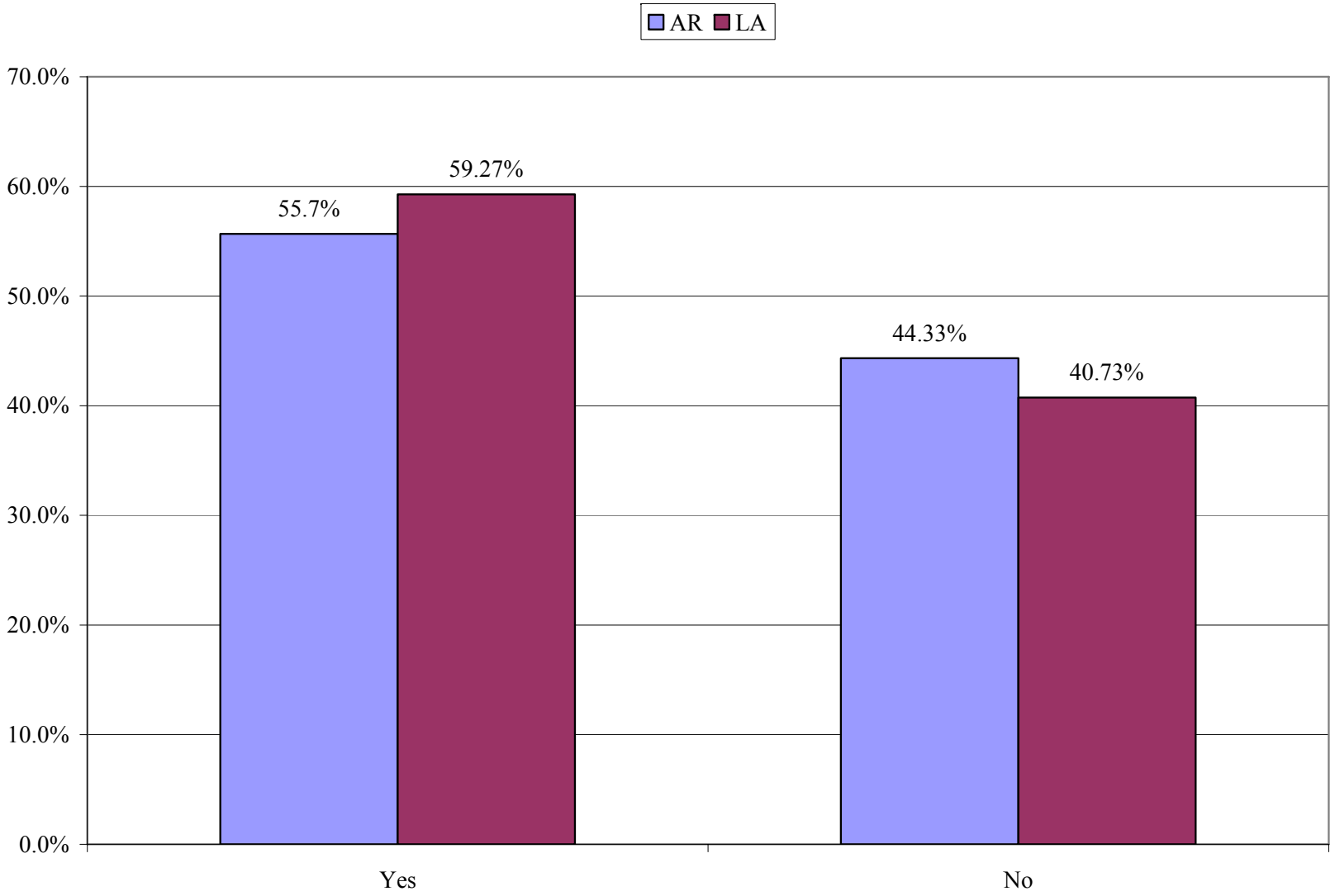

Figure I.1. Question 1. Do you or any members of your household use your land for recreational purposes? (n=1116) (AR n=485) (LA n=631)

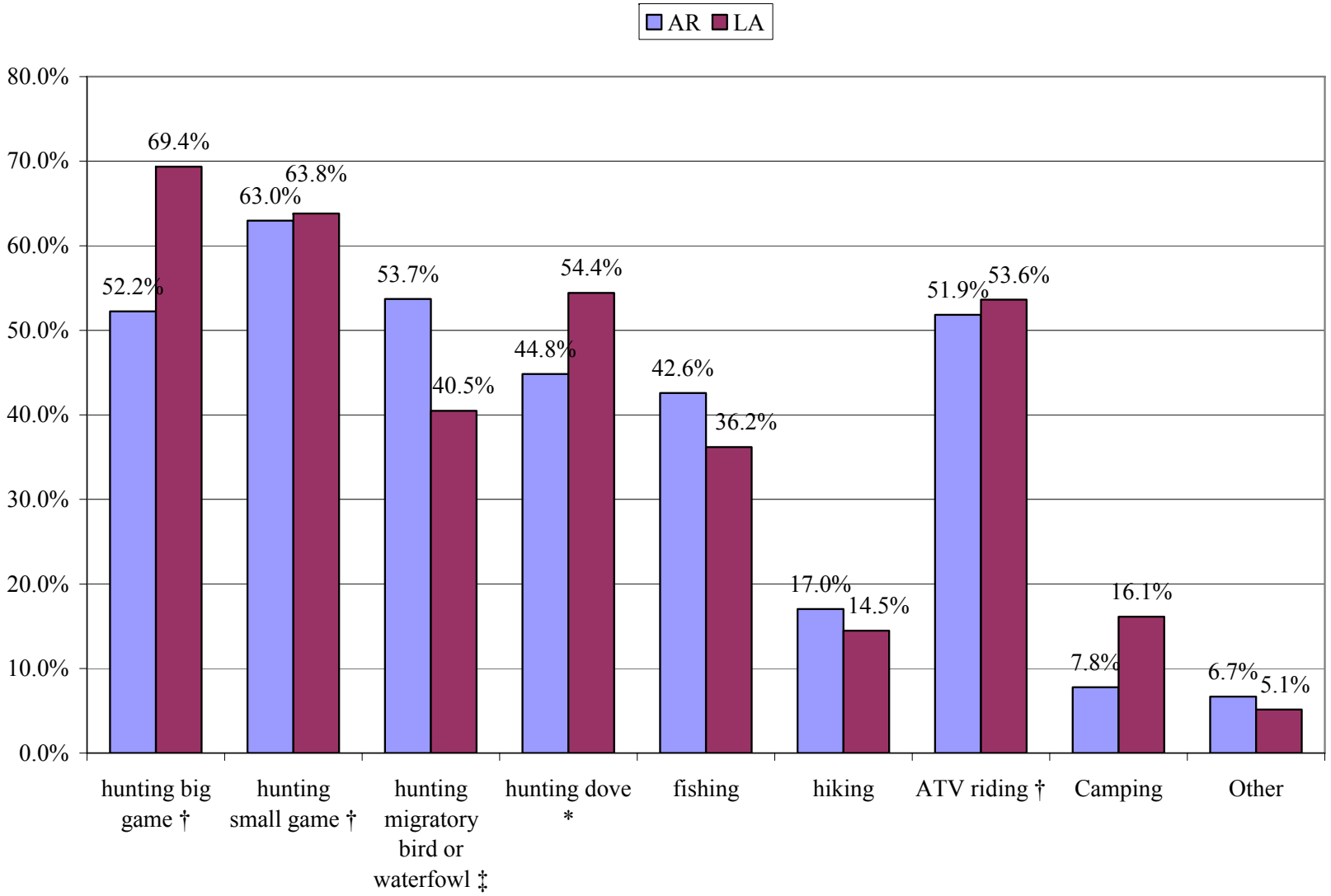

Figure I.2. Question 2. Do you or any members of your household use your land for any of the following recreational purposes? (n=1116) (AR n=485) (LA n=631) (†, ‡, and * indicates statistically significant differences between mean values at the 1%, 5%, and 10% levels, respectively)

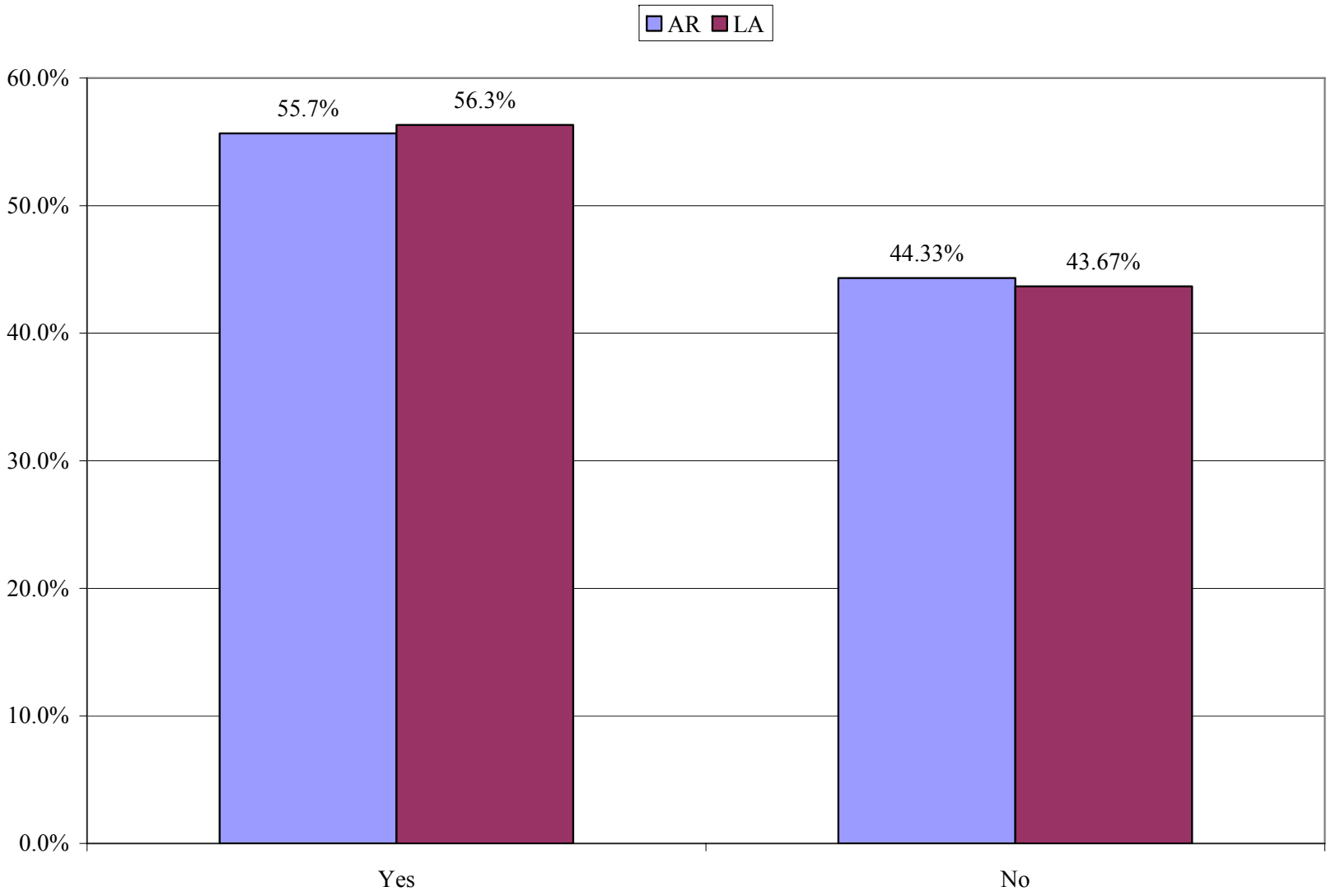

Figure I.3. Question 3. Have you ever allowed individuals who are not part of your household to use your land for recreational purposes? (n=1117) (AR n=485) (LA n=632)

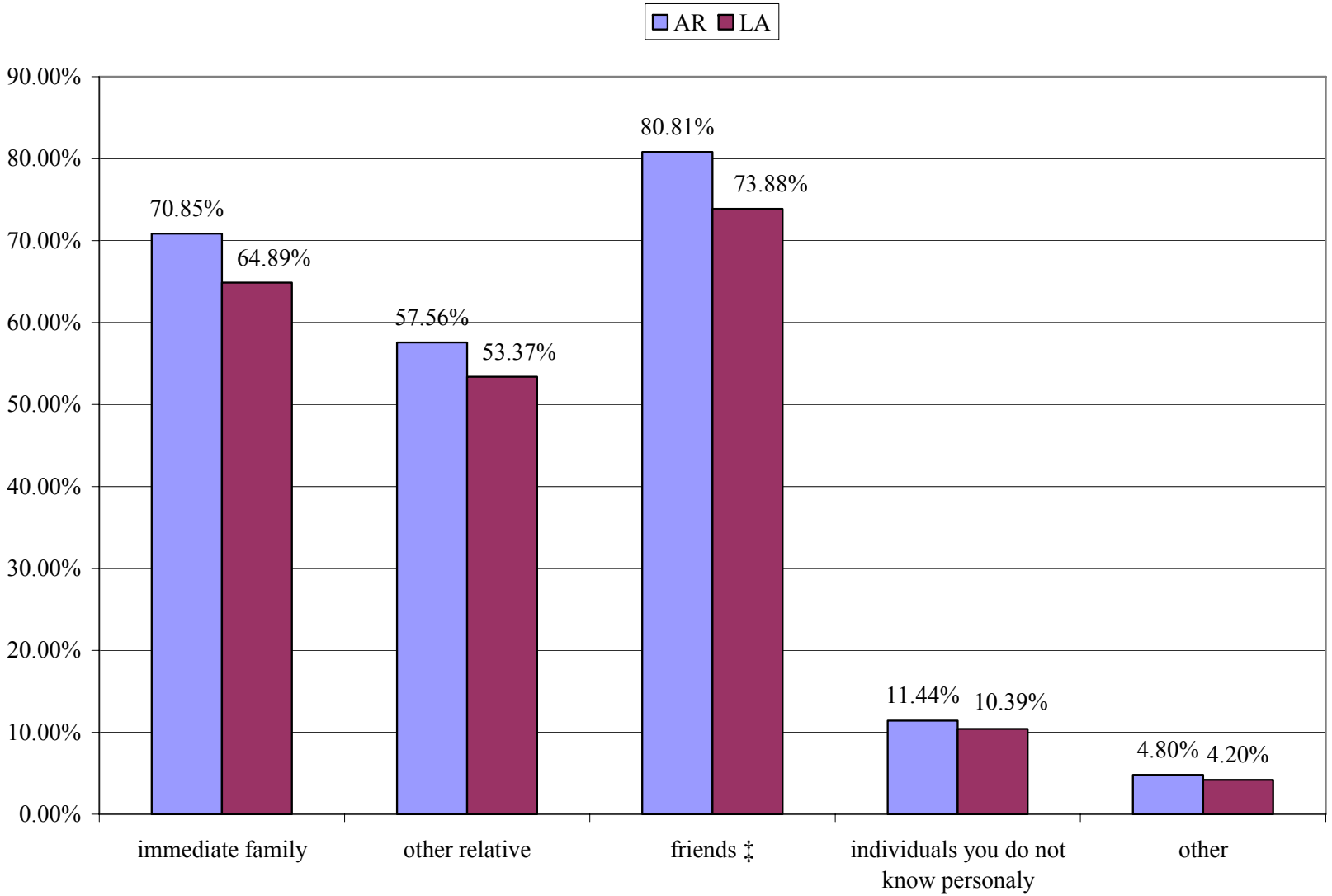

Figure I.4. Question 4. Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes? (n=627) (AR n=271) (LA n=356) (‡ indicates statistically significant differences between mean values at the 5% level)

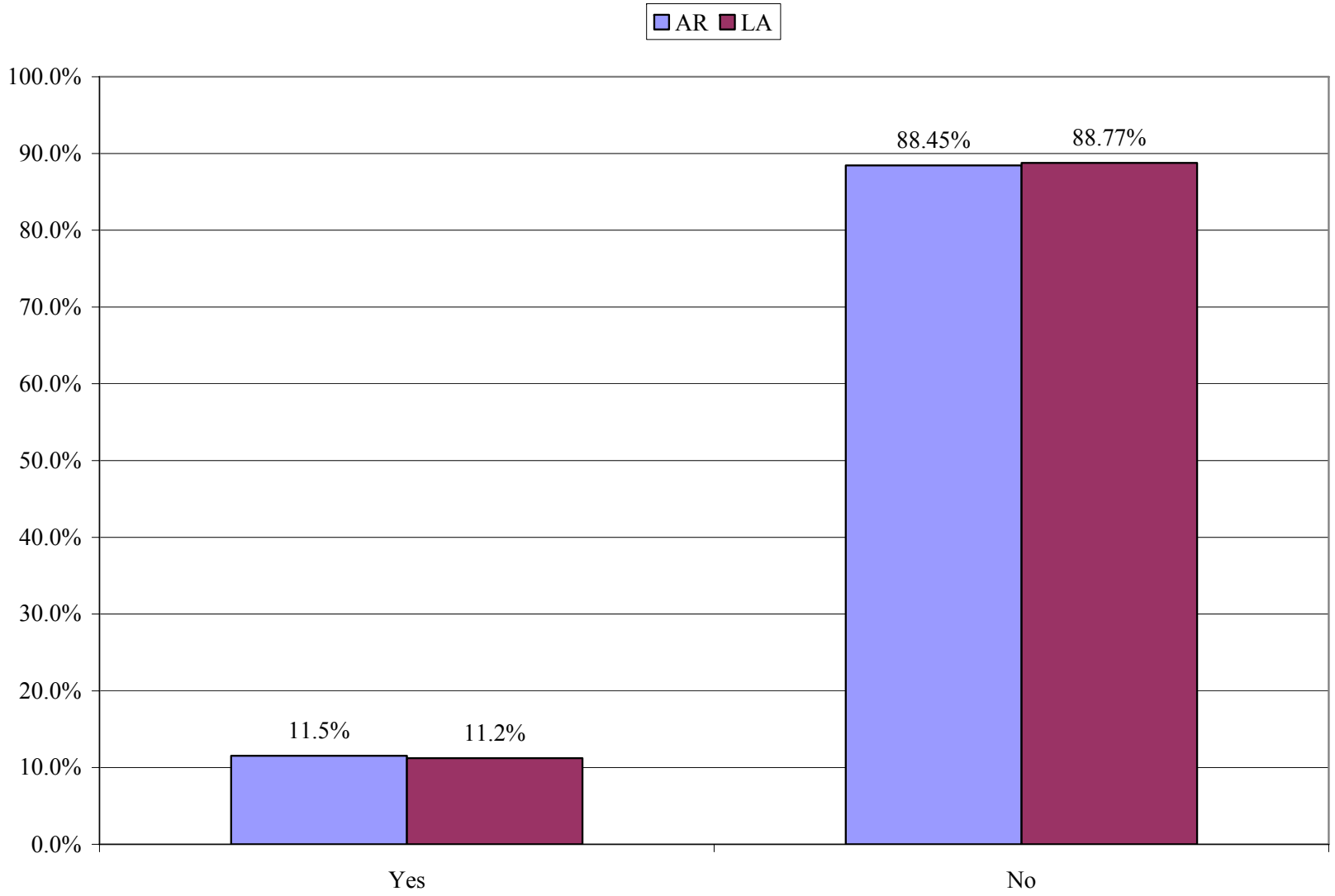

Figure I.5. Question 5. Have you ever leased your land for hunting or recreational access? (n=1117) (AR n=485) (LA n=632)

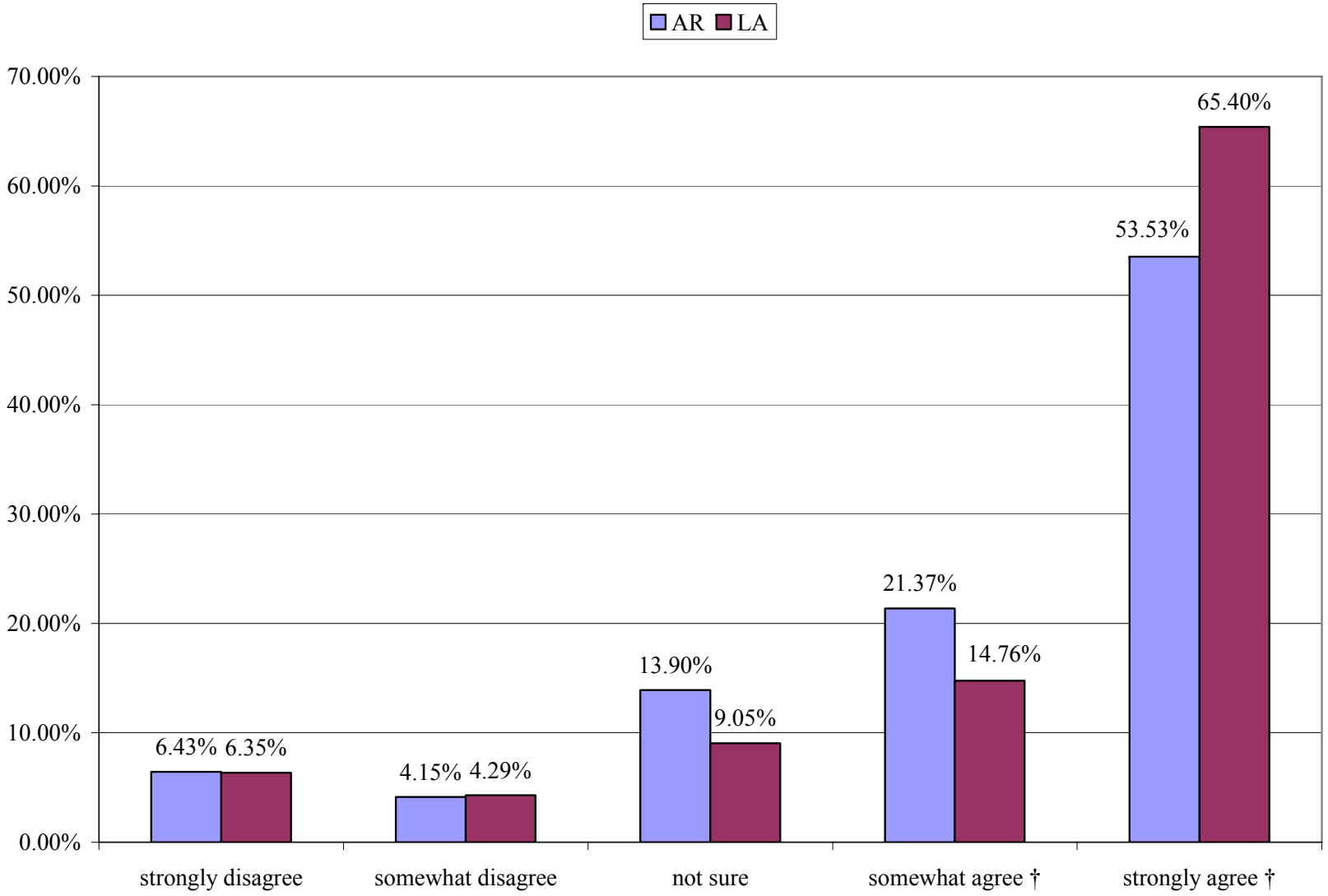

Figure I.6. Question 7. I am very concerned about the liability issues associated with allowing people on my land. (n=1112) (AR n=482) (LA n=630) († indicates statistically significant differences between mean values at the 1% level)

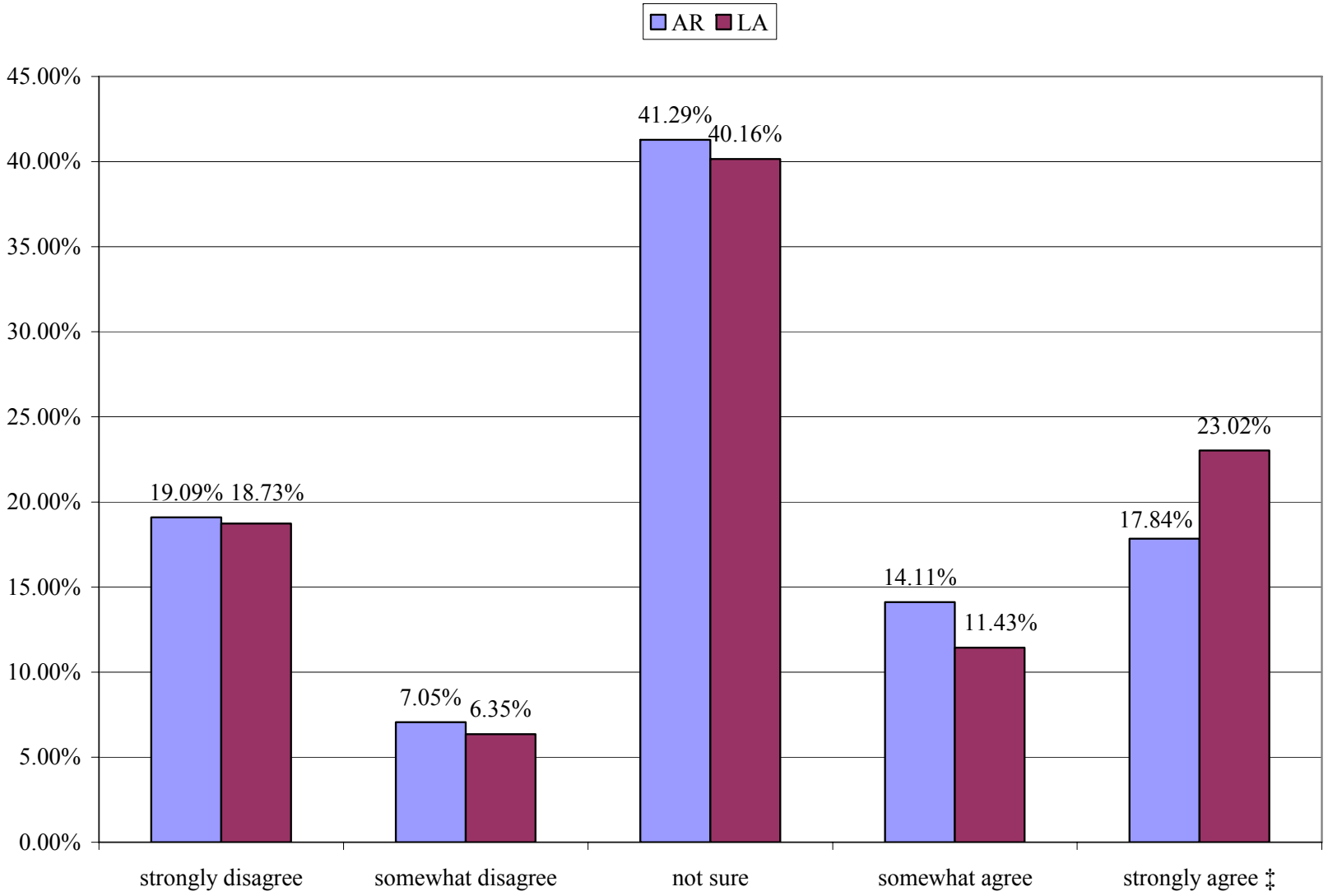

Figure I.7. Question 8. It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability. (n=1112) (AR n=482) (LA n=630) (‡ indicates statistically significant differences between mean values at the 5% level)

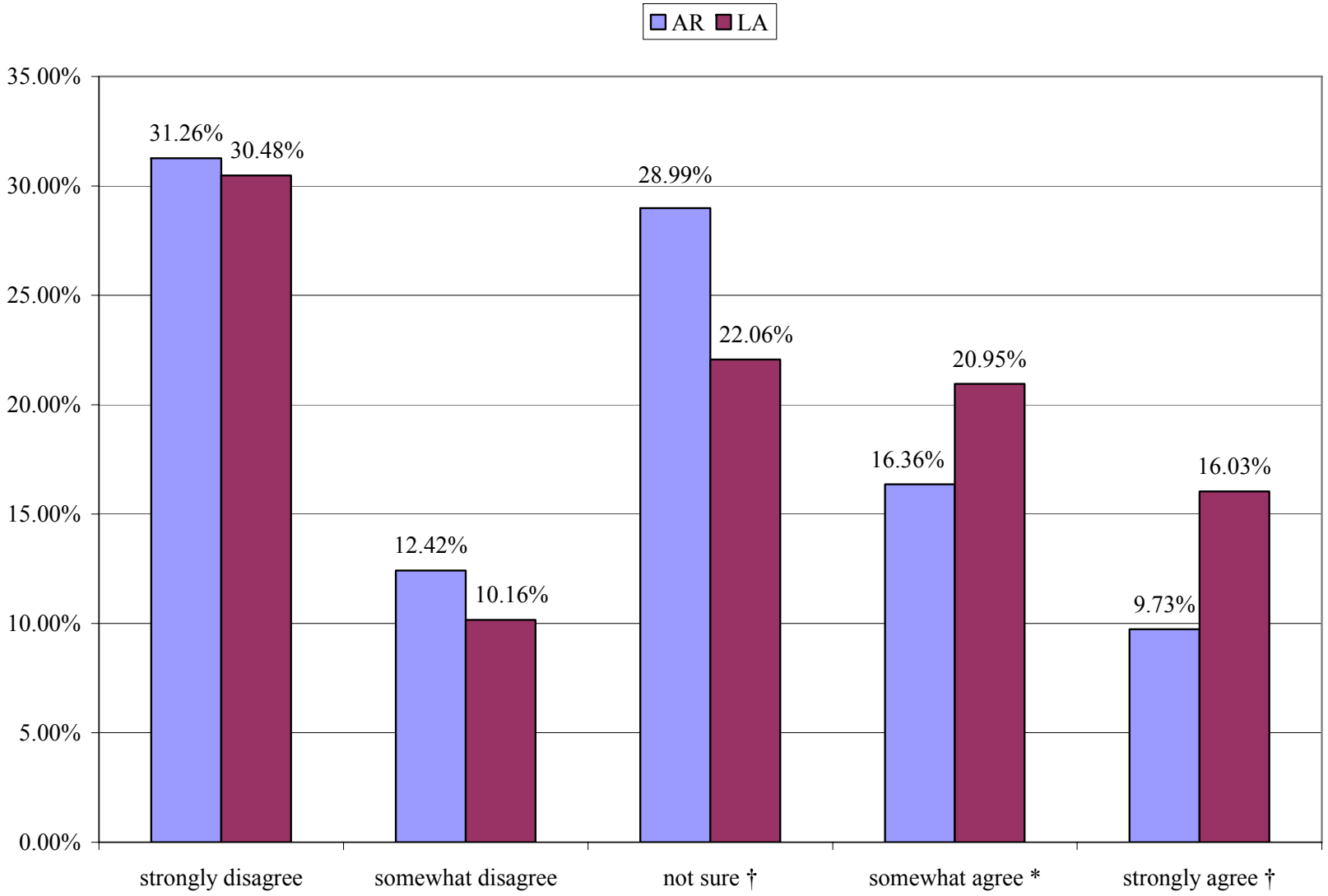

Figure I.8. Question 9. If my liability concerns were eased I would by much more likely to allow people to use my land for recreational purposes. (n=1113) (AR n=483) (LA n=630) († and * indicates statistically significant differences between mean values at the 1% and 10% levels, respectively)

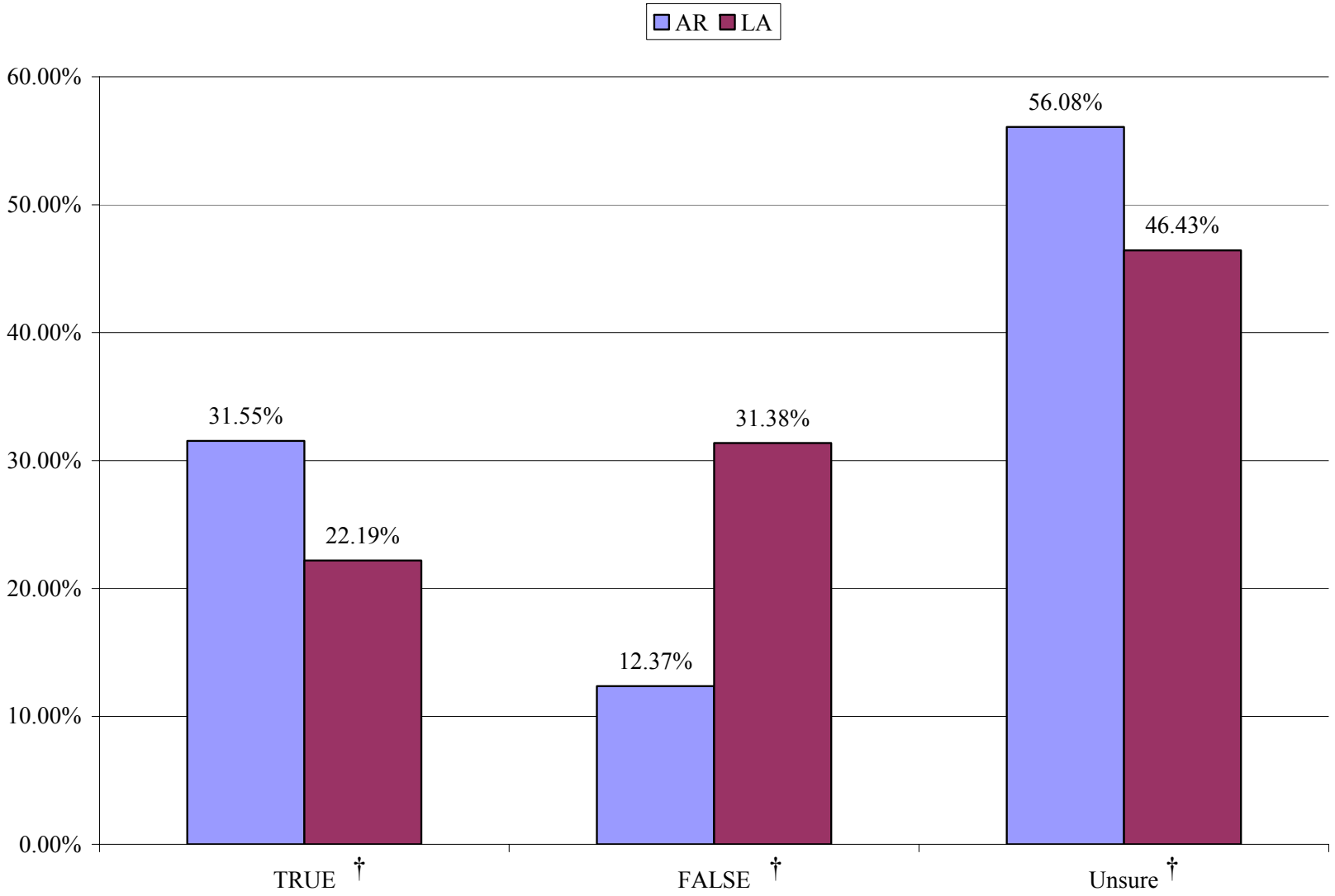

Figure I.9. Question 10. To protect myself from liability associated with trespassers, Arkansas law requires me to post my land with "no trespassing" signs. (n=1115) (AR n=484) (LA n=631) († indicates statistically significant differences between mean values at the 1% level)

