

ATTITUDES TOWARD LAND USE CONTROLS
AMONG OHIO FARMERS: A STATE SURVEY¹

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ABSTRACT

The two purposes of this study are to assess the attitudes of Ohio farmers toward land use controls and to investigate the correlates of those attitudes. Data from a statewide sample of farmers were collected in the summer of 1979 via mailed questionnaires. These data were analyzed to examine the relationships between attitudes toward land use controls, socio-economic characteristics of the farmers, socio-political attitudes, and an ecological variable which measured proximity to urban areas. The findings revealed a slightly unfavorable attitude toward land use controls and demonstrated that two variables were significantly correlated with attitudes toward land use controls. Regression analysis revealed that the independent variables selected for study explained only seven percent of the variance in the land use control index scores.

INTRODUCTION

Many issues associated with land use and land use controls generate conflicts such as disputes over the appropriate level of government jurisdiction (federal, state, local) and the type of land use measures to be implemented (zoning, subdivision regulations, building codes, eminent domain, and others). There are also numerous conflicting interests involved in the decision-making process which frequently have opposing perspectives. Examples of these conflicting interests are environmental-preservation interests, energy and community development interests, and industrial development interests.

In addition to these special interests, public concern about the preservation of agricultural land in the United States has emerged in recent years, due to real or perceived threats to future food-producing capacity. Agricultural commodity producers are subject to a host of economic pressures which encourage the conversion of agricultural land to alternative uses, or consolidation of land holdings (Martinson and Campbell, 1980). Farmers are also compelled by competition to use chemicals, pesticides, irrigation techniques and other practices to increase output which are not conducive to long-term soil and water conservation practices (Pampel and Van Es, 1977). None of these situations encourage farmers to support land use controls.

The conversion of farmlands to alternative uses was the central interest of the National Agricultural Lands Study (NALS) which was a study co-chaired by the Secretary of Agriculture and the Chairperson of the President's Council on Environmental Quality.² In addition to a

series of technical studies focused on soil degradation, the extent of agricultural land conversion, and competition between farmland and energy uses, NALS conducted a series of 19 public workshops throughout the country to address numerous issues. The workshop reports revealed an enormous variety of attitudes regarding the need for public land use controls, as well as the perceived causes of the conversion of agricultural lands to other uses.³

Considerable ambivalence was demonstrated in the recorded comments made about land use controls during the workshop sessions. There were complaints of inadequate and conflicting land use regulations resulting in contradictory actions by federal, state and local governments as well as concern expressed about the absorption of rural counties due to urban sprawl. There were also claims of "too much federal control," and expressed concern with land owners' personal property rights in the use and disposition of land.

The concerns expressed by workshop participants for loss of agricultural land were primarily explained in terms of low net farm income. It was argued that farmers sell their land because they do not have adequate incomes. The problem of low income for many farmers was attributed to discriminatory tax structures, high inheritance taxes, competition from large corporations whose interests are speculative rather than production-oriented, foreign ownership, competition for commercial credit, inflated land prices, public mandates favoring energy development over agriculture, prohibition of certain agricultural chemicals and pesticides, the conversion of grazing land to wilderness areas,

and above all, low farm commodity prices.

Frequently repeated solutions to the problem of agricultural land conversion was government action to improve farm prices, to institute tax reform, to support technical studies, and to finance research and education. Land use controls were not perceived to be very useful strategies for protecting agricultural land. In addition to this view which opposed government action to regulate land use there were other suggestions made such as the establishment of land use policies at the federal level but requiring state and local governments to codify the explicit laws. It has also been suggested that land use controls be executed through tax breaks to farmers coupled with controlled land values. The NALS Study and others (Bosselman, 1971; Clawson, 1975; Brown and and Coke, 1977; Geisler and Martinson, 1976; Wengert and Graham, 1974) strongly suggest that land use control as a concept connotes different meanings and potentials for people in different locales, depending upon existing land use patterns, land use regulatory measures and the observed effects of the controls. Given divergent circumstances, some farmers perceive public land use regulation as another restriction among many others which contribute to higher production costs even though they perceive a need for regulations to protect farm land.

The available literature on land use controls describes situations of potential costs and benefits of land use controls to specific groups and to society (Napier and Mast, 1981). Existing research suggests that perceived benefits and costs are important factors in determining how

people will react to land use control measures. Consistent with this perspective, it is argued in this paper that farmers' attitudes toward public land use controls are in some part determined by the benefits and/or costs they expect to realize from such controls. A "vested interest model" is developed from components of social exchange theory and put to empirical test using data collected in a statewide survey of Ohio farmers.

