

Influence of Institutional Change on Landowner Willingness to Allow Fee-Based Recreation in the Louisiana Delta

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Introduction and Background

- Limited public land available for recreation
- Recognized solution to lack of public land is increasing access to private land for public outdoor recreation
- Potential may exist for private landowners to develop fee-based recreational access
- Louisiana Delta
 - agricultural region in northeast corner of state

Marginal Agricultural Land

- Land that will produce barely enough products to pay the cost of production
- Removal from agricultural applications encouraged by Federal Government
- Recreation on Private Land for Public Use
 - Provide income to landowners
 - Restore marginal lands as a contributor to the local economy
 - Draw recreationists from outside the local economy

Objectives

- Understand landowners' attitudes and perceptions about recreation
- Liability concerns and other possible disincentives
- How incentives and disincentives collectively influence landowner access decision
- How institutional change might stimulate public recreational access to private land

Recreational Use Statute

- Protects landowners from liability claims resulting from accidental injury associated with recreational use of land
 - Only if access is granted free of charge
 - Some states have amended RUS to allow charging of fee to access land
- Louisiana's Recreational Use Statute
 - landowners protected from liability if access is free
 - no liability protection if fee is charged for access

Recreational Use Statute and Institutional Change

- Interesting to see how landowner access policies would change by:
 - expanding liability protection
 - allow for charging of a fee intended to generate a return
- Investigating the effect of such an institutional change:
 - provide insight into landowner behavior
 - possible effects on supply of recreational land

Institutional Issues and Liability

- Potential law suit, whether real or perceived, creates a disincentive for fee-based recreation
- Could be reduced through institutional change
- Amend the recreational use statute to allow the charging of an access fee
- How do liability and other disincentives collectively influence landowners' access decisions?
- Effects of institutional change on landowner behavior?
- Observed by comparing the pre and post institutional change responses to access decision question (yes/no)

Survey Instrument

- Tailored design method (Dillman, 2000)
- Landowner access policies, and attitudes and perceptions for fee-based recreation
- Current level of recreational leasing
- Reasons for not allowing recreational access
- Liability concerns, RUS knowledge
- Possible changes in recreational use statute and impact on access policies

RESULTS

Survey Response Rates

	State
	Louisiana
Sample Size for desired level of precision	369
Surveys mailed	2,500
First mailing surveys returned	488
Second mailing surveys returned	184
Total surveys returned	672
First mailing response rate	19.5%
Second mailing response rate	7.4%
Total response rate (%)	26.9%

Recreational Use and Land Access Practices

- More than half of respondents have allowed use of their land for recreational purposes
- Only 10% of landowners allowed recreational access to individuals they do not know personally
- Nearly 12% of respondents had accepted money to allow recreational use of their land

Risk and Liability Issues

- Vast majority of respondents are very concerned about the liability issues
- May explain in part why so few landowners have allowed recreational access to individuals they do not know personally
- 36% of respondents either somewhat or strongly agreed that if their liability concerns were eased they would be more inclined to allow recreational access
 - Institutional change may increase recreational access to private lands
- Over 40% either somewhat or strongly disagreed with allowing recreational access if their liability concerns were eased
 - Liability concern may not be a major factor in the decision not to allow recreational access for some landowners

Risk and Liability Issues

- Vast majority of respondents either do not know or are unsure about liability and legal issues:
 - written agreements between landowners and land entrants
 - posting of “no trespassing” signs
 - state recreational use statutes
 - availability liability insurance for fee-based recreation
- Indicate a clear need for landowner education

Risk and Liability Issues

- Risk preference may influence the decision to allow fee-based recreation
- Allowing recreational use of land introduces the risk associated with liability