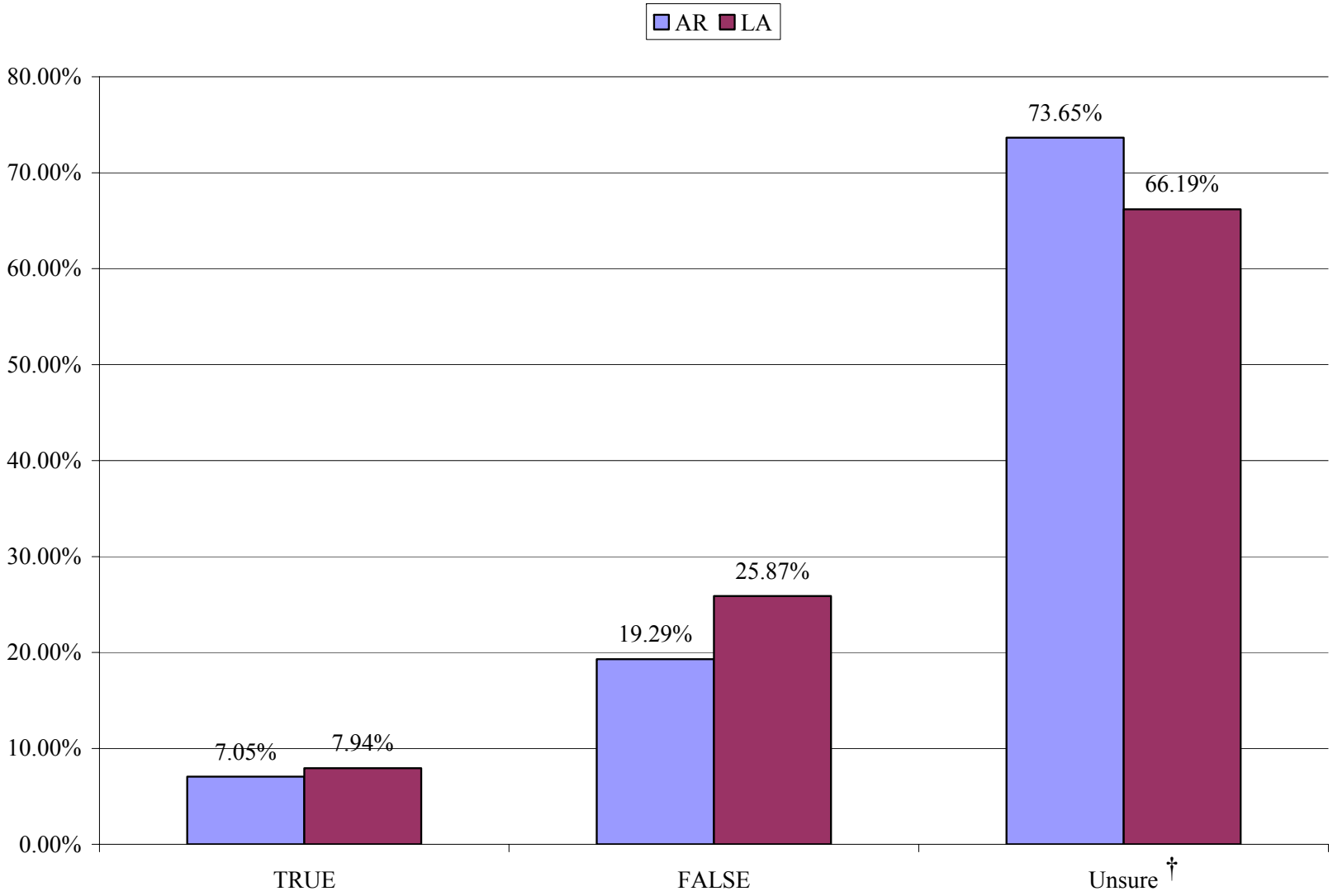

Figure I.10. Question 11. Arkansas law protects me from liability claims that may result from recreational use of my land so long as I do not charge a fee. (n=1114) (AR n=483) (LA n=631) († indicates statistically significant differences between mean values at the 1% level)

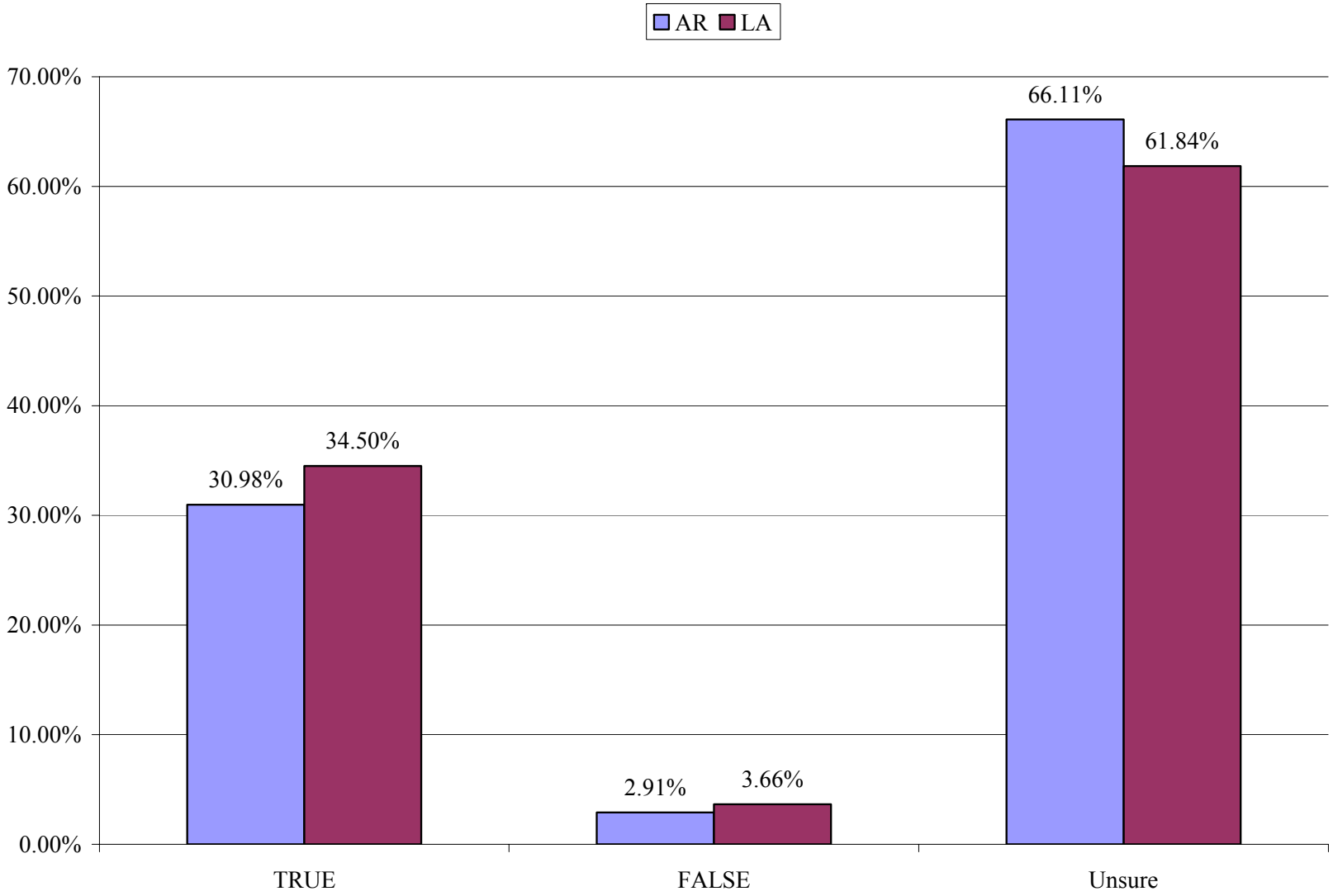

Figure I.11. Question 12. Commercial liability insurance is available specifically for private landowners who charge a fee for recreational access. (n=1109) (AR n=480) (LA n=629)

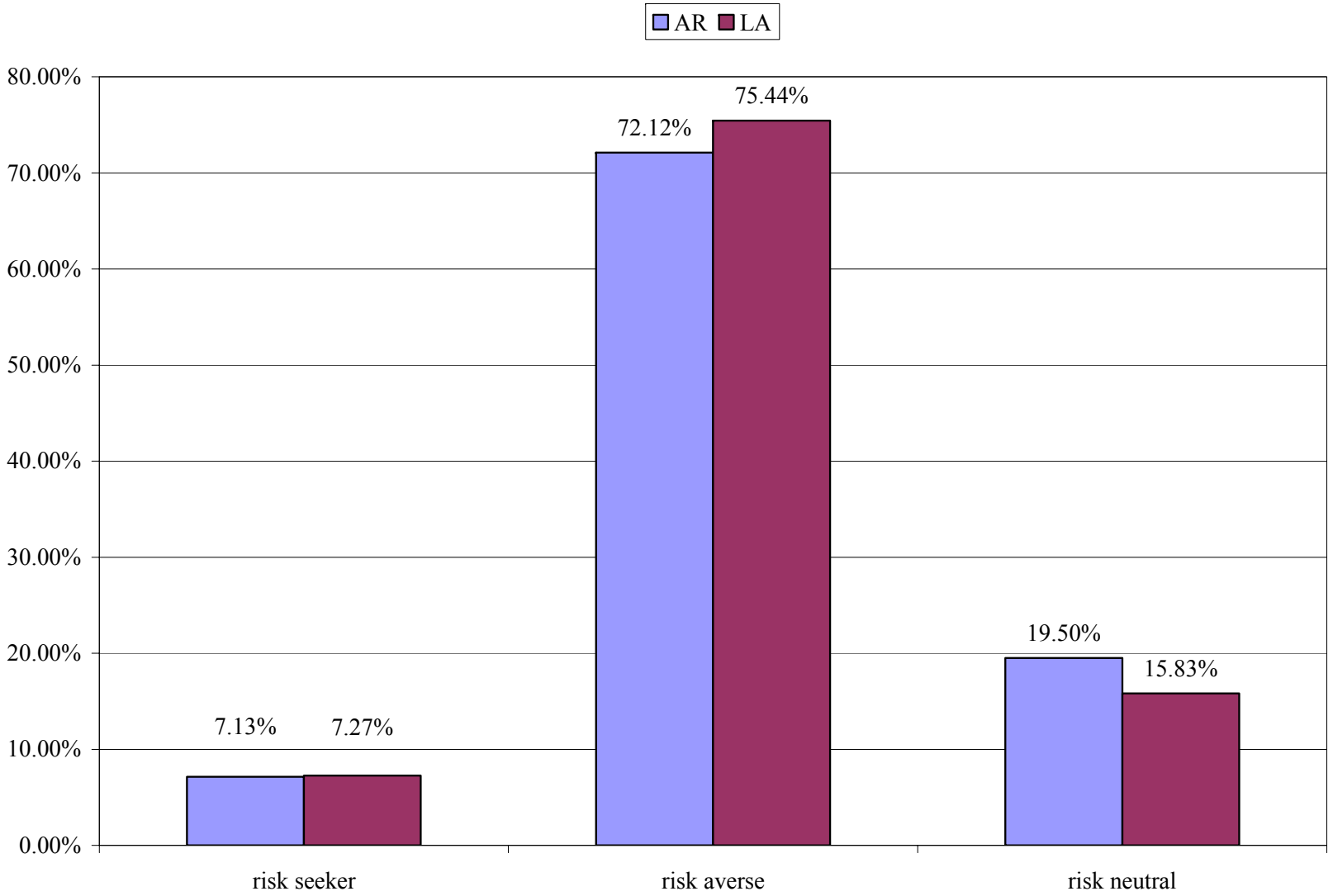

Figure I.12. Question 13. Compared to other landowners you know, how would you characterized yourself? (n=1096) (AR n=477) (LA n=619)

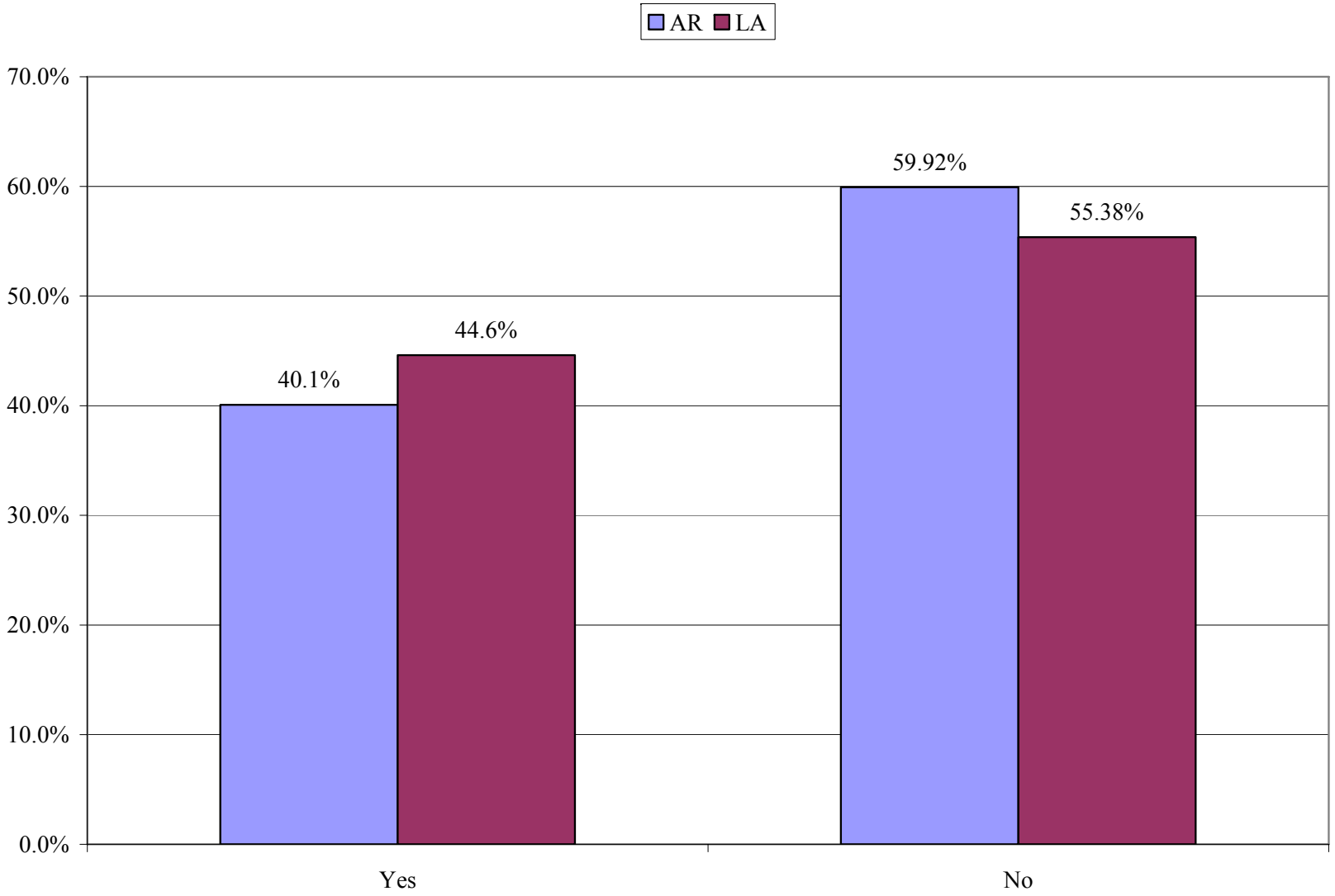

Figure I.13. Question 14. Would you consider any of your land to be “marginal” for agricultural purposes? (n=1116) (AR n=484) (LA n=632)

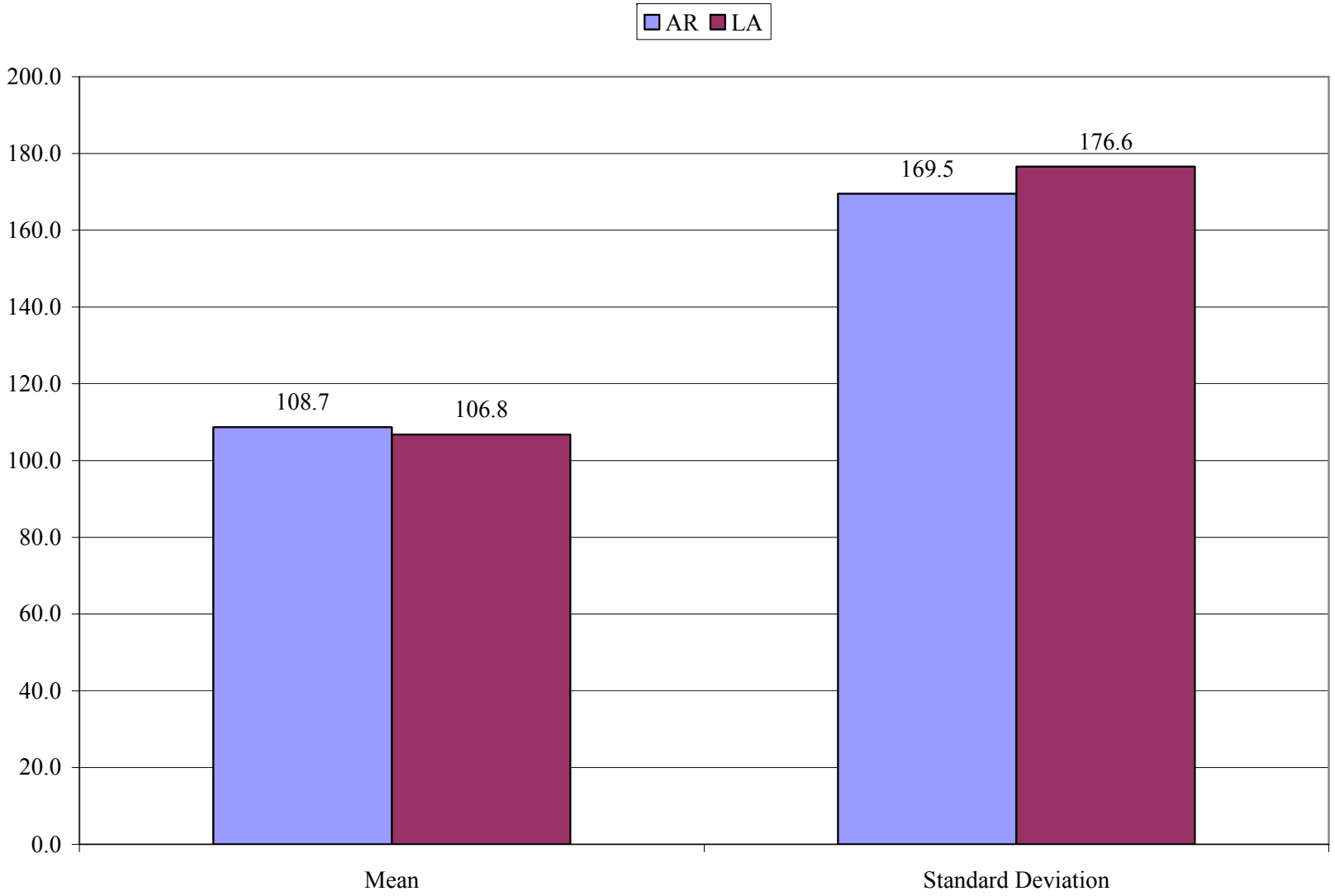

Figure I.14. Question 15. How many acres of your land would you consider to be marginal for agricultural purposes? (n=466) (AR n=192) (LA n=274)

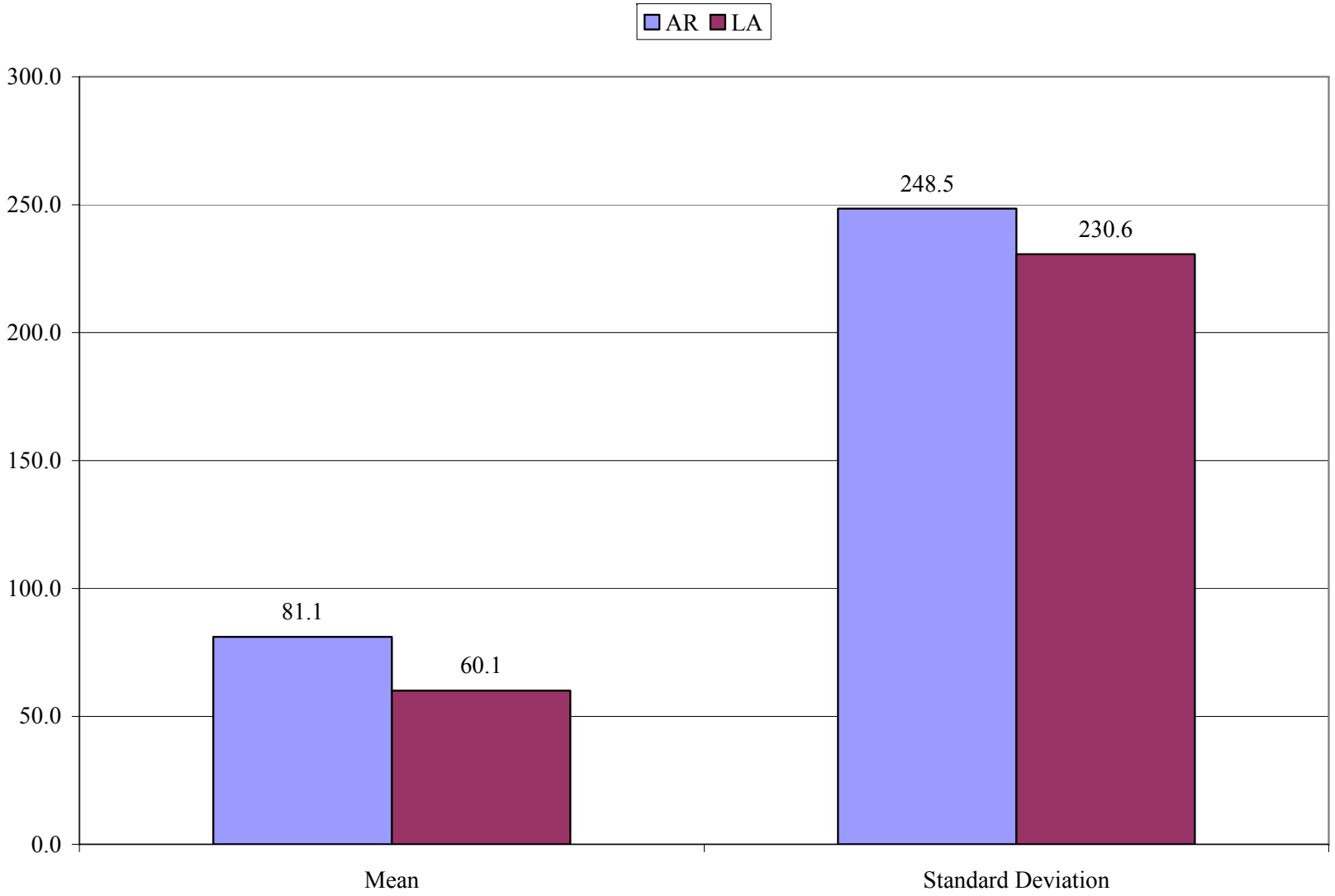

Figure I.15. Question 16. How many miles is your nearest tract of marginal land from your home? (n=473) (AR n=193) (LA n=280)

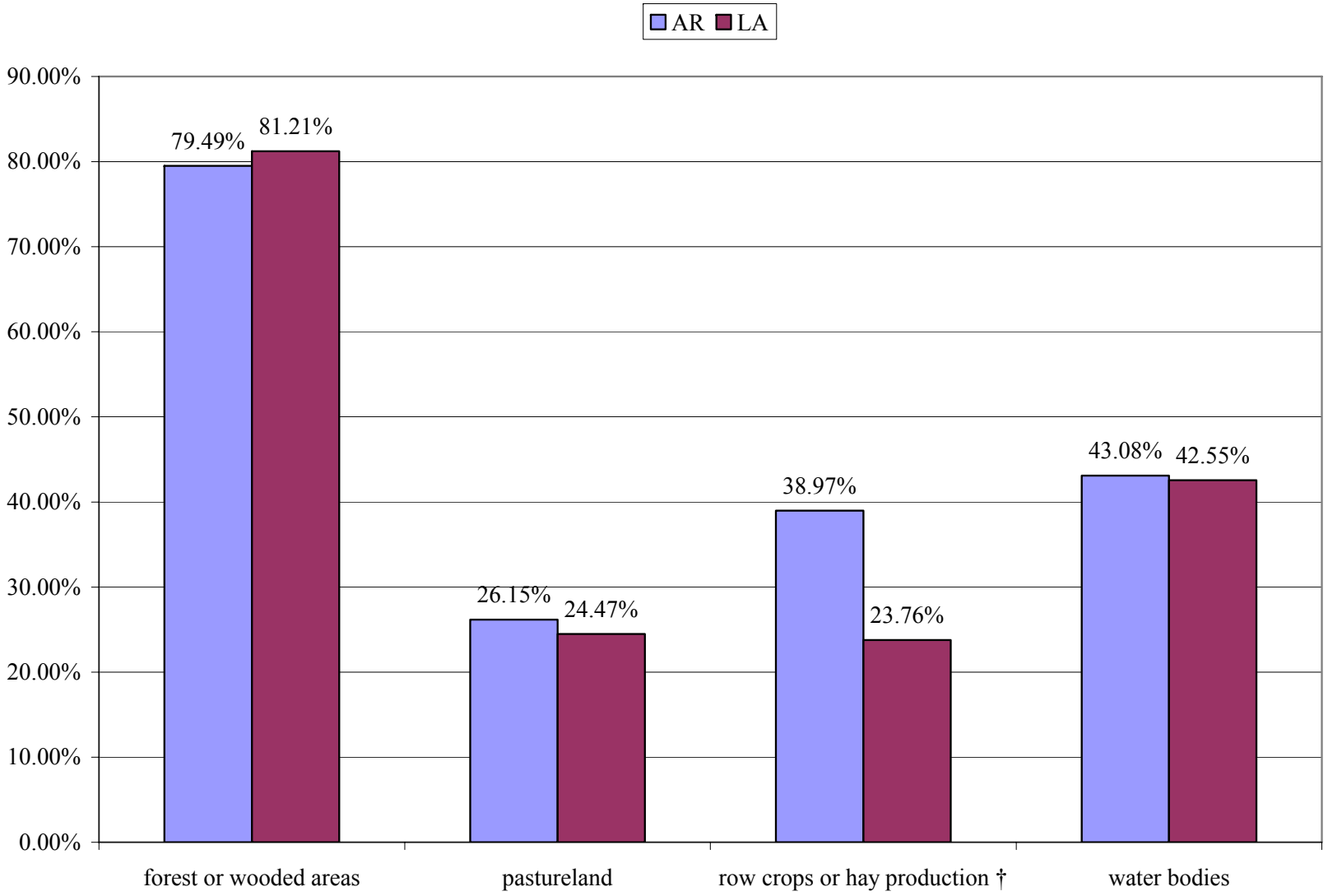

Figure I.16. Question 17. Could any of the following land classifications be used to describe all or part of you marginal land? (n=477) (AR n=195) (LA n=282) (Showing percentage of respondents selecting each category) († indicates statistically significant differences between mean values at the 1% level)

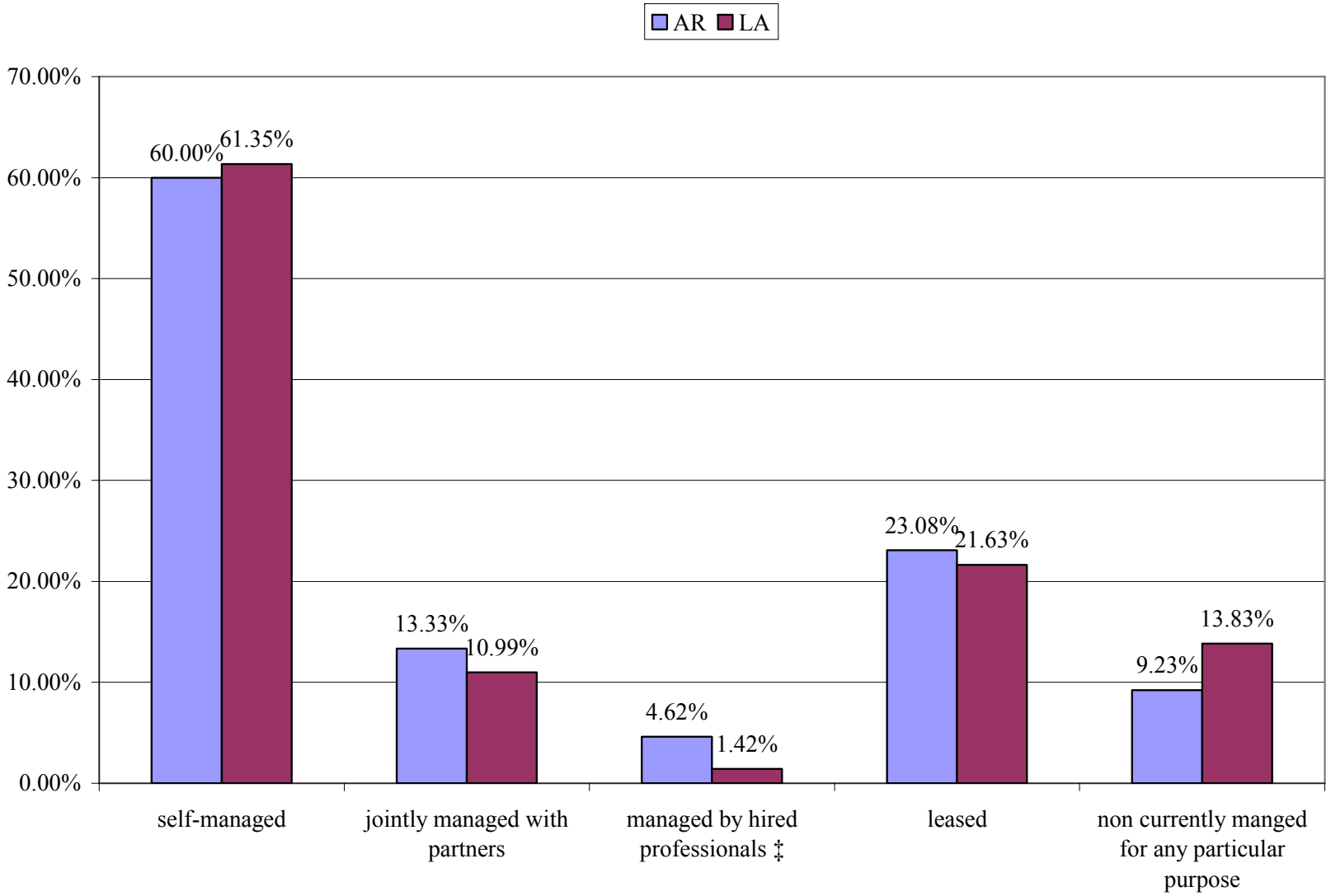

Figure I.17. Question 18. Which of these best described your current land management?
(n=477) (AR n=195) (LA n=282) (‡ indicates statistically significant differences between mean values at the 5% level)

