Modeling Preference for Agricultural College Publications: A Readership Study of Missouri's *Focus21*

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Abstract

Audience studies are some of the most common and useful types of evaluation research in applied communications today. This paper reports descriptive and multivariate findings from recent editorial research conducted on the University of Missouri's biannual, agricultural college magazine, *Focus21*. A response rate of 48 percent was achieved using mail survey techniques for a random sample of the readership, including agricultural alumni and faculty. Data are reported for respondents' interest in various subject matter areas, their preferences for various aspects of the publication, and their preferences for a variety of communication methods used to disseminate agricultural and natural resources information. Regression modeling is used to assess the joint influence of hypothesized variables in shaping alumni and faculty preferences for receiving the publication. Results indicate that two variables—perceived credibility and interest in the subject matter—account for well over one third of the variance in all respondents' preferences for receiving the publication; the two variables explain about 47 percent of the variance when alumni are considered separately. Additional studies are suggested to refine the readership model and to increase the reliability of our measurement in editorial research.

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Introduction

One of the basic challenges of the land-grant communications craft is transforming technical, research-based information into interesting, client-friendly, communication packages—publications, print news stories, CD-ROM, videotapes, and web sites. While these media require different methods and techniques in their preparation, they are typically evaluated according to a single basic criterion: How well do they meet users' needs? This question has occupied several generations of agricultural communication researchers,[1] centering first on print media and extending more recently to emerging electronic and computer technologies (Richardson & Mustian, 1994).

Audience studies are some of the most common and useful types of evaluation research in applied communications today. They are important not only in launching successful new media, but also in helping professional communicators keep current with their audiences' changing informational needs and preferences for traditional print media (Connors, Elliot & Heinze, 1994).

Information specialists at the University of Missouri-Columbia (MU) were particularly interested in a number of questions surrounding their biannual college magazine, *Focus21*. The magazine is entering its eighth year of publication. Each issue is mailed to 23,000 alumni, faculty, staff, students, legislators and agricultural industry leaders at an approximate cost of $21,000 per issue, including postage. Its stated mission is to "provide a look at the Missourians who are preparing the world for the 21st century."

Information specialists involved in the production of *Focus21* were interested in finding the answers to a number of questions surrounding the effectiveness of the magazine. For instance, how much time were readers spending with the magazine? Was the publication receiving a cursory overview, or were readers thoughtfully examining the stories and photographs? Also, the editor and writers wanted to determine if story length and reading level were appropriate for the audience, whether readers were interested in more in-depth articles, and what topics were of particular interest to them.

As described in the following section, a review of literature was one of the first steps taken in designing the current research project.

Literature Review

Given the wealth and variety of print media in circulation today, it is impossible for even high-interest readers to survey all available sources on a given topic. To cope with the large quantity of information, individuals must use some cognitive process to select certain information sources and disregard others. The process and criteria readers use to select information sources have long been of interest in editorial and advertising research, and a comprehensive literature has been developed on factors known to enhance audience perceptions of printed publications. McGinley (1993) provides a useful overview of such literature developed specifically in agricultural communications.

One of the strongest arguments for editorial research is the need to keep current with readers' perceived needs and interests (Redding, 1982). Experience shows that individuals will tolerate wide variation in writing styles and other publication characteristics in order to gain access to information they need or find interesting (Tucker & Cooper, 1987). Not surprisingly, the concept of "news" itself is commonly defined in terms of readers' perceived editorial needs (Fink, 1992).

Another factor shown to influence audience perceptions of publications is the effective use of photography and graphics to support editorial subject matter. The appearance of a publication sets the tone for the information it contains and also conveys an image of the sponsoring organization (McGinley, 1993). Because much of the energy and expense in modern magazine production is wrapped up in its design and format, editors and graphic designers must rely on audience feedback in making such decisions. Connors, Elliot, and Heinze (1994) found that readers of the *FFA New Horizons* magazine rated use of photographs as an important determinant of which articles they read, along with level of interest and quality of writing. Other experts suggest that effective use of photographs is particularly important in supporting scientific or otherwise technical information for a variety of lay audiences (Miller, 1986; Reid, Briggs & Beveridge, 1983; Baxter, Quarles & Kosak, 1978).