A VESTED INTERESTS THEORETICAL PERSPECTIVE

Perceived costs and benefits have been shown to be important dimensions in the formation of attitudes toward land use controls (Napier and Mast, 1981). The primary theoretical model in sociology which conceptualizes costs and benefits is social exchange theory (Mulkay, 1971; Turner, 1978; Blau, 1964; Ekeh, 1974; Emerson, 1964; Homans, 1974) from which selected components were chosen to construct a "vested interest" model. Social exchange basically assumes that human beings seek rewards and avoid punishment which means that they are profit motivated. This perspective maintains that people will be more inclined to engage in activities which will generate more benefits than costs. It is recognized in this perspective that individuals do not always seek to maximize profits (benefits minus costs), but they generally elect to engage in actions which will result in receiving some type of benefit or reduce their losses when all options will produce loss.

Within the context of the present study, it is hypothesized that respondents who perceive they will benefit in some manner from land use controls will tend to exhibit favorable attitudes toward such controls.

Individuals who do not perceive they will benefit from such controls will tend to hold negative attitudes toward land use controls.

The independent variables selected for investigation include attitudes toward farming as a way of life (agrarianism), age, education, net farm income, part-time farming status (the number of days the husband worked off the farm, and the number of days the spouse worked off the farm), total acres farmed, total acres owned, attitude toward government support of family farms, attitude toward government farm programs as the source of problems in agriculture, and proximity to urban/industrial land use competition. The rationale for each factor is provided with a brief statement of research expectations.

Attitudes toward farming as a way of life comprise a set of values which are linked with Jeffersonian agrarianism which has been simply termed agrarianism by recent researchers (Flinn and Johnson, 1974). Agrarianism evokes bucolic images of the situation in the United States at a point in its history which was characterized by an equality among independent family farms operating on a small-scale. Small-scale agriculture managed by independent farmers is perceived in the agrarianistic orientation to be essential for a democratic society (Buttel and Flinn, 1975, 1976). People who work and live on the land are perceived to be caretakers of the natural resources necessary for food production. Not only is the land perceived as a superior resource relative to other wealth-producing resources but farming is perceived to be morally the best way to live. Farming is viewed as a means of providing mental and physical discipline upon which democracy flourishes. Independence, hard

work, and thrift are part of this value constellation. Thus, government actions to protect the family farm should be perceived to be desirable (Buttel, 1979; Buttel, et al, 1979). Land use controls can serve to protect land for agricultural purposes, therefore, it was hypothesized that farmers who tend to adhere to agrarian values would have more positive attitudes toward land use controls because such controls should be viewed as instruments to retain land in agriculture which would provide a means of maintaining highly valued agricultural life styles.

Age was selected to represent differential socialization. Older people who were socialized during an era when there were fewer norms associated with land should be more resistant to imposition of new norms than younger people. Older people should perceive land use controls as restricting their behavior and thus constituting a cost. Therefore, it was hypothesized that older people would be more resistant to land use controls.

Education was chosen to represent a "world view perspective." It was reasoned that more highly educated people would be more aware of the long-range impacts of land use controls and recognize the potential adverse consequences of not controlling use of land. Less obvious benefits of land use controls should be identified by higher educated people which would increase the probability that higher educated people would be able to identify more of the benefits. It was hypothesized that more highly educated people would be more favorable toward land use controls.

Total acres cultivated was chosen to represent the size of farm operations. The larger the farm operation, the greater the likelihood

that profitable farm practices will be disrupted with the imposition of land use controls since outside interference could disrupt highly integrated farming systems. It was hypothesized that individuals who farm large numbers of acres would be less favorable toward land use controls.

Total acres owned was selected to represent the "vested interest" of farm ownership and perceived rights associated with land ownership. Land use controls place constraints upon the landowners' choices in the use and disposition of property (Mast, 1979). The potential losses of external intervention into decision-making about land use is greater for landowners who own large acreage than small land owners or renters. It was hypothesized that landowners with larger acreage owned would be less favorable toward land use controls than farmers with fewer acres owned.

Net farm income was chosen to represent the potential level of foregone income in the event land use controls should constrain income-producing capacity. It was hypothesized that farmers with very profitable farming operations would be less favorable toward land use controls than individuals with less profitable operations because they have more to lose (costs are high relative to benefits).