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

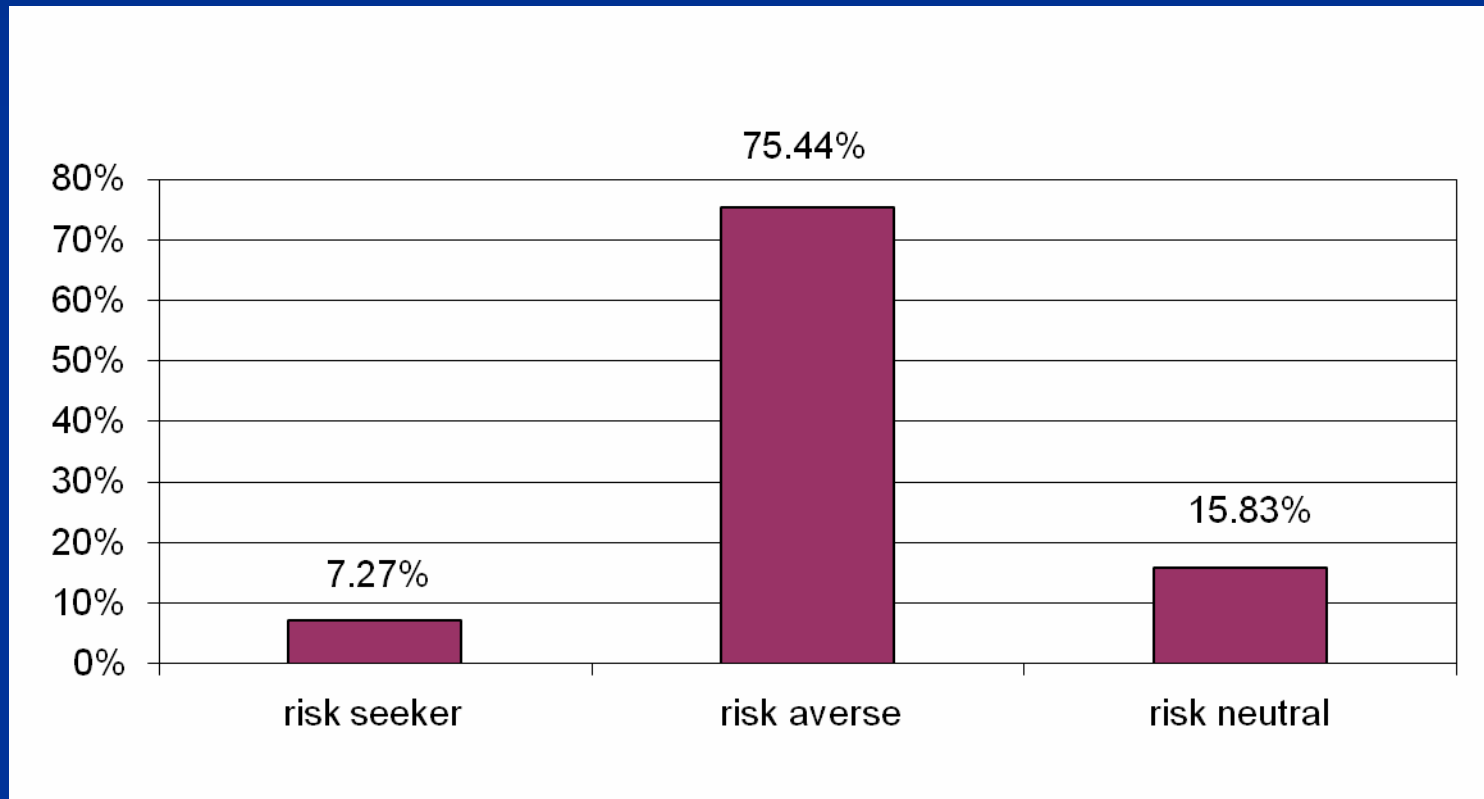
I tend to take on substantial levels of risk in my financial decisions.

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

I neither seek nor avoid risk in my financial decisions.

