

6-1-2009

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Recommended Citation

Yang, R. K., Fetsch, R. J., McBride, T. M., & Benavente, J. C. (2009). Assessing Public Opinion Directly to Keep Current with Changing Community Needs. *The Journal of Extension*, 47(3), Article 6. <https://tigerprints.clemson.edu/joe/vol47/iss3/6>

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June 2009
Volume 47 Number 3
Article Number 3FEA6

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Assessing Public Opinion Directly to Keep Current with Changing Community Needs

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Abstract: In communities that are changing, Cooperative Extension's programs should change to meet the needs of community members. Directly assessing community members' needs and concerns is valuable in developing and offering educational programs that will be responsive to community needs and attract audiences. We describe a simple survey method that can efficiently assess community members' concerns. The method is useful in developing broad programs that can address several related issues. A specific example of the process is presented using a county facing well-recognized rural/urban issues.

The Cooperative State Research, Education, and Extension Service (CSREES) advances knowledge for agriculture, the environment, human health and well-being, and communities. Under the auspices of the CSREES, Cooperative Extension (CE) brings research-based knowledge directly to people to improve their lives and communities. Traditionally, CE has emphasized programs related to agricultural productivity; thus, rural communities have been the recipients of many if not most of CE's programmatic efforts.

During the past three to four decades, rural communities have been affected by well recognized challenges: family-run farms and ranches confronted issues of economic viability (e.g., Lotterman, 1996); agricultural lands were encroached by urban development; and rural families faced more multiplex issues (than urban families), such as those associated with long-term poverty, medical insurance coverage (Lichter, Roscigno, &

Condrón, 2003; USDA, Economic Research Service, 2006), care for elderly family members (MacTavish & Salamon, 2003), and finding adequate child care (U.S. Department of Health and Human Services, 2005). Together, challenges such as these transformed rural communities. Indeed, Davidson used the phrase "broken heartland" to describe the overall impact of these changes on rural communities (Davidson, 1990).

In this article, we argue that Cooperative Extension has not kept adequate pace with the needs of these transformed rural communities. We again (cf. Yang, Fetsch, Jenson, & Weigel, 1995) suggest a method, discussed by Baker and Verma (1993) in the pages of this journal, that can bring CE closer to its mission. Cooperative Extension has used issues-based programming to redirect its efforts, but has not used the public directly to help delineate community needs. Instead, CE has used leaders (from CE and the communities) to define issues (Baker & Verma, 1993) rather than surveying the community directly. Weigel, Fetsch, Jenson, Yang, and Rogers (1992) found that citizens can differ from advisory councils and community leaders in ranking the importance of issues that need to be addressed. In this article, we provide a specific example of the usefulness of direct community assessment.

Why Direct Community Assessment?

The assessment of community needs is not new. All county Cooperative Extension offices have advisory councils. These councils help county CE directors delineate a community's needs. These needs can include services or resources that are unavailable and therefore prevent people from adapting well to their current situation. The needs can also include resources, the availability of which would allow people to achieve a more ideal situation in the future (cf. Wade, 1989). These assessments could be especially important in rapidly changing rural communities.

Baker and Verma (1993) described the adaptation of issues-based programming by Cooperative Extension in Louisiana. Using focus groups comprised of community (parish) leaders and Extension agents, Baker and Verma discovered considerable resistance to issues programming. Focus-group members were concerned about poorly timed initiation, unfamiliarity with the process and procedure, overlapping responsibilities, and professional rivalries. However, group members also felt that issues programming was successful when it was actually implemented: Extension became better recognized in local communities, had better ties with local governments, and became better networked with other agencies. Baker and Verma's findings indicated that Extension professionals have mixed feelings about issues-based programming. We speculated that CE staff resisted issues-based programming because of suspicions that it was an administrative ploy to reallocate resources, that it was without empirical validation, and that it required too much reorganization to be truly feasible (Yang, Fetsch, Jenson, & Weigel, 1995).

