An Empirical Overview of the N ARE A Membership Survey

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During the period of transition that culminated in our professional organization being renamed the Northeastern Agricultural and Resource Economics Association (formerly the Northeastern Agricultural Economics Council), discussion centered upon such issues as the composition of the executive committee, the election procedures for officers, financial stability, and membership involvement. As a result of such discussions, a questionnaire was designed to ascertain Association members' attitudes towards the organization in three areas of interest: members' professional background, members' evaluation of the annual meeting, and attitudes towards our Journal. The objective of this survey was to establish attitudinal data for background information for future discussions concerning our Association.

In the spring of 1985, three hundred (300) questionnaires were mailed to members with one hundred forty-two (142) surveys returned for a response rate of approximately forty-seven percent. Cross tabulation tables and multivariate regression models were formulated for analytical purposes.[1] A partial presentation of the results is contained in this paper. For readers interested in more comprehensive survey information, contact the author.

This paper will be organized as follows. Membership cross tabulation results will initially be presented, followed by a section focusing upon multivariate regression models. The last section will contain summary and conclusions.

[1] A chi-square test was not used because there was not at least five observations in each theoretical frequency class. This avoided inflated chi-square values due to the division of the squared differences by a small size of expected frequency.

Cross Tabulation Results

Membership Analysis

Respondent data were organized to view members' professional interests and employment by type. Table 1 contains the results of this tabulation. Employment was broken into four categories: university, government, private, and student. Professional interests were denoted by four groupings: agricultural economics, resource economics, community development, and other. Of 142 respondents, 109 members or approximately 76.7 percent were associated with a university and 19 individuals or roughly 13.3 percent resided in government work.

Of 109 university members, about 64 percent or 70 individuals responded that agricultural economics was their main professional interest. Twenty-eight (28) percent of the university members emphasized resource economics as their specialty. Seven of the nine private sector respondents focused upon agricultural economics. Roughly 58 percent of the government respondents listed agricultural economics as the main focus of their work. Of the 142 total respondents, 90 members or about 63 percent had an agricultural economics interest.

Table 2 was organized to view respondent years of membership in the Association and employment by type. Of 142 respondents, 33 percent or 46 individuals were members for 1-3 years. Forty-one (41) percent or 58 respondents were members for 10 years or more.

Of the university respondents, about 40 percent had been members for 10 years or more. Roughly 32 percent of university individuals had been members for 1-3 years. Approximately 63 percent of the government respondents had been members for 10 years or more. One-third of the private sector individuals were with the Association for 1-3 years with

Table 1.   NAREA Membership Employment Compared With Professional Interests

Employment	Professional Interests				Row Totals
	Agricultural Economics	Resource Economic	Community Development	Other	
University	70 (64.22)*	31 (28.44)	8 (7.34)	0 —	109 (100.00)
Government	11 (57.89)	7 (36.84)	0 —	1 (5.26)	19 (100.00)
Private	7 (77.28)	1 (11-11)	0 —	1 (11.11)	9 (100.00)
Student	2 (40.00)	3 (60.00)	0 —	0 —	5 (100.00)
Column Totals	90 (63.38)	42 (29.58)	8 (5.63)	2 (1.41)	142 (100.00)

* Numbers in parentheses are row percentages.

one-third of the private members for over 10 years or longer.

Meetings Analysis

One aspect of the survey questions was the quality of papers presented at the Association's annual meeting. Table 3 contains respondent data organized to view member ratings of papers at meetings by employment type.

Interestingly, of the 142 total respondents to the survey, 104 of these individuals had attended at least one meeting and therefore responded to the qualitative questions regarding attitudes towards meetings. Of the university individuals who attended meetings, approximately 46 and 38 percent responded that the quality of papers presented at NAREA meetings were good and average, respectively. Roughly, 73 percent of government respondents who had attended past meetings felt that the paper quality was good. Over all employ-

ment categories, about 51 percent responded that the quality of papers presented was good with 35 percent emphasizing average.

Journal Analysis

A portion of the questionnaire focused upon respondent attitudes towards our Journal. Table 4 contains respondent data organized by employment type to view member ratings of our Journal as an outlet for publishing.