Risk and Liability Issues

Compared to other landowners you know, how would you characterized yourself? (LA n=619)

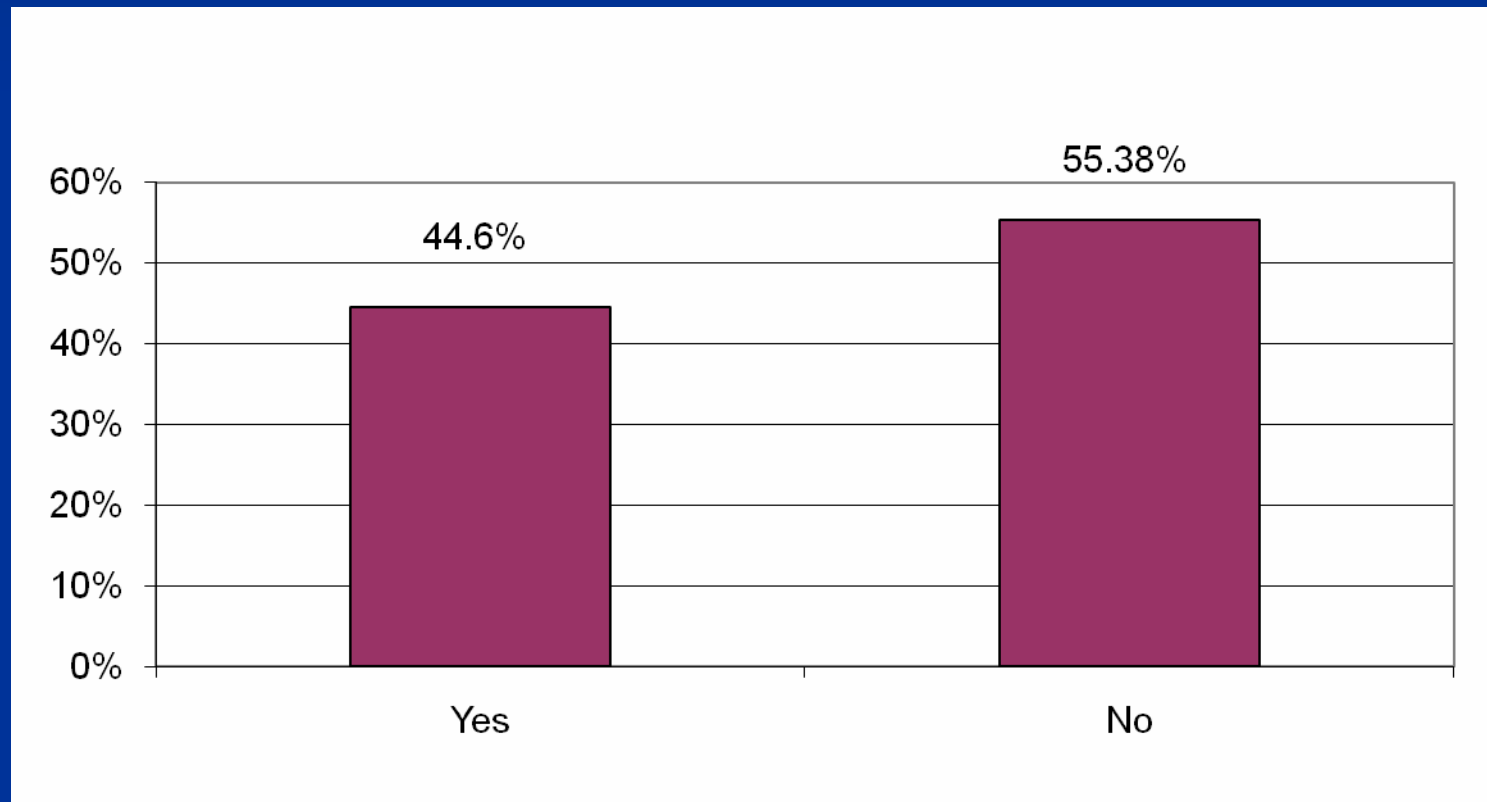


Risk and Liability Issues

- Over 70% of respondents indicate that they are risk averse implying:
 - Many landowners may choose not to allow fee-based recreation because of the liability risk
 - Institutional change reducing landowner liability may increase landowner willingness to allow fee-based recreation