Notably, Baker and Verma (1993) did not consult with the community members served by Cooperative Extension. These citizens, as CE's service base, could have had different opinions about issues programming than community leaders and Extension professionals, or these citizens could have actually had needs different from those perceived by community leaders. It seems possible that in Baker and Verma's case, issues arising within the CE organization prevented it from directly assessing community members' needs. In communities undergoing changes, such as the one we describe in this article, recurring assessments of needs could be essential.

We propose that directly assessing community members' needs with an empirically validated method can help address the problems described by Baker and Verma (1993). By making the first part of the process directly surveying citizens, concerns about initiating programs, overlapping responsibilities, and professional rivalries can be set back, tandem to the survey. Using the analysis of the survey to generate decisions about which programs to initiate and who is responsible for them can preclude politicized considerations from creating an intra-organizational debate about programmatic offerings. What is needed is a method for

analyzing the survey results that is empirical and yields program-level recommendations about issues important to citizens. In this article, we propose that the statistical method of factor analysis will meet this criterion. We report an analysis of a survey conducted in a county confronting challenges that are both rural and urban.

Survey Method

County Profile

In this article, we describe an assessment of the citizens of a county containing a mix of metropolitan and agricultural areas. Adams County, Colorado, extends from the Northern side of metropolitan Denver area to the Eastern plains (1,180 square miles). It encompasses rural agricultural areas as well as urban municipalities and Denver International Airport. Thus, the county is an example of the changing interface between rural agricultural areas and rapidly expanding urban developments. The U.S. Census Bureau estimates that the county's population grew 13.9% between 2000 and 2006 (to 414,300). It is the fifth most populous of Colorado's 64 counties. Median household income in 2000 was \$47,323; 7% of families and 9% of the population fell below the poverty line. The county's most recent public report (Adams County, 2006) speaks to the diversity of issues facing counties like these, for example, the deterioration of infrastructure in areas as investors seek new residential and retail developments, increasing social services (as population increases), and preserving farm and ranch lands and wildlife habitat.

Respondents' Profile

The Adams County Cooperative Extension office obtained a current list of registered voters in the county (125,000). From this list, 800 were randomly selected and sent a survey (English and Spanish), a one-dollar bill, and a stamped return-envelope. Ten days later, a postcard was mailed to the same address, reminding and thanking the resident for responding to the survey. Ten days after the postcard, another letter and survey were sent asking again anyone who had not yet responded to please complete the survey and return it. Using this modified Dillman (1991) method, we achieved a 65% response rate (N = 520; 498 usable surveys).

Respondents were demographically diverse. Their modal education was some college or technical school (42%). Twenty-four percent had only a high school education (or less); 33% had a college baccalaureate degree (or more). Annual pre-tax income varied from less than \$10,000 to more than \$350,000; the median was approximately \$50,000. Ten percent of respondents lived in a small town (under 2,500 population), rural area, or farm/ranch; 29% lived in a town (2,500 - 10,000), small city (10,000 - 50,000), city (50,000 - 100,000); and 60% lived in a metropolitan area (100,000 or more). Sixty-seven percent were married; 12% were never married; 10% were divorced or separated; 4% were widowed; 4% were cohabitating; and 3% were remarried. Average household size was 2.76 persons (range: 1 - 12). Seventy-nine percent of respondents were White, 10% were Hispanic, and the remainder were from other ethnic minority groups.

The Survey

Thirty-seven issues were listed in the survey. The list was initially generated by Jenson and his colleagues (Jenson & Daly, 1988; Jenson, Warstadt, Daly, & Schuchardt, 1990; Weigel et al., 1992). Using guidelines recommended by Gallup and Proctor (1984), Jenson et al., drew from reports by national polling organizations, congressional committees, federal policy-making and funding agencies, and social policy organizations. The list was validated in public surveys (Weigel et al., 1992; Yang, Fetsch, Jenson, & Weigel, 1997). County Extension professionals added issues specific to Colorado and Adams County. Respondents used a 7-point Likert scale (ranging from 1 = "Unimportant" to 7 = "Critical & needs immediate attention")

to rate each issue.