Of the 142 total respondents to the survey, 130 of these members responded to the questions that focused upon the Journal. Approximately 45, 28, and 20 percent of the university members stated that the Journal as an outlet for publishing was good, average, and excellent, respectively. About 63 percent of the government respondents felt that the Journal was good for publication purposes.

Over all employment categories, roughly 49 percent or 63 individuals rated the Journal as a good outlet for publication purposes. Approxi-

Table 2.   NAREA Membership Employment Compared With Years of NAREA Membership

Employment	Membership Years				Row Totals
	1-3	4-6	7-9	10 & over	
University	35 (32.10)*	20 (18.35)	11 (10.09)	43 (39.44)	109 (100.00)
Government	3 (15.79)	4 (21.05)	0 —	12 (63.14)	19 (100.00)
Private	3 (33.33)	1 (11.11)	2 (22.22)	3 (33.33)	9 (100.00)
Student	5 (100.00)	0 —	0 —	0 —	5 (100.00)
Column Totals	46 (32.39)	25 (17.60)	13 (9.15)	58 (40.81)	142 (100.00)

* Numbers in parentheses are row percentages.

Table 3. NAREA Membership Evaluation of the Quality of Papers Presented at NAREA Meetings by Employment Categories

	Ratings				Poor	Totals
	6	38	31	7	0	82
University	(7.32)*	(46.34)	(37.80)	(8.54)	—	(100.00)
	1	11	3	0	0	15
Government	(6.67)	(73.33)	(20.00)	—	—	(100.00)
	1	3	2	0	0	6
Private	(16.67)	(50.00)	(33.33)	—	—	(100.00)
	0	1	0	0	0	1
Student		(100.00)			—	(100.00)
Column	8	53	36	7	0	104
Totals	(7.69)	(50.96)	(34.62)	(6.73)	—	(100.00)

* Numbers in parentheses are row percentages.

mately, 25 percent or 33 individuals felt the Journal was average for their publication needs. Roughly, 16 percent or 21 individuals answered that the Journal was excellent.

Table 5 contains respondent data that relates membership years with quality ratings for the Journal. Of the individuals who rated the Journal good, 41 percent were members of 10 years or more and 28 percent were members for 1-3 years. About one-third of the members who responded that the Journal was average were members of 10 years or longer and one-third were involved in the Association for 1-3 years. Of the 21 individuals who responded with an excellent, 52 percent had been members for 10 years or more with 33 percent members for only 1-3 years.

The following section contains ordinary least-squares results for three linear model formulations based on the questionnaire data.

Multivariate Regression Estimations

Three different linear models were formulated to estimate the relationship between three distinct dependent variables and a selected group of independent variables.

Model I With Dependent Variable—Number of NAREA Journal Articles by Respondent

It was hypothesized that the following linear relationship holds as shown by equation (1):

$$(1) \quad NJA - b_1 + b_2\, MY + b_3\, PR + b_4\, IP$$

where, NJA refers to the number of NAREA journal articles by respondent, MY denotes the number of years the respondent has been a member of NAREA, PR refers to the respondent's percentage of appointment that

Table 4. NAREA Membership Evaluation of the NAREA Journal as an Outlet for Publishing by Employment Categories

Employment	Ratings					Row Totals
	Excellent	Good	Average	Fair	Poor	
	20	45	28	8	0	101
University	(19.80)*	(44.55)	(27.72)	(7-92)	—	(100.00)
	1	12	4	1	1	19
Government	(5.26)	(63.16)	(21.05)	(5.26)	(5.26)	(100.00)
	0	2	1	3	0	6
Private	—	(33.33)	(16.67)	(50.00)	—	(100.00)
	0	4	0	0	0	4
Student	—	(100.00)	—	—	—	(100.00)
Column	21	63	33	12	1	130
Totals	(16.15)	(48.46)	(25.38)	(9.23)	(.77)	(100.00)

* Numbers in parentheses are row percentages.