In addition to reader interest and photographic appeal, client perceptions of source credibility has been shown by research to play an important role in the evaluation of a source (Hovland & Weiss, 1951; West, 1994). Social-science research has confirmed that individuals seek credible sources of information and tend to ignore or deemphasize those perceived as being less credible (Bandura, 1977). Credible information sources are more likely to alter an individual's beliefs than sources with low credibility (Hass, 1981). Individuals who receive information from sources they perceive as credible usually are more receptive to the information and less likely to question its accuracy (Mueller, 1989). While different criteria have been shown to be important in measuring credibility for different types of mass media sources, such as newspapers and television (Newhagen Nass, 1989), a number of common characteristics have emerged from the research. Relevant characteristics of credible sources include expertise, trustworthiness, fairness, and ability and willingness to separate facts from opinion (Rogers, 1983; Gaziano & McGrath, 1986; West, 1994; Engel, Blackwell & Miniard, 1986).

Based on the literature, editors might reasonably expect that more favorable audience evaluations of credibility, graphic appeal, and subject-matter interest would be accompanied by measurably higher preferences for receiving the publication. However, few studies have used causal modeling to examine the role of these three factors in influencing reader preferences for an agricultural college publication.

Purpose of the Study

The purpose of this study was to generate information about the editorial preferences and habits of *Focus21* readers, including their evaluations of alternative methods for receiving agricultural and natural resources information. The following issues were of particular interest in the current research:

1. Perceived credibility of both *Focus21* and the College of Agriculture, Food and Natural Resources (CAFNR) as sources of research-based information.

2. Level of reader interest in several broad topic areas frequently featured in the publication.

3. Audience preferences for photography and other graphic elements in the publication.

4. Relative audience preferences for a variety of communications methods used to disseminate agricultural and natural resources information.

5. The additive effect of perceived credibility, reader interest and use of photography and graphics in influencing overall preferences for receiving the publication.

Methods

Mail survey research techniques were employed in the study. We randomly selected 392 names from the *Focus21* mailing list[2] to achieve a sampling margin of error of .05 (Krejcie & Morgan, 1970).

An instrument was designed to gather information on editorial interests and personal characteristics of *Focus21* readers. In addition, a number of questions addressed readers' current perceptions about various aspects of the magazine and the MU College of Agriculture, Food and Natural Resources. Content validity of the instrument was established by submitting the questionnaire to a panel of Extension and Agricultural Information Department faculty who are on the *Focus21* mailing list. Sections of the instrument were revised based on the panel's feedback. Alpha coefficients, discussed later in this paper, were generated to assess the reliability of several attitude measures.

On March 13, 1996, the instrument, cover letter, and self-addressed, stamped return envelope were mailed. The cover letter explained the purpose of the study and urged readers to respond. A scenic Missouri postcard was also included as an incentive to help boost response (Dillman, 1978). About six weeks later, a second packet was mailed to nonrespondents that included another questionnaire, a self-addressed stamped return envelope, and a revised cover letter explaining the purpose and importance of the survey.

Subjects responding prior to the second mailing were coded as early respondents, and those responding after the mailing were coded as late respondents. T-tests were used to compare group means of early and late respondents on several selected variables and scales used in the study. Statistically significant differences, particularly if detected on major study variables, would suggest a need for caution in generalizing the results to the sample (Miller & Smith, 1983; Steeh, 1981). No statistically significant differences were detected for these

variables at the .05 level.[3]

Some frame error existed in the list because five respondents had moved or died. The net sample size was adjusted to allow for this nonresponse due to inaccessability (Bailey, 1987). A total of 186 completed questionnaires was returned for a usable response rate of 48%. The response rate was judged satisfactory given the exploratory purposes of the study and the typically moderate rates of return for mailed readership surveys (Wimmer & Dominick, 1987). SPSS/PC+ software (Norusis, 1993) was used to generate the descriptive and multivariate statistics reported in the following sections.

Findings

Findings presented in Table 1 provide a general profile of *Focus21* readers. A variety of occupations are represented in the sample. Age categories also appear to be representative of the readership.

A number of questions in the opening section of the instrument were used to measure respondents' perceptions of various aspects of both the magazine and the MU College of Agriculture, Food and Natural Resources. As shown in Table 2, a variety of questions dealt with respondents' use of the magazine, their preferences for various aspects of the magazine, and perceived credibility of both the magazine and the college as sources of unbiased agricultural and natural resources information.