Respondents completed a demographic information sheet in which they reported their age, marital status, gender, household size and income, education, race, where they lived (e.g., farm/ranch, small town, metropolis), and ZIP code. Respondents also reported their familiarity with Cooperative Extension.

Results

We used principal components analysis (SPSS) with varimax rotation to analyze the survey. Principal components analysis groups specific items (in our case, issues) with other correlated items, generating groups that are independent (i.e., orthogonal) of each other; the rotational processes minimizes the possibility that items will have substantial coefficients on more than one factor. In previous analyses, we found that using principal components analysis grouped specific issues so that a dominant conceptual theme was visible, interpretable, and appeared useful as a programmatic focus (Fetsch, Yang, & Hughes, 2007; Yang et al., 1995; Yang et al., 1997).

Six factors with eigenvalues greater than one were generated. (An eigenvalue indicates the amount of variance that is accounted for by a specific factor.) Summed, these six factors explained 63% of the total variance. The six retained factors, specific issues, factor coefficients (above 0.50), and eigenvalues are presented in Table 1. To try to eliminate the chance association of a specific issue with a factor, we set a factor coefficient minimum of .50 to define the factors. As in previous analyses, the factoring collected the specific issues into thematically coherent groups.

Table 1.
Principal Components Analysis of 37 Specific Issues

Factor 1 (16.63^a, 15.65^b): Helping Vulnerable Children and Youth
Preventing child abuse (.77 ^c)
Preventing violence in schools (.77)
Preventing students from dropping out of high school (.68)
How to help children living in poverty (.66)
Preventing teenage pregnancy (.65)
Preventing drug abuse (.65)
Preventing alcohol abuse (.62)
Affordable housing for families (.53)
Factor 2 (12.84, 2.61): Agricultural Education and Sustainability
Increasing farmers' knowledge about chemical-free farming (.70)
Educating the public about improved landscape water methods (.69)
Loss of farmland to housing, business and infrastructure development (.66)
Agriculture education programs in schools (.66)

Computer education for family farms and ranches (.59)
Controlling weeds on farms and ranches (.50)
Factor 3 (9.32, 1.50): Strengthening Families
Strengthening families (.72)
Teaching couples how to get along with each other (.65)
Lack of leadership skills in youth (.61)
Poor reading skills of youth (.55)
Factor 4 (8.62, 1.33): Family Finances
Coping well with rising health care costs (.70)
Budgeting in tight times (.62)
Feeding a family on a tight budget (.56)
Coping with rapid population growth in Colorado (.53)
Health care for the elderly (.52)
Factor 5 (8.35, 1.23): Chronic Diseases
Preventing diabetes (.74)
Controlling obesity (.70)
Preventing heart disease (.67)
Factor 6 (8.17, 1.10): Environmental Threats
Coping with drought in Colorado (.72)
Coping with wildfires in Colorado (.68)
Conserving water in homes and businesses (.66)
^a percent of variance (rotated solution). ^b initial eigenvalue for unrotated solution. ^c factor coefficient.

We labeled the first factor Helping Vulnerable Children and Youth. The factor grouped issues related to the vulnerability of children and youth to the dangers in our communities. These dangers include physical violence and activities that disrupt normal healthy development at home and in school. Notably, alcohol and other drug abuse were associated with youth (and not older persons). Together, the grouping of these issues suggested that concerns about youth specifically involve drug abuse, violence, affordable housing and poverty, and poor education.

We labeled the second factor Agricultural Education and Sustainability. The factor grouped specific concerns about agriculture, including chemical-free farming, water conservation, urban encroachment, agriculture-related education, and weed control. Together, the grouping suggested concern about agricultural issues and the public's appreciation of the importance of agriculture.

We labeled the third factor Strengthening Families. The factor described concerns about family relationships, strengthening families and teaching couples how to get along. But the factor also included concern about illiteracy and poor leadership skills among youth. The occurrence of these latter issues on this factor suggested that respondents believe that these skills are most influenced in the family.