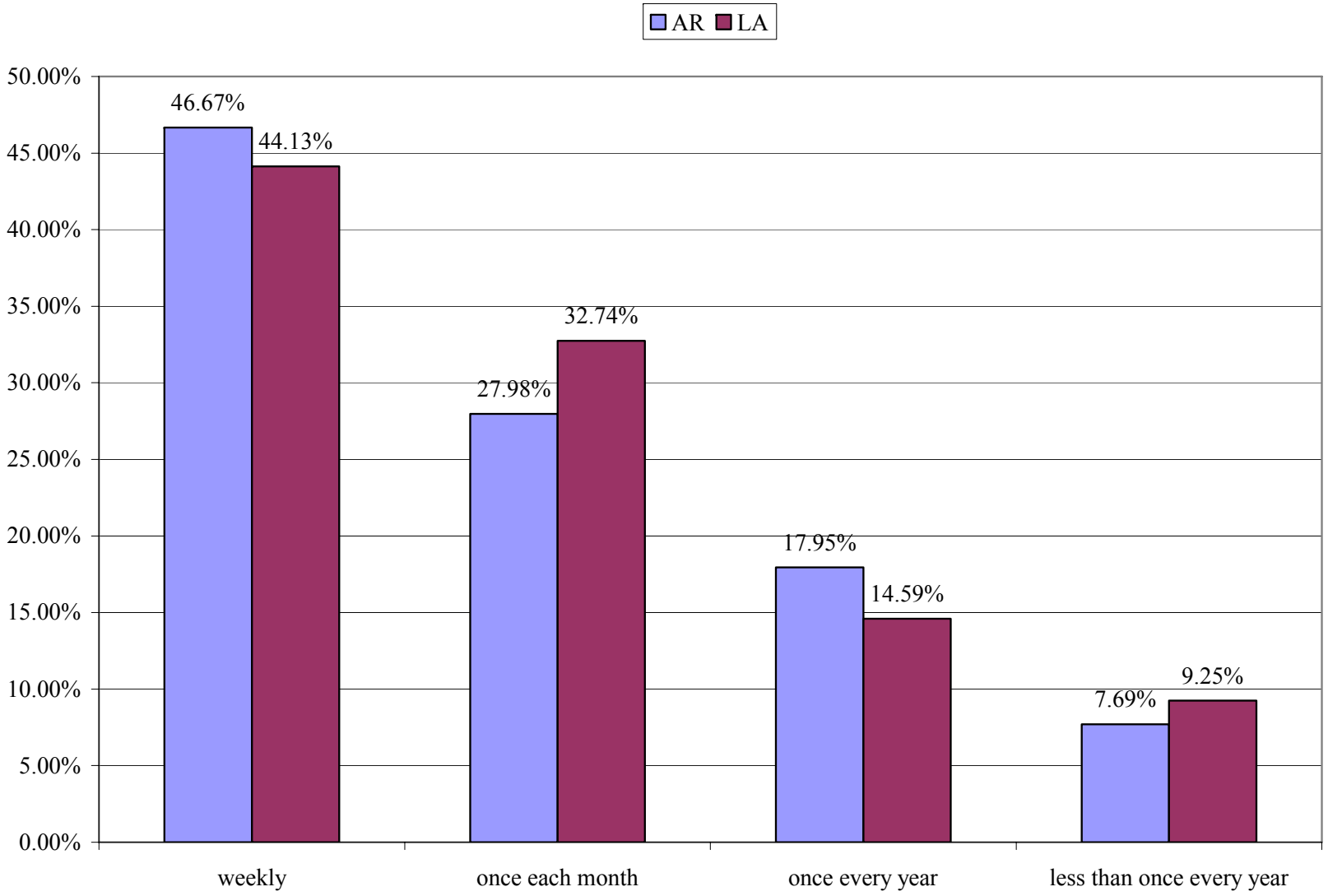

Figure I.18. Question 19. On average how often do you visit or check on your marginal land? (n=476) (AR n=195) (LA n=281)

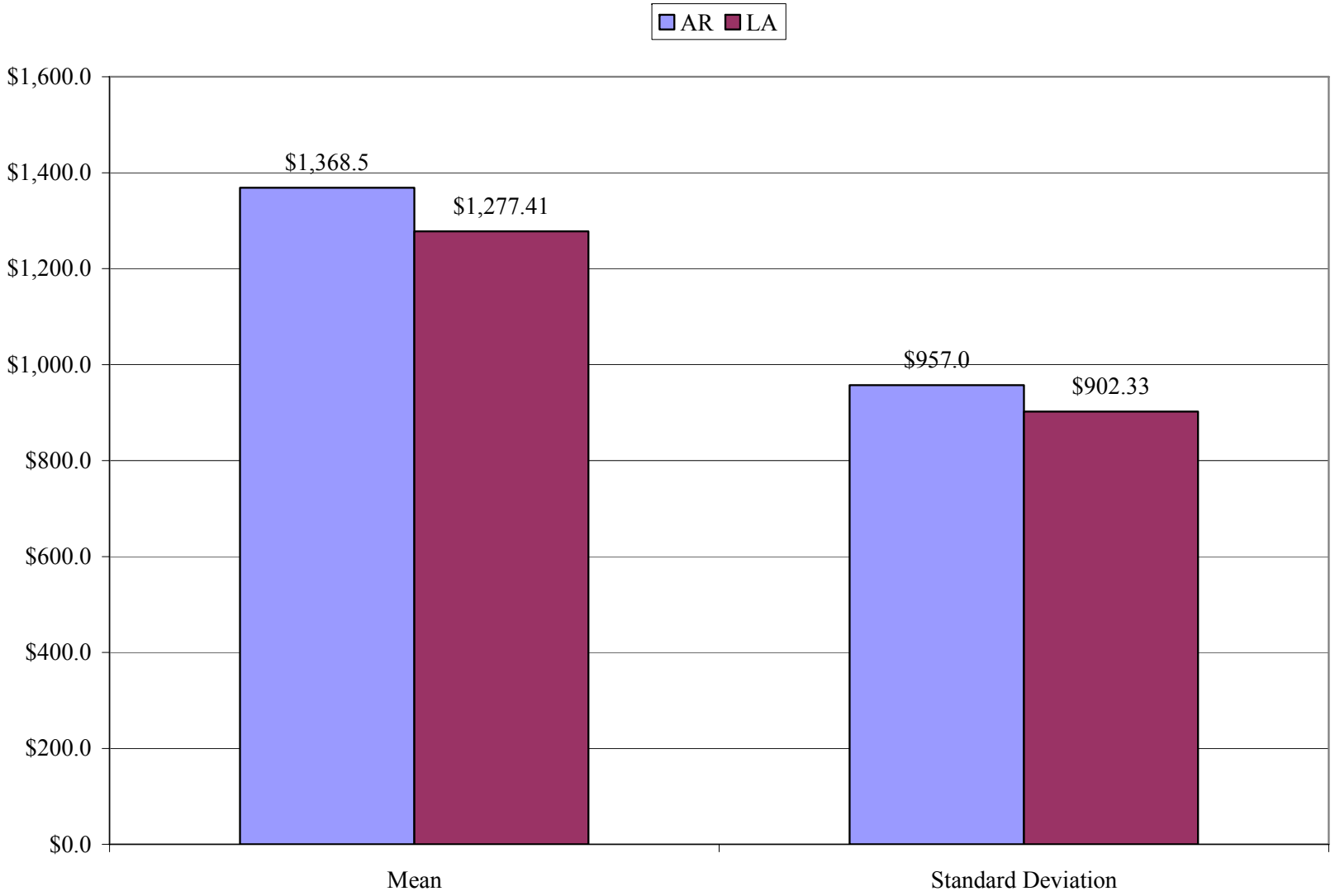

Figure I.19. Question 20.If you were to sell your marginal land, how much do you think you could get per acre? (n=347) (AR n=154) (LA n=193)

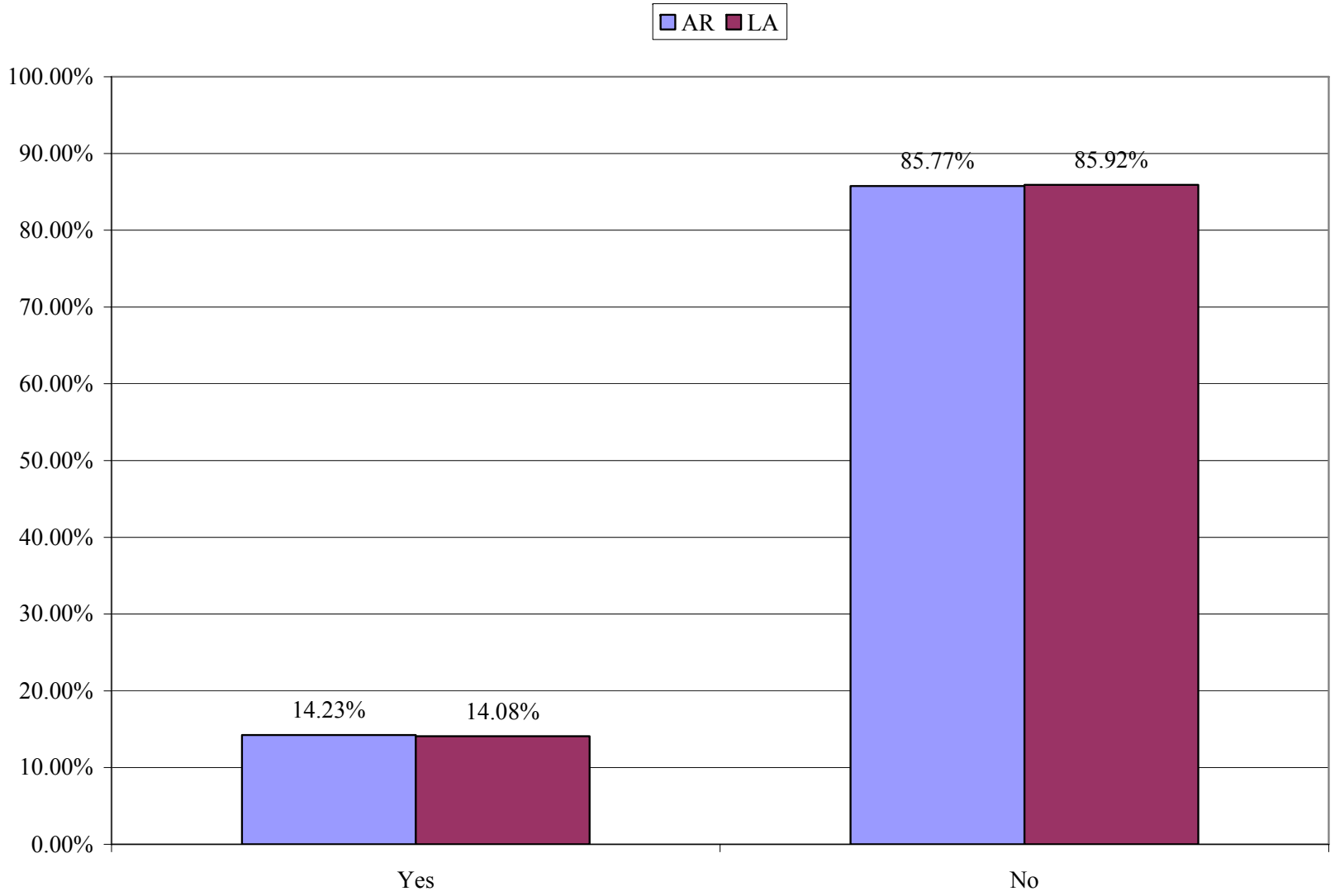

Figure I.20. Question 21. Would you be willing to let people pay you a fee to access your land for recreational purposes? (n=1117) (AR n=485) (LA n=632)

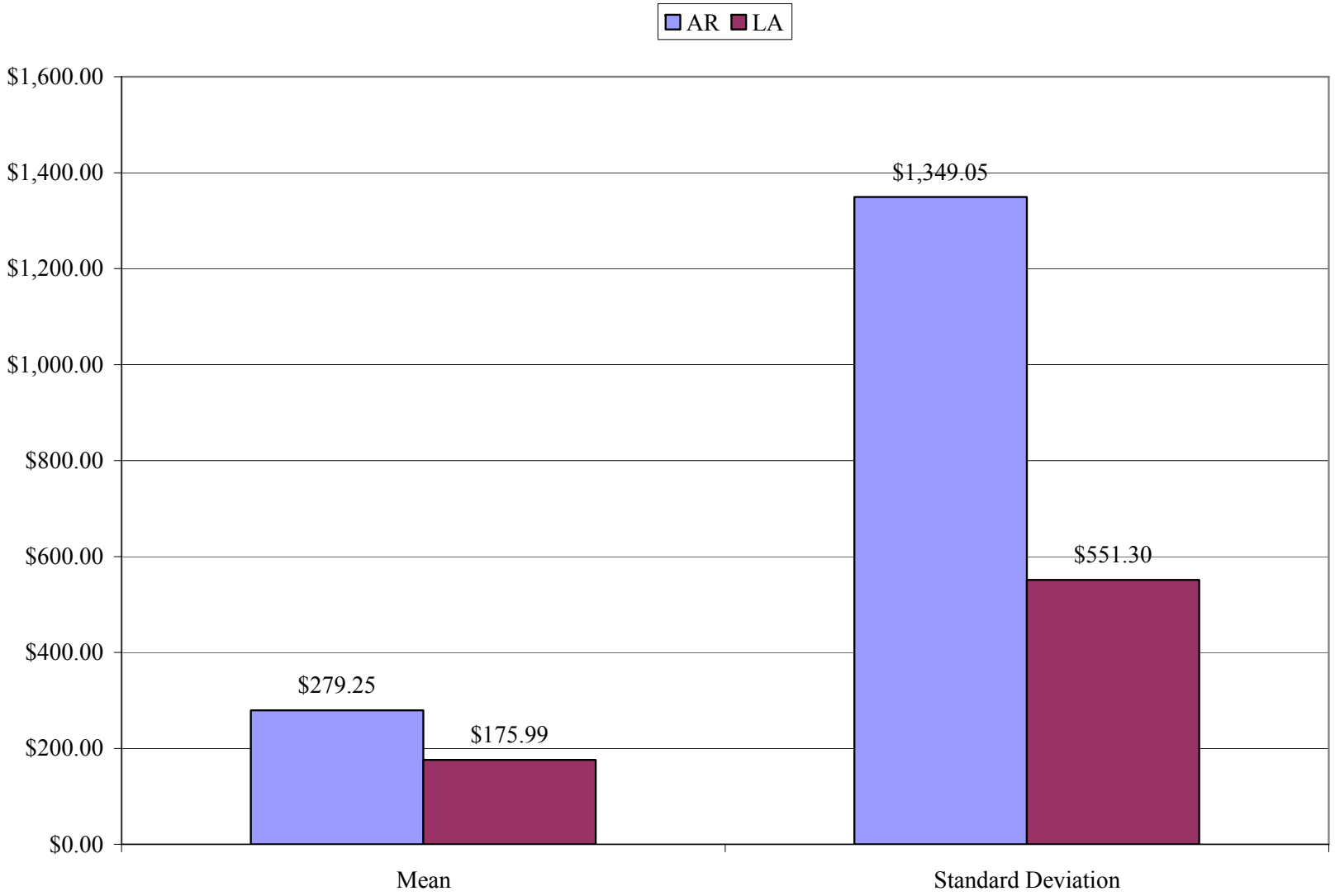

Figure I.21. Question 22. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (n=120) (AR n=53) (LA n=67)

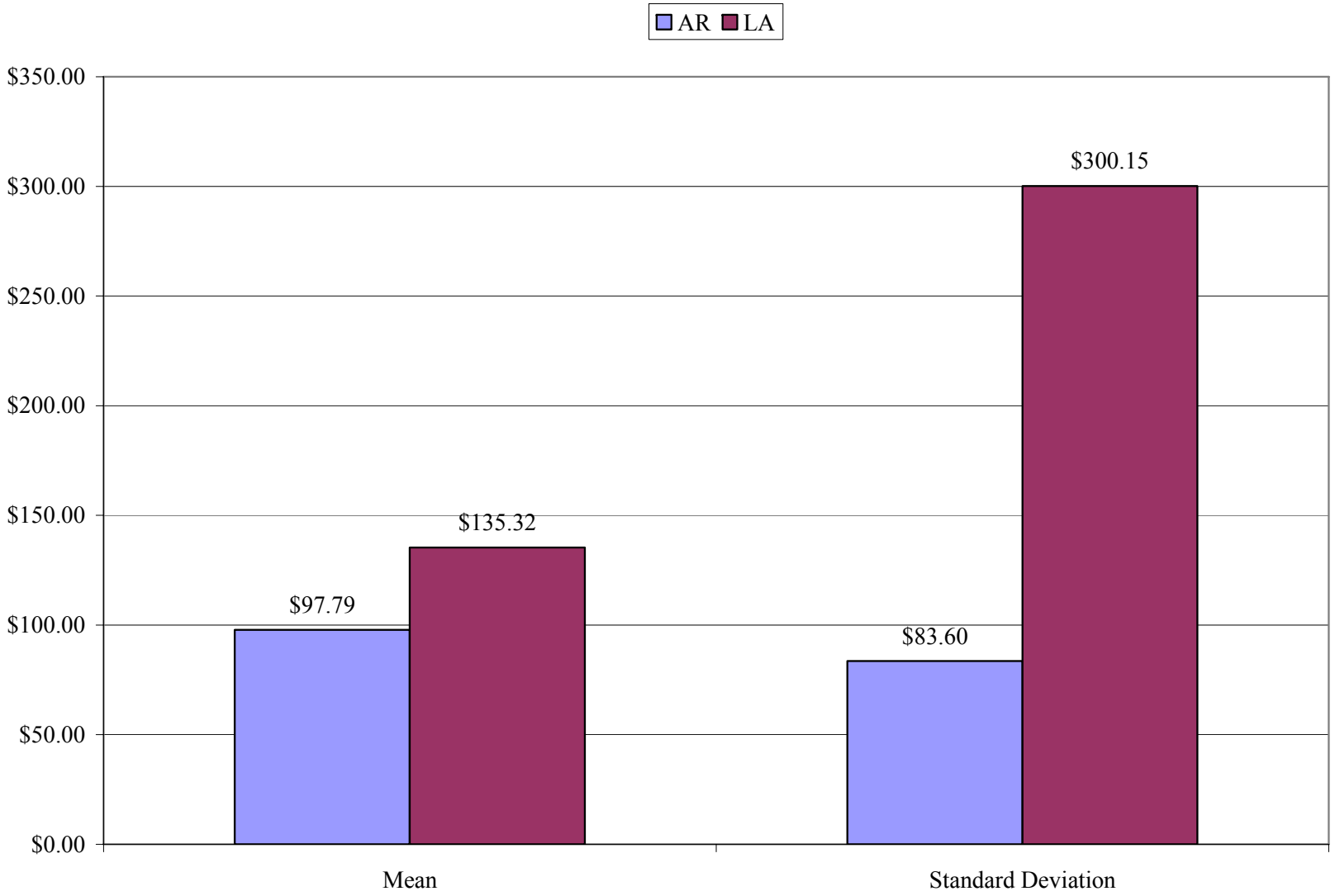

Figure I.22. Question 22 after correcting for 80% certiantiy and for outliers. (n=117) (AR n=52) (LA n=65)

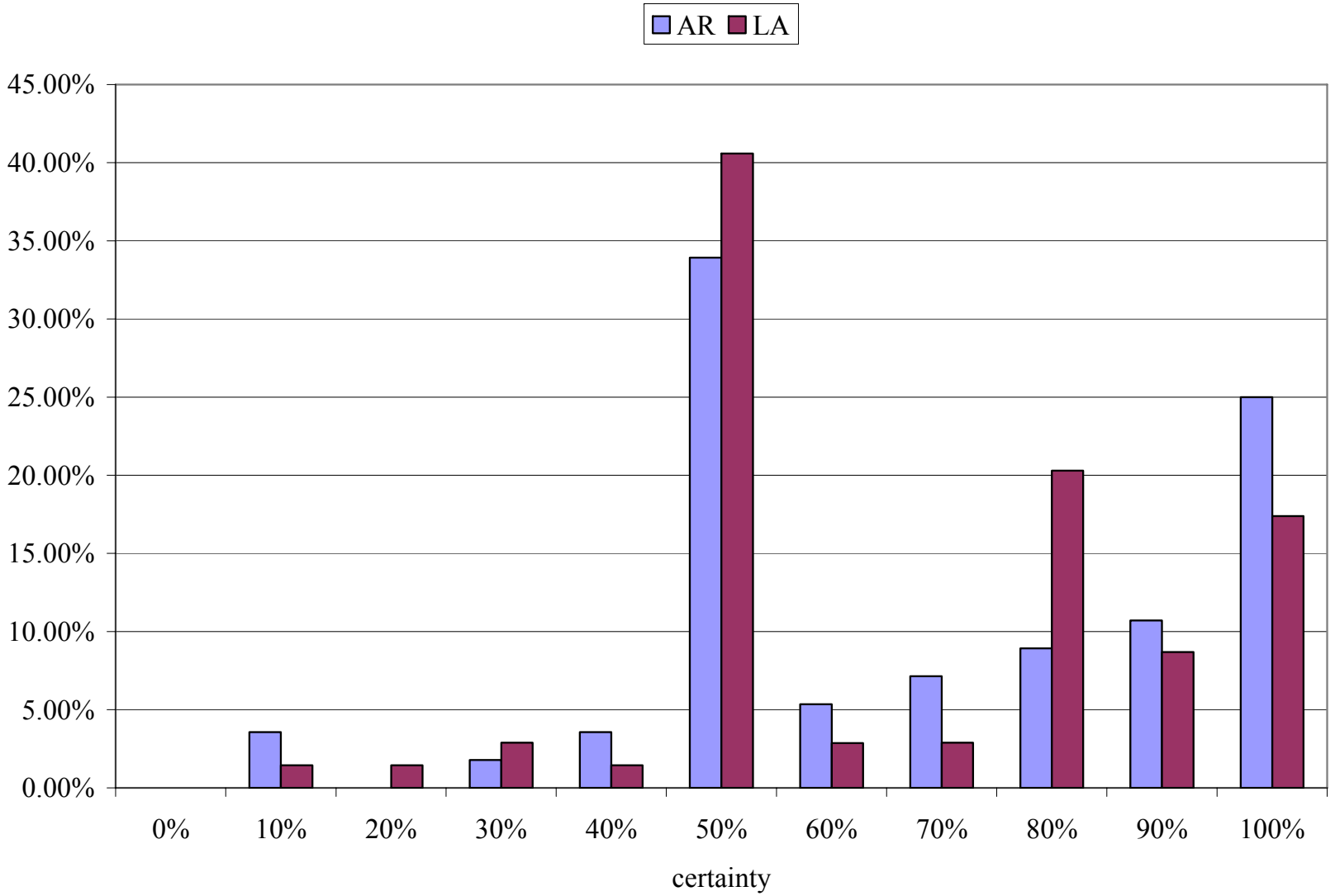

Figure I.23. Question 23. How certain are you that you would accept the dollar value you indicated in the previous question? (n=125) (AR n=56) (LA n=69)

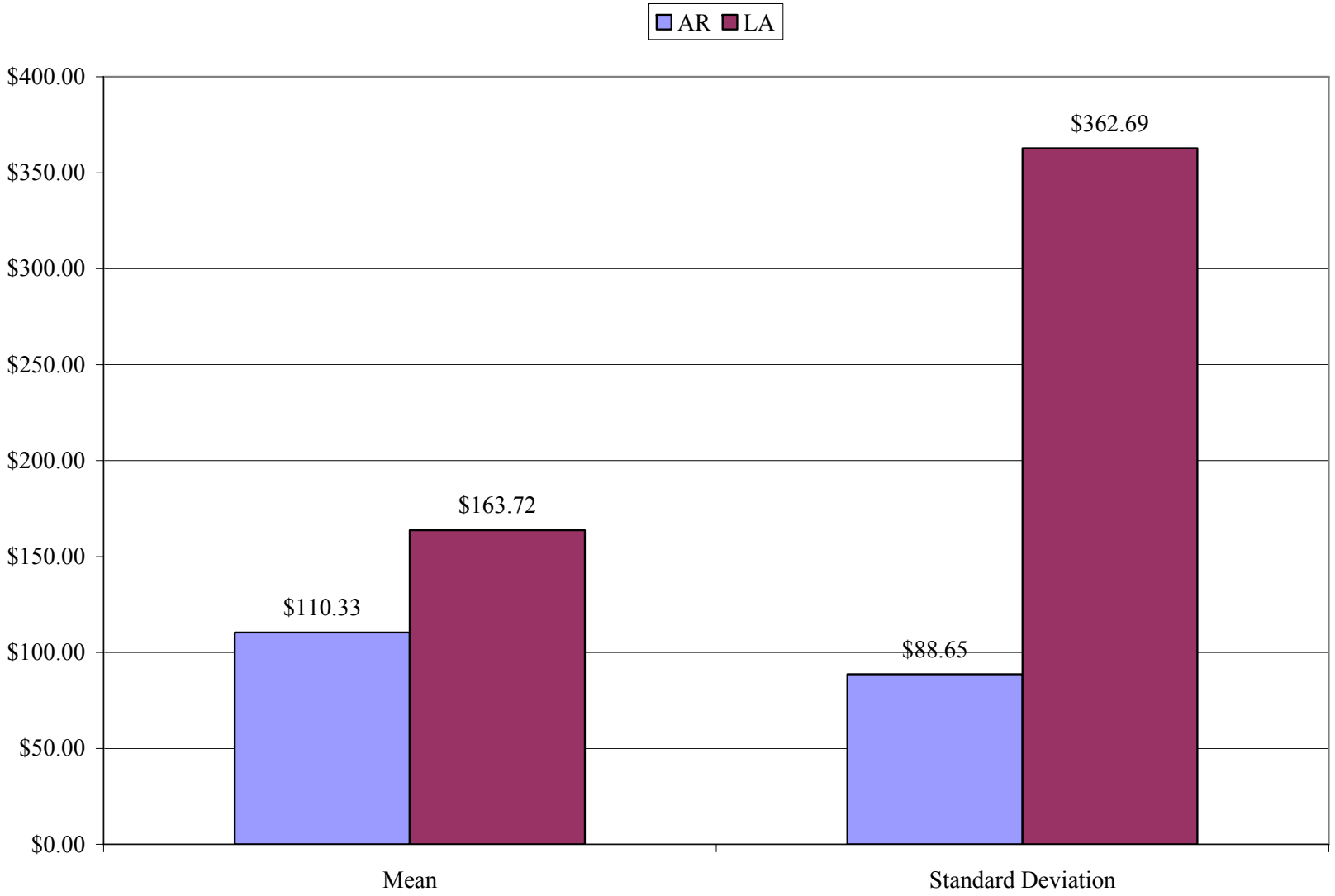

Figure I.24. Question 24. If you selected a percentage less than 80% in question 23, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting. (n=66) (AR n=30) (LA n=36)

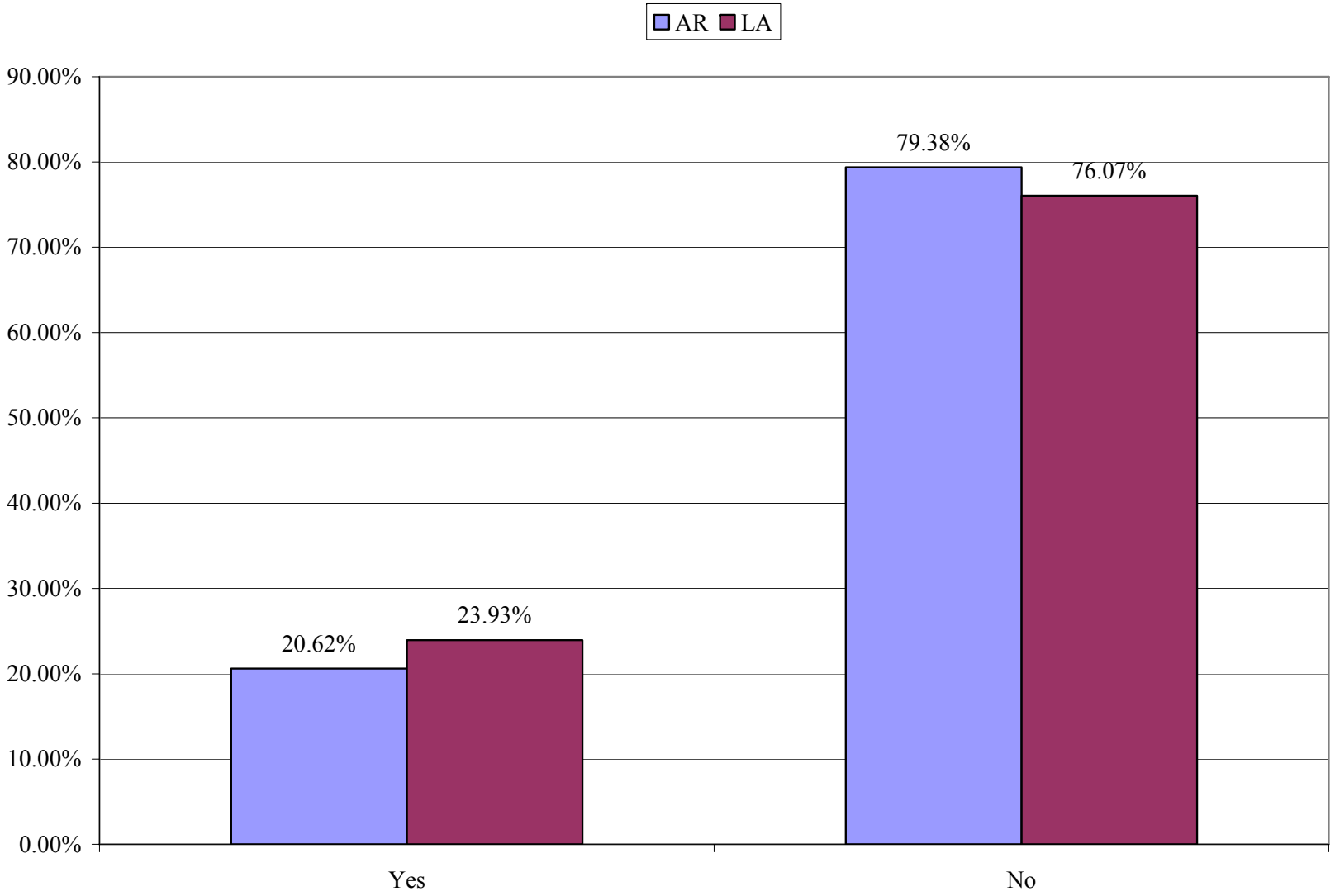

Figure I.25. Question 25. IF current law were changed to allow you to charge a fee and keep the liability protection, would you allow people to pay you for recreational use of your land? (n=1111) (AR n=482) (LA n=629)

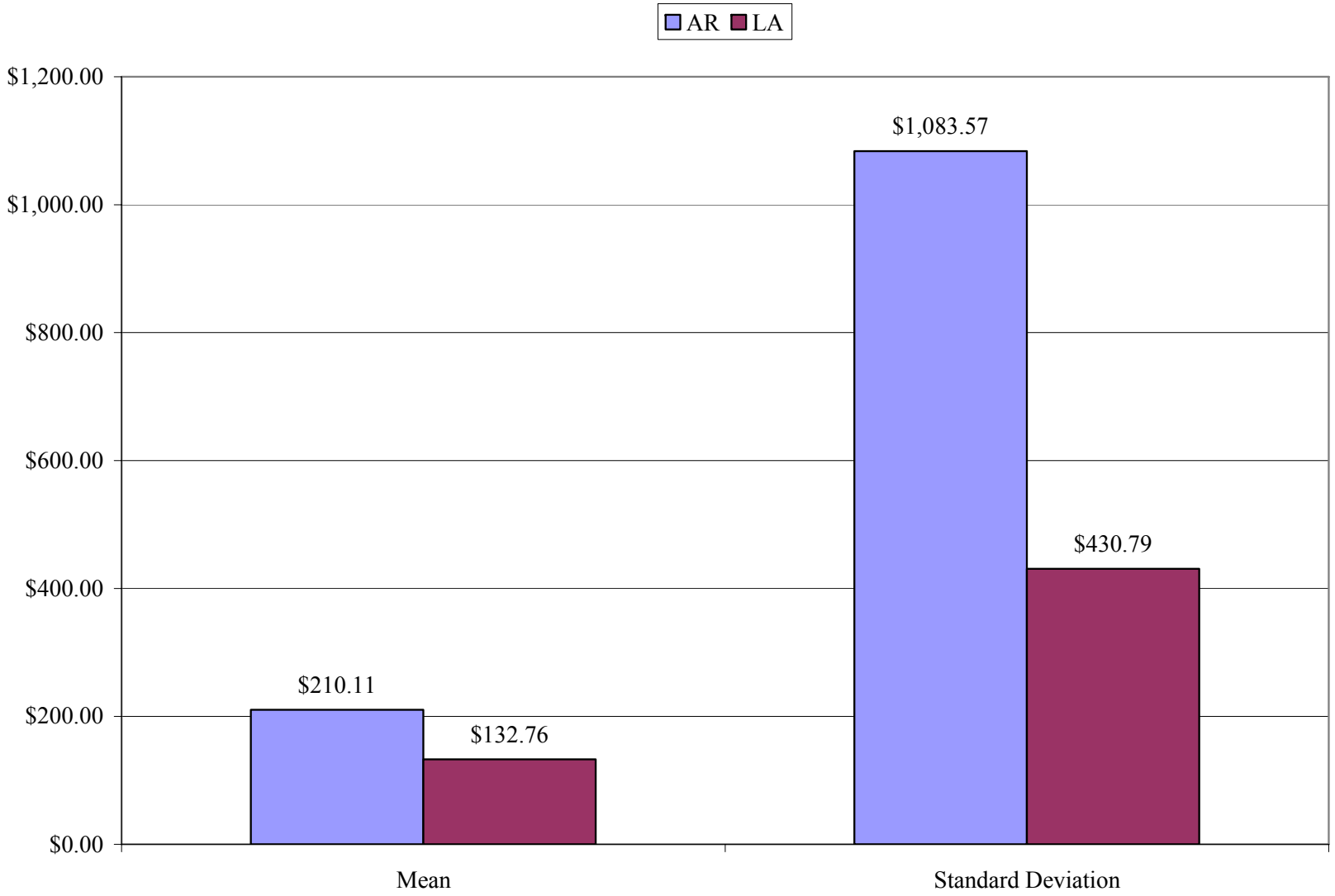

Figure I.26. Question 26. How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses? (per acre per year) (n=213) (AR n=87) (LA n=126)

Figure I.27. Question 26 after correcting for 80% certiantiy and for outliers. (n=201) (AR n=77) (LA n=124)