Attitude toward government support of family farms was chosen because farmers who support such intervention should also view government intervention as protecting public interests (Buttel, et al, 1979). It was hypothesized that proponents of government action to support the family farm would be more supportive of land use controls.

Attitudes toward government intervention as the source of problems

in agriculture was chosen because farmers who hold this view should be proponents of "free enterprise," and perceive government action as an encumbrance to profit-making activities. It was hypothesized that farmers who perceive government action in the agricultural economy as the main cause of producers' income insecurity would be less favorable toward land use controls.

Proximity to urban/industrial development was selected to assess the impact of competition from nonagricultural sources. As competition for land increases, interest and support for land use controls should also increase. Subsequently, it was hypothesized that farmers who are located closer to urban/industrial areas would be more favorable toward land use controls.

Husband's days worked off the farm was selected as an indicator of part-time farming status. Small-scale and part-time farm operators have less to forfeit than large-scale or full-time operators in the event land use controls are implemented. In fact, part-time operators may profit considerably as their land values increase through sale to nonagricultural enterprises and from unbridled growth. It was hypothesized that farmers who worked more days in nonfarm activities would be less favorable toward land use controls than full-time farmers.

Number of days spouse worked off the farm was selected as an additional indicator of the level of nonfarm income earned by members of the respondent's household. The rationale for selecting this variable is similar to the reasoning for number of days worked off the farm by the husband. If the farm wife works a large number of days off the farm,

it is assumed that farm income alone is not adequate to sustain the family unit. Consequently, people in such a household would tend to perceive fewer benefits associated with land use controls than full-time farmers. It was hypothesized that as the number of nonfarm work for the spouse increased there would be a corresponding decrease in favorable attitudes toward land use controls.

METHODOLOGY

Sample

Data from a mail survey of Ohio farmers conducted in the spring and summer of 1979 were used to test the merits of the hypotheses noted above. Questions were developed to assess attitudes towards land use controls, pollution, farm life, perceived problems in the agricultural sector and their solutions, and agricultural production practices.⁴ A systematic random sample of 2,001 persons was drawn from the subscriber list of the Ohio Farmer which contained names and addresses of 74,000 farmers designated as owner-operators in Ohio. Subscribers associated with agricultural industries and individuals who did not own or operate a farm were excluded from the sampling frame. A total of 1,092 questionnaires were returned but only 623 were usable. This constitutes a response rate of 40.7 percent.⁵ Socio-economic characteristics of the sample and land tenure status are presented in Table 1.

(Table 1 Here)

Measurement of Variables

Age was operationalized in terms of years of age at last birthdate.

Education was measured in terms of the number of years of formal education completed by the respondent.

Land tenure status was measured by two variables: number of acres being farmed and number of acres owned.

Estimated net farm income was measured with a scale of 15 income categories of \$2,500 which ranged from \$30,000 and above to no income. Two additional categories were added and termed "break even" and "costs exceed income." The categories were weighted 0 through 16 with 0 given to costs exceed income and 16 to the highest income category.

Part-time farming status was measured by two variables. The variables were measured in terms of number of days the husband worked off the farm in the preceding year and the number of days the spouse worked off the farm in the preceding year.

The two attitude scales termed the "attitude toward land use controls scale" and the "attitude toward farming as a way of life scale" (agrarianism) were measured with Likert-type (Edwards, 1957) attitude scales. The possible responses were weighted 1 through 5 and evaluated with Kuder-Richardson (1937) reliability coefficients which are presented in Table 2.

(Table 2 Here)

The items composing the attitudes toward land use control scale were developed from existing research which used similar measures (Napier and Mast, 1981; Napier, *et al.*, 1978; Bosselman, 1971; Reilly, 1973; Rose, 1975; Levin, *et al.*, 1974). The attitude toward farming as a way of life scale was basically adopted from the work of Buttel and Flinn (1975), Flinn and Johnson (1974), and Morrison and Steeves (1967). The Kuder-Richardson item analyses presented in Table 2 demonstrate that both scales were highly reliable and could legitimately be combined into composite indexes. The individual item weights for each scale were summed and these values composed the two attitude measures used for statistical analyses. High scores on the land use scale indicated a negative attitude toward land use controls. High scores on the agrarianism scale indicated a positive commitment to farming as a way of life.