Findings indicate that about three fourths (75.3%) of the respondents perceived *Focus21* as a truthful source of information, and more than one half (51.7%) believed the type of information in *Focus21* was not available elsewhere. Just under one half (45.2%) indicated looking forward to receiving and reading *Focus21*. More than 40% (40.8%) indicated reading most of the articles in each issue.[4] Fewer than 2% of the respondents (1.6%) indicated that *Focus21* stories were too long, while fewer than one fifth of the respondents (18.3%) indicated they would prefer more in-depth stories in the publication.

In response to questions about the MU College of Agriculture, well over one half of the respondents (66.1%) felt that the college was a good investment of their tax dollars and that the college was meeting the needs of Missouri citizens (63.4%).

Table 1

Respondent Characteristics (N=186)

Profession	Frequency	Percentage of Respondents
Marketing/management	21	11.3
Livestock production	7	3.8
Crop production	9	4.8
Education	33	17.7
Hotel/restaurant management	4	2.2
Parks/recreation	5	2.7
Government agency	23	12.4
Communications	2	1.1
Health-related profession	11	5.9
Other	52	28.0
Missing data	19	10.2
Age Category	**Frequency**	**Percentage of Respondents**
22-35	33	17.7
36-50	76	40.9
51-65	44	23.7
over 65	24	12.9
Missing data	9	4.8

Respondents were also asked to indicate their level of interest in eight, broad subject areas typically featured in the magazine. The scale ranged from zero (no interest) to six (high interest). As shown in Table 3, mean values ranged from a low of 3.06 for international programs to a high of 4.15 for natural resources programs.

Table 2

Reader Attitudes Toward Various Aspects of "Focus21" and the MU College of Agriculture, Food and Natural Resources, Presented in Percentages (N=186)

Attitude Statement	Possible Responses SA	A	Neither Agree nor Disagree	D	SD	MD[1]	Mean[2]	Std Dev
1. *Focus21* is a truthful source of information	15.6	59.7	21.5	0	0	3.2	2.06	.62
2. I frequently read most of the articles in *Focus21*[3]	5.9	34.9	25.8	23.1	7.5	2.7	2.91	1.07
3. The type of information in *Focus21* is not generally available elsewhere	6.5	45.2	41.9	2.2	.5	3.8	2.43	.6
4. I am actively involved in CAFNR activities[4]	3.8	12.9	25.3	36.6	18.3	3.2	3.54	1.06
5. *Focus21* should have more stories about students in the College of Agriculture, Food and Natural Resources	5.4	31.7	52.2	7	.5	3.2	3.36	.72
6. The content of the cover photograph determines whether or not I will read some articles in *Focus21*	3.2	23.7	29.6	33.3	7.5	2.7	3.19	1.00
7. I would prefer more in-depth stories in *Focus21*	1.1	17.2	61.8	15.6	1.1	3.2	3.02	.66
8. Dean Mitchell's letter, Perspective, accurately represents the goals of the College	4.8	30.1	54.8	3.8	2.2	4.3	2.69	.77
9. *Focus21* provides a biased view of the College of Agriculture, Food and Natural Resources	3.8	22.6	53.8	14	2.7	3.2	3.11	.80
10. The writing in *Focus21* is easy to read and understand[3,4]	10.8	71	13.4	.5	.5	3.8	2.06	.57

(Table Continued)