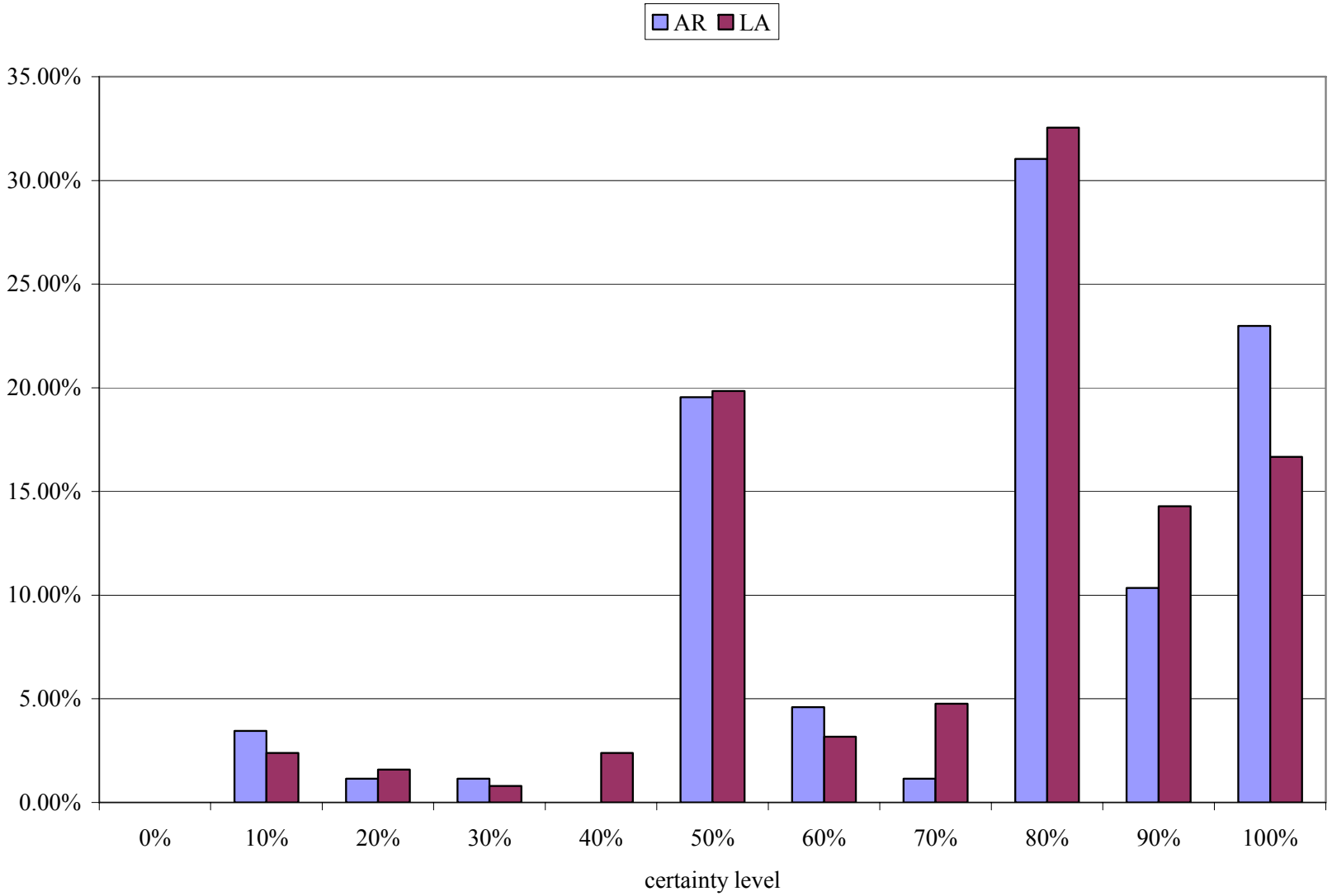

Figure I.28. Question 27. How certain are you that you would accept the dollar value you indicated in the previous question? (n=213) (AR n=87) (LA n=126)

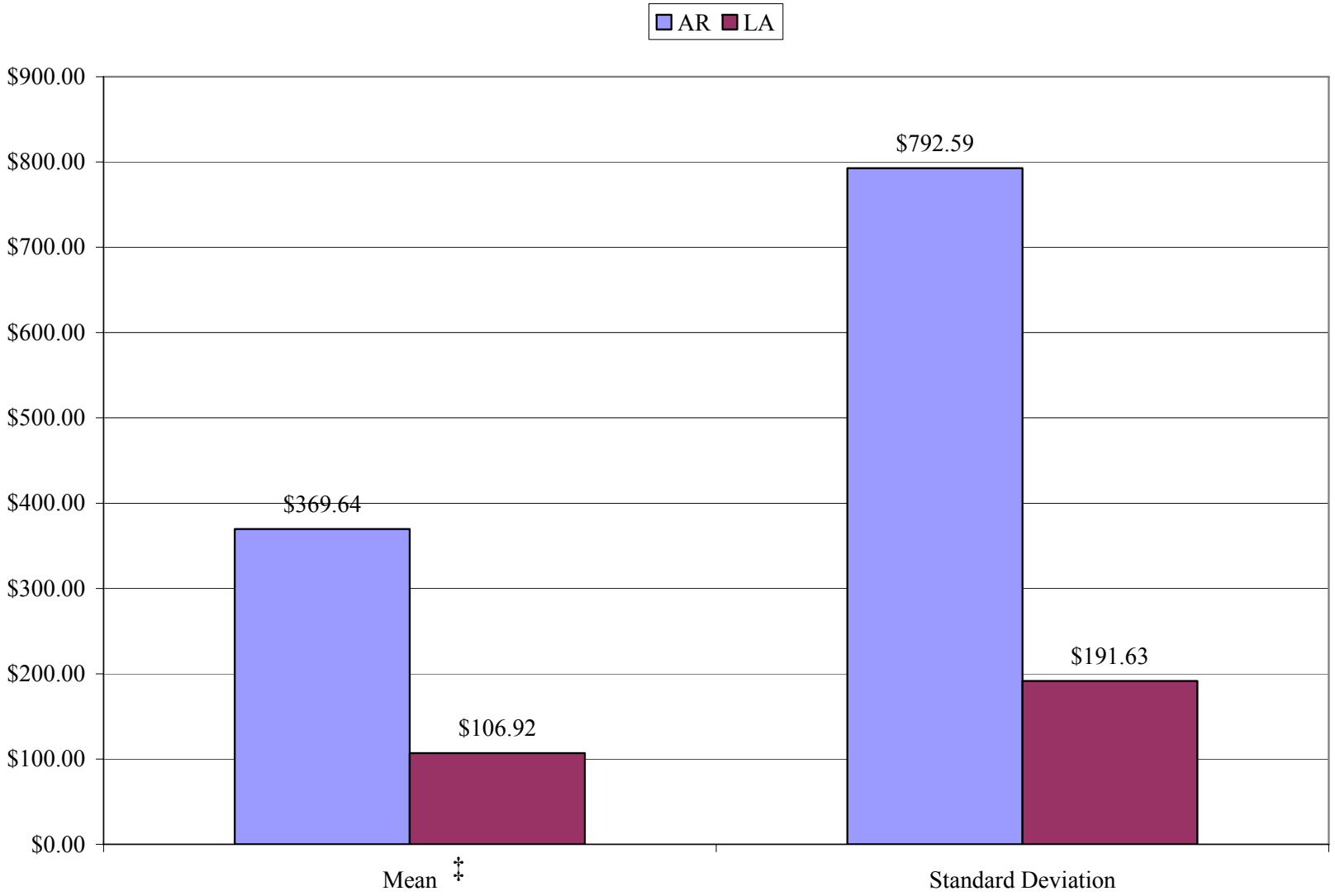

Figure I.29. Question 28. If you selected a percentage less than 80% in question 27, write in the dollar value you would be willing to accept that you would be at least 80% certain of accepting. (n=83) (AR n=33) (LA n=50) (‡ indicates statistically significant differences between mean values at the 5% level)

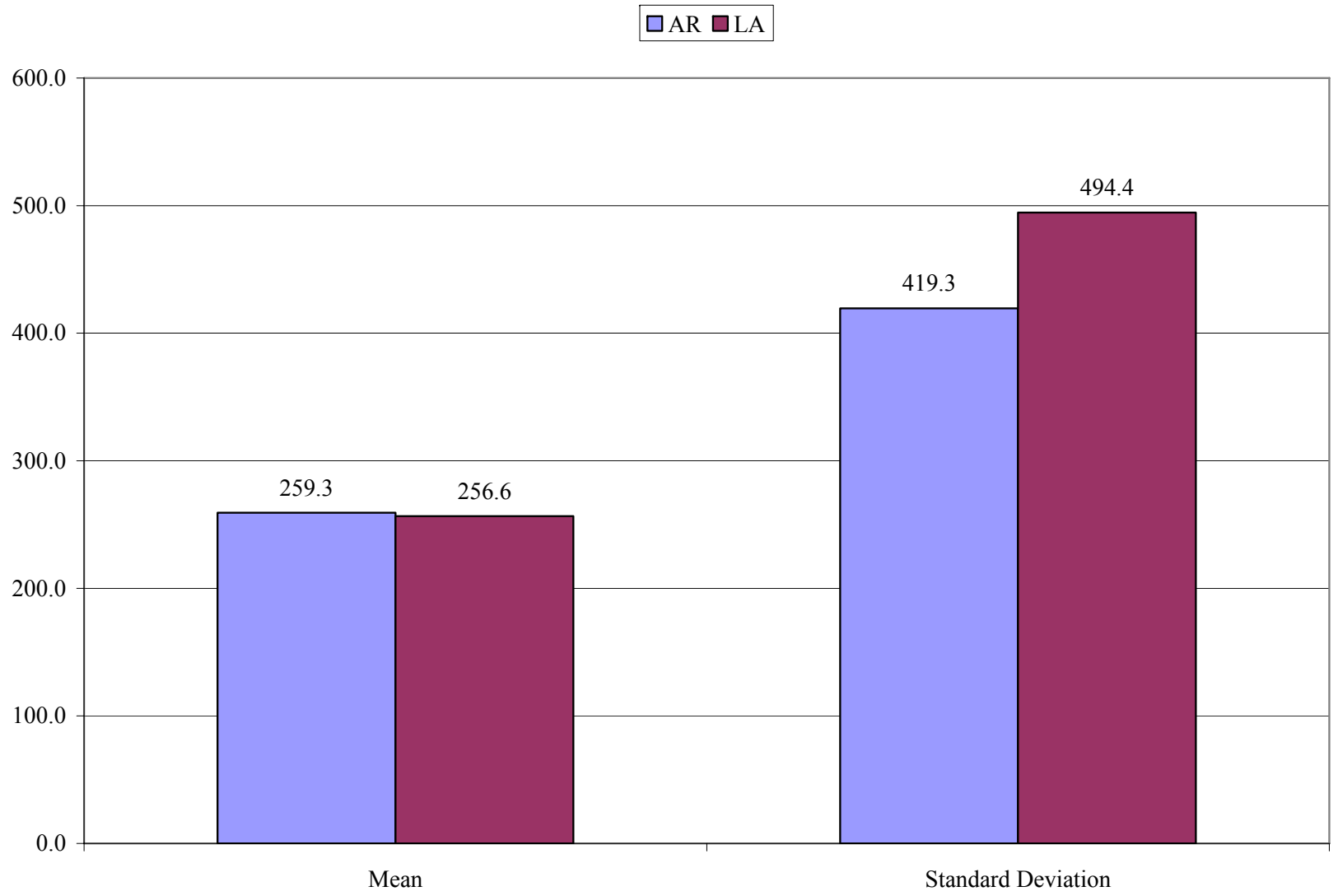

Figure I.30. Question 29. How many acres of land would you be willing to use for fee-based recreational activities? (n=291) (AR n=94) (LA n=137)

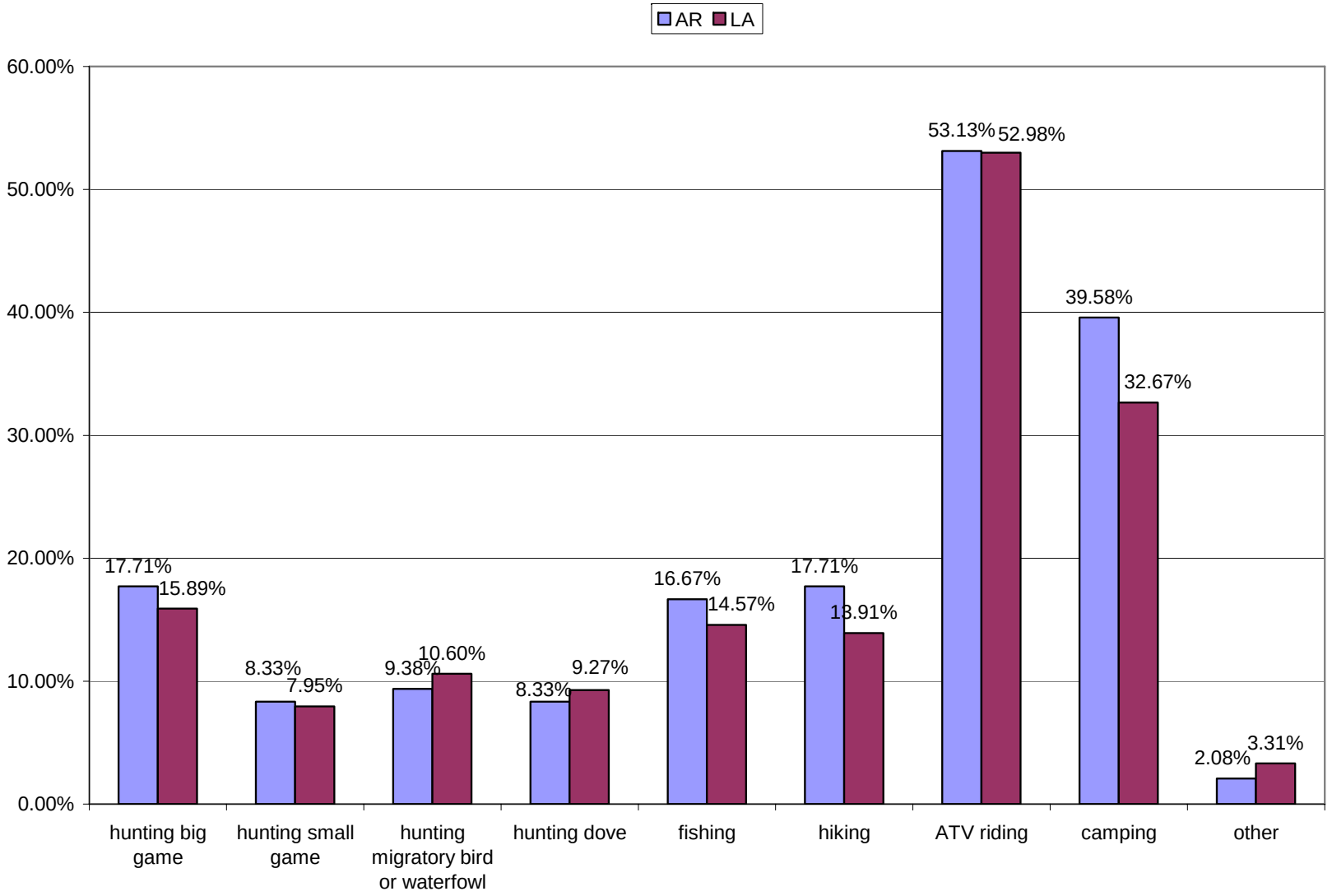

Figure I.31. Question 30. Which of the following recreational activities would you NOT allow on your land? (n=247) (AR n=96) (LA n=151)

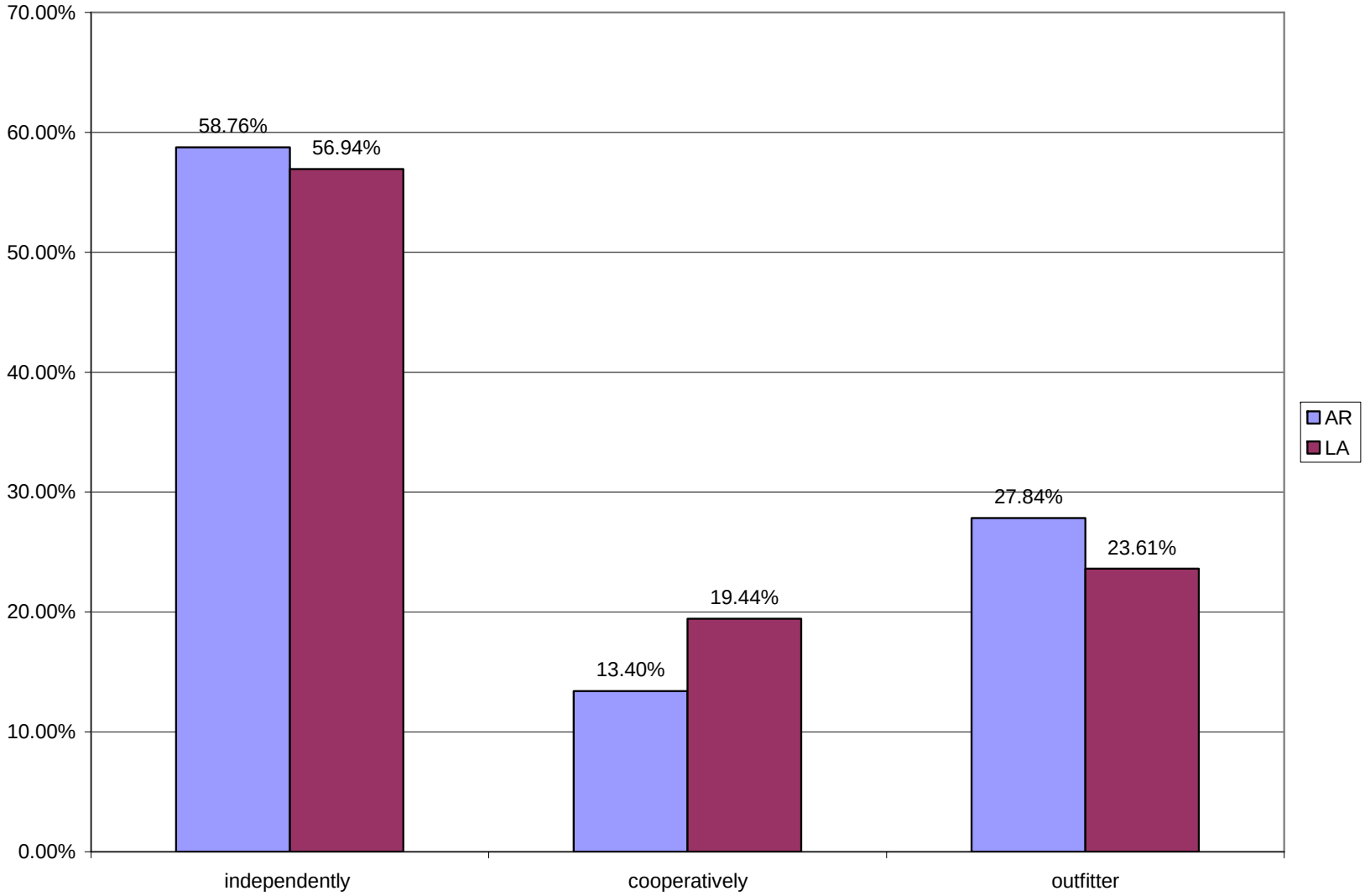

Figure I.32. Question 31. If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer? (n=241) (AR n=97) (LA n=144)

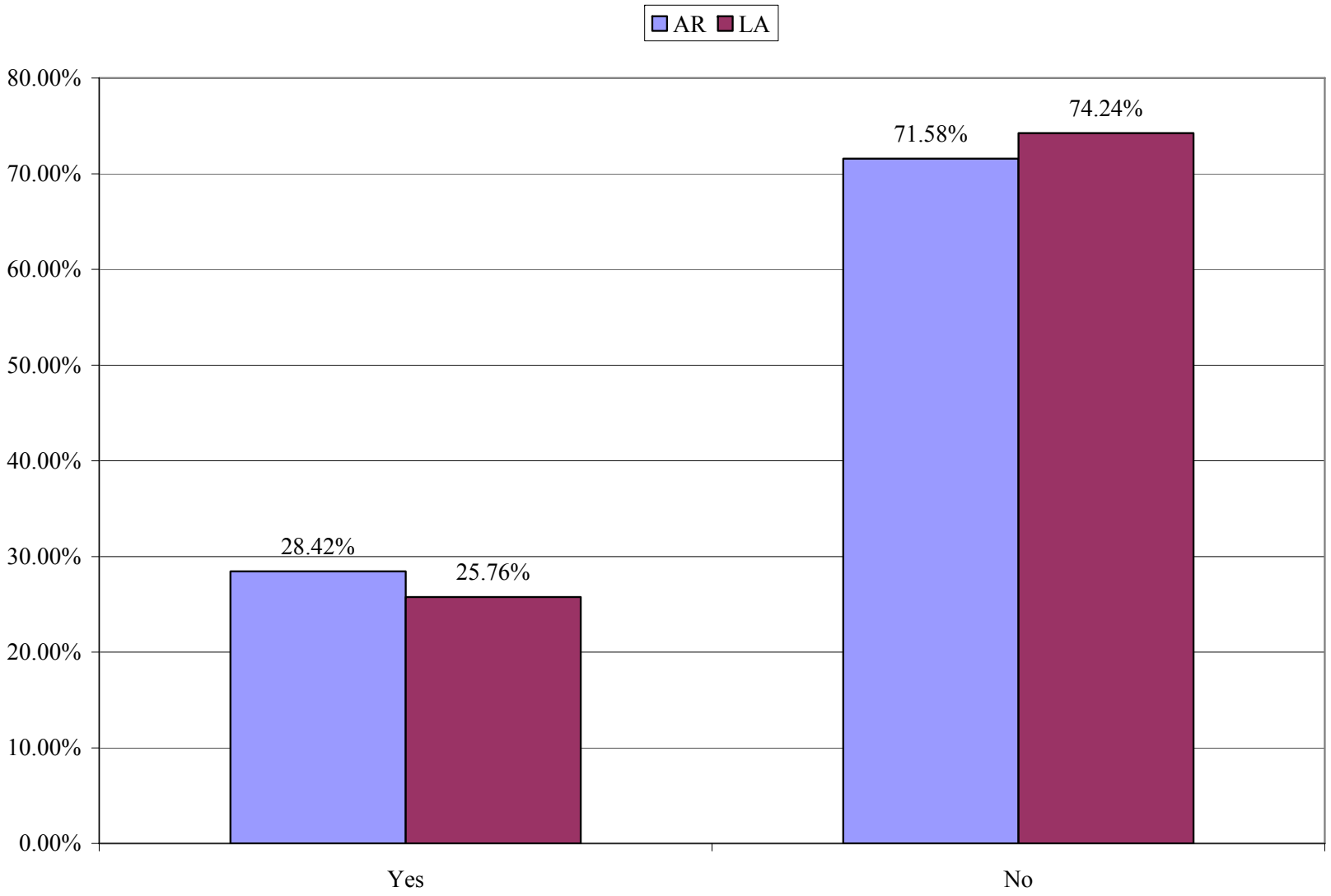

Figure I.33. Question 32. Have you ever worked with any of your adjacent or local landowners in any way? (n=1111) (AR n=482) (LA n=629)

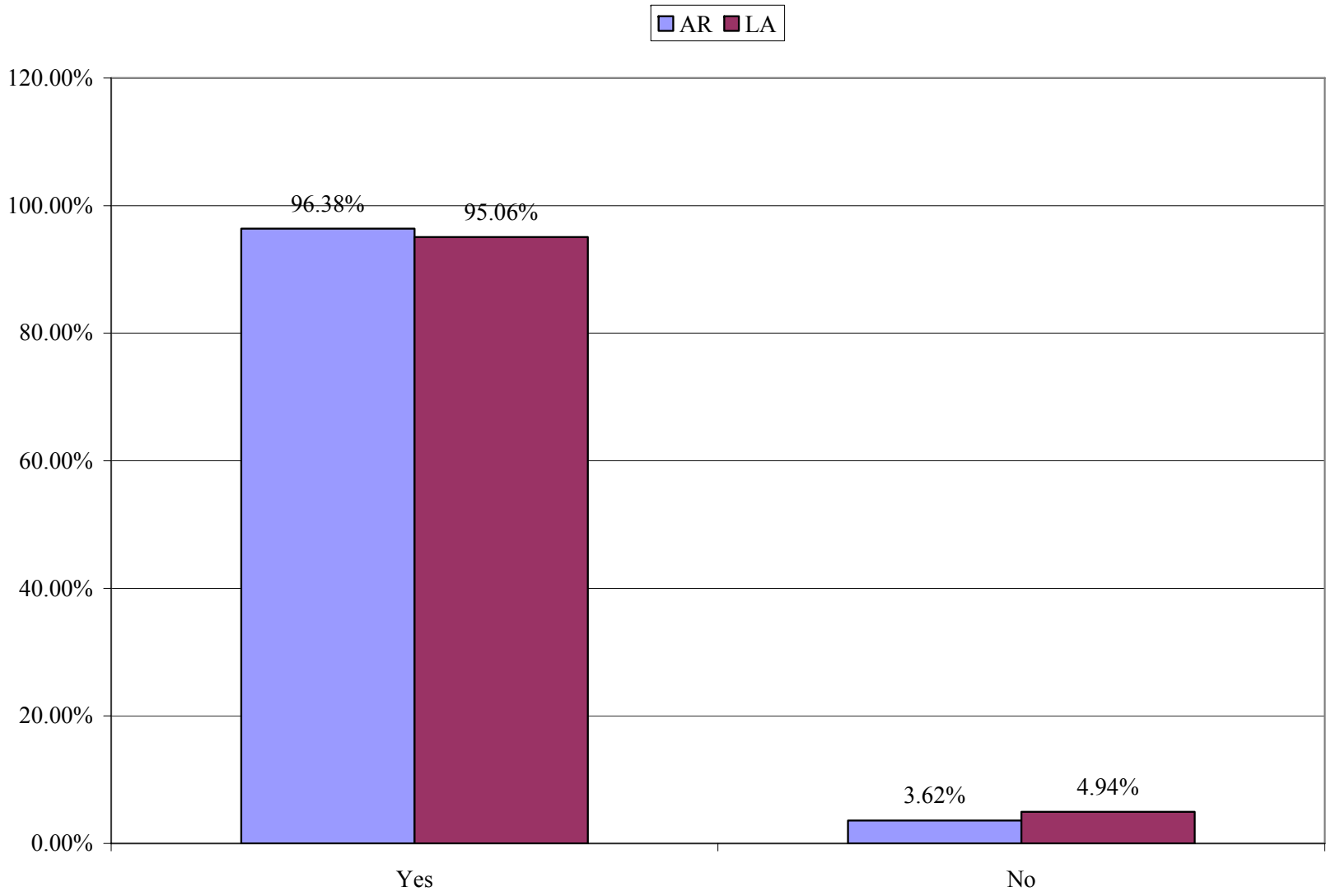

Figure I.34. Question 33. If yes, did you find your cooperation with other landowners to be effective? (n=300) (AR n=138) (LA n=162)

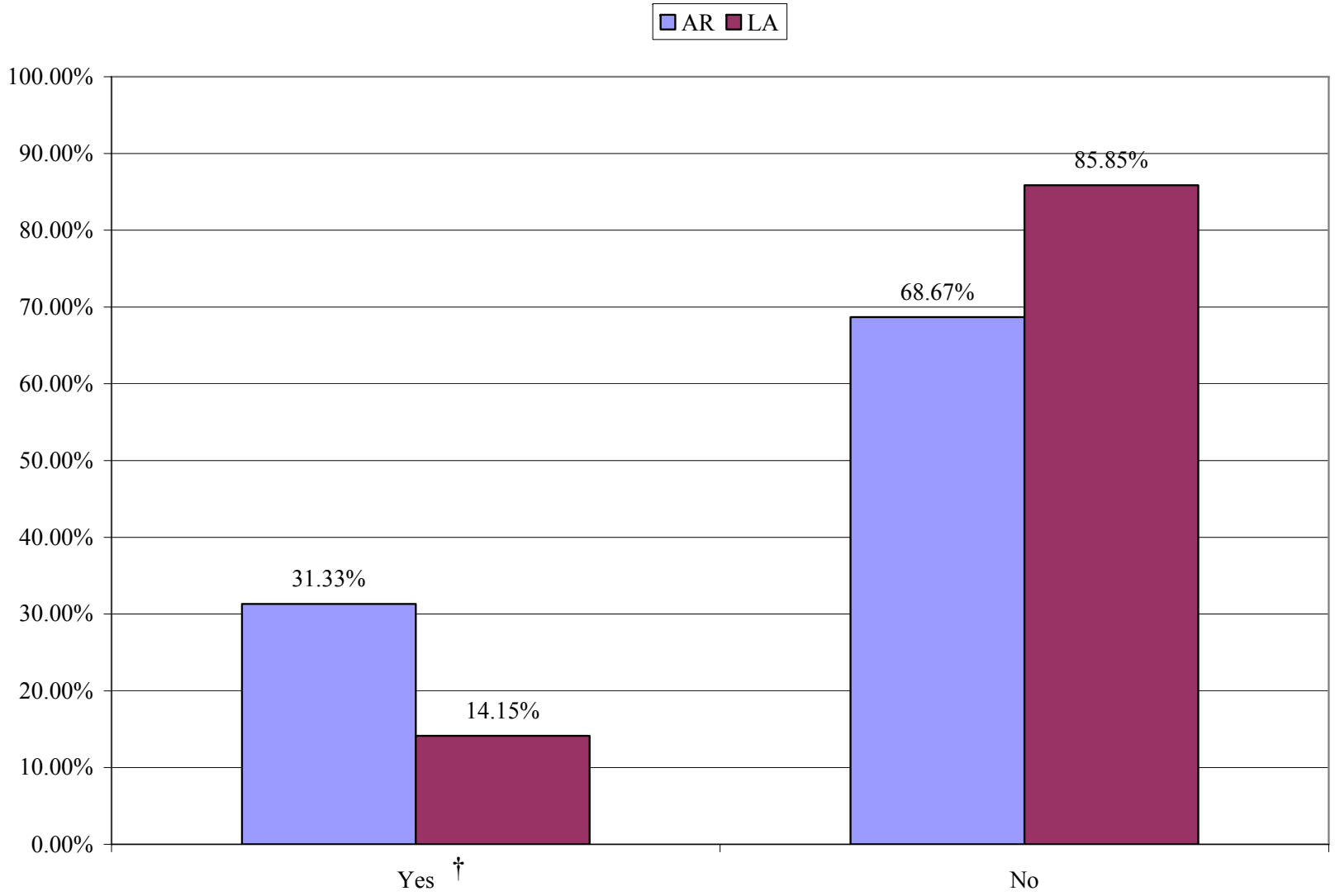

Figure I.35. Question 34. Have you ever been involved with a cooperative? (n=1111) (AR n=482) (LA n=629) († indicates statistically significant differences between mean values at the 1% level)

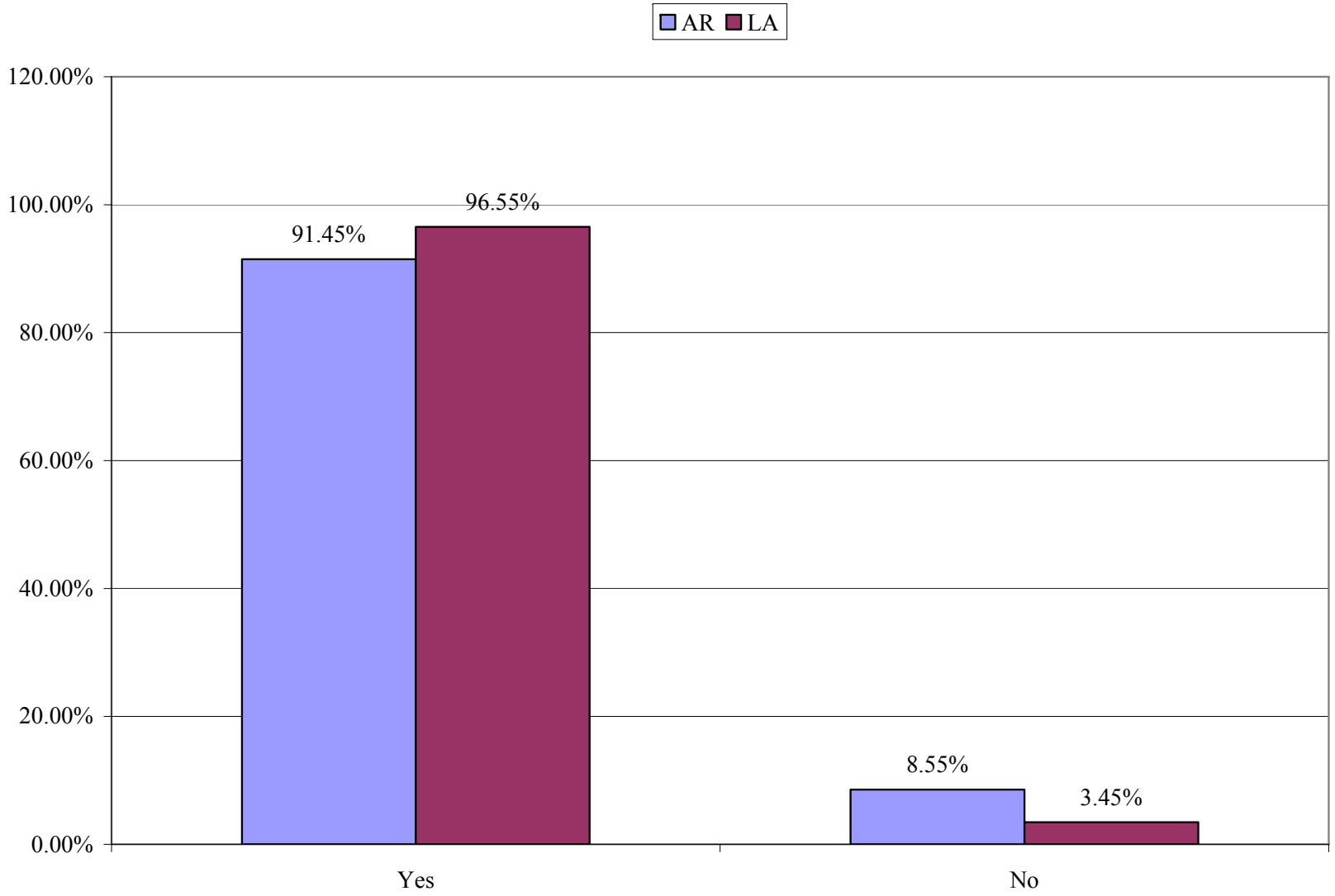

Figure I.36. Question 35. If yes, did you find your involvement in the cooperative to be beneficial to you? (n=239) (AR n=87) (LA n=152)