Two variables were used to measure the respondents' perceptions of governmental roles in the farm sector. The first variable evaluated farmers' attitudes toward the role government intervention played in "causing the farm problems." The possible responses were: none, somewhat, most, and all. The responses were weighted from 1 to 4 with

"none" receiving a score of 1 and "all" a score of 4. The second variable measured attitudes toward government action to preserve the family farm with possible responses of: harmful, neither harmful nor helpful, somewhat helpful, and very helpful. The responses were weighted 1 to 4 with "harmful" responses given a value of 1 and "very helpful" responses given a value of 4. The weightings for each variable were used in subsequent statistical analyses. The attitude items, frequency counts and central tendency data are presented in Table 3.

(Table 3 Here)

The ecological variable which evaluated proximity to urban/industrial areas was measured by computing density of population for each Ohio county.⁶ Total population in each county was divided by size of the county in square miles. The density figure for the county of residence was matched with each respondent and used in the statistical analyses.

Statistical Analyses

Multiple correlation and step-wise regression analysis were used to examine the data. Linear relationships among the variables were assumed. It was also assumed that the attitude measures produced metric measure (Abelson and Tukey, 1970; Labovitz, 1970; Kim, 1975).

FINDINGS

The descriptive data presented in Tables 2 and 3 reveal that the respondents tended to be "somewhat" opposed to land use controls, committed to agrarian values, slightly supportive of the position that

government farm programs have contributed to problems in agriculture; and were basically supportive of government programs to aid the family farm.

Multiple correlation analysis was used to test the "vested interest" perspective discussed above and the findings are presented in Table 4.

(Table 4 Here)

Only two of the eleven independent variables were shown to be significantly correlated with the attitude toward land use control index scores at the .05 level. The two significant variables are education and agrarianism. The agrarianism findings are contrary to the research expectations but the education findings are consistent with research expectations (high scores on the attitude toward land use control scale indicate negative attitudes). As agrarianism increased attitudes toward land use controls became more negative. More highly educated people tended to be slightly less negative than respondents with lower educational achievement levels. While the two correlations are significant at the .05 level, it should be noted that the correlations are very low. The remaining variables were not significantly correlated with the dependent variable at the .05 level.

Step-wise multiple regression analyses were conducted on the data set to determine the relative explanatory power of the independent variables when all factors are considered simultaneously. The regression findings are presented in Table 5.

(Table 5 Here)

Both of the previously discussed variables were shown to be significant in reducing the unexplained variance in the dependent variable. Agrarianism entered first followed by education. The remaining variables were insignificant in reducing the unexplained variance. The adjusted coefficient of determination (\bar{R}^2) was shown to be .07 which is quite low.

The "best model" is presented in standardized regression coefficient form:

$$y : 0.249X_1 - 0.082X_2 + 0.964e$$

where

y = attitude toward land use control index scores

X₁ = agrarianism index scores

X₂ = education

e = residual error

SUMMARY AND CONCLUSION

A study was conducted using data from a statewide sample of farmers in Ohio to assess the correlates of attitudes toward land use controls. A "vested interest model" was developed and put to test. The findings revealed that the study respondents were slightly negative toward land use controls. Two variables were shown to be significantly correlated with the dependent variable at the .05 level but the magnitude of the correlations was miniscule. The authors conclude that the "vested interest" model as it was developed for this study was not appropriate and that factors other than those included in the analysis were operating to affect attitudes toward land use controls. More comprehen-

sive models must be developed to understand attitudes toward land use controls among general populations such as the study group.

While the theoretical perspective employed in this study was demonstrated to have little utility in this instance, it should not be too quickly repudiated since the model was shown to be useful in the assessment of more localistic attitudes toward land use controls (Napier and Mast, 1981). It is possible that the extensive variability of socio-ecological circumstances of local communities prevents the theoretical perspective from being predictive on a macro-level basis. Different circumstances could affect the distribution of costs and benefits on the local level for many communities even though the same mechanisms to control land use were being applied. This line of reasoning suggests that prediction of attitudes toward land use controls cannot be achieved without consideration of local situations which generate the need for such actions. Knowledge of the specific impacts of land use controls upon local farming groups would also be required since the distribution of costs and benefits is probably quite different from community to community. In essence, it is argued that better indicators of costs and benefits must be constructed to test the theoretical perspective on a macro-level.