Table 5.   Membership Quality Evaluation of the NAREA Journal According to Years of Membership

Quality of Journal	Membership Years				Row Totals
	1-3	4-6	7-9	10 & over	
Excellent	7	2	1	11	21
	(33.33)*	(9.52)	(4.76)	(52.37)	(100.00)
Good	18	14	5	26	63
	(28.57)	(22.23)	(7-94)	(41.26)	(100.00)
Average	11	6	4	12	33
	(33.33)	(18.18)	(12.12)	(36.36)	(100.00)
Fair	3	2	3	4	12
	(25.00)	(16.66)	(25.00)	(33.32)	(100.00)
Poor	0	0	0	1	1
	--	--	--	(100.00)	(100.00)
Column Totals	39	24	13	54	130
	(30,00)	(18.46)	(10.00)	(38.48)	(100.00)

* Numbers in parentheses are row percentages.

is research and IP depicts the number of institutional publications (regional bulletins, experiment station reports, . . .) that the individual has had published, b_1, b_2, b_3, and b_4 designate estimated parameters.

A priori, it was assumed that the estimated parameters would be positive in sign. For instance, it was anticipated that the more years of membership (MY) for a respondent, the greater the number of NAREA journal articles. Also, it was felt that the higher the percentage of ones appointment in research (PR), the higher the number of NAREA journal articles. Lastly, a positive spillover was hypothesized to exist with the number of institutional publications (IP). With an increasing IP, it was hypothesized that experiment station reports and bulletins often have their variations published as NAREA journal articles.

Table 6A contains the ordinary estimated least-squares results for (1). All three independent variables (MY, PR, and IP) had corresponding estimated parameters (b_2, b_3, and 04, respectively) that tested statistically significant at the one percent level and had positive signs.[2] An estimated parameter with a value of .0812 for membership years (MP) can be interpreted as meaning for each additional year of membership, the number of NAREA journal articles will increase by .0812 articles. The estimated parameter for percentage of research appointment denotes the interpretation that for each additional percent of appointment for

research, the number of journal articles will increase by .0134. A similar interpretation holds for the estimated parameter for number of institutional publications (IP).

The adjusted coefficient of multiple determination has a value of about 31 percent, which refers to the collective linear influence of the independent variables of equation (1) in explaining the variation in the dependent variable (NJA).

Model II With Dependent Variable—
Number of NAREA Meetings Attended

It was hypothesized that the following linear relationship holds:

$$(2) \quad NM = a_1 + a_2 MY + a_3 PR + a_4 PT$$

where, NM depicts the number of NAREA meetings attended by the respondent, MY again refers to member's years in NAREA, PR again denotes respondent's percentage of research appointment, and PT refers to the percentage of respondent's appointment that is teaching, a_1, a_2, a_3, and a_4 designate estimated parameters.

A priori, it was assumed that the estimated parameters would be positively signed. It was felt that the longer a respondent was a member of the Association (MY), the higher the number of NAREA meetings attended. It was also assumed that the higher the percentage of a member's appointment for research (PR), the greater likelihood of attending Association meetings for an outlet to present research results. The hypothesis was also offered that the higher the percentage of member's appointment for teaching (PT), the greater the number

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[2] The correlations between the independent variables were low in value (below .20) so as not to suggest multicollinearity. This was also true for models two and three in a latter portion of this paper.

Table 6.   OLS Results for Three Linear Mode! Formulations Based on NAREA Questionnaire

A. Number of NAREA journal articles = f (membership years, percent of appointment research, number of institutional publications)

Independent Variables	Estimated Parameters	Standard Errors	t Values
constant (b_t)	-.1788	.2671	-.67
MY	.0812	.0193	4.20*
PR	.0134	.0044	3.09*
IP	.0362	.0102	3.53*

R^2 - 30.6

n = 142

B. Number of NAREA meetings attended = g (membership years, percent of appointment research, percent of appointment teaching)

Independent Variables	Estimated Parameters	Standard Errors	t Values
constant (a_1)	-2.6525	.5320	–4.99*
MY	.6559	.0322	20.39*
PR	.0207	.0085	2.44*
PT	.0253	.0112	2.26*

R^2 = 75.3

n = 142

C. Participation in NAREA meetings in capacity other than attendance = h (membership years, percent of appointment research, percent of appointment extension, number of institutional publications)

Independent Variables	Estimated Parameters	Standard Errors	t Values
constant (d)	-1.3952	.4472	-3.12*
MY	.2208	.0306	7.22*
PR	.0251	.0069	3.66*
PE	.0069	.0098	.71
IP	.0535	.0163	3.28*

R^2 = 46.1

n = 142

* Denotes significance at one percent level.

of meetings attended for purposes of being exposed to new material as well as interacting with fellow professors.