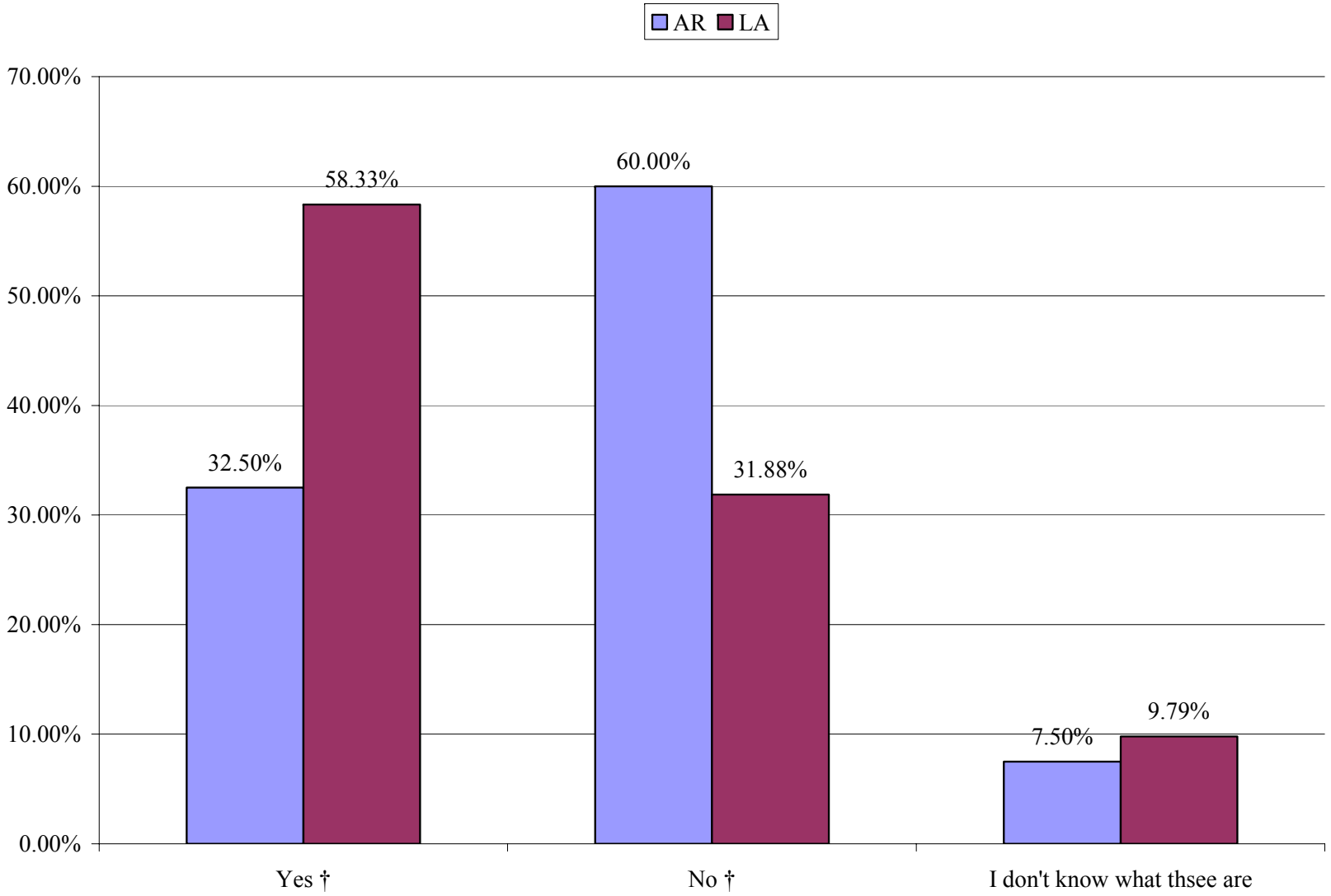

Figure I.37. Question 36. Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program? (n=1109) (AR n=480) (LA n=631) († indicates statistically significant differences between mean values at the 1% level)

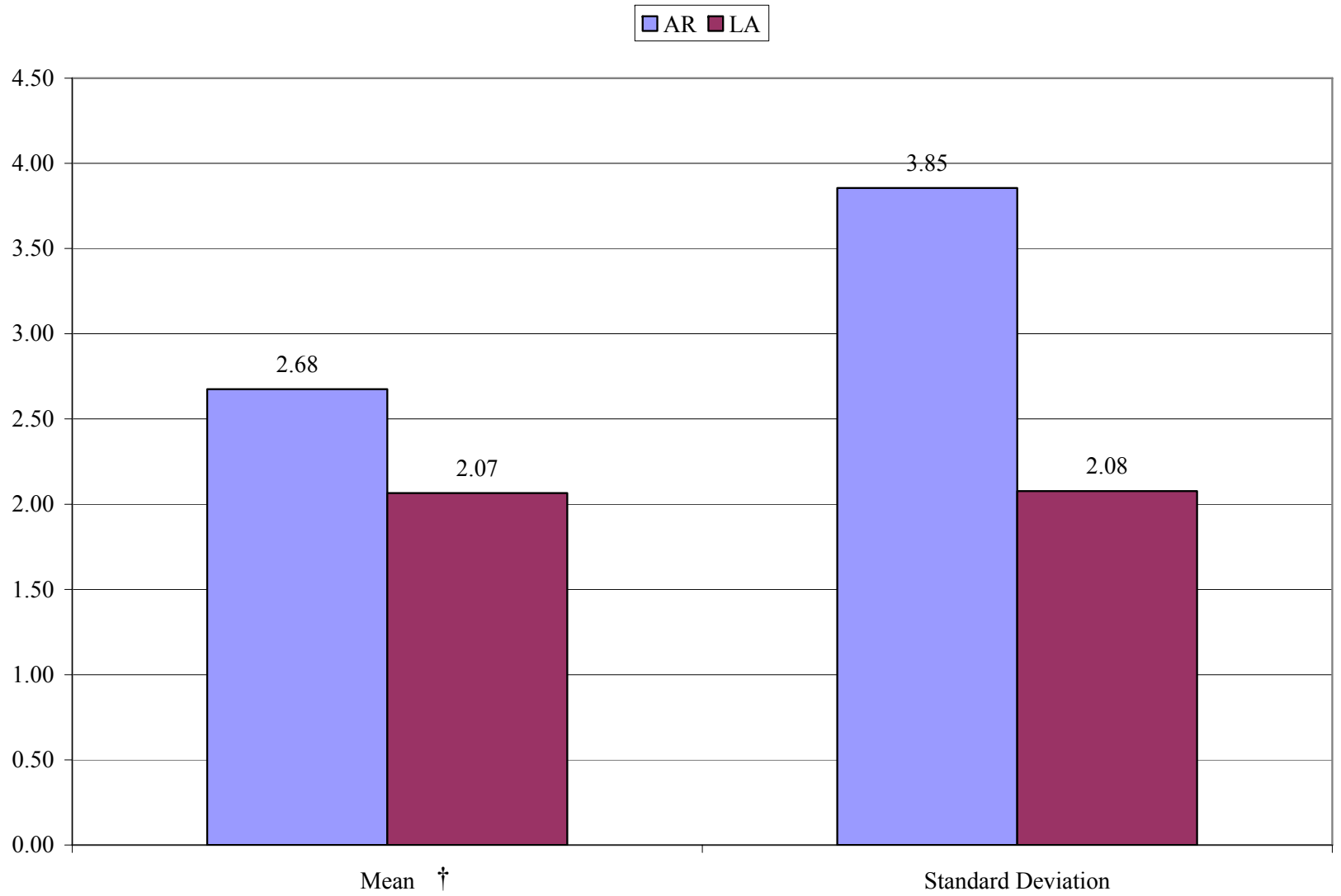

Figure I.38. Question 37. How many separate tracts of non-residential land do you own? (n=1070) (AR n=462) (LA n=608) († indicates statistically significant differences between mean values at the 1% level)

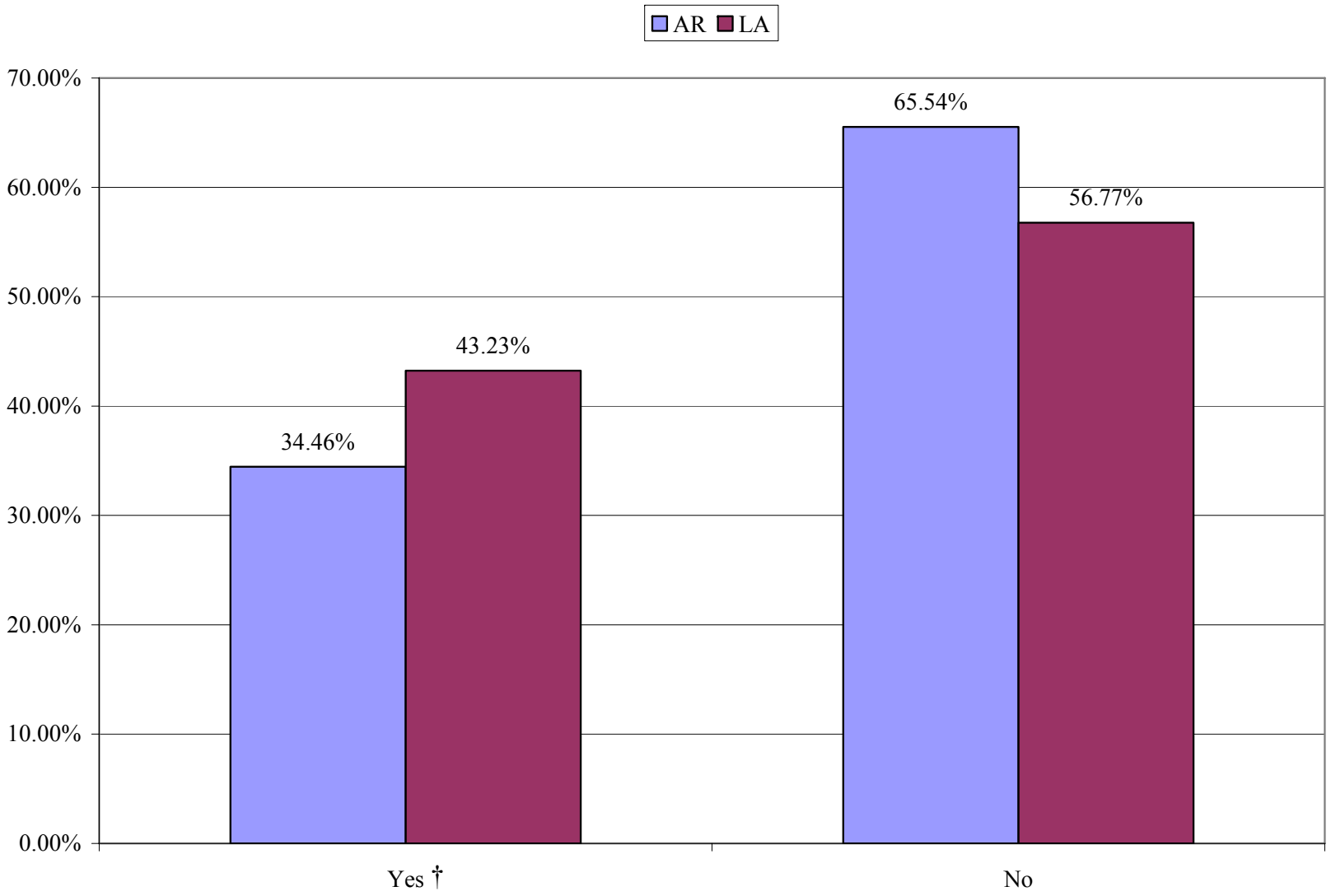

Figure I.39. Question 38. Is your nearest tract of non-residential land adjacent to your primary residence? (n=1086) (AR n=473) (LA n=613) († indicates statistically significant differences between mean values at the 1% level)

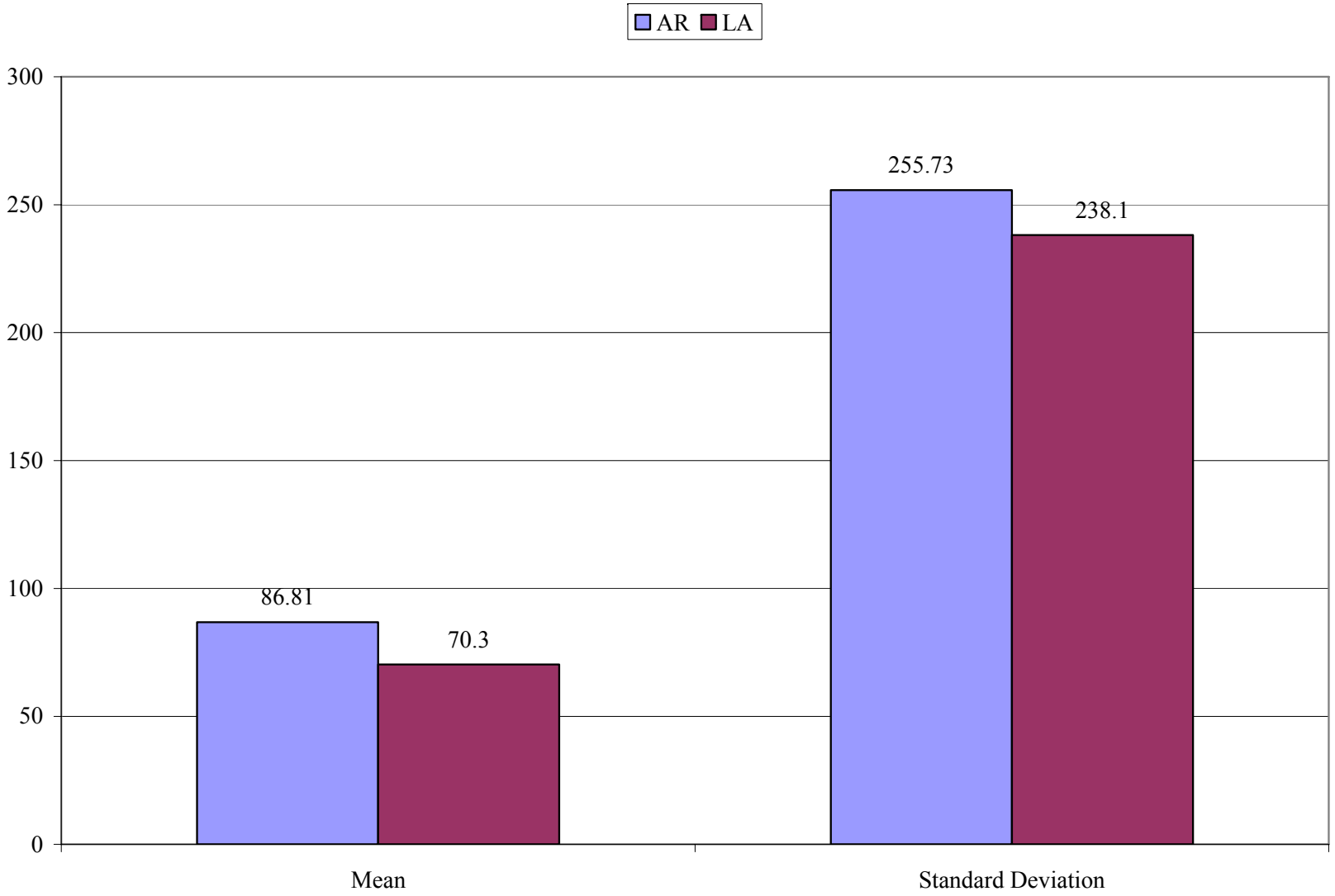

Figure I.40. Question 39. How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence? (n=1067) (AR n=465) (LA n=602)

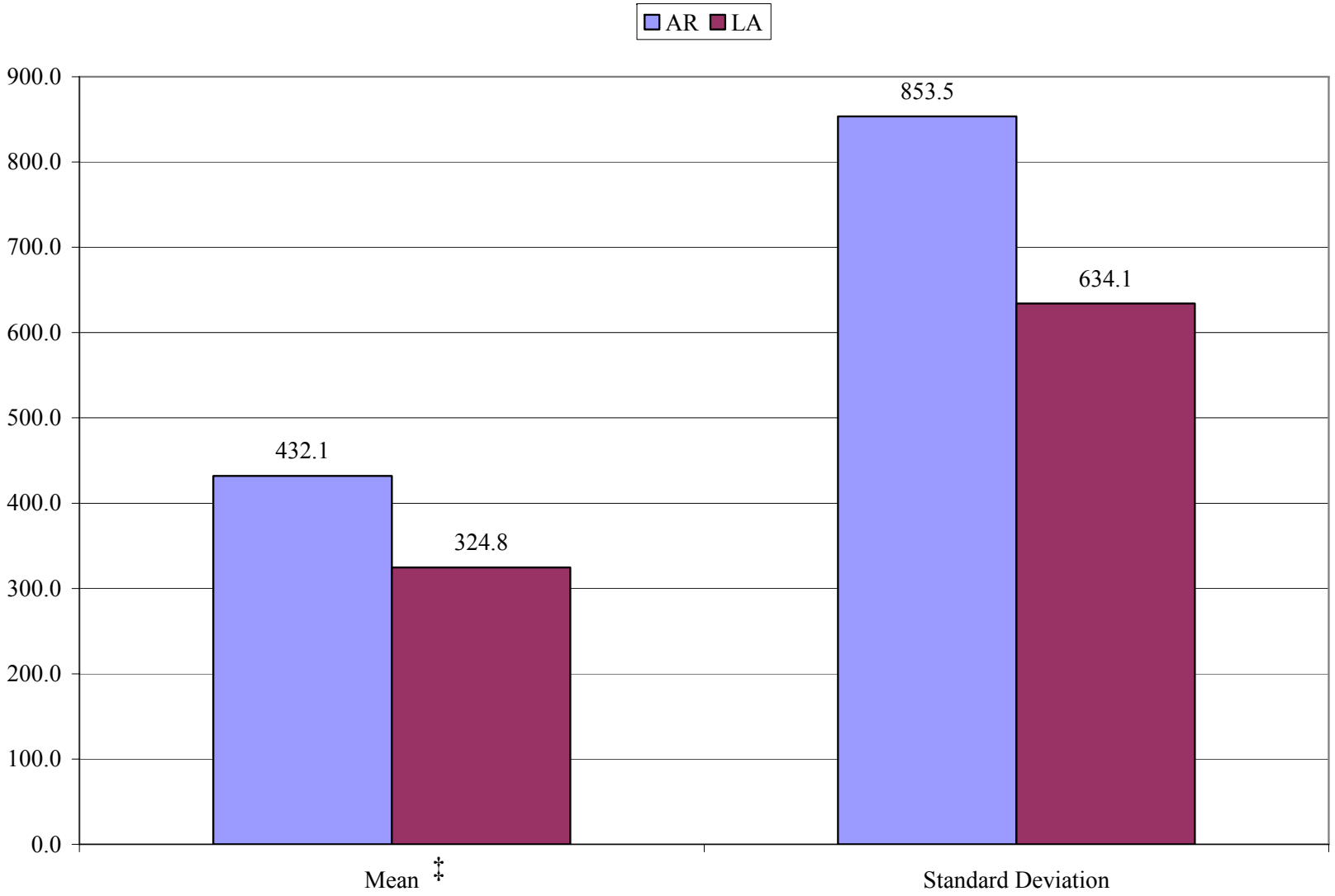

Figure I.41. Question 40. What is the total acreage of all tracts of land? (n=1066) (AR n=465) (LA n=601) (‡ indicates statistically significant differences between mean values at the 5% level)

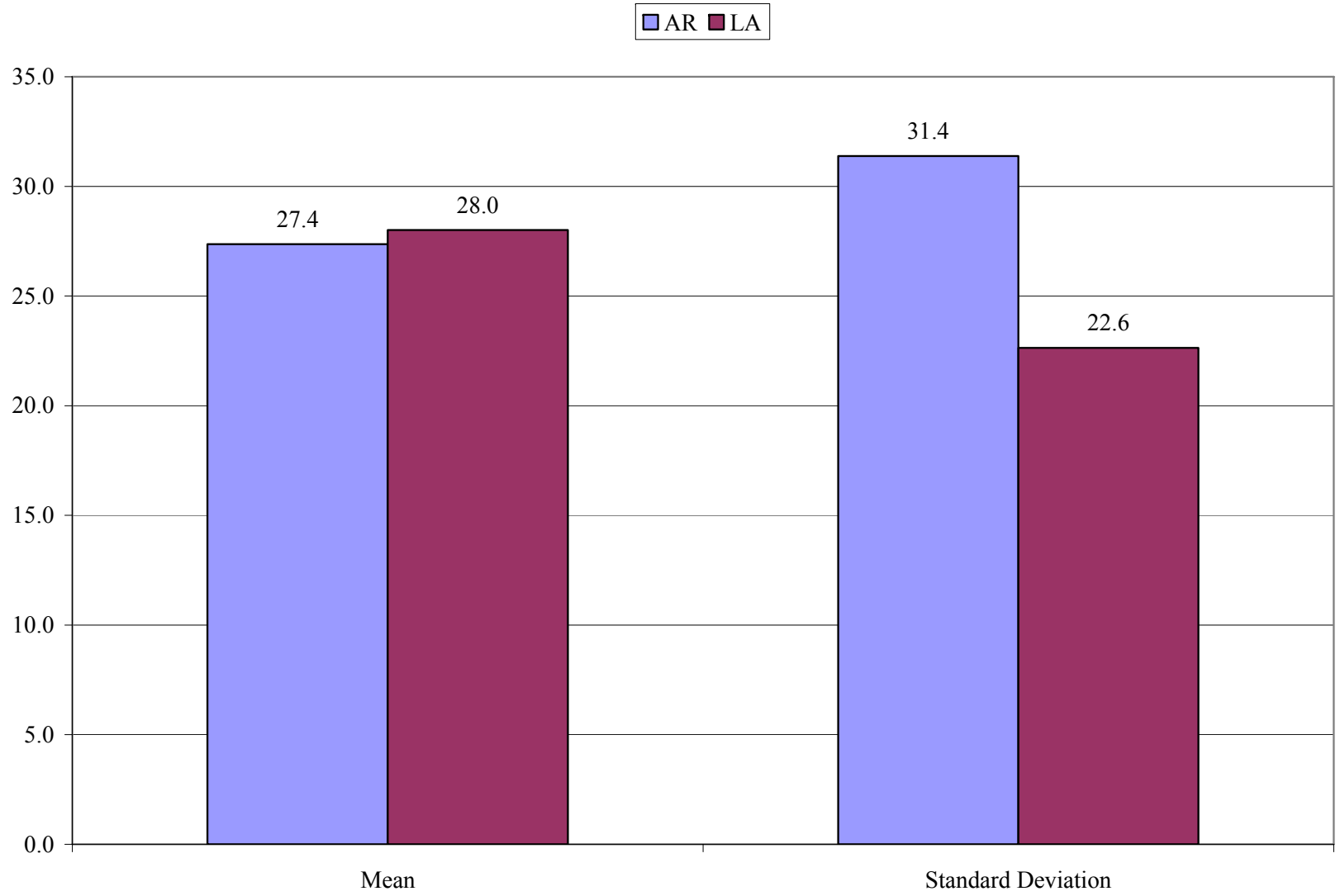

Figure I.42. Question 41. How many years have you been a landowner? (n=1086) (AR n=476) (LA n=610)

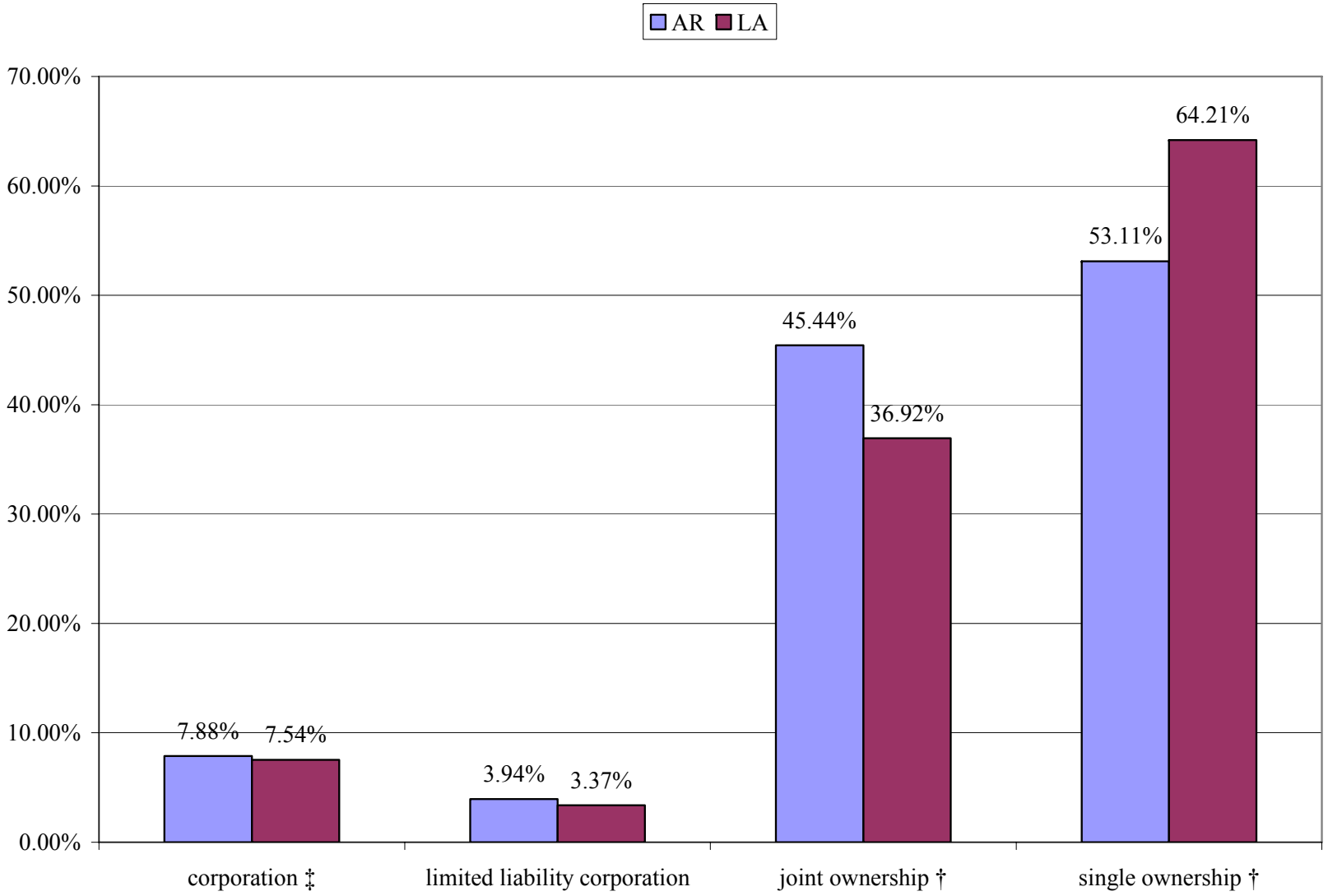

Figure I.43. Question 42. How is the ownership of your land organized? (n=1105) (AR n=482) (LA n=623) (Showing percentage of respondents selecting each category) († and ‡ indicates statistically significant differences between mean values at the 1% and 5% levels)

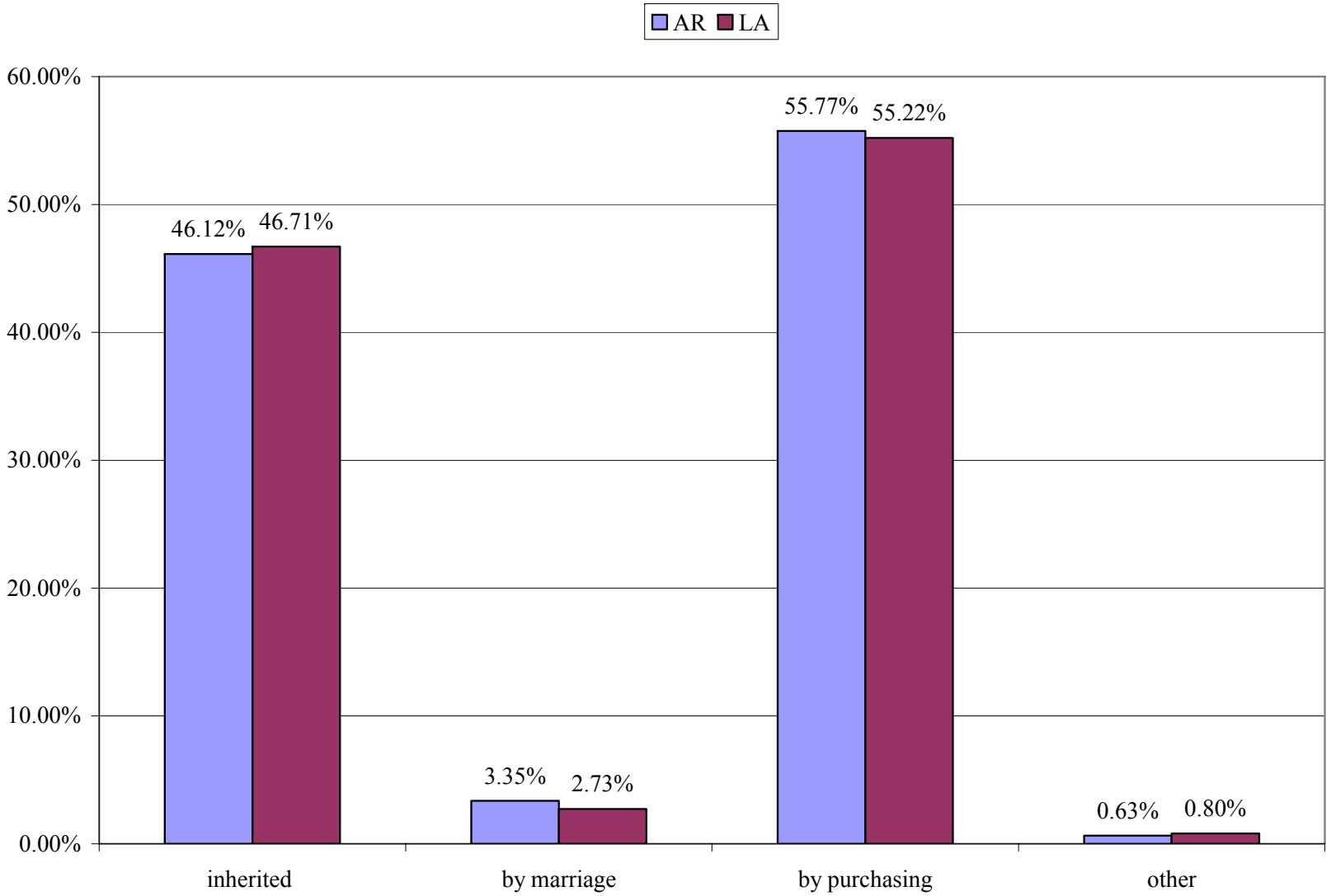

Figure I.44. Question 43. How did you acquire the majority of you non residence, non commercial land? (n=1100) (AR n=477) (LA n=623) (Showing percentage of respondents selecting each category)