It is also possible that the level of specificity of the attitude measures is too abstract to evaluate local land use issues. When research is conducted on the local level, such as a community or county basis, the respondents have a higher probability of evaluating the same type of land use control issues but such is not the case on a macro-

level study basis. Farmers, for example, in this study were distributed throughout Ohio and the types of land use issues were correspondingly broad.

While the study findings basically invalidated the theoretical perspective, they clearly demonstrate that farmers in Ohio are not supportive of land use controls. This is quite interesting since questions included in the survey revealed that a large proportion of the respondents perceived the need for mechanisms to protect agricultural lands. This suggests the respondents desired the benefits of land use controls without assuming the costs associated with protecting land resources.

FOOTNOTES

¹Funding for the conduct of this study was provided by the State 471 project via the Ohio Agricultural Research and Development Center, Wooster, Ohio. The authors share equally in the conceptualization and writing of this paper.

²Also participating in NALS were the Departments of State, Interior, Housing and Urban Development, Transportation, Commerce, Treasury, Defense and Energy. The Environmental Protection Agency and the Water Resources Council were also represented.

³The format of the printed workshop reports consists of enumerated tabulations of participants' opinions, lists of concerns, and solutions and/or general statements concerning the issues under discussion.

⁴Descriptive statistics for all questionnaire items appear in Napier, et al, Rural Life and Farmer Attitudes: A State Survey, Research Circular 260, OARDC, Wooster, Ohio, October, 1980.

⁵Follow-up communications at approximately four-week intervals produced a response rate of 54.6 percent, which included 469 questionnaires which had been returned without being completed by the selected subject or family member for a variety of reasons, including death, sale of farm, and complete retirement from agriculture. The 469 cases were subtracted from the original list of 2,001 names which reduced the sample to 1,532 cases. There were 623 usable questionnaires which constitutes a response rate of 40.7 percent (623/1, 532) (Napier, et al), 1980:3).

⁶County population and land area figures were taken from the 1980 Commercial Atlas and Marketing Guide, San Francisco: Rand McNally and Company, p. 418.

Table 1: Socio-Demographic Characteristics of Study Respondents (N=623)

Relationship of Respondent to Farm Ownership

	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>
Farm Owners	294	47.2	Sons of Owner and Operator	22	3.5
Farm Owner/ Operator	185	29.7	Partners in Farm	6	1.0
Spouses of Owner and Operators	33	5.3	Full-Time Employee	3	0.5
Principal Operator	51	8.2	No Data	29	4.6

Average age of respondents--52.4 years

Average years of formal education completed--respondent 12.3; spouse 12.4

Average number of years farming--27.2 years

Average age when beginning farming--22.5 years

Number of retired respondents--135 (22%)

Average farm size (total number of acres farmed)--249.1 acres

Average number of acres owned--161.7 acres

Average number of acres rented--227.5 acres

Percent of farmers whose parents were engaged in farming--84.9%

Average number of acres owned by farmers' parents (N=429)--155.1 acres

Average number of acres rented by farmers' parents (N=409)--62.0 acres

Percent of farmers' spouses whose parents were engaged in farming--59.2%

Average number of acres owned by spouses' parents (N=271)--151.0 acres

Average number of acres rented by spouses' parents (N=85)--126.7 acres

Farm Size Characteristics

Acres Farmed
(N=544)

Acres Owned
(N=529)

Acres	Acres Farmed (N=544)	Acres Owned (N=529)
≤ 50	19.3	22.5
51 - 100	20.2	23.4
101 - 200	20.8	34.8
201 - 300	16.2	9.1
301 - 400	7.4	3.8
401 - 500	5.5	2.8
501 - 1,000	7.2	2.6
1001>	3.5	1.0
	100.1*	100.0

*Rounding error.