Table 2. Continued

Attitude Statement	SA	A	Neither Agree nor Disagree	D	SD	MD[1]	Mean[2]	Std Dev
11. The information value of photographs in *Focus21* is more important to me than their aesthetic appeal	1.6	36.6	48.4	8.6	1.1	3.8	2.70	.70
12. I look forward to receiving and reading *Focus21*	6.5	38.7	39.8	7	4.3	3.8	2.63	.89
13. *Focus21* is a credible source of information about agricultural research conducted by MU scientists[3]	9.7	59.1	24.7	1.6	.5	4.3	2.21	.66
14. I contribute to the College monetarily	5.4	24.7	21.5	31.7	12.4	4.3	3.22	1.14
15. I would like to receive *Focus21* more frequently	2.2	11.8	50.5	25.8	5.9	3.8	3.22	.83
16. I never read Dean Mitchell's letter, Perspective	7	14.5	29	38.2	7.5	3.8	2.74	1.04
17. The stories in *Focus21* are generally too long	0	1.6	53.2	37.6	3.8	3.8	2.55	.60
18. The College of Agriculture, Food and Natural Resources is a good investment of my tax dollars	17.7	48.4	36.9	1.6	1.1	4.3	2.16	.78
19. The College is meeting the needs of Missourians	11.8	51.6	28	4.8	.5	3.2	2.28	.76
20. The photographs in *Focus21* draw me into the stories[3]	5.9	57.5	28	2.2	2.2	4.3	2.34	.73
21. I would not miss *Focus21* if I stopped receiving it[3]	5.9	22.6	33.9	26.9	7	3.8	2.93	1.03

[1] Missing data (percentage of respondents not answering the question).

[2] All responses weighted 1 to 5 from Strongly Agree to Strongly Disagee except items 5, 7, 9, 16, 17 and 21, weighted 5 to 1 from Strongly Agree to Strongly Disagee.

[3] Early and late respondents varied at statistical significance.

[4] Faculty and alumni responses varied at statistical significance. Involvement in CAFNR activities: faculty mean=2.53; alumni mean=3.82. Writing easy to read and understand: faculty mean=1.89; alumni mean=2.10.

Table 3

Reader Interest in Various Topics, Presented in Percentages (N=186)

Topic	Level of Interest[1] 0	1	2	3	4	5	6	MD[2]	Mean	Std Dev
1. Natural resource programs[3]	2.2	3.8	5.9	21	22	18.3	24.7	2.2	4.15	1.53
2. Agricultural production research	4.3	5.4	10.8	22.6	15.1	23.1	16.7	2.2	3.79	1.66
3. Innovative teaching efforts[4]	3.2	3.8	10.8	28	24.2	18.8	9.7	1.6	3.64	1.43
4. Value-added research	5.4	4.3	11.8	24.2	22.6	24.7	4.3	2.7	3.50	1.47
5. Agricultural marketing/economics	6.5	7	16.1	21.5	14	21	12.9	1.1	3.46	1.73
6. Food processing research	5.9	7	12.9	27.4	22	14	9.7	1.1	3.35	1.59
7. Alumni activities	5.4	9.1	16.1	28.5	22.6	10.2	5.9	2.2	3.10	1.49
8. International programs[4]	5.4	9.7	17.7	28.5	20.4	10.2	5.9	2.2	3.06	1.50

[1] Possible responses range from 0 (no interest) to 6 (high interest).

[2] Missing data (percentage of respondents not answering the question).

[3] Early and late respondents varied at statistical significance.

[4] Faculty and alumni responses varied at statistical significance. Innovative teaching efforts: faculty mean=4.05; alumni mean=3.53. International programs: faculty mean=3.68; alumni mean=2.90.

Readers also indicated their preferences for various characteristics of printed publications, such as readability, interest appeal, and use of photographs. Results shown in Table 4 indicate that readers perceived most important those aspects dealing with content and relevance of the information, such as whether articles are interesting, up-to-date, and easy to read. The relatively low, standard deviations associated with these items indicate a relatively high level of agreement among readers as to their importance. Items dealing with the nature and use of photographs tended to be rated least important.

Finally, readers were asked to evaluate 10 communication methods according to their importance as sources of agricultural and natural resources information. The methods included newspapers, radio, television, extension publications, web sites, and *Focus21*. The scale ranged from zero (not important) to six (very important). As shown in Table 5A, various print media were the preferred sources for this type of information, especially newspapers (3.95), extension publications (3.72), and newsletters (3.72). Communication methods receiving the lowest rankings were CD-ROM (1.98), web sites/online services (2.08), and radio (3.03). Faculty tended to rate web sites/online services more favorably than did alumni, although relatively low overall (see Footnote 3, Table 5A). *Focus21* was ranked moderately important (3.2) compared to the other methods.