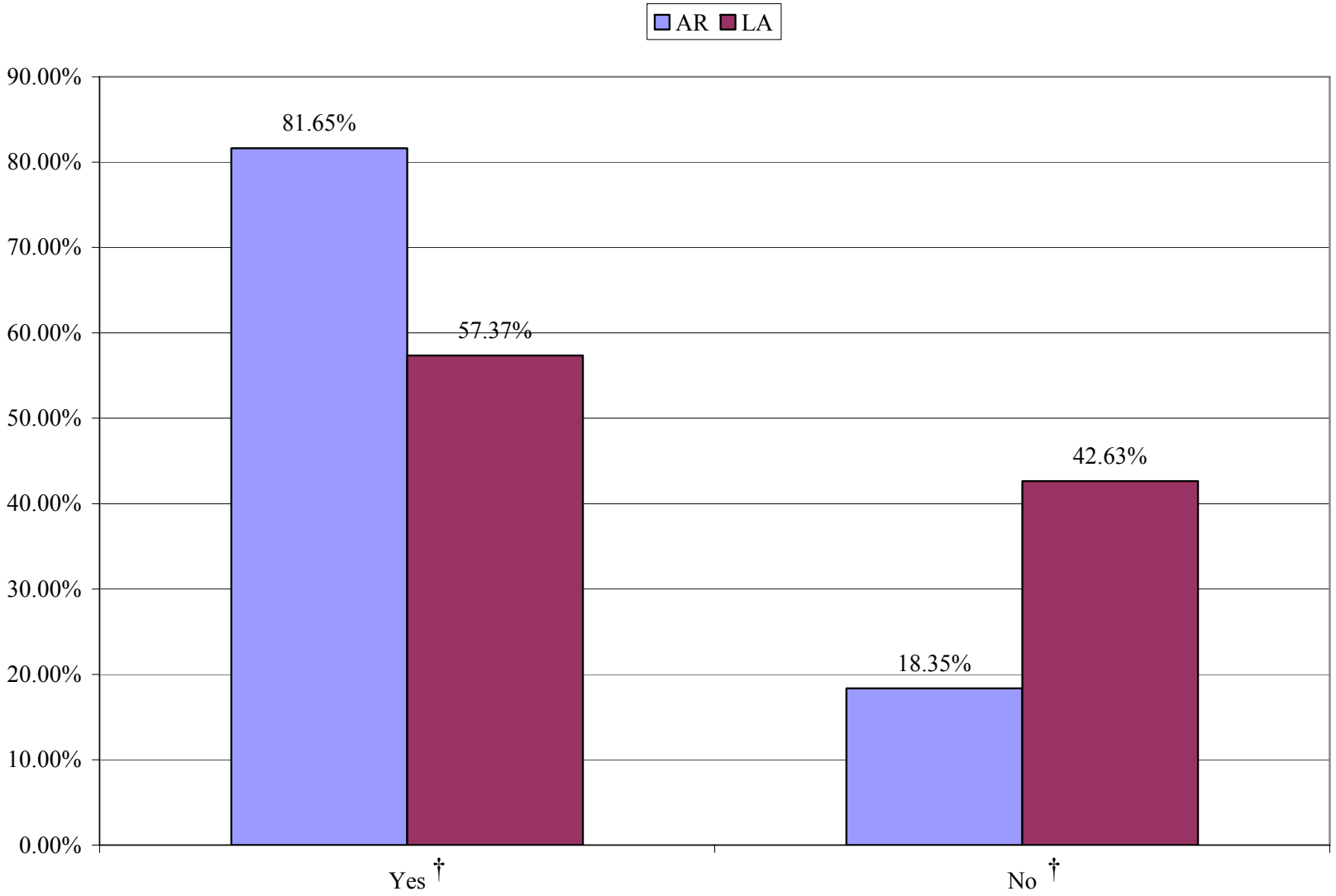

Figure I.45. Question 44. Do you use any of your land for agricultural production of row crops? (n=1116) (AR n=485) (LA n=631) († indicates statistically significant differences between mean values at the 1% level)

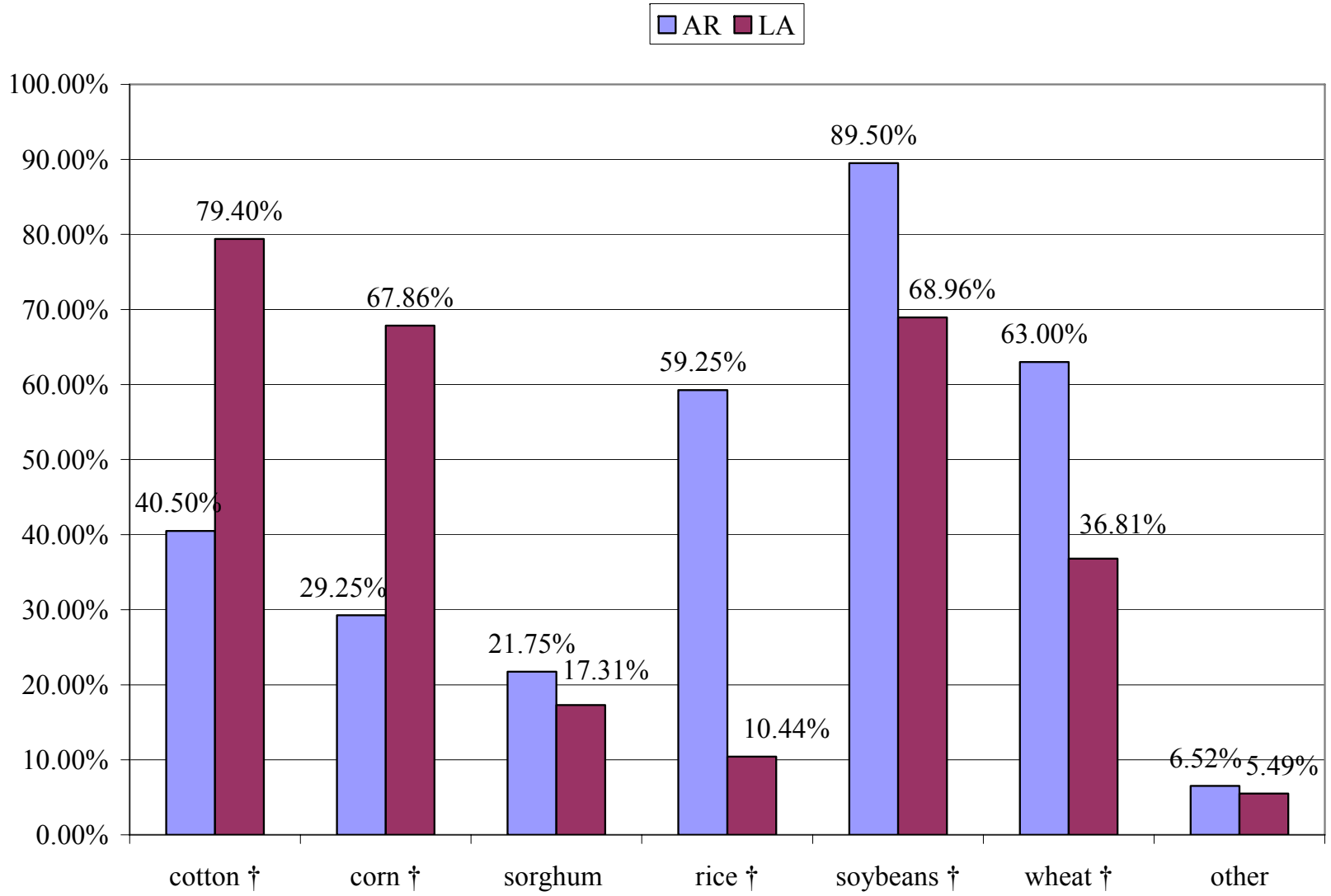

Figure I.46. Question 45. Which of the following agricultural crops are historically produced on your land? (n=764) (AR n=400) (LA n=364) (Showing percentage of respondents selecting each category) († indicates statistically significant differences between mean values at the 1% level)

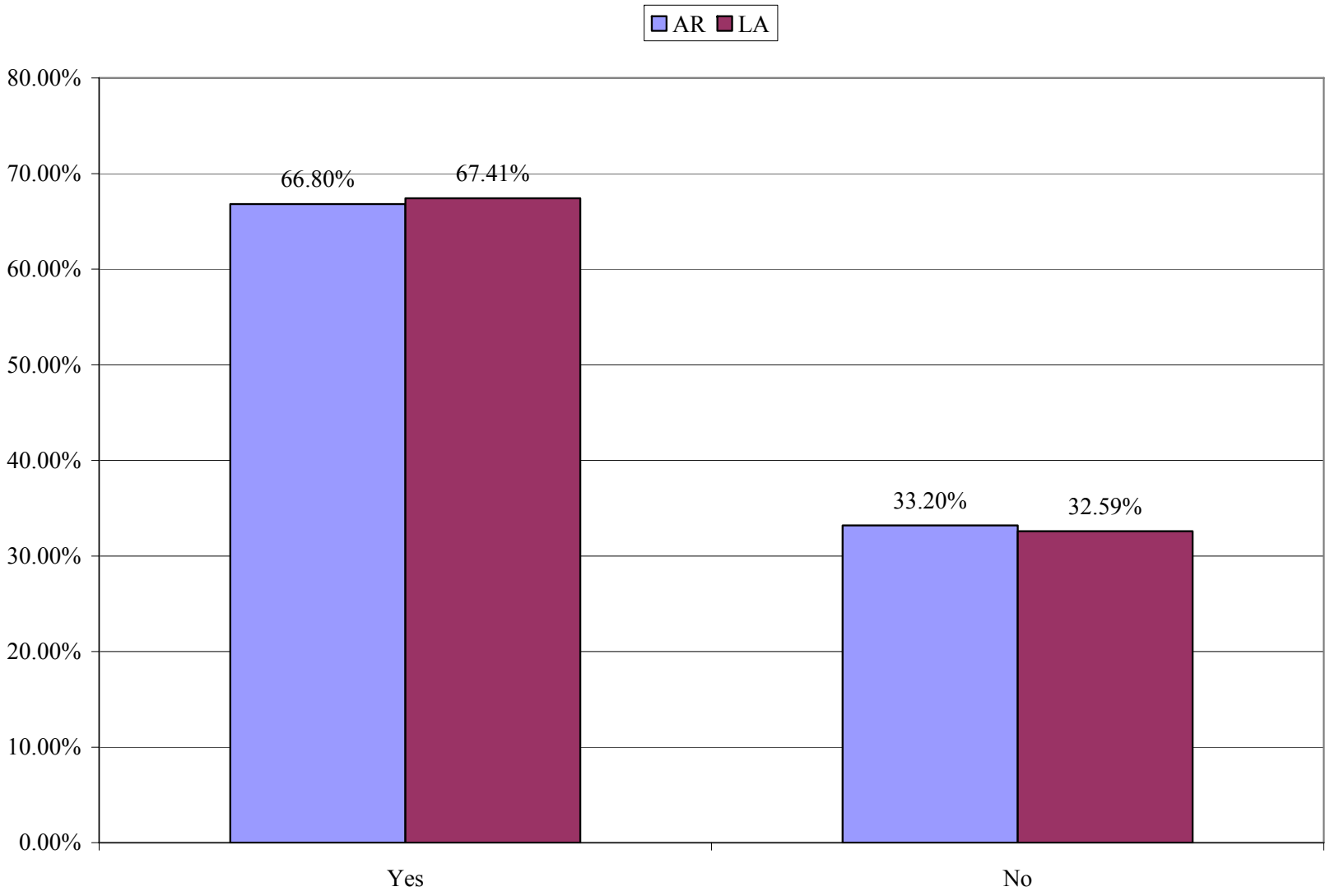

Figure I.47. Question 46. Have you ever leased any of your land for agricultural uses? (n=1114) (AR n=482) (LA n=632)

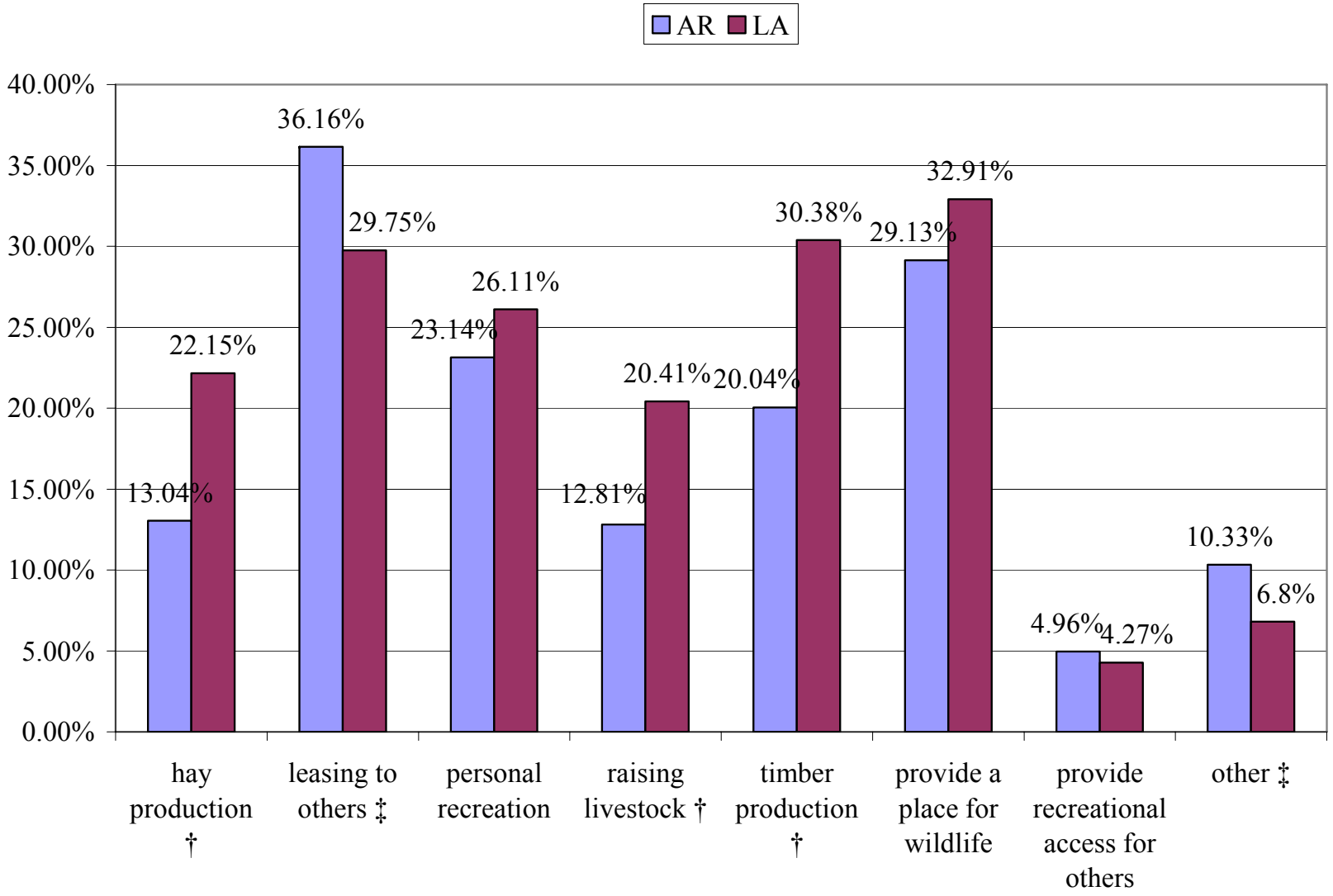

Figure I.48. Question 47. Do you own land for any of the following reasons? (n=1116) (AR n=484) (LA n=632) (Showing percentage of respondents selecting each category) († and ‡ indicates statistically significant differences between mean values at the 1% and 5% levels, respectively)

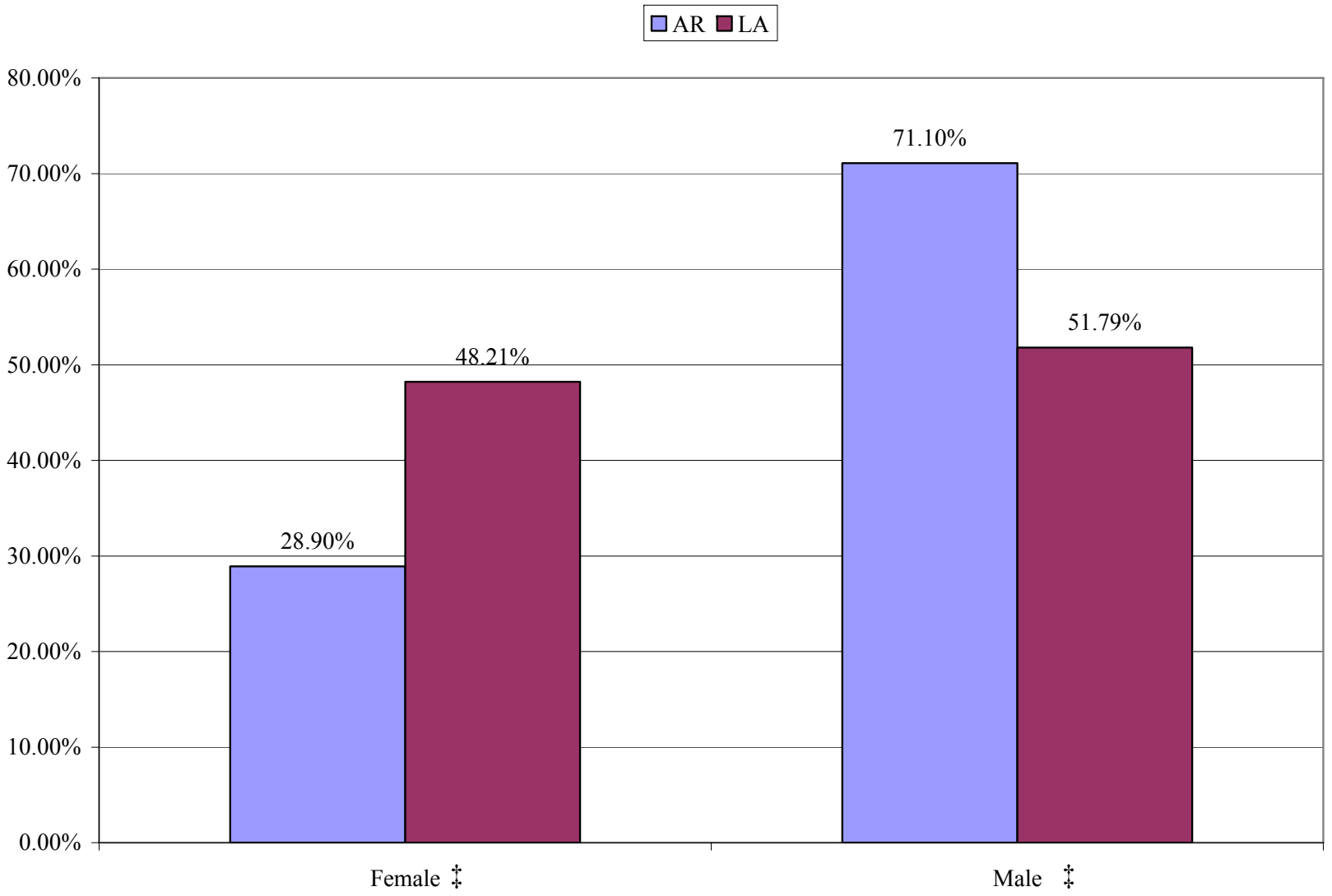

Figure I.49. Question 48. Your Gender (n=1090) (AR n=474) (LA n=616) (‡ indicates statistically significant differences between mean values at the 5% level)

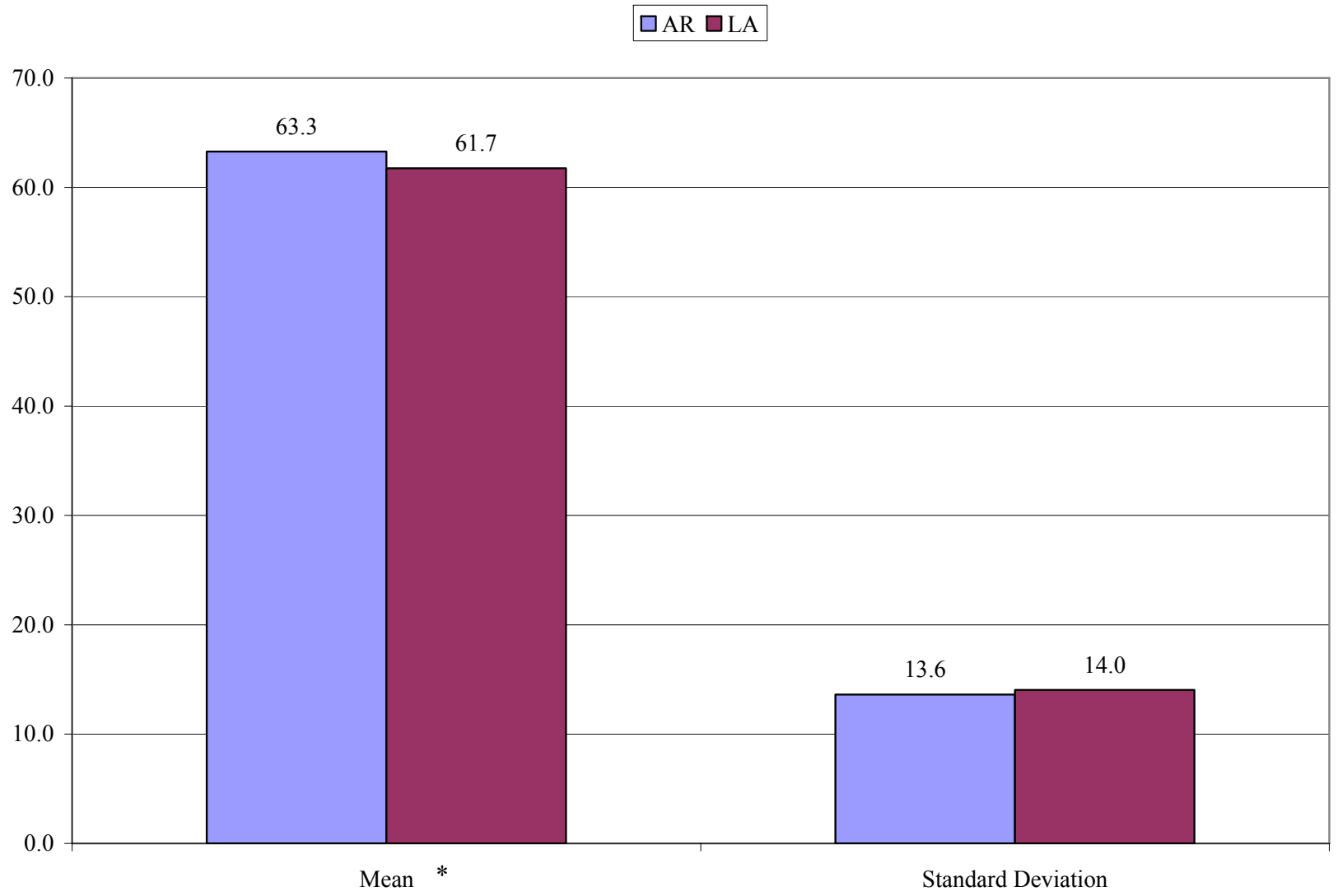

Figure I.50. Question 49. Your age in years (n=1067) (AR n=464) (LA n=603) (* indicates statistically significant differences between mean values at the 10% level)

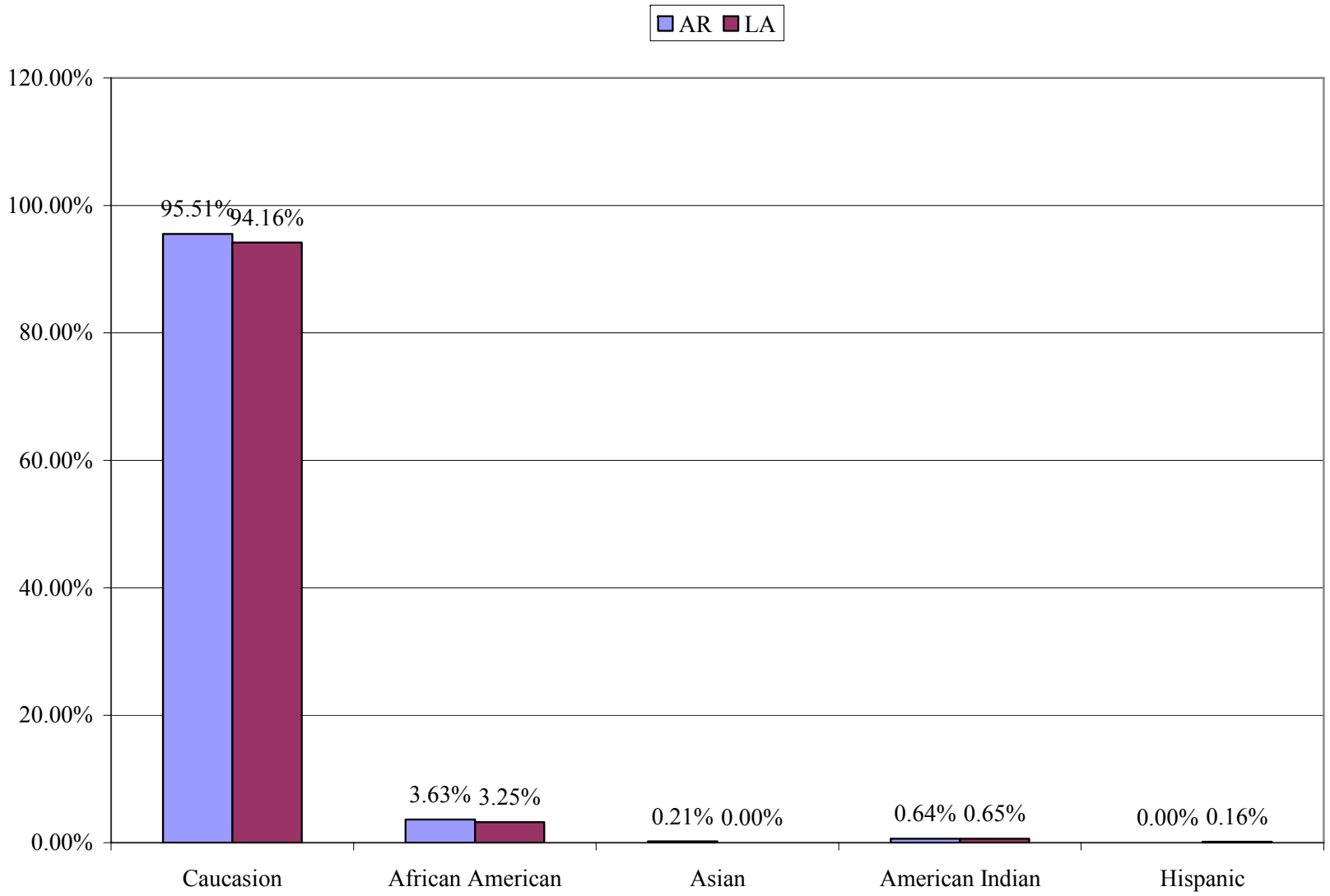

Figure I.51. Question 50. Which of the following best describes your ethnic background? (n=1084) (ARn=468) (LAn=616)

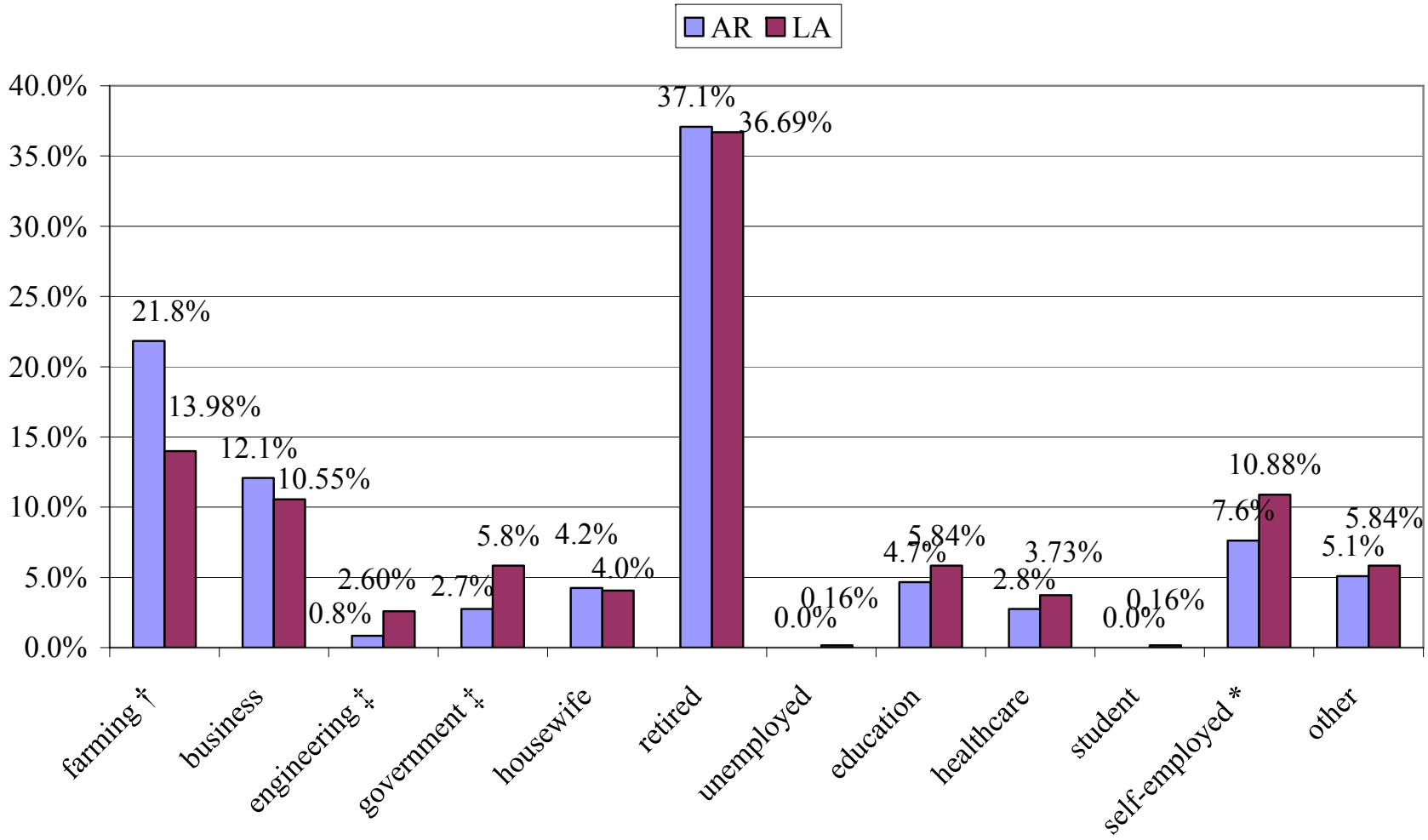

Figure I.52. Question 51. Choose one category that most closely describes your primary occupation. (n=1088) (AR n=472) (LA n=616) (†, ‡, and * indicates statistically significant differences between mean values at the 1%, 5%, and 10% levels, respectively)

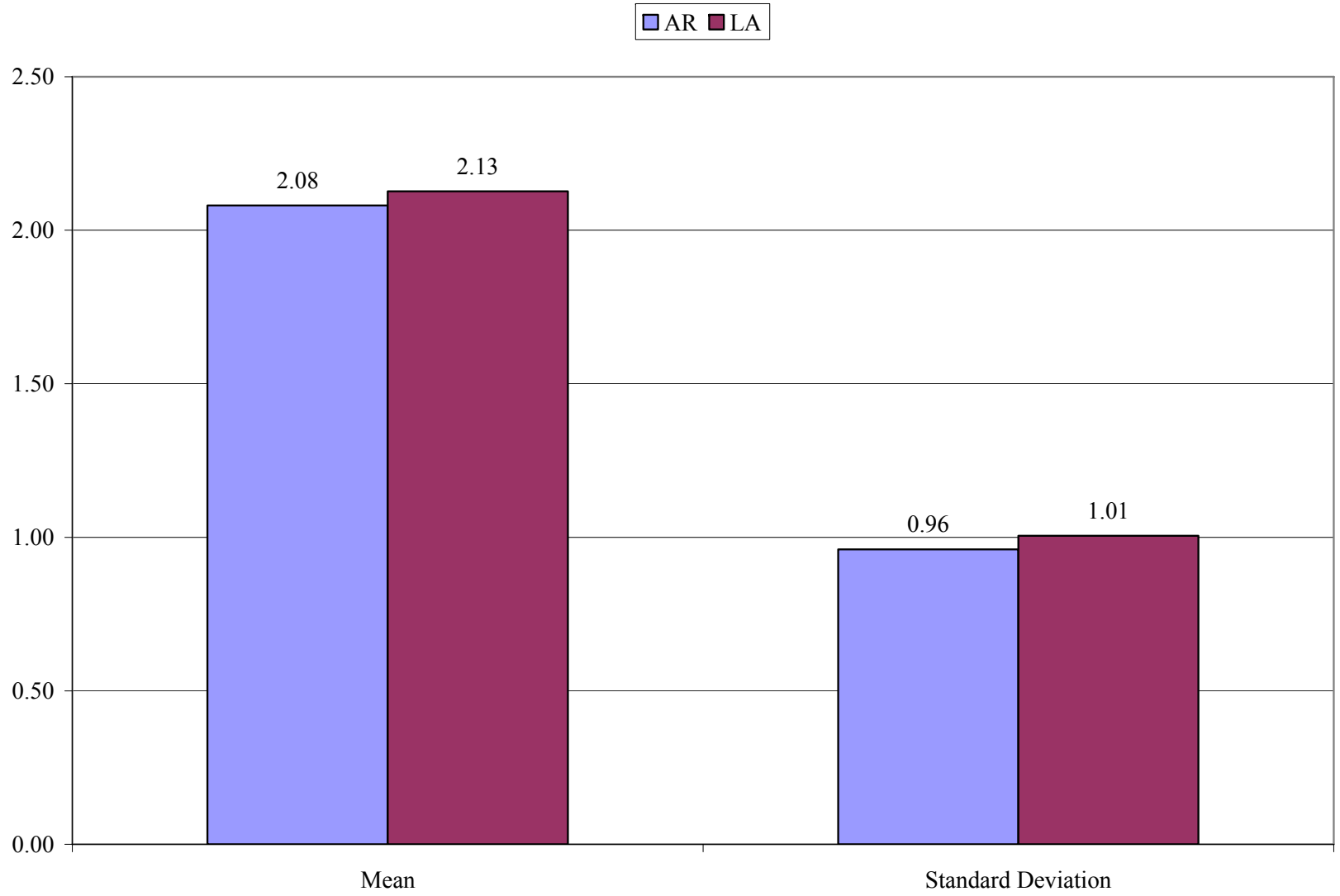

Figure I.53. Question 52. How many individuals live in your household? (n=1076) (AR n=470) (LA n=606)