Table 2: SCALE ITEMS WITH FREQUENCY DISTRIBUTIONS, MEANS, STANDARD DEVIATIONS AND KUDER-RICHARDSON RELIABILITY COEFFICIENTS (Percentages^a Within Parentheses)

ATTITUDES TOWARD LAND USE CONTROL ^b (N=623)									
Attitude Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	No Response	Mean	Standard Deviation	Kuder-Richardson Test Reliability
*1. No one has the right to tell farmers what they can or cannot do with their own land.	9 (1.4)	88 (14.1)	58 (9.3)	204 (32.7)	245 (39.3)	19 (3.0)	4.0	1.1	.41
*2. Farmers should have the right to sell their land to anyone for any purpose.	31 (5.0)	163 (26.2)	80 (12.8)	178 (28.6)	152 (24.4)	19 (3.0)	3.4	1.2	.51
*3. Land use controls should be supported in my county.	59 (9.5)	130 (20.9)	159 (25.5)	199 (31.9)	43 (6.9)	33 (5.3)	3.1	1.1	.65
*4. Land use controls will harm most farmers in my county.	18 (2.9)	193 (31.0)	196 (31.5)	144 (23.1)	44 (7.1)	28 (4.5)	3.0	1.0	.62
*5. Land use controls are not needed in my county.	35 (5.6)	157 (25.2)	177 (28.4)	173 (27.8)	55 (8.8)	26 (4.2)	3.1	1.0	.71
**6. Land use controls are a good way of protecting the best farmland.	38 (6.1)	111 (17.8)	159 (25.5)	236 (37.9)	55 (8.8)	24 (3.9)	3.3	1.0	.57
ATTITUDES TOWARD FARM LIVING (AGRARIANISM SCALE) ^c (N=623)***									
***1. Agricultural life is the natural life for man.	1 (.02)	56 (9.0)	53 (8.5)	339 (54.4)	139 (22.3)	35 (5.6)	4.0	0.8	.51
***2. The family farm is the best way to make sure Americans have plenty to eat at reasonable prices.	1 (.02)	24 (3.9)	38 (6.1)	277 (44.5)	250 (40.1)	33 (5.3)	4.3	0.7	.64
***3. The family farm is very important to democracy.	0 (0.0)	7 (1.1)	21 (3.3)	276 (44.3)	281 (45.1)	38 (5.1)	4.4	0.6	.61
***4. The farm is the ideal place to raise a family.	2 (0.3)	9 (1.4)	26 (4.2)	236 (37.9)	319 (51.2)	31 (5.0)	4.5	0.7	.63

*Strongly agree indicates a negative orientation to land use controls.

**Strongly agree indicates a positive orientation to land use controls.

***Strongly agree for all items in agrarianism scale indicate positive orientation toward farm living.

^aPercentages may not sum to 100.0 due to rounding error.

^bKuder-Richardson test reliability coefficient for aggregated scale was .79. The average score for land use control aggregated scale was 19.2.

^cKuder-Richardson test reliability coefficient for aggregated scale was .73. Average score for agrarianism aggregated scale was 17.1.

Table 3: GOVERNMENT INTERVENTION ATTITUDE ITEMS WITH FREQUENCY DISTRIBUTIONS, AND MEANS (Percentages Within Parentheses)

GOVERNMENT ACTION AS CAUSE OF FARM PROBLEMS (N=568)

Potential contributing factor	Importance of Factor in Causing Problem				Mean
	None 1*	Somewhat 2*	Most 3*	All 4*	
Government farm programs	53 (9.3)	331 (58.3)	145 (25.5)	39 (6.9)	2.3

GOVERNMENT ACTION AS SOLUTION TO FARM PROBLEMS (N=586)

Possible solution	Harmful 1*	Neither Harmful Nor Helpful 2*	Somewhat Helpful 3*	Very Helpful 4*	Mean
	Government programs to preserve the family farm	55 (9.4)	115 (19.6)	190 (32.4)	

*Weighted values given to each designated response.

Table 4. Correlation Matrix for Selected Independent Variables and Attitudes Toward Land Use Controls (N=623)

	Population Density	Age	Total Acres Farmed	Total Acres Owned	Education	Agrarianism Scale	Government Programs Cause Farm Problems	Government Support of Family Farms	Husband Days of Off Farm Work	Wife Days of Off Farm Work	Net farm Income for 1978	Negative Attitudes Toward Land Use Controls
Population Density	1.00											
Age	0.05	1.00										
Total Acres Farmed	-0.07	-0.08*	1.00									
Total Acres Owned	-0.07	0.09*	0.74*	1.00								
Education	0.11*	-0.28*	0.04	0.05	1.00							
Agrarianism Scale	-0.06	0.03	0.00	-0.05	-0.15*	1.00						
Government Programs Cause Farm Problems	-0.02	-0.06	0.05	0.00	-0.04	0.09*	1.00					
Government Support of Family Farms	-0.02	0.09*	-0.08*	-0.07	-0.06	0.26*	-0.12*	1.00				
Husband Days of Off Farm Work	0.01	-0.31*	-0.21*	-0.17*	0.11*	-0.04	0.00	-0.05	1.00			
Wife Days of Off Farm Work	-0.05	-0.15*	0.00	-0.04	0.07	-0.02	0.08*	-0.05	0.22*	1.00		
Net Farm Income for 1978	-0.09*	-0.01	0.32*	0.26*	-0.07	0.07	-0.05	-0.04	-0.34*	-0.09*	1.00	
Negative Attitudes Toward Land Use Controls	0.04	0.04	-0.03	-0.03	-0.12*	0.26*	0.07	0.01	0.03	-0.05	-0.05	1.00