A more detailed profile of respondents' preferences for various communication methods is presented in Table 5B, where respondents were divided into three groups according to faculty status and level of interest in agricultural and natural resources information.[3] As shown, readers with higher levels of interest in the subject matter tended to resemble faculty in their relative preferences for various information methods. Readers with lower levels of interest were much more likely to rank television as an important source of information and less likely to rank extension personnel highly. *Focus21* was ranked sixth most important by all three groups of respondents.

Regression modeling was used to explore the simultaneous influence of selected factors on respondents' evaluations of the magazine. As discussed in the following section, a model was developed for the entire sample and then tested separately for alumni and faculty.

Table 4

Reader Preferences for Various Aspects of Publications, Presented in Percentages (N=186)

Publication Aspect	Level of Preference[1] 0	1	2	3	4	5	6	MD[2]	Mean	Std Dev
Interesting subject matter of articles	.5	0	1.1	3.2	9.7	45.7	36.6	3.2	5.15	.91
Up-to-date information	.5	0	0	4.8	16.1	35.5	40.3	2.7	5.12	.95
Practical or usable information	.5	1.1	.5	6.5	16.7	36	36	2.7	4.98	1.09
Articles that are easy to read and understand	.5	1.6	1.1	10.2	23.1	36.6	23.7	3.2	4.67	1.14
Credibility of the publisher	.5	1.1	4.3	13.4	17.7	30.6	27.4	4.8	4.61	1.28
Use of photographs and visuals to provide additional information	1.1	0	2.2	12.4	23.7	38.7	19.4	2.7	4.58	1.12
Use of short articles for quick reading	1.1	0	3.8	19.9	22.6	27.4	22	3.2	4.41	1.25
Sources used in a story	1.1	1.6	3.8	32.3	27.4	21	9.7	3.2	3.91	1.2
An attractive front cover	2.2	5.9	8.1	18.3	25.3	24.2	13.4	2.7	3.90	1.49
An interesting cover photograph	2.2	2.2	11.3	23.7	22.6	21.5	14	2.7	3.88	1.43
Use of colorful photographs inside the publication	2.7	3.2	11.8	21	25.3	17.2	16.1	2.7	3.84	1.51

[1] Possible responses range from 0 (not important) to 6 (very important).

[2] Missing data (percentage of respondents not answering the question).

Table 5A

Perceived Importance of Various Communication Methods as Sources of Agricultural and Natural Resources Information, Presented in Percentages (N=186)

	Level of Importance[1]									
Medium	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**MD[2]**	**Mean**	**Std Dev**
Newspapers	1.6	3.2	8.6	19.4	28	24.2	11.8	3.2	3.95	1.37
Extension publications (printed)	4.3	4.8	11.8	18.8	23.7	20.4	13.4	2.7	3.72	1.59
Newsletters	4.3	4.3	11.8	21	18.8	24.7	11.3	3.8	3.72	1.58
Agricultural magazines	9.1	4.8	8.1	17.2	21.5	24.2	10.8	4.3	3.60	1.75
Area or state extension specialists	9.1	7.5	13.4	19.4	15.6	21	10.8	3.2	3.35	1.80
Focus21	5.9	8.6	14	26.9	18.3	16.7	5.4	4.3	3.20	1.56
Television programs	5.4	14.5	9.7	27.4	17.2	16.7	5.9	3.2	3.14	1.62
Radio programs	9.7	8.1	15.6	24.2	20.4	11.8	6.5	3.8	3.03	1.65
Web sites/online services[3]	24.7	17.7	16.1	15.1	11.8	6.5	4.3	3.8	2.08	1.79
Xplor: Extension Publications Library on Request,(CD-ROM)	27.4	14	16.1	18.8	8.1	6.5	3.2	5.9	1.98	1.74

[1] Possible responses range from 0 (not important) to 6 (very important).
[2] Missing data (percentage of respondents not answering the question).
[3] Faculty and alumni responses varied at statistical significance for this item: faculty mean=2.79; alumni mean=1.89.