We labeled the fourth factor Family Finances. The factor described concerns about family financial viability, rising health care costs, managing household expenses during tight times, and providing health care for the elderly. Also included with these budgetary concerns was concern about rapid population growth. Together, these concerns are about money and cash flow at the family level and suggest that concern about rising expenses is associated with population growth.

We labeled the fifth factor Chronic Diseases. The factor described concerns about long-term human chronic diseases, which have been well publicized in the last several years. Each concern is an aspect of metabolic syndrome.

We labeled the sixth factor Environmental Threats. The factor described concern about drought, controlling wildfires, and water conservation.

The factor analysis grouped 30 of the 37 specific issues into thematic and interpretable broader concerns about helping vulnerable children and youth; agricultural education and sustainability, strengthening families, family finances, chronic diseases, and environmental threats (Fetsch et al., 2007). Seven specific issues did not load substantially on any of the six factors: Youth who are unprepared for employment; Steps to take to reduce global warming; Animal disease outbreaks such as Chronic Wasting Disease in elk and West Nile virus; Managing stress, anxiety, and fear in a dangerous world; Peace of mind workshops, for example, reducing stress and anxiety, finding balance; Nutrition for pregnant women; and Grandparents caring for grandchildren.

Mean Differences Between Factors

We generated raw scores for each factor by summing ratings for each survey item with a factor coefficient of .50 or greater on each factor. Presented in Table 2 are the mean raw scores for each factor and their standard deviations.

Table 2.
Raw Factor Score Means, Standard Deviations, and Confidence Intervals^a

	Mean	SD	95% Confidence Interval
Helping Vulnerable Children & Youth	5.61	1.17	5.50-5.71
Agricultural Education & Sustainability	4.23	1.24	4.19-4.41
Strengthening Families	5.32	1.1	5.21-5.43
Family Finances	5.22	1.58	5.12-5.33
Chronic Diseases	4.76	1.42	4.63-4.88
Threats to the Environment	5.13	1.22	5.02-5.24
^a n = 484-488.			

Demographic Differences

We used *t*-tests, analyses of variance, and correlations to assess demographic differences for the six factors within our sample.

Gender

Men and women differed on two factors: Women were more concerned about the Helping Vulnerable Children and Youth, $F(1,467) = 14.40, p < .000$, and were more concerned about Chronic Diseases, $F(1, 467) = 5.27, p = .02$.

Age

Age was correlated with three of the six factors: negatively with Strengthening Families, $r(458) = -.15, p = .001$; positively with Family Finances, $r(458) = .21, p < .000$; and positively with Environmental Threats, $r(458) = .29, p < .000$.

Marital Status

Marital status was related to only two factors: Helping Vulnerable Children and Youth ($F(1, 6) = 2.75, p = .012$), with never-married having the lowest concern and separated persons having the greatest concern; and Environmental Threats ($F(1, 6) = 2.91, p = .009$), with re-married persons having the least concern and separated persons having the greatest concern.

Household Size

Household size was minimally correlated with four of the six factors: negatively with Agricultural Education and Sustainability, $r(472) = -.10, p = .031$; positively with Strengthening Families, $r(472) = .13, p = .006$; negatively with Family Finances, $r(472) = -.14, p = .002$; and negatively with Environmental Threats, $r(472) = -.20, p < .000$.

Education and Income

Education and income were correlated, $r(455) = .34, p < .000$. A composite score (principal component) combining both measures was correlated with Family Finances, $r(435) = -.29, p < .000$; Chronic Diseases, $r(435) = .34, p = .017$; and Strengthening Families, $r(435) = .34, p = .029$.

Reported Residence: Rural, Small Town, Metropolitan

To our surprise, no statistically significant differences occurred among any of the six factors classified by the seven residential categories. This could have been because the respondents living in rural areas were relatively small in number compared to the metropolitan respondents, thus reducing statistical power. For example, for the factor Agricultural Education and Sustainability, farm/ranch, rural, and small town respondents had higher scores than city or metropolitan respondents, but these differences did not reach statistical significance. A Pearson correlation between residential location and the six factors generated a minimal relation for the Agricultural Education and Sustainability factor, $r(466) = -.11, p = .021$.