*Correlations significant at the .05 level.

Table 5. Stepwise Regression Analysis for Attitudes Toward Land Use Controls and Selected Independent Variables Presented in Standardized Regression Coefficient Form (N=623)

STEP	Agrarianism Scale	Education	Net Farm Income	Attitude Toward Government Support of Family Farms	Proximity to Urban/Industrial Development	Wife: Off-Farm Work Hours	Attitudes Toward Government Farm Programs As Source of Problems in Agriculture	Husband: Off-Farm Work Hours Age	Total Acres Owned	Total Acres Farmed	Multiple R	Adjusted Multiple R Square	Entering Variables F Ratio	
1	.261										.26	.068	43.9*	
2	.249	-.082									.27	.072	4.2*	
3	.253	-.086	-.073								.28	.075	3.5	
4	.270	-.088	-.078	-.066							.29	.078	2.6	
5	.272	-.094	-.072	-.066	.064						.30	.080	2.6	
6	.273	-.091	-.077	-.068	.060	-.051					.30	.081	1.7	
7	.267	-.089	-.080	-.062	.060	-.055	.043				.30	.082	1.1	
8	.267	-.092	-.067	-.060	.061	-.062	.043	.040			.31	.081	.86	
9	.268	-.092	-.070	-.059	.060	-.060	.044	.045	.013		.31	.080	.09	
10	.268	-.091	-.068	-.059	.059	-.060	.044	.044	.012	-.009	.31	.078	.05	
11	.269	-.093	-.070	-.059	.060	-.059	.045	.042	.010	.020	-.016	.31	.077	.07

*F-ratio of entering variable is significant at .05 level.

REFERENCES

- Abelson, Robert P., and John W. Tukey. "Efficient Conversion of Non-Metric Information Into Metric Information," The Qualitative Analysis of Social Problems. Edward R. Tufte (ed.), Reading, Massachusetts: Addison Wesley, 407-417, 1970.
- Bosselman, Fred and D. Collis. The Quiet Revolution in Land Use Controls. Washington, D.C.: Government Printing Office, 1971.
- Blau, Peter M. Exchange and Power in Social Life. New York: John Wiley and Sons, 1964.
- Brown, Steven R., and James G. Coke. Public Opinion on Land Use Regulation. Columbus, Ohio: Academy for Contemporary Problems, 1977.
- Buttel, Frederick H. "Agricultural Structure and Agricultural Policy: A Preliminary Report on the Values and Preferences of New York Farmers," Cornell Rural Sociology Bulletin Series, No. 109, November 1979.
- Buttel, Frederick H., and William L. Flinn. "Sources and Consequences of Agrarian Values in American Society," Rural Sociology 40: 134-151, 1975.
- Buttel, Frederick H., and William L. Flinn. "Socio-Political Consequences of Agrarianism," Rural Sociology 41: 473-483, 1976.
- Clawson, Marion. "Economic and Social Conflicts in Land Use Planning," Natural Resources Journal 15(3): 474-489, 1975.
- Edwards, Allen L. Techniques of Attitude Scale Construction. New York: Appleton-Century-Crofts, Inc., 1957.
- Ekeh, Peter. Social Exchange Theory. Cambridge, Mass.: Harvard University Press, 1974.
- Emerson, Richard. "Exchange Theory, Part I: A Psychological Basis for Social Exchange," and "Exchange Theory, Part II: Exchange Relations and Network Structures," Sociological Theories, Morris Zelditch, et al (eds.), Boston: Houghton Mifflin, 1966.
- Flinn, William L., and Donald E. Johnson. "Agrarianism Among Wisconsin Farmers," Rural Sociology 39: 187-204, 1974.
- Geisler, Charles C., and Oscar B. Martinson. "Local Controls of Land Use-- Profile of a Problem," Land Economics 52(3): 371-381, 1976.
- Goss, Kevin F., Frederick H. Buttel, and Richard D. Rodefeld. "The Political Economy of Class Structure in U.S. Agriculture: A Theoretical Outline." paper presented at the annual Rural Sociological Society Meeting, San Francisco, California, September 1978.
- Homans, George. Social Behavior: Its Elementary Forms. New York: Harcourt, Brace and Jovanovitch, 1974.