Table 5B

Means and Rank[1] of Perceived Importance of Various Communication Methods as Sources of Agricultural and Natural Resources Information, by MU Faculty, Low-Interest Alumni, and High-Interest Alumni

Communication Method	Alumni respondents expressing: Faculty	Low Interest	High Interest
	(N=38)	(N=53)	(N=54)
Newspapers	4.08 (1)	3.75 (1)	4.11 (4)
Extension publications (printed)	3.76 (2)	2.89 (3)	4.46 (1)
Newsletters	3.76 (2)	2.78 (4)	4.41 (2)
Agricultural magazines	3.27 (5)	2.72 (5)	4.39 (3)
Area or state extension specialists	3.34 (4)	2.47	4.02 (5)
Focus21	3.11 (6)	2.53 (6)	3.87 (6)
Television programs	2.87	3.04 (2)	3.57
Radio programs	2.87	2.44	3.63
Web sites/online services [2]	2.79	2.00	2.02
Xplor: Extension Publications Library on Request, (CD-ROM)	1.95	1.78	2.49

[1] Responses in calculating means range from 0 (not important) to 6 (very important). Values in parentheses indicate rank of top six methods for each group (column).

[2] See Footnote 3, Table 5A.

Regression Analysis

Data generated on perceived credibility, reader interest in various topics, and evaluations of photographs and graphics in the publication are useful in gauging readers preferences. Because of their importance in prior studies, the way in which the three variables work together in explaining audience preferences for receiving the magazine was of particular interest to us. Multiple regression analysis allows us to measure the combined influence of multiple independent variables

on a single dependent variable when all variables are considered simultaneously (Lewis-Beck, 1980). The following section describes the variables used in the regression analysis.

Description of Variables. The dependent variable used in the regression models was a single-item indicator that measured respondents' attitude toward receiving and reading *Focus21* (see Variable 12, Table 2).

The three independent variables were constructed by summing the values of various single-item indicators into a composite score for each respondent. The use of composite scores rather than single-item indicators provides a richer measurement of abstract or multidimensional constructs, such as the variables studied here.

A composite score for reader interest was calculated by summing the values of the eight topic variables shown in Table 3: natural resource programs, agricultural production research, innovative teaching efforts, value-added research, agricultural marketing/economics, food-processing research, alumni activities, and international programs. Item analysis was used to assess reliability of the eight-variable scale, resulting in an alpha coefficient of .82.

A scale was similarly constructed to measure respondents' preferences for publication photography and graphics. The values of four variables from Table 4 were summed as a composite measure of the importance of photography and graphics in evaluating publication quality. The variables were use of colorful photographs inside the publication, an attractive front cover, use of photographs and visuals to provide additional information, and an interesting cover photograph. Item analysis of the four-variable scale yielded an alpha coefficient of .86.

In operationalizing the concept of credibility of a college publication, we hypothesized that readers would consider the overall image of the sponsoring college in addition to editorial characteristics of the publication itself. Accordingly, we constructed a composite credibility score by summing the values of six variables[6] from Table 2 that centered on perceptions of both the college and the publication: "*Focus21* is a truthful source of information; the type of information in *Focus21* is not generally available elsewhere; Dean Mitchell's letter, Perspective, accurately represents the goals of the college; *Focus21* is

a credible source of information about agricultural research conducted by MU scientists; CAFNR is a good investment of my tax dollars; and the college is meeting the needs of Missourians." Item analysis was performed to assess the reliability of the six-variable set, yielding an alpha coefficient of .76.

Regression Findings. Stepwise regression analysis was used to measure the influence of each independent variable on the dependent variable while holding other variables constant.[7] Stepwise techniques involve the computer's experimentation with different combinations of independent variables in determining their final selection and order in the regression equation (Schroeder et al., 1986). Independent variables explaining the greatest amount of variance are entered into the regression

Figure 1. Regression models for all respondents (1), alumni (1A), and faculty (1B)

(1) $Y = .419x_1^* - .311x_2^* - .110x_3$
(Adjusted R Square = .383; n = 161)

(1A) $Y = .502x_1^* - .281x_2^* - .088x_3$
(Adjusted R Square = .468; n = 127)

(1B) $Y = .126x_1 - .342x_2^* - .198x_3$
(Adjusted R Square = .090; n = 34)

where Y is respondents' attitude toward receiving and reading *Focus21*,

X_1 is a composite measure of perceived credibility of the college and magazine,

X_2 is a composite measure of reader interest in the publication's subject matter, and

X_3 is a composite measure of the level of preference for photography and graphics in publications.