Familiarity with Cooperative Extension

Seventy-one percent of respondents reported that they "know nothing about . . . Cooperative Extension." Twenty percent of respondents reported that they knew about CE, but had not contacted them. Only 9% of respondents reported any contact (within the last 3-years) with CE.

Of the six factors, only Agricultural Education and Sustainability distinguished those who had any contact with CE (within the last 3 years) from those who had no contact. Respondents who had contact with CE had higher scores on this factor than those who had no contact, $t(469) = 3.41, p = .001$.

Discussion

We used this factor analytic technique (principal components analysis) as an exploratory tool. The analysis empirically grouped specific concerns into thematic groups of conceptually interpretable factors; no *a priori* conceptual assumptions were made. We think this factoring procedure has four benefits.

- First, placing concern about specific issues into larger groups allows program developers to understand the broader concerns of citizens. Sometimes, those broader concerns cannot be well articulated even by respondents, especially when asked about single topics or specific issues. For example, concern about a specific farm practice (chemical-free farming) was also related to concern about urban water conservation and to teaching children about agriculture. The factoring suggests that a program developed to address on-farm practices should also address these other issues.
- Second, the factoring reduced the 37 issues into 6 groups, all of which seem to be coherent broader concerns. This is an efficient way to reduce the number of different offerings that Cooperative Extension would need to develop to respond to community concerns. Notably, the first and largest factor represented concern about helping vulnerable children and youth. This factor was also more highly ranked than all the other factors. This suggests that concern about children and youth predominates all the other concerns of respondents. The factoring also suggests that of secondary concern is agriculture, and of least concern is drought and controlling wildfires.
- Third, the relative ranking of the factors provides valuable comparative information among these priorities: many citizens would probably argue that controlling wildfires and conserving water are important, but our analyses indicate that among several concerns, they are not highly ranked.
- Fourth, the factoring allowed us to search for other interests of respondents that would not have been visible if only concern about specific issues had been examined.

Characteristics of respondents were related to the nature of their concerns. People who were familiar with Cooperative Extension and whose residences were rural had, expectedly, greater concerns about the challenges facing agriculture, not only for improving efficiency, but also for educating the public about the importance of agriculture. But familiarity with CE and rural residence were only associated with agricultural concerns, and not with any of the other five factors.

Respondents who were older expressed less concern about strengthening families. But respondents who were more educated and living in larger households expressed greater concern about these family relationships (than respondents who were less educated and living in smaller households). However, older respondents

with less education and from smaller households were more concerned about family finances. These findings indicate that intra-familial issues about relationships and managing the family budget are important to older persons. Cooperative Extension has programs in these areas. That so many respondents were unaware of CE, yet had these concerns, suggests that better publicity by CE of its programs in these areas is all that may be needed.

We had not anticipated and remain puzzled by one other result. Concern about agricultural education and sustainability was negatively related to household size; larger families were less concerned than smaller families. We do not know why this should be the case.

Nonetheless, taken together, our analysis of respondents' concerns generated useful profiles that Cooperative Extension could use to develop, deliver, and evaluate programs. These programs could address, based on audiences' demographic characteristics, topics expected to be of greater concern for specific groups. For example, an Extension forum in a working-class community with older "empty-nest" residents should address household financial management issues and family relationships. Although this might seem obvious, our results also indicate that this audience would be interested in natural resource issues (drought, wildfires, conserving water), as well. This latter interest would not be obvious and would not be apparent, we believe, were it not for the survey of citizens' needs.

We were startled to find that seven of 10 citizens knew nothing about Cooperative Extension. This could be related to the urbanization of this county and the fact that respondents with rural residences comprised most of the three of 10 respondents who did know something about CE. Perhaps CE is still perceived as "agricultural" Extension and not as an organization that is a source of omnibus research-based expertise for communities, rural and urban. Better publicizing existing programs on non-agricultural topics could do much to broaden CE's audience, especially in light of citizens' primary concern with youth.

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