- Kim, J. "Multivariate Analyses of Ordinal Variables," American Journal of Sociology, 81: 261-298, 1975.
- Kohl, Barbara A. "The American Agriculture Movement: Discussion and Contrast With Past Agrarian Movements," paper presented at annual North Central Sociological Association Meetings, Akron, Ohio, April 1979.
- Kuder, G.F., and M.W. Richardson. "The Theory of the Estimation of Test Reliability," Psychometrika 2(3): 151-160, 1937.
- Labovitz, Sanford. "The Assignment of Numbers to Rank Order Categories," American Sociological Review, 35: 515-524, 1970.
- Levin, Melvin R., Jerome G. Rose, and Joseph S. Slavet. New Approaches to State Land-Use Policies. Lexington, Massachusetts: Lexington Books.
- Martinson, Oscar B., and Gerald R. Campbell. "Betwixt and Between: Farmers and Marketing of Agricultural Inputs and Outputs," in The Rural Sociology of The Advanced Societies. Frederick H. Buttell and Howard Newby (eds.), 215-254. Montclair: Allanheld, Osmun, 1980.
- Mast, Diane S. "Attitudes Toward Land Use Controls: A Test of A Social Exchange Perspective," Masters thesis, Department of Agricultural Economics and Rural Sociology, The Ohio State University, Columbus, Ohio, 1979.
- Morrison, Denton E., and Allen D. Steeves. "Deprivation, Discontent and Social Movement Participation: Evidence on a Contemporary Farmers' Movement, the NFO," Rural Sociology 32: 414-434, 1967.
- Mulkay, Michael J. Functionalism, Exchange and Theoretical Strategy. New York: Schocken Books, 1971.
- Napier, Ted L., and Diane S. Mast. "Attitudes Toward Land Use Controls Within a Multi-Ethnic County of Ohio," Journal of Community Development Society, 1981 (forthcoming).
- Napier, Ted L., Richard C. Maurer and Elizabeth Bryant. "The Relevance of a Human Resources Development Model for Understanding Unemployment Status Within Southeastern Ohio," paper presented at annual Rural Sociological Society Meeting, San Fransisco, California, 1978.
- Napier, Ted L., Barbara Kohl, David Hansen and Gregory Hooks. Rural Life and Farmer Attitudes: A State Survey. Research Circular 260, Ohio Agricultural Research and Development Center, Wooster, Ohio, October 1980.
- Pampel, Fred Jr., and J.C. VanEs. "Environmental Quality and Issues of Adoption Research," Rural Sociology 42: 57-71, 1977.
- Reilley, William. "New Directions in Federal Land Use Legislation," in Land Use Controls: Present Problems and Future Reforms, David Listokin (ed.), New Brunswick, New Jersey: Center for Urban Policy Research, Rutgers University, 1974.

Rose, Jerome G., The Transfer of Development Rights. New Brunswick, New Jersey: Center for Urban Policy Research, Rutgers University, 1975.

Turner, Jonathan H. The Structure of Sociological Theory. Homewood, Illinois: The Dorsey Press, 1978.

United States Department of Agriculture. Agricultural Lands Workshops, North Central Region. National Agricultural Land Study. Washington, D.C.: U.S. Government Printing Office, 1980.

United States Department of Agriculture. Agricultural Lands Workshops, Northeastern Region. National Agricultural Land Study. Washington, D.C.: U.S. Government Printing Office, 1980.

United States Department of Agriculture. Agricultural Lands Workshops, Western Region. National Agricultural Land Study. Washington, D.C.: U.S. Government Printing Office, 1980.

United States Department of Agriculture. Agricultural Lands Workshops, Southern Region. National Agricultural Land Study. Washington, D.C.: U.S. Government Printing Office, 1980.

Wengert, Norman and Thomas Graham. "Transferable Development Rights and Land Use Control," Journal of Soil and Water Conservation 29(6): 253-257, 1974.