*** Variables significant beyond the .05 level.**

Note: Negative beta coefficients for X_2 and X_3 result from the scheme used to code variables (see footnotes in Tables 2, 3 and 4). Negative values for these coefficients indicate that reader interest and preference for photography and graphics are *positively* associated with attitude toward receiving and reading the magazine.

equation first, and subsequent independent variables are entered according to their ability to account for additional variance. The three regression models shown in Figure1 are presented in standardized form.[8]

Equation 1 represents the best regression model when all respondents (both alumni and faculty) are considered. The first two variables in the equation were significant beyond the .05 level, while the third variable, preference for photography and graphics, was statistically insignificant. The adjusted R^2 for the model was .38, indicating that perceived credibility and level of reader interest explained about 38% of the total variance in alumni and faculty respondents' attitudes toward receiving and reading *Focus21*.

Equations 1A and 1B (Figure 1) specify models developed from separate consideration of alumni and faculty, respectively. In Equation 1A, perceived credibility and level of reader interest again emerged as statistically significant variables, accounting for approximately 47% of the variance in alumni attitudes toward receiving and reading *Focus21*. In Equation 1B, only one variable—level of reader interest—was statistically significant in accounting for faculty preferences for the magazine. The adjusted R^2 for the model was .09, indicating that the variable accounted for only 9% of the variance in faculty attitudes toward receiving and reading the magazine.

Discussion and Conclusions

The study generated useful and much-needed data on *Focus21*'s audience and its performance as a source of college and research information. Data on readers' levels of interest in various subject-matter areas will be particularly useful in guiding the editorial content of upcoming issues of the magazine. This information will also provide important base-line data as future research tracks readers' changing interests.

Findings indicate that *Focus21* readers have high levels of interest in topics frequently covered in the publication, as well as high expectations about the quality of presentation of this material. For instance, as shown in Table 4, mean values of reader preferences for 11 aspects of publications ranged only from 3.84 to 5.15 on a six-point scale. Both alumni and faculty were shown to have relatively high preferences for a range of publication characteristics, from interesting topics to attractive presentation.

The data also provide a clearer picture of how alumni with relatively high and low levels of interest in agricultural and natural resources information vary in their preferences for various communication methods and media. Specifically, those with lower levels of interest in these topics are more likely to rate general media, such as newspapers and especially television, as the most important sources of information. In general, print media such as newspapers and extension publications were ranked relatively high by low-interest and high-interest alumni, as well as by faculty participating in the study.

Care should be taken in interpreting the relatively low levels of preference for web sites and CD-ROM as sources of agricultural and natural resources information. Although these methods are quickly gaining popularity, they are not nearly as well established among clientele as traditional print and electronic media. It is also possible that the low levels of preference result from a lack of accessibility by the audience at this time. Accordingly, the current findings for these new media are probably most useful as comparative or base-line data for future research, but not as a measurement of future potential.

Results from the regression analysis helped build on the descriptive findings by providing information on the simultaneous action of three variables hypothesized to influence audience perceptions of the publication. Two of the three proposed regression models were somewhat successful in accounting for variance in respondents' preferences for receiving the magazine. Two variables—source credibility and reader interest—explained well over one third of the total variance in alumni and faculty (combined) preferences for receiving the magazine; the explained variance increased to nearly 50% when alumni preferences were considered separately from faculty. Contrary to our expectations, reader preference for photography and graphics was not a significant predictive variable in any of the models.

The regression findings clearly suggest source credibility is at least as important to alumni respondents as their level of interest in the articles. Alumni tend to interpret credibility as a broad concept based not only on their impressions about editorial aspects of the magazine, but also the perceived effectiveness of the college and its personnel. Such a finding

points out the critical, yet limited, role that publications and other media play in influencing audiences' perceptions of a college's credibility. Media represent only one aspect of credibility enhancement and should be evaluated as such. Perceived credibility and subject-matter interest were considerably less useful in explaining faculty preferences for the magazine. More than 90% of the variance in faculty attitudes toward receiving the publication remained unexplained with the proposed model. It is clear that additional variables not included in the current model are more important in explaining publication preferences of internal audiences such as faculty.