Marginal Lands

Would you consider any of your land to be “marginal” for agricultural purposes? (LA n=632)



Marginal Lands

- About 45% of respondents indicated ownership of land marginal for agricultural purposes
- About 80% described their marginal land as forest or wooded areas
 - Ideal for certain types of wildlife associated fee-based recreation

Fee-Based Recreational Use of Land

- Willing to allow fee-based recreation on their land
 - 14.1% indicating yes
- Institutional change
 - Recreational use statute that would allow landowners to charge a fee for recreational access and keep the liability protection afforded to free access granting landowners
- Willing to allow fee-based recreation on their land post-institutional change
 - 24% indicating yes
- 70% increase for LA respondents

Fee-Based Recreational Use of Land

- Institutional change can increase the potential amount of private land that could be used for fee-based recreation
- Average amount of land that landowners willing to use for fee-based recreation
 - 256.6 acres
- Potential exists to make available a sizable amount land for public fee-based recreation

Current Land Uses

- 60% of respondents indicated participation in government conservation programs
- Such landowners may have a greater willingness to adopt non-agricultural uses of their land

Current Land Uses

- Only 57.4% of respondents indicate use of land for agricultural production of row crops
- May suggest that LA Delta landowners might be willing to consider alternative land uses since nearly half are not using their land for agriculture

Ownership of Land

- Single ownership more common followed by joint ownership and LLC
- 64% single owners
- Alternative land uses may not be as attractive to joint owners
 - may lack autonomy in the decision process
 - cost of having to deal with their co-owners: bargaining and negotiating

Probit Model

Decision to Allow Access

- Binary Probit ($Y_1=1, 0$ otherwise)
 - Decision to allow recreation modeled as a binary variable (yes/no)
 - Access decision following a hypothetical institutional change
 - Pre-institutional change (current law) model
 - Post-institutional change (modified law) model
 - 47 variables

Effect of Easing Liability Concern

- Represented by the two variables that indicate if landowners
 - disagree (*CONCERNEASED2*)
 - agree (*CONCERNEASED3*)
 - with allowing recreational use of their land if their liability concerns were eased
- Very significant predictor for the probability of allowing fee-based recreation (pre- or post-institutional change)
 - disagreed the effect was negative
 - agreed the effect was positive

Negative Effect of *CONCERNEASED2*

- (i.e., disagree with allowing recreational use of their land if their liability concerns were eased)
- Indicates reason many landowners chose not to allow fee-based recreational access is not related to liability concern but rather because of other exclusive uses
 - purely agricultural application
 - loss of exclusive use of their land

Positive Effect of *CONCERNEASED3*

- (i.e., agree with allowing recreational use of their land if their liability concerns were eased)
- Expect magnitude of positive effect to be greater in the post institutional change models, since the liability risk would be lower
- Pre- and post-institutional change models indicate an increase in probability of allowing fee-based recreation
 - increase from 6.9% to 11.9%
- Reflects the responsiveness of landowners to an institutional change
- Respondents would be much more likely to allow fee-based recreation following an institutional change that reduces their liability concerns

Risk Preference

- The element of risk is inherent in allowing fee-based recreation
 - liability / potential for a lawsuit
 - potentially powerful disincentive to a landowner depending on how a landowner perceives risk
- The influence of risk preference was represented by the two dummy variables
 - *RISKPREFERENCE1*, indicating risk seeking behavior
 - *RISKPREFERENCE2*, indicating risk aversion
- Two variables significant only in the pre-institutional change probit models
 - risk is far greater under the current institutional arrangements
 - risk is substantially lessened post-institutional change