Table 6B contains the ordinary least-squares estimations for equation (2). All three independent variables (MY, PR, and PT) have related positively signed estimated parameters a_2, a_3, and a_4, respectively that were statistically significant at the one percent level. Their interpretation is the same as stated for the previous model. The adjusted coefficient of multiple determination was roughly 75 percent.

Model III With Dependent Variable—
Participation in NAREA Meetings in
Capacity Other Than Attendance

The following linear relationship was formulated and tested:

$$(3) \quad PM = C_1 + C_2\, MY + c_3\, PR + c_4\, PE + c_5\, IP$$

where, PM refers to the number of times a member has participated in NAREA meetings other than just attending, MY, PR, and IP are defined as previously designated, and PE denotes the percentage of a member's appointment that involves extension activities. C_i, C_2, c_3, and c_4 depict estimated parameters.

A priori, it was assumed that the estimated parameters would be positively signed, except for PE where a negative estimated parameter was conjectured. It was hypothesized that as the number of membership years (MY) increased, the higher the likelihood that individuals would be more active in Association meeting activities. As one's research percentage (PR) increased, it was felt that there would be an increase in meeting participation (paper

presentations, symposia organization, . . .). This same logic also was applied to the independent variable, IP. The higher the percentage of a member's appointment that was extension oriented (PE), it was hypothesized the less participation there would be in NAREA activities. Extension activities were thought to be very time consuming and thus a distraction for active participation in NAREA meetings. Table 6C contains the ordinary least-squares estimations for equation (3). MY, PR, and IP had related positively signed estimated parameters (c_2, c_3, and c_5, respectively) that were statistically significant at the one percent level. The estimated parameter for the percent of an appointment that is extension (PE) tested statistically insignificant. The adjusted coefficient of multiple determination was roughly 46 percent.

Summary and Conclusions

The number of NAREA members that designated agricultural economics as their area of professional interest was roughly over double the number of respondents that denoted resource economics. This differential also held when viewing the University employment category. For the government sector, about fifty percent more of the members designated agricultural economics than resource economics as their area of specialty. A similar trend of dominance held for the private sector. In considering activities for NAREA sponsored events, this particular fact should be noted so that programs will appeal to the membership mainstream. In discussions that focus upon increasing membership, this information may be useful in designing strategies.

In terms of the distribution of years of membership, roughly one-third of our members are new to NAREA (one to three years) and about forty percent have been involved with NAREA for ten years or more. The mix of membership has the potential for an influx of new ideas in determining what NAREA should be as well as the potential for conflicts evolving around how much future change, if any, should take place. Those individuals in-

volved in future NAREA decisions should be aware of this particular situation.

Roughly half of the membership respondents designated the quality of papers presented at NAREA meetings as good with about one-third referring to the papers as average. Disenchantment with the quality of papers presented seemed very minimal with only seven of one hundred four respondents rating the papers as fair and no respondents selecting the poor category.

With regards to our Journal as an outlet for publishing, about one-half and one-quarter of the respondents designated the categories of good and average, respectively. Roughly, sixty-five percent of the respondents, after combining the excellent and good categories, referred to the Journal as good or excellent. The response seems to imply a strong affirmation of support for our Journal.

In terms of being actively involved in NAREA by publishing in the Journal, the variables of length of membership, the percent of member's appointment that is research, and number of institutional publications are statistically significant. The length of membership, percent of appointment that is research, and percent of appointment that involves teaching were statistically significant in influencing the attendance at NAREA meetings. Participation in NAREA meetings other than attendance was significantly influenced by membership years, percentage of appointment that is research, and number of institutional publications. The percent of extension appointment was not statistically significant.

The ordinary least squares results should be interpreted as estimations for three explanatory models and not for predictive purposes. The adjusted coefficients of multiple determination for the three models ranged from roughly thirty-one to seventy-five percent.

The results and generalities derived from the NAREA members' responses should be used cautiously given the fact that the participation level in the survey was about fifty percent of the total membership. The information collected for NAREA is unique, given the fact that this was the first time that such a survey was distributed to our membership.