This research project is a step toward building a needed model of *Focus21* readership. The use of regression analysis helped reveal important differences among subgroups within the sample that would not have been discovered by examination of descriptive data alone. With the exception of the few variables noted, alumni and faculty revealed statistically similar attitudes toward various aspects of *Focus21* and its subject matter. However, the two groups differed significantly according to how selected variables predicted their preference for receiving and reading the publication.

Additional research will be necessary to track readers' changing needs and interests and to refine our theoretical modeling. Future work should employ purposive sampling of alumni, faculty, and other key subgroups so that findings can be generalized with more confidence. Additional research is also needed to construct more valid and reliable indicators of audience and communication variables within the land-grant context. Increased precision is needed in the measurement of independent variables used in the current study, particularly in the area of source credibility.

It is important that other states conduct similar research, when appropriate, to help perfect measurement of key study variables. Improving our measurement in editorial research will help us build a more comprehensive body of comparative research literature while providing more useful information to our alumni, faculty and clientele.

Notes

[1] Government bulletins reporting on farmers' and rural residents' uses of information were published as early as the 1920s (NPAC, 1955).

[2] The sampling frame included alumni, faculty and professional staff, legislators, and agricultural industry leaders. Students were not included in the sampling. Faculty and professional staff were specially coded during data entry so that they could be identified later for separate analyses. Because of the relatively small number of legislators and industry leaders included in the sample, all remaining subjects were coded as "alumni." References in this paper to "readers" or "respondents" refer to the entire sample.

[3] In a later, more rigorous examination of the data, all Likert-type questions in the study were subjected to T-testing. Several variables were found to exhibit statistically significant differences between early and late respondents at the .05 level. These variables are footnoted in the tables, and descriptive findings for most of these items are generalized only to respondents and not the sample (see Note 4 for exceptions).

[4] Early and late responses varied at statistical significance for this item (see Variable 2,Table 2). This difference disappeared when T-tests were recalculated using only instate (Missouri) respondents. Therefore, findings for this variable may be generalized to instate readers, but not to the entire sample. Other findings generalized only to instate readers include data for Variable 21, Table 2; and Variable 1, Table 3. It should be noted that Missouri residents account for the large majority of *Focus21* readership. In analyses not reported here, Missouri residents were shown to be equally or more favorable than nonresidents to all aspects of the publication. Therefore, descriptive data reported here should be viewed as a conservative estimate of Missouri readers preferences for the publication and its subject matter.

[5] A composite measure of interest in agricultural and natural resources subject matter was calculated by summing three variables: *natural resource programs, agricultural production research,* and *agricultural marketing/economics* (Table 3). Scores for faculty respondents were analyzed first (N=38). Alumni were then divided into two groups based on their scores for the composite-interest variable. Approximately 50 alumni expressing the lowest levels of interest were selected to represent low-interest readers, and approximately 50 alumni expressing the highest levels of interest were selected to represent high-interest readers.

[6] Our original composite measure of credibility included a seventh variable from Table 2: *Focus21 provides a biased view of the College of Agriculture, Food and Natural Resources.* Item analysis indicated that this variable was not sufficiently correlated with the other six items to justify its inclusion in the composite measure. This finding was unexpected given the frequent mention of bias variables in mass media literature. In retrospect, omission of the bias variable makes sense in the current research. College publications, unlike general mass media, are likely to be viewed by readers as serving an explicit promotional function in addition to a "news" function for their sponsoring universities. This finding provides some insight into the differential criteria used by readers in assessing credibility of university-sponsored publications as opposed to commercial publications. Future research is needed in this area.

[7] We conducted two tests to rule out the threat of multicollinearity, or excessive intercorrelation of independent variables. First, multiple models, not reported here, were analyzed with different numbers and combinations of our independent variables. We then compared the signs and magnitudes of beta coefficients in the test models with those in the reported models. All of the final betas exhibited expected signs and reasonable magnitudes. In a more rigorous test for multicollinearity (Lewis-Beck, 1980), we regressed each independent variable against the other independent variables and inspected the resulting R-square values. High R-square values would suggest unacceptable levels of multicollinearity. All of the R-square values for our sample were sufficiently low to conclude that multicollinearity was not a problem in the study.

[8] Standardized regression coefficients are reported to allow for comparison of magnitudes for different coefficients within the equation (Pedhazur, 1982). Unstandardized coefficients are scale-specific, so their relative effects should not be compared.

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