Risk Preference Variables

- Significant and have the expected sign consistent with theory
 - risk seeker would be more (+) likely to allow fee-based recreation under the current institutional environment
 - risk averse landowners less (-) likely to allow fee-based recreation under the current institutional environment
- Probability of allowing fee-based recreation under the current institutional environment
 - 9.8% greater for risk seekers
 - 6.6% lower for risk averse landowners

Marginal Landowners

- Willing to use their land for fee-based recreation?
- *MARGINALLAND* significant and positive in sign
- Appear to be very responsive to institutional change
 - increase in probability of 6.5% for pre-institutional change
 - 11.4% post-institutional change

Land in Conservation Programs

- May have positive effect on the probability of allowing fee based recreation
- Such landowners have a demonstrated willingness to use their land for non-traditional agricultural uses
- Significant and positive
 - 6% higher probability pre-institutional change
 - 9.6% higher probability post-institutional change

Organization of Land Ownership

- Influence the decision to allow fee-based recreation
- Joint ownership as compared with single ownership appears to have a negative effect under both the pre- and post-institutional change environments
- Limited liability (LLC) ownership has a positive effect as compared with single ownership
 - personal wealth of the individual is better protected from liability
 - not significant in the post-institutional change model where liability issues and associated risk are greatly reduced

CONCLUSIONS

Fee-Based Recreation and Current Institutional Environment

- Carries risk of liability
- Risk preference was a significant predictor of the decision to allow fee-based recreation
 - risk averse landowners were more unlikely
 - risk seeking landowners were much more likely
- Following an institutional change
 - risk preference no longer significant predictor of the willingness to allow fee-based recreation
 - suggesting diminished risk in allowing fee-based recreation

Marginal Land

- Owned by over 40% of respondents
- Average ownership slightly more than 100 acres
- Owners of marginal land were particularly responsive to an institutional change providing greater liability protection

Amending the LA Recreational Use Statute

- About 14% of landowners indicated that they would be willing to allow fee-based recreation under the current institutional environment
- Can potentially increase the number of private landowners willing to use their land for fee-based recreation
 - nearly 24% of Louisiana Delta respondents (70% increase)

Questions?

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

ACCESSOUR	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	0.37511	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†	0.28453	-0.081479	0.03088	-2.39	0.017
CONCERNEASED3	0.486406†	0.226416	0.06878	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	-0.04589	0.028806	-1.69	0.091
RISKREFERENCE1	0.3015	0.333392	0.047304	0.06201	0.9	0.366
RISKREFERENCE2	-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	-0.00241	0.000665	-0.000031	0.000086	-0.36	0.717
LANDOWNERCOOPER	0.226347	0.19882	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	0.00002	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	0.18981	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	0.08961	0.29	0.773
ACQUIRE3	0.19207	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	0.02663	-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
OCCUPATION1	0.10025	0.289564	0.013777	0.041891	0.35	0.729
OCCUPATION2	0.269369	0.288588	0.040879	0.050373	0.93	0.351
OCCUPATION3	0.466254*	0.264091	0.079097	0.056177	1.77	0.077
EDUCATION1	0.175392	0.205421	0.023843	0.02914	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	0.78772			-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