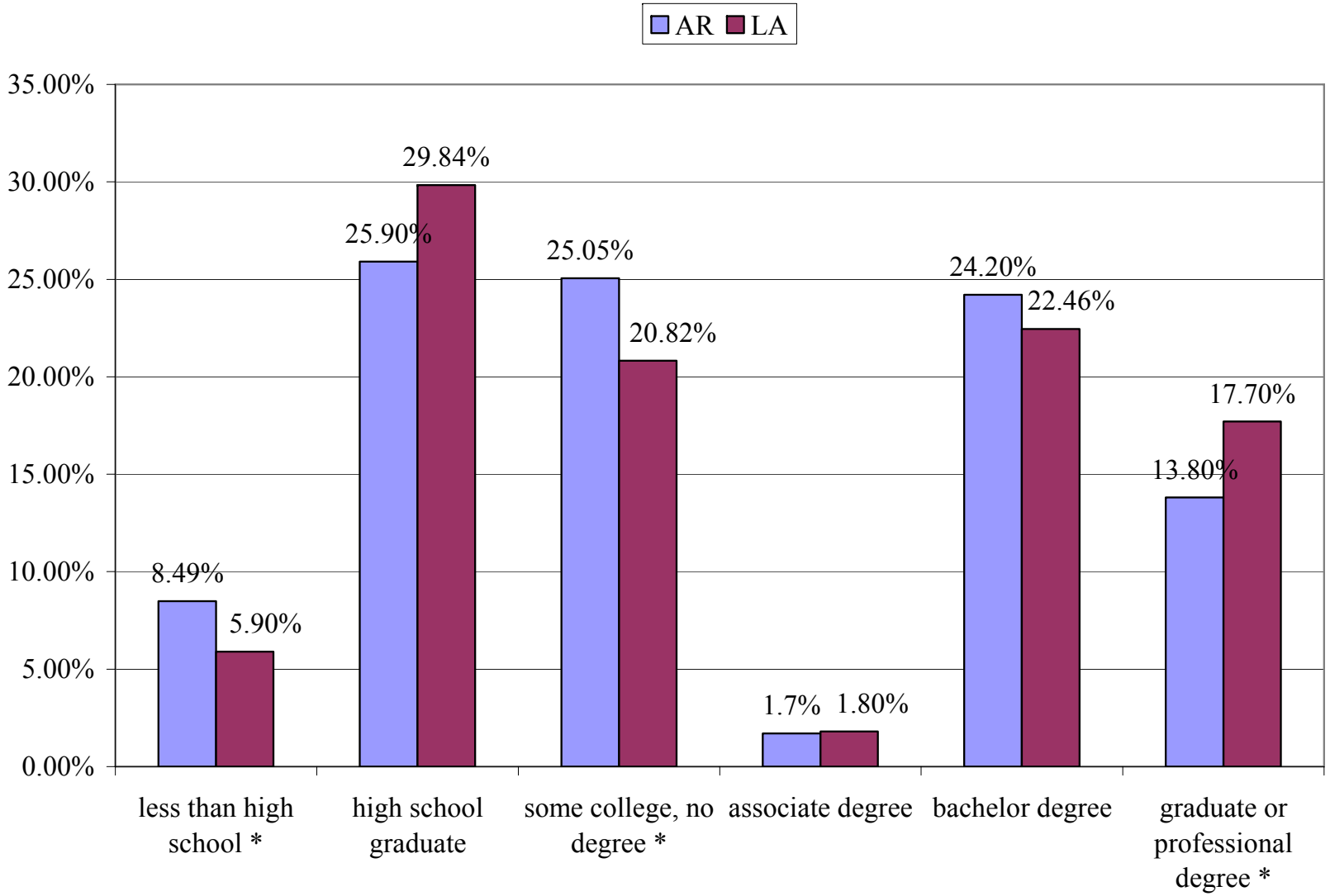

Figure I.54. Question 53. Indicate your highest level of education attained. (n=1081) (AR n=471) (LA n=610) (* indicates statistically significant differences between mean values at the 10% level)

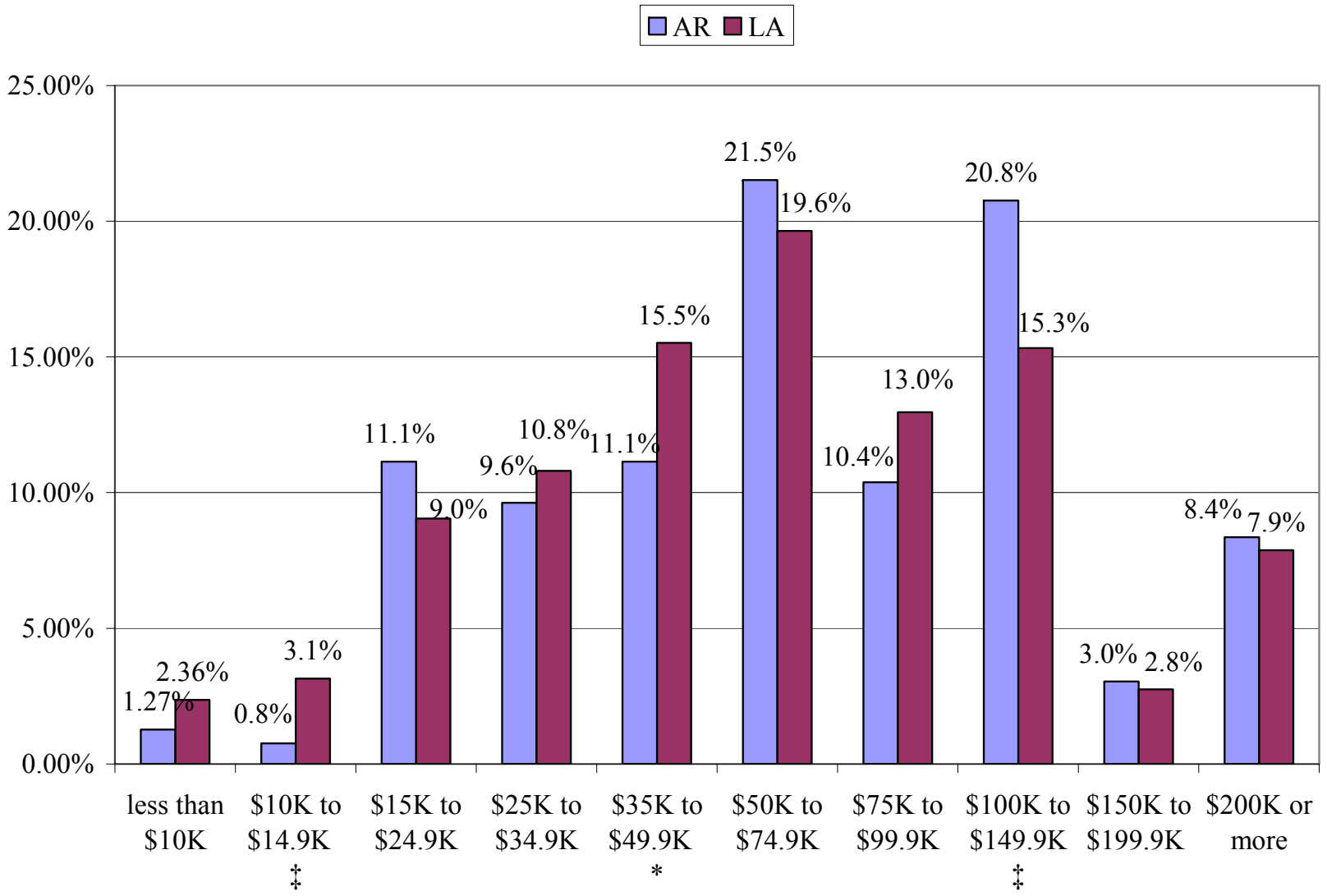

Figure I.55. Question 54. Which best describes your annual household income? (n=904) (AR n=395) (LA n=509) (‡ and * indicates statistically significant differences between mean values at the 5% and 10% levels, respectively)

APPENDIX J: T-TESTS FOR SIGNIFICANT DIFFERENCES BETWEEN ARKANSAS AND LOUISIANA RESPONSES AND BETWEEN FIRST AND SECOND MAILNGS SENT TO LOUISIANA AND ARKANSAS LANDOWNERS

Table J.1. A summary of t-tests for difference between mean values for Arkansas and Louisiana survey responses.

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q1	Do you or any members of your household use your land for recreational purposes?	631	0.5879556	0.4925935	485	0.556701	0.4972875	1.0464	0.2956	
	Do you or any members of your household use your land for any of the following recreational purposes?									
Q2a	hunting big game	372	0.6854839	0.4649482	270	0.5222222	0.5004335	4.2527	0.0000	†
Q2b	hunting big game	373	0.6380697	0.4812043	270	0.6296296	0.4838006	0.219	0.8267	
Q2c	hunting small game	373	0.4048257	0.4915176	270	0.537037	0.4995523	-3.3433	0.0009	†
Q2d	hunting migratory bird or waterfowl	373	0.5442359	0.4987083	270	0.4481481	0.4982276	2.4123	0.0161	‡
Q2e	hunting dove	373	0.3619303	0.4812043	270	0.4259259	0.4954008	-1.6439	0.1007	*
Q2f	fishing	373	0.1447721	0.3523436	270	0.1703704	0.376656	-0.8832	0.3775	
Q2g	hiking	373	0.536193	0.4993582	270	0.5185185	0.5005848	0.4425	0.6583	
Q2h	ATV riding	372	0.1612903	0.3682939	270	0.0777778	0.2683189	3.1655	0.0016	†
Q2i	Camping	370	0.0513514	0.2210122	270	0.0666667	0.249907	-0.819	0.4131	
Q3	Have you ever allowed individuals who are not part of your household to use your land for recreational purposes?	632	0.5632911	0.4963709	485	0.556701	0.4972875	0.2198	0.8261	
	Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes?									
Q4a	immediate family	356	0.6488764	0.4779933	271	0.7084871	0.4553	-1.5789	0.1149	
Q4b	other relative	356	0.5337079	0.4995646	271	0.5756458	0.495159	-1.0453	0.2963	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q4c	friends	356	0.738764	0.4399266	271	0.8081181	0.3945093	-2.0439	0.0414	‡
Q4d	individuals you do not know personally	356	0.1039326	0.3056026	271	0.1143911	0.3188746	-0.4166	0.6771	
Q4i	other	357	0.0420168	0.2009091	271	0.0479705	0.2140992	-0.3575	0.7208	
Q5	Have you ever leased your land for hunting or recreational access?	632	0.1123418	0.3160366	485	0.1154639	0.319911	-0.1628	0.8707	
	I am very concerned about the liability issues associated with allowing people on my land.									
Q7a	strongly disagree	630	0.0634921	0.2440397	482	0.0643154	0.2455687	-0.0556	0.9557	
Q7b	somewhat disagree	630	0.0428571	0.2026959	482	0.0414938	0.1996365	0.1119	0.9109	
Q7c	not sure	630	0.0904762	0.2870907	630	0.0904762	0.2870907	0	1.0000	
Q7d	somewhat agree	630	0.147619	0.3550038	482	0.2136929	0.4103384	-2.8736	0.0041	†
Q7e	strongly agree	630	0.6539683	0.4760814	482	0.5352697	0.4992727	4.0338	0.0001	†
	It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability.									
Q8a	strongly disagree	630	0.1873016	0.3904634	482	0.1908714	0.3933962	-0.1506	0.8803	
Q8b	somewhat disagree	630	0.0634921	0.2440397	482	0.0705394	0.2563199	-0.4669	0.6407	
Q8c	not sure	630	0.4015873	0.4906088	482	0.4128631	0.4928601	-0.379	0.7047	
Q8d	somewhat agree	630	0.1142857	0.3184108	482	0.1410788	0.3484645	-1.3345	0.1823	
Q8e	strongly agree	630	0.2301587	0.4212688	482	0.1784232	0.3832664	2.1097	0.0351	‡

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	If my liability concerns were eased I would by much more likely to allow people to use my land for recreational purposes.									
Q9a	strongly disagree	630	0.3047619	0.4606723	483	0.3126294	0.4640454	-0.2815	0.7784	
Q9b	somewhat disagree	630	0.1015873	0.3023449	483	0.1242236	0.3301784	-1.1893	0.2346	
Q9c	not sure	630	0.2206349	0.4150043	483	0.2898551	0.4541653	-2.6468	0.0082	†
Q9d	somewhat agree	630	0.2095238	0.4072921	483	0.1635611	0.3702603	1.9404	0.0526	*
Q9e	strongly agree	630	0.1603175	0.3671918	483	0.0973085	0.2966847	3.0786	0.0021	†
	To protect myself from liability associated with trespassers, the law requires me to post my land with "no trespassing" signs.									
Q10a	true	338	0.4142012	0.4933139	213	0.7183099	0.4508827	-7.2818	0.0000	†
Q10b	unsure	631	0.4643423	0.4991226	484	0.5619835	0.4966565	-3.2446	0.0012	†
	State law protects me from liability claims that may result from my land so long as I do not charge a fee.									
Q11a	true	213	0.2347418	0.4248358	127	0.2677165	0.4445226	-0.6804	0.4967	
Q11b	unsure	631	0.6608558	0.4737944	483	0.7349896	0.4417963	-2.6645	0.0078	†

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Liability insurance is available specifically for private landowners who charge a fee for recreational access.									
Q12a	true	240	0.9041667	0.2949777	163	0.9141104	0.2810644	-0.3385	0.7352	
Q12b	unsure	629	0.618442	0.4861556	480	0.6625	0.4733503	-1.5124	0.1307	
	Compared to other landowners you know, how would you characterized yourself?									
Q13a	risk seeker	619	0.0726979	0.25985	477	0.0712788	0.2575601	0.09	0.9283	
Q13b	risk averse	619	0.7544426	0.4307653	477	0.721174	0.4488925	1.2446	0.2136	
Q13c	risk neutral	619	0.1583199	0.3653359	477	0.1949686	0.3965924	-1.5861	0.1130	
Q14	Would you consider any of your land to be "marginal" for agricultural purposes?	632	0.4462025	0.4974911	484	0.4008264	0.490573	1.5192	0.1290	
Q15	How many acres of your land would you consider to be marginal for agricultural purposes?	274	106.7555	176.5857	192	108.6927	169.5404	-0.1185	0.9057	
Q16	How many miles is your nearest tract of marginal land from you home?	280	60.08929	230.5976	193	81.06218	248.5087	-0.9417	0.3468	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Could any of the following land classifications be used to describe all or part of you marginal land?									
Q17a	forest or wooded areas	282	0.8120567	0.3913614	195	0.7948718	0.4048346	0.4649	0.6422	
Q17b	pastureland	282	0.2446809	0.4306621	195	0.2615385	0.4406037	-0.4163	0.6774	
Q17c	row crops or hay production	282	0.2375887	0.4263624	195	0.3897436	0.4889474	-3.6066	0.0003	†
Q17d	water bodies	282	0.4255319	0.4953024	195	0.4307692	0.4964585	-0.1134	0.9097	
	Which of these best described your current land management?									
Q18a	self-managed	282	0.6134752	0.4878189	195	0.6	0.4911589	0.2958	0.7675	
Q18b	jointly managed with partners	282	0.1099291	0.3133574	195	0.1333333	0.3408096	-0.7736	0.4396	
Q18c	managed by hired professionals	282	0.0141844	0.1184608	195	0.0461538	0.2103583	-2.1136	0.0351	‡
Q18d	leased	282	0.2163121	0.4124614	195	0.2307692	0.4224095	-0.3726	0.7096	
Q18e	non currently managed for any particular purpose	282	0.1382979	0.3458261	195	0.0923077	0.2902049	1.5228	0.1285	
	On average how often do you visit or check on your marginal land?									
Q19a	weekly	281	0.4412811	0.497426	195	0.4666667	0.5001718	-0.5463	0.5851	
Q19b	once each month	281	0.3274021	0.4701026	193	0.2797927	0.4500648	1.1021	0.2710	
Q19c	once every year	281	0.1459075	0.3536433	195	0.1794872	0.3847475	-0.9825	0.3263	
Q19d	less than once every year	281	0.0925267	0.290285	195	0.0769231	0.2671552	0.5957	0.5517	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q20	If you were to sell your marginal land, how much do you think you could get per acre?	193	1277.409	902.3335	154	1368.506	956.9824	-0.9095	0.3637	
Q21	Would you be willing to let people pay you a fee to access your land for recreational purposes?	632	0.1408228	0.3481142	485	0.142268	0.3496855	-0.0686	0.9453	
Q22	How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses?	612	19.8415	192.1668	472	33.62754	469.7677	-5.823	0.0000	†
Q23a	How certain are you? 10%	67	0.0149254	0.1221694	53	0.0377358	0.1923802	-0.7902	0.4310	
Q23b	How certain are you? 20%	67	0.0149254	0.1221694	53	0	0	0.8886	0.3760	
Q23c	How certain are you? 30%	67	0.0298507	0.1714598	53	0.0188679	0.1373606	0.3797	0.7048	
Q23d	How certain are you? 40%	67	0.0149254	0.1221694	53	0.0377358	0.1923802	-0.7902	0.4310	
Q23e	How certain are you? 50%	67	0.4179104	0.4969377	53	0.3584906	0.4841463	0.6579	0.5119	
Q23f	How certain are you? 60%	68	0.0294118	0.1702139	53	0.0566038	0.2332953	-0.7411	0.4601	
Q23g	How certain are you? 70%	67	0.0298507	0.1714598	53	0.0754717	0.2666788	-1.1353	0.2585	
Q23h	How certain are you? 80%	67	0.1940299	0.3984366	53	0.0943396	0.2950978	1.5207	0.1310	
Q23i	How certain are you? 90%	67	0.0746269	0.2647716	53	0.0943396	0.2950978	-0.385	0.7009	
Q23k	How certain are you? 100%	67	0.1791045	0.3863337	53	0.2264151	0.4225158	-0.6391	0.5240	
Q24	Dollar value that you are 80% certain of accepting	36	163.7222	362.6922	30	110.3333	88.64821	0.786	0.4348	
Q25	If current laws were changed to allow you to charge a fee and deep the liability protection would you allow people to pay you for recreational use of your land?	629	0.2368839	0.4255089	482	0.2012448	0.4013471	1.4179	0.1565	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q26	How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses?	605	17.73223	93.03263	469	12.93177	39.03192	1.0482	0.2948	
Q27a	How certain are you? 10%	126	0.0241935	0.154273	87	0.0365854	0.1888969	-0.5155	0.6067	
Q27b	How certain are you? 20%	126	0.016129	0.1264828	87	0	0	1.1538	0.2499	
Q27c	How certain are you? 30%	126	0.0080645	0.0898027	87	0.0121951	0.1104315	-0.2946	0.7686	
Q27d	How certain are you? 40%	126	0.0241935	0.154273	87	0	0	1.4189	0.1574	
Q27e	How certain are you? 50%	126	0.2016129	0.4028322	87	0.2073171	0.4078793	-0.099	0.9212	
Q27f	How certain are you? 60%	126	0.0322581	0.1774015	87	0.0487805	0.2167344	-0.5984	0.5502	
Q27g	How certain are you? 70%	126	0.0483871	0.2154533	87	0.0121951	0.1104315	1.4033	0.1620	
Q27h	How certain are you? 80%	126	0.3306452	0.472354	87	0.3306452	0.472354	0	1.0000	
Q27i	How certain are you? 90%	126	0.1370968	0.3453448	87	0.097561	0.2985461	0.848	0.3975	
Q27j	How certain are you? 100%	126	0.1612903	0.3692906	87	0.2195122	0.4164634	-1.0523	0.2939	
Q28	Dollar value that you are 80% certain of accepting	50	106.92	191.63	33	369.64	792.59	-2.324	0.0231	‡
Q29	How many acres of land would you be willing to use for fee-based recreational activities?	137	256.60	494.40	94	259.3	419.30	0.3608	0.7186	
	Which of the following recreational activities would you NOT allow on you land?									
Q30a	hunting big game	151	0.1589404	0.3668372	96	0.1875	0.3923613	-0.5804	0.5622	
Q30b	hunting small game	151	0.0794702	0.2713713	96	0.0833333	0.2778363	-0.1081	0.9140	
Q30c	hunting migratory bird or waterfowl	151	0.1059603	0.308811	96	0.09375	0.2930107	0.3089	0.7576	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q30d	hunting dove	151	0.0927152	0.2909981	96	0.0833333	0.2778363	0.2513	0.8018	
Q30e	fishing	151	0.1456954	0.3539746	96	0.1666667	0.3746343	-0.4437	0.6577	
Q30f	hiking	151	0.1390728	0.347174	96	0.1770833	0.3837431	-0.8049	0.4217	
Q30g	ATV riding	151	0.5298013	0.500772	96	0.53125	0.501642	-0.0221	0.9823	
Q30h	camping	150	0.3266667	0.4705654	96	0.3958333	0.491596	-1.1051	0.2702	
Q30i	other	151	0.0331126	0.179526	96	0.0208333	0.1435759	0.5649	0.5726	
	If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer?									
Q31a	independently	144	0.5694444	0.4968823	97	0.5876289	0.4948185	-0.2791	0.7804	
Q31b	cooperatively	144	0.1944444	0.3971538	97	0.1340206	0.3424442	1.223	0.2225	
Q31c	outfitter	144	0.2361111	0.4261736	97	0.2783505	0.4505152	-0.7374	0.4616	
Q32	Have you ever worked with any of your adjacent or local landowners in any way?	629	0.2575517	0.4376337	482	0.2842324	0.4515167	-0.9933	0.3208	
Q33	Did you find your cooperation with other landowners to be effective?	162	0.9506173	0.2173376	138	0.9637681	0.1875474	-0.556	0.5786	
Q34	Have you ever been involved with a cooperative?	629	0.1414944	0.3488082	482	0.313278	0.4643083	-7.0417	0.0000	†
Q35	Did you find your involvement in the cooperative to be beneficial to you?	87	0.9655172	0.1835234	152	0.9144737	0.2805878	1.5202	0.1298	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program?									
Q36a	yes	631	0.446571	0.4975341	480	0.3263598	0.4693719	4.0773	0.0000	†
Q36b	I don't know what these are	631	0.0750799	0.2637309	480	0.075	0.2636661	0.005	0.9960	
Q37	How many separate tracts of non-residential land do you own?	608	2.065789	2.076529	462	2.675325	3.85454	-3.3172	0.0009	†
Q38	Is your nearest tract of non-residential land adjacent to your primary residence?	613	0.4323002	0.4958001	473	0.3446089	0.4757437	2.9412	0.0033	†
Q39	How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence?	602	70.31894	238.1102	465	86.8086	255.7322	-1.086	0.2777	
Q40	What is the total acreage of all tracts of land?	601	324.8087	634.0845	465	432.0688	853.5366	-2.3537	0.0188	‡
Q41	How many years have you been a land owner?	610	28.00984	22.63743	476	27.29832	31.33989	0.4341	0.6643	
	How is the ownership of your land organized?									
Q42a	corporation	623	0.011236	0.1054873	482	0.0311203	0.1738233	-2.3503	0.0189	‡
Q42b	limited liability corporation	623	0.0337079	0.1806212	482	0.0394191	0.1947921	-0.5037	0.6146	
Q42c	joint ownership	623	0.3691814	0.4829709	482	0.4543568	0.4984297	-2.8669	0.0042	†
Q42d	single ownership	623	0.6420546	0.4797812	482	0.5311203	0.4995491	3.7436	0.0002	†

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	How did you acquire the majority of you non residence, non commercial land?									
Q43a	inherited	623	0.4670947	0.499317	477	0.4612159	0.4990169	0.1936	0.8466	
Q43b	by marriage	623	0.0272873	0.1630503	477	0.033543	0.1802386	-0.6023	0.5471	
Q43c	by purchasing	623	0.5521669	0.4976707	477	0.557652	0.4971866	-0.1812	0.8562	
Q43d	other	623	0.0080257	0.0892976	477	0.0062893	0.0791384	0.3356	0.7372	
Q44	Do you use any of your land for agricultural production of row crops?	631	0.5736926	0.4949319	485	0.8164948	0.3874798	-8.9073	0.0000	†
	Which of the following agricultural crops are historically produced on your land?									
Q45a	cotton	364	0.793956	0.4050191	400	0.405	0.4915068	11.8696	0.0000	†
Q45b	corn	364	0.6785714	0.4676677	400	0.2925	0.4554804	11.553	0.0000	†
Q45c	sorghum	364	0.1730769	0.3788345	400	0.2175	0.4130621	-1.5442	0.1229	
Q45d	rice	364	0.1043956	0.3061939	400	0.5925	0.4919846	-16.2755	0.0000	†
Q45e	soybeans	364	0.6895604	0.4633104	400	0.895	0.3069373	-7.2843	0.0000	†
Q45f	wheat	364	0.3681319	0.4829613	400	0.63	0.4834089	-7.4816	0.0000	†
Q45g	other	364	0.0549451	0.2281866	399	0.0651629	0.247123	-0.5916	0.5543	
Q46	Have you ever leased any of your land for agricultural uses?	632	0.6740506	0.4690997	482	0.6680498	0.4714025	0.2111	0.8329	
	Do you own land for any of the following reasons?									
Q47a	hay production	632	0.221519	0.4155979	484	0.1304348	0.3371303	3.9289	0.0001	†
Q47b	leasing to others	632	0.2974684	0.4575064	484	0.3615702	0.4809523	-2.2685	0.0235	‡

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q47c	personal recreation	632	0.2610759	0.4395691	484	0.2252066	0.4181505	1.3797	0.1680	
Q47d	raising livestock	632	0.2041139	0.4033719	484	0.1280992	0.334546	3.3552	0.0008	†
Q47e	timber production	632	0.3037975	0.4602605	484	0.2004132	0.4007238	3.9307	0.0001	†
Q47f	provide a place for wildlife	632	0.3291139	0.4702636	484	0.2913223	0.4548418	1.3495	0.1775	
Q47g	provide recreational access for others	632	0.0427215	0.2023887	484	0.0495868	0.2173143	-0.5438	0.5867	
Q47h	other	632	0.068038	0.2520105	484	0.1033058	0.3046728	-2.1149	0.0347	‡
Q48	Your gender (female = 1, male=0)	616	0.349026	0.4770496	474	0.2890295	0.4537906	2.1023	0.0358	‡
Q49	Your age in years	603	61.87231	13.66587	464	63.28664	13.61654	-1.6785	0.0935	*
	Which of the following best describes your ethnic background?									
Q50a	Caucasian	616	0.9448052	0.2285457	468	0.9380342	0.2413514	0.4716	0.6373	
Q50b	African American	616	0.0324675	0.1773823	468	0.0363248	0.1872972	-0.3461	0.7293	
Q50c	Asian	616	0	0	468	0.0021368	0.046225	-1.1474	0.2515	
Q50d	American Indian	616	0.0064935	0.0803855	468	0.0064103	0.0798924	0.0169	0.9865	
Q50e	Hispanic	616	0.0016234	0.0402911	468	0	0	0.8715	0.3837	
Q50f	other	616	0	0	468	0	0	.	.	
	Choose one category that most closely describes your primary occupation.									
Q51a	farming	616	0.1398374	0.3471006	472	0.2182203	0.413476	-3.3945	0.0007	†
Q51b	business	616	0.1022727	0.3032529	472	0.1165254	0.3211944	-0.7488	0.4541	
Q51c	engineering	616	0.025974	0.159187	472	0.0084746	0.0917638	2.1321	0.0332	‡
Q51d	government	616	0.0584416	0.2347672	472	0.0275424	0.1638312	2.4401	0.0148	‡

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q51e	housewife	616	0.0405844	0.1974858	472	0.0423729	0.2016521	-0.1467	0.8834	
Q51f	retired	616	0.3668831	0.4823459	472	0.3707627	0.4835215	-0.1313	0.8955	
Q51g	unemployed	616	0.0016234	0.0402911	472	0	0	0.8753	0.3816	
Q51h	education	616	0.0584416	0.2347672	472	0.0466102	0.2110261	0.8605	0.3897	
Q51i	healthcare	616	0.0373377	0.1897419	472	0.0275424	0.1638312	0.8947	0.3711	
Q51j	student	616	0.0016234	0.0402911	472	0	0	0.8753	0.3816	
Q51k	self-employed	616	0.1087662	0.3115987	472	0.0762712	0.2657131	1.8156	0.0697	*
Q51l	other	616	0.0584416	0.2347672	472	0.0508475	0.2199192	0.5434	0.5869	
Q52	How many individuals live in your household?	606	2.127063	1.005124	470	2.080851	0.960774	0.7625	0.4459	
	Indicate your highest level of education attained.									
Q53a	less than high school	610	0.0590164	0.2358488	471	0.0849257	0.2790675	-1.6527	0.0987	*
Q53b	high school graduate	610	0.2967213	0.4571875	471	0.2590234	0.4385643	1.3683	0.1715	
Q53c	some college, no degree	610	0.2081967	0.4063515	471	0.2505308	0.4337795	-1.6491	0.0994	*
Q53d	associate degree	610	0.0180328	0.1331791	471	0.0169851	0.1293529	0.1299	0.8967	
Q53e	bachelor degree	610	0.2245902	0.4176546	471	0.2420382	0.4287727	-0.6732	0.5010	
Q53f	graduate or professional degree	610	0.1770492	0.3820236	471	0.1380042	0.3452712	1.737	0.0827	*
	Which best describes your annual household income?									
Q54a	less than $10K	509	0.0235756	0.1518721	395	0.0126582	0.1119362	1.1982	0.2311	
Q54b	$10K to $14.9K	509	0.0314342	0.1746597	395	0.0075949	0.0869275	2.4842	0.0132	‡
Q54c	$15K to $24.9K	509	0.0903733	0.2869979	395	0.1113924	0.3150165	-1.0464	0.2956	
Q54d	$25K to $34.9K	509	0.108055	0.3107553	395	0.0962025	0.2952428	0.5813	0.5612	
Q54e	$35K to $49.9K	509	0.1552063	0.3624574	395	0.1113924	0.3150165	1.9075	0.0568	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.1. (continued)

		Louisiana			Arkansas					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q54f	$50K to $74.9K	509	0.1964637	0.397714	395	0.2151899	0.4114752	-0.6916	0.4893	
Q54g	$75K to $99.9K	509	0.129666	0.3362661	395	0.1037975	0.3053844	1.1939	0.2328	
Q54h	$100K to $149.9K	509	0.1532417	0.3605746	395	0.2075949	0.4060995	-2.1268	0.0337	‡
Q54i	$150K to $199.9K	509	0.0275049	0.1637102	395	0.0303797	0.1718476	-0.2562	0.7978	
Q54j	$200K or more	508	0.0787402	0.2695983	395	0.0835443	0.2770541	-0.2624	0.7930	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. A summary of t-tests for difference between mean values for first and second mailngs sent to Louisiana landowners.

		first maligns			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q1	Do you or any members of your household use your land for recreational purposes?	447	0.5951	0.4914	184	0.5707	0.4963	0.5658	0.5717	
	Do you or any members of your household use your land for any of the following recreational purposes?									
Q2a	hunting big game	267	0.6929	0.4622	105	0.6667	0.4737	0.4890	0.6251	
Q2b	hunting big game	268	0.6493	0.4781	105	0.6095	0.4902	0.7167	0.4740	
Q2c	hunting small game	268	0.4067	0.4921	105	0.4000	0.4922	0.1185	0.9057	
Q2d	hunting migratory bird or waterfowl	268	0.5373	0.4995	105	0.5619	0.4985	-0.4278	0.6690	
Q2e	hunting dove	268	0.3694	0.4835	105	0.3429	0.4769	0.4787	0.6325	
Q2f	fishing	268	0.1343	0.3416	105	0.1714	0.3787	-0.9144	0.3611	
Q2g	hiking	268	0.5485	0.4986	105	0.5048	0.5024	0.7605	0.4475	
Q2h	ATV riding	268	0.1679	0.3745	104	0.1442	0.3530	0.5560	0.5785	
Q2i	Camping	268	0.0560	0.2303	102	0.0392	0.1951	0.6511	0.5154	
Q3	Have you ever allowed individuals who are not part of your household to use your land for recreational purposes?	448	0.6027	0.4899	184	0.4674	0.5003	3.1344	0.0018	†
	Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes?									
Q4a	immediate family	270	0.6556	0.4761	86	0.6279	0.4862	0.4666	0.6410	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q4b	other relative	270	0.5259	0.5003	86	0.5581	0.4995	-0.5202	0.6032	
Q4c	friends	270	0.7444	0.4370	86	0.7209	0.4512	0.4312	0.6666	
Q4d	individuals you do not know personally	270	0.1000	0.3006	86	0.1163	0.3224	-0.4297	0.6677	
Q4i	other	271	0.0406	0.1977	86	0.0465	0.2118	-0.2378	0.8122	
Q5	Have you ever leased your land for hunting or recreational access?	448	0.1228	0.3285	184	0.0870	0.2825	1.2948	0.1959	
	I am very concerned about the liability issues associated with allowing people on my land.									
Q7a	strongly disagree	447	0.0537	0.2257	183	0.0874	0.2832	-1.5773	0.1152	
Q7b	somewhat disagree	447	0.0470	0.2118	183	0.0328	0.1786	0.7976	0.4254	
Q7c	not sure	447	0.0783	0.2689	447	0.0783	0.2689	0.0000	1.0000	
Q7d	somewhat agree	447	0.1521	0.3595	183	0.1366	0.3444	0.4976	0.6189	
Q7e	strongly agree	447	0.6644	0.4727	183	0.6284	0.4846	0.8618	0.3891	
	It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability.									
Q8a	strongly disagree	447	0.1767	0.3819	183	0.2131	0.4106	-1.0618	0.2887	
Q8b	somewhat disagree	447	0.0805	0.2724	183	0.0219	0.1466	2.7542	0.0061	†
Q8c	not sure	447	0.4139	0.4931	183	0.3716	0.4846	0.9821	0.3264	
Q8d	somewhat agree	447	0.1186	0.3236	183	0.1038	0.3059	0.5273	0.5982	
Q8e	strongly agree	447	0.2058	0.4048	183	0.2896	0.4548	-2.2742	0.0233	‡

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	If my liability concerns were eased I would by much more likely to allow people to use my land for recreational purposes.									
Q9a	strongly disagree	447	0.2864	0.4526	183	0.3497	0.4782	-1.5694	0.1171	
Q9b	somewhat disagree	447	0.0984	0.2982	183	0.1093	0.3129	-0.4089	0.6828	
Q9c	not sure	447	0.1946	0.3964	183	0.2842	0.4522	-2.4680	0.0139	†
Q9d	somewhat agree	447	0.2394	0.4272	183	0.1366	0.3444	2.8917	0.0040	†
Q9e	strongly agree	447	0.1767	0.3819	183	0.1202	0.3261	1.7567	0.0795	*
	To protect myself from liability associated with trespassers, the law requires me to post my land with "no trespassing" signs.									
Q10a	true	244	0.3893	0.4886	94	0.4787	0.5022	-1.4952	0.1358	
Q10b	unsure	448	0.4554	0.4986	183	0.4863	0.5012	-0.7073	0.4797	
	State law protects me from liability claims that may result from my land so long as I do not charge a fee.									
Q11a	true	160	0.2688	0.4447	53	0.1321	0.3418	2.0451	0.0421	‡
Q11b	unsure	448	0.6406	0.4804	183	0.7104	0.4548	-1.6807	0.0933	*
	Liability insurance is available specifically for private landowners who charge a fee for recreational access.									
Q12a	true	183	0.9071	0.2911	57	0.8947	0.3096	0.2759	0.7829	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q12b	unsure	447	0.5906	0.4923	182	0.6868	0.4651	-2.2580	0.0243	‡
	Compared to other landowners you know, how would you characterized yourself?									
Q13a	risk seeker	443	0.0790	0.2701	176	0.0568	0.2322	0.9583	0.3383	
Q13b	risk averse	443	0.7472	0.4351	176	0.7727	0.4203	-0.6653	0.5061	
Q13c	risk neutral	443	0.1535	0.3609	176	0.1705	0.3771	-0.5206	0.6029	
Q14	Would you consider any of your land to be "marginal" for agricultural purposes?	448	0.4643	0.4993	184	0.4022	0.4917	1.4270	0.1541	
Q15	How many acres of your land would you consider to be marginal for agricultural purposes?	203	112.2660	185.1824	71	91.0000	149.3771	0.8731	0.3834	
Q16	How many miles is your nearest tract of marginal land from you home?	207	60.7488	205.8973	73	58.2192	291.1293	0.0804	0.9359	
	Could any of the following land classifications be used to describe all or part of you marginal land?									
Q17a	forest or wooded areas	208	0.8221	0.3833	74	0.7838	0.4145	0.7230	0.4703	
Q17b	pastureland	208	0.2404	0.4283	74	0.2568	0.4398	-0.2804	0.7794	
Q17c	row crops or hay production	208	0.2115	0.4094	74	0.3108	0.4660	-1.7262	0.0854	*
Q17d	water bodies	208	0.4327	0.4966	74	0.4054	0.4943	0.4064	0.6848	
	Which of these best described your current land management?									
Q18a	self-managed	208	0.6154	0.4877	74	0.6081	0.4915	0.1100	0.9125	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q18b	jointly managed with partners	208	0.1154	0.3203	74	0.0946	0.2947	0.4895	0.6249	
Q18c	managed by hired professionals	208	0.0192	0.1377	74	0.0000	0.0000	1.2003	0.2310	
Q18d	leased	208	0.2019	0.4024	74	0.2568	0.4398	-0.9821	0.3269	
Q18e	non currently managed for any particular purpose	208	0.1394	0.3472	74	0.1351	0.3442	0.0914	0.9272	
	On average how often do you visit or check on your marginal land?									
Q19a	weekly	208	0.4279	0.4960	73	0.4795	0.5030	-0.7615	0.4470	
Q19b	once each month	208	0.3365	0.4737	73	0.3014	0.4620	0.5492	0.5833	
Q19c	once every year	208	0.1538	0.3617	73	0.1233	0.3310	0.6345	0.5263	
Q19d	less than once every year	208	0.0865	0.2818	73	0.1096	0.3145	-0.5830	0.5603	
Q20	If you were to sell your marginal land, how much do you think you could get per acre?	151	1237.1520	935.1637	42	1422.1430	765.4635	-1.1764	0.2409	
Q21	Would you be willing to let people pay you a fee to access your land for recreational purposes?	448	0.1808	0.3853	184	0.0435	0.2045	4.5759	0.0000	†
Q22	How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses?	434	14.1544	79.2146	176	0.0000		2.3694	0.0181	‡
Q25	If current laws were changed to allow you to charge a fee and deep the liability protection would you allow people to pay you for recreational use of your land?	445	0.3124	0.4640	184	0.0543	0.2273	7.1922	0.0000	†

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q26	How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses?	431	24.8910	109.4475	174	0.0000	0.0000	2.9984	0.0028	†
Q29	How many acres of land would you be willing to use for fee-based recreational activities?	130	276.2154	510.3076	7	185.0000	206.4986	0.4695	0.6395	
	Which of the following recreational activities would you NOT allow on you land?									
Q30a	hunting big game	141	0.1348	0.3427	10	0.5000	0.5270	-3.1305	0.0021	†
Q30b	hunting small game	141	0.0709	0.2576	10	0.2000	0.4216	-1.4589	0.1467	
Q30c	hunting migratory bird or waterfowl	141	0.0993	0.3001	10	0.2000	0.4216	-0.9965	0.3206	
Q30d	hunting dove	141	0.0922	0.2903	10	0.1000	0.3162	-0.0817	0.9350	
Q30e	fishing	141	0.1418	0.3501	10	0.2000	0.4216	-0.5008	0.6173	
Q30f	hiking	141	0.1348	0.3427	10	0.2000	0.4216	-0.5730	0.5675	
Q30g	ATV riding	141	0.5106	0.5017	10	0.8000	0.4216	-1.7784	0.0774	*
Q30h	camping	141	0.3262	0.4705	9	0.3333	0.5000	-0.0437	0.9652	
Q30i	other	141	0.0213	0.1448	10	0.2000	0.4216	-3.1300	0.0021	†
	If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer?									
Q31a	independently	136	0.5882	0.4940	8	0.2500	0.4629	1.8878	0.0611	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q31b	cooperatively	136	0.1765	0.3826	8	0.5000	0.5345	-2.2715	0.0246	‡
Q31c	outfitter	136	0.2353	0.4258	8	0.2500	0.4629	-0.0945	0.9248	
Q32	Have you ever worked with any of your adjacent or local landowners in any way?	448	0.2746	0.4468	181	0.2155	0.4123	1.5345	0.1254	
Q33	Did you find your cooperation with other landowners to be effective?	123	0.9431	0.2326	39	0.9744	0.1601	-0.7820	0.4354	
Q34	Have you ever been involved with a cooperative?	448	0.1674	0.3738	181	0.0773	0.2679	2.9496	0.0033	†
Q35	Did you find your involvement in the cooperative to be beneficial to you?	73	0.9589	0.1999	14	1.0000	0.0000	-0.7656	0.4460	
	Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program?									
Q36a	yes	447	0.4743	0.4999	180	0.3778	0.4862	2.2038	0.0279	‡
Q36b	I don't know what these are	446	0.0561	0.2303	180	0.1222	0.3285	-2.8575	0.0044	†
Q37	How many separate tracts of non-residential land do you own?	440	2.1295	2.2056	168	1.8988	1.6870	1.2257	0.2208	
Q38	Is your nearest tract of non-residential land adjacent to your primary residence?	441	0.4104	0.4925	172	0.4884	0.5013	-1.7516	0.0803	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q39	How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence?	436	77.5436	245.2761	166	51.3434	217.7333	1.2070	0.2279	
Q40	What is the total acreage of all tracts of land?	427	354.5059	684.6005	174	251.9310	482.5293	1.8020	0.0720	*
Q41	How many years have you been a land owner?	435	27.9172	22.5686	175	28.2400	22.8709	-0.1591	0.8736	
	How is the ownership of your land organized?									
Q42a	corporation	444	0.0090	0.0946	179	0.0168	0.1287	-0.8297	0.4070	
Q42b	limited liability corporation	444	0.0383	0.1921	179	0.0223	0.1482	0.9969	0.3192	
Q42c	joint ownership	444	0.3784	0.4855	179	0.3464	0.4771	0.7483	0.4546	
Q42d	single ownership	444	0.6396	0.4806	179	0.6480	0.4789	-0.1977	0.8433	
	How did you acquire the majority of you non residence, non commercial land?	444	0.4617	0.4991	179	0.4804	0.5010	-0.4235	0.6721	
Q43a	inherited	444	0.0248	0.1556	179	0.0335	0.1805	-0.6055	0.5451	
Q43b	by marriage	444	0.5563	0.4974	179	0.5419	0.4996	0.3267	0.7440	
Q43c	by purchasing	444	0.0090	0.0946	179	0.0056	0.0747	0.4326	0.6655	
Q43d	other									
Q44	Do you use any of your land for agricultural production of row crops?	448	0.5826	0.4937	183	0.5519	0.4987	0.7062	0.4803	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Which of the following agricultural crops are historically produced on your land?									
Q45a	cotton	263	0.7985	0.4019	101	0.7822	0.4148	0.3434	0.7315	
Q45b	corn	263	0.6730	0.4700	101	0.6931	0.4635	-0.3661	0.7145	
Q45c	sorghum	263	0.1787	0.3838	101	0.1584	0.3670	0.4571	0.6479	
Q45d	rice	263	0.1179	0.3231	101	0.0693	0.2552	1.3565	0.1758	
Q45e	soybeans	263	0.7186	0.4505	101	0.6139	0.4893	1.9391	0.0533	‡
Q45f	wheat	263	0.3802	0.4864	101	0.3366	0.4749	0.7707	0.4414	
Q45g	other	263	0.0532	0.2249	101	0.0594	0.2376	-0.2308	0.8176	
Q46	Have you ever leased any of your land for agricultural uses?	448	0.6964	0.4603	184	0.6196	0.4868	1.8750	0.0613	*
	Do you own land for any of the following reasons?									
Q47a	hay production	448	0.2031	0.4028	184	0.2663	0.4432	-1.7389	0.0825	*
Q47b	leasing to others	448	0.3192	0.4667	184	0.2446	0.4310	1.8667	0.0624	*
Q47c	personal recreation	448	0.2679	0.4433	184	0.2446	0.4310	0.6049	0.5455	
Q47d	raising livestock	448	0.1920	0.3943	184	0.2337	0.4243	-1.1819	0.2377	
Q47e	timber production	448	0.3237	0.4684	184	0.2554	0.4373	1.6954	0.0905	*
Q47f	provide a place for wildlife	448	0.3326	0.4717	184	0.3207	0.4680	0.2897	0.7721	
Q47g	provide recreational access for others	448	0.0402	0.1966	184	0.0489	0.2163	-0.4926	0.6225	
Q47h	other	448	0.0670	0.2502	184	0.0707	0.2569	-0.1670	0.8674	
Q48	Your gender (female = 1, male=0)	439	0.3554	0.4792	177	0.3333	0.4727	0.5181	0.6046	
Q49	Your age in years	430	61.8744	13.1459	173	61.8671	14.9203	0.0060	0.9952	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Which of the following best describes your ethnic background?									
Q50a	Caucasian	439	0.9453	0.2276	177	0.9435	0.2315	0.0897	0.9285	
Q50b	African American	439	0.0342	0.1819	177	0.0282	0.1662	0.3746	0.7081	
Q50c	Asian	439	0.0000	0.0000	177	0.0000	0.0000	.	.	
Q50d	American Indian	439	0.0068	0.0825	177	0.0056	0.0752	0.1653	0.8688	
Q50e	Hispanic	439	0.0000	0.0000	177	0.0056	0.0752	-1.5768	0.1154	
Q50f	other	439	0.0000	0.0000	177	0.0000	0.0000	.	.	
	Choose one category that most closely describes your primary occupation.									
Q51a	farming	437	0.1281	0.3346	178	0.1685	0.3754	-1.3095	0.1908	
Q51b	business	438	0.1027	0.3040	178	0.1011	0.3023	0.0599	0.9522	
Q51c	engineering	438	0.0297	0.1699	178	0.0169	0.1291	0.9063	0.3651	
Q51d	government	438	0.0662	0.2489	178	0.0393	0.1949	1.2890	0.1979	
Q51e	housewife	438	0.0434	0.2039	178	0.0337	0.1810	0.5506	0.5821	
Q51f	retired	438	0.3676	0.4827	178	0.3652	0.4828	0.0562	0.9552	
Q51g	unemployed	438	0.0023	0.0478	178	0.0000	0.0000	0.6372	0.5242	
Q51h	education	438	0.0616	0.2408	178	0.0506	0.2197	0.5307	0.5958	
Q51i	healthcare	438	0.0479	0.2139	178	0.0112	0.1057	2.1832	0.0294	‡
Q51j	student	438	0.0000		178	0.0056	0.0750	-1.5705	0.1168	
Q51k	self-employed	438	0.0982	0.2979	178	0.1348	0.3425	-1.3243	0.1859	
Q51l	other	438	0.0525	0.2233	178	0.0730	0.2609	-0.9834	0.3258	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.2. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q52	How many individuals live in your household?	431	2.1299	0.9844	175	2.1200	1.0572	0.1101	0.9123	
	Indicate your highest level of education attained.									
Q53a	less than high school	437	0.0503	0.2189	173	0.0809	0.2735	-1.4448	0.1490	
Q53b	high school graduate	437	0.2632	0.4409	173	0.3815	0.4872	-2.8992	0.0039	†
Q53c	some college, no degree	437	0.2105	0.4081	173	0.2023	0.4029	0.2249	0.8222	
Q53d	associate degree	437	0.0229	0.1497	173	0.0058	0.0760	1.4309	0.1530	
Q53e	bachelor degree	437	0.2380	0.4263	173	0.1908	0.3940	1.2597	0.2083	
Q53f	graduate or professional degree	437	0.1968	0.3980	173	0.1272	0.3341	2.0343	0.0424	‡
	Which best describes your annual household income?									
Q54a	less than $10K	373	0.0188	0.1359	136	0.0368	0.1889	-1.1835	0.2372	
Q54b	$10K to $14.9K	373	0.0241	0.1537	136	0.0515	0.2218	-1.5650	0.1182	
Q54c	$15K to $24.9K	373	0.0912	0.2882	136	0.0882	0.2847	0.1014	0.9193	
Q54d	$25K to $34.9K	373	0.1126	0.3165	136	0.0956	0.2951	0.5461	0.5852	
Q54e	$35K to $49.9K	373	0.1448	0.3523	136	0.1838	0.3888	-1.0758	0.2826	
Q54f	$50K to $74.9K	373	0.1903	0.3931	136	0.2132	0.4111	-0.5741	0.5662	
Q54g	$75K to $99.9K	373	0.1314	0.3383	136	0.1250	0.3319	0.1889	0.8503	
Q54h	$100K to $149.9K	373	0.1689	0.3752	136	0.1103	0.3144	1.6252	0.1047	*
Q54i	$150K to $199.9K	373	0.0295	0.1694	136	0.0221	0.1474	0.4528	0.6509	
Q54j	$200K or more	373	0.0804	0.2723	135	0.0741	0.2629	0.2345	0.8147	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. A summary of t-tests for difference between mean values for first and second mailngs sent to Arkansas landowners.

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q1	Do you or any members of your household use your land for recreational purposes?	343	0.556851	0.497483	142	0.556338	0.498575	0.0103	0.992	
	Do you or any members of your household use your land for any of the following recreational purposes?									
Q2a	hunting big game	191	0.497382	0.501307	79	0.582279	0.496335	-1.2697	0.205	
Q2b	hunting big game	191	0.643979	0.48008	79	0.594937	0.494041	0.7572	0.450	
Q2c	hunting small game	191	0.565445	0.497001	79	0.468354	0.502186	1.456	0.147	
Q2d	hunting migratory bird or waterfowl	191	0.455497	0.499324	79	0.43038	0.498293	0.3763	0.707	
Q2e	hunting dove	191	0.434555	0.497001	79	0.405063	0.494041	0.4444	0.657	
Q2f	fishing	191	0.188482	0.392124	79	0.126582	0.334629	1.2297	0.220	
Q2g	hiking	191	0.539267	0.499766	79	0.468354	0.502186	1.0592	0.290	
Q2h	ATV riding	191	0.052356	0.223329	79	0.139241	0.34841	-2.4429	0.015	†
Q2i	Camping	191	0.08377	0.27777	79	0.025317	0.158088	1.7553	0.080	*
Q3	Have you ever allowed individuals who are not part of your household to use your land for recreational purposes?	343	0.574344	0.495164	142	0.514085	0.501571	1.2149	0.225	
	Please indicate which of the following types of individuals you have allowed access to your land for recreational purposes?									

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q4a	immediate family	198	0.707071	0.45626	73	0.712329	0.45581	-0.0842	0.933	
Q4b	other relative	198	0.590909	0.492912	73	0.534247	0.502278	0.8353	0.404	
Q4c	friends	198	0.80303	0.398717	73	0.821918	0.38523	-0.3491	0.727	
Q4d	individuals you do not know personally	198	0.106061	0.308696	73	0.136986	0.346212	-0.7076	0.480	
Q4i	other	198	0.060606	0.239211	73	0.013699	0.117041	1.6047	0.110	
Q5	Have you ever leased your land for hunting or recreational access?	343	0.134111	0.341269	142	0.070423	0.256764	2.0012	0.046	‡
	I am very concerned about the liability issues associated with allowing people on my land.									
Q7a	strongly disagree	342	0.067252	0.250824	140	0.057143	0.232949	0.4099	0.682	
Q7b	somewhat disagree	342	0.035088	0.184271	140	0.057143	0.232949	-1.1013	0.271	
Q7c	not sure	342	0.122807	0.328697	342	0.122807	0.328697	0	1.000	
Q7d	somewhat agree	342	0.207602	0.406185	140	0.228571	0.42142	-0.5089	0.611	
Q7e	strongly agree	342	0.55848	0.497296	140	0.478571	0.501334	1.5977	0.111	
	It is possible to obtain a written agreement from anyone coming onto my land that would protect me from liability.									
Q8a	strongly disagree	342	0.192983	0.395218	140	0.185714	0.390272	0.184	0.854	
Q8b	somewhat disagree	342	0.078947	0.270052	140	0.05	0.218728	1.1259	0.261	
Q8c	not sure	342	0.418129	0.493974	140	0.4	0.491657	0.3663	0.714	
Q8d	somewhat agree	342	0.134503	0.341692	140	0.157143	0.365242	-0.6472	0.518	
Q8e	strongly agree	342	0.166667	0.373224	140	0.207143	0.406714	-1.0527	0.293	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	If my liability concerns were eased I would by much more likely to allow people to use my land for recreational purposes.									
Q9a	strongly disagree	343	0.291545	0.455138	140	0.364286	0.482957	-1.5653	0.118	
Q9b	somewhat disagree	343	0.122449	0.328283	140	0.128571	0.335927	-0.1847	0.854	
Q9c	not sure	343	0.291545	0.455138	140	0.285714	0.453376	0.1279	0.898	
Q9d	somewhat agree	343	0.183674	0.387783	140	0.114286	0.3193	1.8734	0.062	*
Q9e	strongly agree	343	0.102041	0.303144	140	0.085714	0.280947	0.5483	0.584	
	To protect myself from liability associated with trespassers, the law requires me to post my land with "no trespassing" signs.									
Q10a	true	151	0.688742	0.464549	62	0.790323	0.410402	-1.498	0.136	
Q10b	unsure	342	0.561404	0.496942	142	0.56338	0.497722	-0.0398	0.968	
	State law protects me from liability claims that may result from my land so long as I do not charge a fee.									
Q11a	true	90	0.255556	0.438617	37	0.297297	0.463373	-0.4794	0.633	
Q11b	unsure	343	0.734694	0.442141	140	0.735714	0.442535	-0.023	0.982	
	Liability insurance is available specifically for private landowners who charge a fee for recreational access.									
Q12a	true	124	0.91129	0.285478	39	0.923077	0.269953	-0.2277	0.820	
Q12b	unsure	341	0.639296	0.48091	139	0.719425	0.450905	-1.6854	0.093	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Compared to other landowners you know, how would you characterized yourself?									
Q13a	risk seeker	340	0.073529	0.261388	137	0.065693	0.248655	0.3004	0.764	
Q13b	risk averse	340	0.714706	0.45222	137	0.737226	0.441756	-0.4954	0.621	
Q13c	risk neutral	340	0.197059	0.398363	137	0.189781	0.393567	0.1812	0.856	
Q14	Would you consider any of your land to be "marginal" for agricultural purposes?	343	0.422741	0.494717	141	0.347518	0.47788	1.5349	0.126	
Q15	How many acres of your land would you consider to be marginal for agricultural purposes?	143	120.2448	186.6084	49	74.97959	99.00515	1.6197	0.107	
Q16	How many miles is your nearest tract of marginal land from you home?	144	102.6319	284.2531	49	17.67347	28.5054	2.0851	0.038	‡
	Could any of the following land classifications be used to describe all or part of you marginal land?									
Q17a	forest or wooded areas	145	0.793103	0.406485	50	0.8	0.404061	-0.1036	0.918	
Q17b	pastureland	145	0.255172	0.437469	50	0.28	0.453557	-0.3428	0.732	
Q17c	row crops or hay production	145	0.372414	0.485124	50	0.44	0.501427	-0.8422	0.401	
Q17d	water bodies	145	0.455172	0.499713	50	0.36	0.484873	1.17	0.243	
	Which of these best described your current land management?									
Q18a	self-managed	145	0.593103	0.492958	50	0.62	0.490314	-0.3331	0.739	
Q18b	jointly managed with partners	145	0.131035	0.338608	50	0.14	0.35051	-0.16	0.873	
Q18c	managed by hired professionals	145	0.062069	0.242117	50	0	0	1.8097	0.072	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q18d	leased	145	0.255172	0.437469	50	0.16	0.370328	1.377	0.170	
Q18e	non currently managed for any particular purpose	145	0.089655	0.286677	50	0.1	0.303046	-0.2168	0.829	
	On average how often do you visit or check on your marginal land?									
Q19a	weekly	145	0.413793	0.49422	50	0.62	0.490314	-2.5492	0.012	†
Q19b	once each month	144	0.291667	0.456116	49	0.244898	0.434483	0.6273	0.531	
Q19c	once every year	146	0.212329	0.410364	49	0.081633	0.276642	2.075	0.039	‡
Q19d	less than once every year	146	0.082192	0.275602	49	0.061225	0.242226	0.4744	0.636	
Q20	If you were to sell your marginal land, how much do you think you could get per acre?	120	1228.333	861.2755	34	1863.235	1116.902	-3.5413	0.001	†
Q21	Would you be willing to let people pay you a fee to access your land for recreational purposes?	343	0.198251	0.399265	142	0.007042	0.083918	5.6521	0.000	†
Q22	How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses?	343	14.82507	47.70583	142	0	0	3.7009	0.000	†
Q25	If current laws were changed to allow you to charge a fee and deep the liability protection would you allow people to pay you for recreational use of your land?	340	0.279412	0.449372	142	0.014085	0.118257	6.9325	0.000	†
Q26	How much money per acre would you be willing to accept each year to allow someone to lease your land for recreational uses?	329	18.43465	45.51932	140	0	0	4.7889	0.000	†

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q29	How many acres of land would you be willing to use for fee-based recreational activities?	91	312.0659	480.6857	2	55	21.2132	0.7523	0.454	
	Which of the following recreational activities would you NOT allow on you land?									
Q30a	hunting big game	94	0.191489	0.395583	2	0	0	0.681	0.498	
Q30b	hunting small game	94	0.085106	0.280536	2	0	0	0.4268	0.671	
Q30c	hunting migratory bird or waterfowl	94	0.095745	0.295819	2	0	0	0.4554	0.650	
Q30d	hunting dove	94	0.085106	0.280536	2	0	0	0.4268	0.671	
Q30e	fishing	94	0.170213	0.377835	2	0	0	0.6338	0.528	
Q30f	hiking	94	0.180851	0.386959	2	0	0	0.6575	0.512	
Q30g	ATV riding	94	0.531915	0.501656	2	0.5	0.707107	0.0886	0.930	
Q30h	camping	94	0.393617	0.491171	2	0.5	0.707107	-0.3014	0.764	
Q30i	other	94	0.021277	0.145079	2	0	0	0.2063	0.837	
	If you are interested in offering recreational opportunities on your land, which of the following management formats would you prefer?									
Q31a	independently	95	0.578947	0.496347	2	1	0	-1.1935	0.236	
Q31b	cooperatively	95	0.136842	0.345504	2	0	0	0.5573	0.579	
Q31c	outfitter	95	0.284211	0.45343	2	0	0	0.8819	0.380	
Q32	Have you ever worked with any of your adjacent or local landowners in any way?	342	0.295322	0.456856	140	0.257143	0.438628	0.8425	0.400	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q33	Did you find your cooperation with other landowners to be effective?	102	0.960784	0.195066	36	0.972222	0.166667	-0.3136	0.754	
Q34	Have you ever been involved with a cooperative?	343	0.349854	0.477621	139	0.223022	0.417778	2.735	0.007	†
Q35	Did you find your involvement in the cooperative to be beneficial to you?	121	0.892562	0.310957	31	1	0	-1.919	0.057	*
	Have you ever enrolled land in a government conservation program such as the Conservation Reserve Program or Wetland Reserve Program?									
Q36a	yes	339	0.333333	0.472101	139	0.309353	0.463898	0.5069	0.613	
Q36b	I don't know what these are	341	0.070381	0.256164	139	0.086331	0.281868	-0.6007	0.548	
Q37	How many separate tracts of non-residential land do you own?	333	2.882883	4.379729	129	2.139535	1.831769	1.8646	0.063	*
Q38	Is your nearest tract of non-residential land adjacent to your primary residence?	339	0.327434	0.469971	134	0.38806	0.489137	-1.2496	0.212	
Q39	How many miles is your primary residence from your nearest tract of land that is not adjacent to your primary residence?	337	102.2641	284.4388	128	46.11719	150.2868	2.1226	0.034	‡
Q40	What is the total acreage of all tracts of land?	333	485.012	919.8754	132	298.5076	640.9599	2.1326	0.034	‡
Q41	How many years have you been a land owner?	339	27.30383	35.41903	137	27.28467	17.68098	0.006	0.995	
	How is the ownership of your land organized?									
Q42a	corporation	342	0.038012	0.191505	140	0.014286	0.119092	1.3616	0.174	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q42b	limited liability corporation	342	0.049708	0.217659	140	0.014286	0.119092	1.8167	0.070	*
Q42c	joint ownership	342	0.447368	0.497951	140	0.471429	0.500975	-0.4807	0.631	
Q42d	single ownership	342	0.526316	0.500039	140	0.542857	0.499949	-0.3297	0.742	
	How did you acquire the majority of you non residence, non commercial land?									
Q43a	inherited	342	0.491228	0.500656	135	0.385185	0.488452	2.0981	0.036	‡
Q43b	by marriage	342	0.023392	0.151366	135	0.059259	0.236989	-1.9637	0.050	‡
Q43c	by purchasing	342	0.52924	0.499876	135	0.62963	0.484702	-1.9927	0.047	‡
Q43d	other	342	0.002924	0.054074	135	0.014815	0.121261	-1.4801	0.140	
Q44	Do you use any of your land for agricultural production of row crops?	343	0.830904	0.375385	142	0.78169	0.414561	1.2736	0.203	
	Which of the following agricultural crops are historically produced on your land?									
Q45a	cotton	286	0.437063	0.496893	114	0.324561	0.470278	2.075	0.039	‡
Q45b	corn	286	0.304196	0.460872	114	0.263158	0.442292	0.8131	0.417	
Q45c	sorghum	286	0.237762	0.426459	114	0.166667	0.374323	1.5567	0.120	
Q45d	rice	286	0.615385	0.487357	114	0.535088	0.500969	1.4757	0.141	
Q45e	soybeans	286	0.881119	0.324216	114	0.929825	0.25657	-1.4345	0.152	
Q45f	wheat	286	0.625874	0.484745	114	0.640351	0.482016	-0.2701	0.787	
Q45g	other	285	0.066667	0.249883	114	0.061404	0.241129	0.192	0.848	
Q46	Have you ever leased any of your land for agricultural uses?	343	0.690962	0.462772	139	0.611511	0.48917	1.6794	0.094	*

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Do you own land for any of the following reasons?									
Q47a	hay production	343	0.131195	0.338107	140	0.128571	0.335927	0.0775	0.938	
Q47b	leasing to others	343	0.390671	0.488614	141	0.29078	0.455741	2.0833	0.038	‡
Q47c	personal recreation	343	0.241983	0.428909	141	0.184397	0.38919	1.3779	0.169	
Q47d	raising livestock	343	0.122449	0.328283	141	0.141844	0.350134	-0.5791	0.563	
Q47e	timber production	343	0.206997	0.405745	141	0.184397	0.38919	0.5634	0.573	
Q47f	provide a place for wildlife	343	0.306122	0.461555	141	0.255319	0.437595	1.1168	0.265	
Q47g	provide recreational access for others	343	0.049563	0.217357	141	0.049645	0.217986	-0.0038	0.997	
Q47h	other	343	0.102041	0.303144	141	0.106383	0.309426	-0.1423	0.887	
Q48	Your gender (female = 1, male=0)	337	0.284867	0.452022	137	0.29927	0.459619	-0.313	0.755	
Q49	Your age in years	329	62.1155	13.79351	135	66.14074	12.78068	-2.9155	0.004	†
	Which of the following best describes your ethnic background?									
Q50a	Caucasian	334	0.937126	0.243101	134	0.940299	0.237822	-0.1284	0.898	
Q50b	African American	334	0.026946	0.162169	134	0.059702	0.237822	-1.7138	0.087	*
Q50c	Asian	334	0.002994	0.054718	134	0	0	0.633	0.527	
Q50d	American Indian	334	0.008982	0.094489	134	0	0	1.0997	0.272	
Q50e	Hispanic	334	0	0	134	0	0		.	
Q50f	other	334	0	0	134	0	0		.	
	Choose one category that most closely describes your primary occupation.									
Q51a	farming	336	0.199405	0.400149	136	0.264706	0.442807	-1.5563	0.120	
Q51b	business	336	0.119048	0.324328	136	0.110294	0.314414	0.2679	0.789	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
Q51c	engineering	336	0.011905	0.108619	136	0	0	1.2773	0.202	
Q51d	government	336	0.029762	0.170183	136	0.022059	0.147418	0.4622	0.644	
Q51e	housewife	336	0.038691	0.193144	136	0.051471	0.221772	-0.6232	0.534	
Q51f	retired	336	0.363095	0.481609	136	0.389706	0.489486	-0.5411	0.589	
Q51g	unemployed	336	0	0	136	0	0		.	
Q51h	education	336	0.047619	0.213277	136	0.044118	0.206116	0.1631	0.871	
Q51i	healthcare	336	0.038691	0.193144	136	0	0	2.3346	0.020	‡
Q51j	student	336	0	0	136	0	0		.	
Q51k	self-employed	336	0.074405	0.26282	136	0.080882	0.273662	-0.2396	0.811	
Q51l	other	336	0.059524	0.236955	136	0.029412	0.169582	1.3484	0.178	
Q52	How many individuals live in your household?	336	2.104167	0.916441	134	2.022388	1.065286	0.8328	0.405	
	Indicate your highest level of education attained.									
Q53a	less than high school	336	0.0625	0.242423	135	0.140741	0.349049	-2.7709	0.006	†
Q53b	high school graduate	336	0.226191	0.418988	135	0.340741	0.475724	-2.5786	0.010	†
Q53c	some college, no degree	336	0.241071	0.428372	135	0.274074	0.447708	-0.7463	0.456	
Q53d	associate degree	336	0.017857	0.13263	135	0.014815	0.121261	0.2306	0.818	
Q53e	bachelor degree	336	0.279762	0.449552	135	0.148148	0.35657	3.0386	0.003	†
Q53f	graduate or professional degree	336	0.163691	0.370546	135	0.074074	0.262867	2.5622	0.011	†

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

Table J.3. (continued)

		first mailings			second mailings					
Q #	Variables	obs	mean	Std. Dev.	obs	mean	Std. Dev.	t-value	p-value	
	Which best describes your annual household income?									
Q54a	less than $10K	290	0.006897	0.082902	105	0.028571	0.167398	-1.7042	0.089	*
Q54b	$10K to $14.9K	290	0.003448	0.058722	105	0.019048	0.137348	-1.5786	0.115	
Q54c	$15K to $24.9K	290	0.086207	0.281155	105	0.180952	0.386825	-2.661	0.008	†
Q54d	$25K to $34.9K	290	0.086207	0.281155	105	0.12381	0.330944	-1.1186	0.264	
Q54e	$35K to $49.9K	290	0.103448	0.30507	105	0.133333	0.341565	-0.8326	0.406	
Q54f	$50K to $74.9K	290	0.213793	0.410691	105	0.219048	0.415585	-0.112	0.911	
Q54g	$75K to $99.9K	290	0.12069	0.326329	105	0.057143	0.233229	1.8325	0.068	*
Q54h	$100K to $149.9K	290	0.231035	0.422223	105	0.142857	0.351605	1.9128	0.057	*
Q54i	$150K to $199.9K	290	0.034483	0.182781	105	0.019048	0.137348	0.7882	0.431	
Q54j	$200K or more	290	0.089655	0.286181	105	0.066667	0.25064	0.7281	0.467	

† indicates significance at the 1% level, ‡ indicates significance at the 5% level, * indicates significance at the 10% level

VITA

James Emery Henderson II was born in Winnfield, Louisiana. He graduated from Louisiana Tech University, Ruston, Louisiana, in May 2001 where he received the title Bachelor of Science in Forestry. In August 2003 he enrolled in the graduate school at Mississippi State University where he recived the titles of Master of Business Administration and Master of Science in May 2003 and in May 2004, respectively. In August 2003, he entered the doctoral program in the Department of Agricultural Economics and Agribusiness at Louisiana State University, and currently he is a candidate for the degree of Doctor of Philosophy.