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
ACCESSOUR	3.24197†	0.440187	0.868092	0.029223	7.36	0
PERSONALUSE	-0.171585	0.212467	-0.052391	0.065481	-0.81	0.419
FRIENDSFAMILY	0.113663	0.214483	0.034035	0.063682	0.53	0.596
LEASEDREC	0.063558	0.27684	0.019506	0.086443	0.23	0.818
LIABILITYCONCERN2	0.072253	0.416813	0.022254	0.131015	0.17	0.862
LIABILITYCONCERN3	0.215002	0.322644	0.061538	0.087324	0.67	0.505
WRITTENAGREE2	-0.079261	0.23154	-0.023553	0.067709	-0.34	0.732
WRITTENAGREE3	-0.074148	0.197148	-0.022164	0.058381	-0.38	0.707
CONCERNEASED2	-0.62856†	0.23617	-0.179312	0.062294	-2.66	0.008
CONCERNEASED3	0.38330*	0.214742	0.118667	0.068202	1.78	0.074
NOTRESSPASS	0.099882	0.187082	0.030217	0.056817	0.53	0.593
RUSPROTECTS	-0.204836	0.198734	-0.063136	0.062643	-1.03	0.303
INSURACEKNOW	-0.142831	0.190677	-0.043518	0.058645	-0.75	0.454
RISKREFERENCE1	-0.106906	0.410501	-0.031135	0.115163	-0.26	0.795
RISKREFERENCE2	-0.311508	0.236488	-0.09927	0.078865	-1.32	0.188
MARGINALLAND	0.37550†	0.193584	0.11433	0.059255	1.94	0.052
MARGINALACRES	-0.001052	0.000956	-0.000317	0.000289	-1.1	0.271
LANDOWNERCOOPER	-0.123564	0.206976	-0.036441	0.059584	-0.6	0.551
COOPERATIVE	0.052979	0.256622	0.016207	0.079605	0.21	0.836
CONSERVATION	0.280984	0.181879	0.085268	0.055544	1.54	0.122
TRACTS	-0.006128	0.049607	-0.001849	0.014966	-0.12	0.902
ADJACENT	-0.062809	0.176587	-0.018887	0.052923	-0.36	0.722
DISTANCE	-0.000473	0.000454	-0.000143	0.000136	-1.04	0.297
TOTALACREAGE	0.00031*	0.00019	0.000093	0.000057	1.62	0.104
YEARSOWNERSHIP	-0.001733	0.004221	-0.000523	0.001273	-0.41	0.681
OWNERSHIP1	-2.073588	1.599861	-0.231901	0.032751	-1.3	0.195
OWNERSHIP2	-0.50913	0.504167	-0.125114	0.096016	-1.01	0.313
OWNERSHIP3	-0.303876	0.191556	-0.08822	0.053316	-1.59	0.113
ACQUIRE1	0.187048	0.332507	0.056712	0.101092	0.56	0.574
ACQUIRE2	-0.453394	0.635552	-0.113751	0.126814	-0.71	0.476
ACQUIRE3	0.194002	0.338737	0.057949	0.099993	0.57	0.567
ROWCROPS	0.0743	0.279447	0.022308	0.083531	0.27	0.79
COTTON	-0.032246	0.266303	-0.00972	0.080205	-0.12	0.904
LEASEDFORAG	-0.127525	0.198968	-0.039076	0.061865	-0.64	0.522
HAYLAND	-0.43477*	0.265936	-0.119024	0.065237	-1.63	0.102
LIVESTOCKLAND	0.369618	0.26446	0.119484	0.090432	1.4	0.162
GENDER	0.175312	0.190302	0.053994	0.05958	0.92	0.357
AGE	0.01464*	0.007739	0.004414	0.002323	1.89	0.059
ETHNIC	0.84554*	0.512817	0.179991	0.067466	1.65	0.099
OCCUPATION1	0.205958	0.264847	0.065457	0.087957	0.78	0.437
OCCUPATION2	-0.049416	0.297296	-0.014692	0.08708	-0.17	0.868
OCCUPATION3	0.114996	0.298603	0.035836	0.09599	0.39	0.7
EDUCATION1	-0.162749	0.197495	-0.048113	0.057225	-0.82	0.41
EDUCATION3	-0.179449	0.243937	-0.051702	0.067054	-0.74	0.462
INCOME1	-0.266425	0.296012	-0.073958	0.074683	-0.9	0.368
INCOME3	0.046025	0.202344	0.013964	0.061708	0.23	0.82
CONSTANT	-2.68543†	0.920132			-2.92	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