DEFINING NEW CLIENTELE FOR UNIVERSITY OUTREACH[1] IN THE WEST[2]

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Abstract

The rural West has experienced dramatic demographic and economic transformations over the past decade. The make-up of farm operators has altered significantly and enterprises are increasingly at greater production, financial, marketing, human, and institutional risks. Given the importance of University Outreach education to the future of agriculture, a better understanding of the make-up of farm operators and their perceived threats are required in order to design effective risk management education. A statistically valid survey was conducted in 2006 of farmers and ranchers in Arizona, Colorado, and Wyoming in cooperation with the National Agricultural Statistics Service of the U.S. Department of Agriculture. The questionnaire was designed to discover the demographics, preferences for learning methodologies, greatest threats, and information demands of today's farmers. Empirical analyses were conducted using survey data of 2,645 farm operators. This paper presents preliminary results based on initial analysis.

Introduction

The rural western United States has experienced dramatic demographic and economic transformations over the past decade. The make-up of farm operators has altered significantly and enterprises are increasingly at greater production, financial, marketing, human, and institutional risks.

Passage of the 1914 Smith-Lever Act launched Extension education in the United States with the stated purpose: "to aid the diffusion among the people of the United States useful and practical information on the subjects relating to agriculture and home economics and to encourage the application of the same." (CSREES n.d.) In the earlier years of Extension the transfer of knowledge occurred primarily through face-to-face education. While face-to-face education continues to be an effective method, other delivery mechanisms have been used to keep pace with emerging communication technologies, increased time constraints of both producers and Extension personnel, and the increasing complexities of production agriculture. These changing methods in education delivery include public radio in the 1930's, television in the 1950's and more recently Satellites in the 80's and the internet in the 90's.

[1] For the purposes of this paper, University Outreach and Extension are used synonymously to describe all outreach education by land grant universities.

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Anecdotal evidence and U.S. Census of Agriculture data support the thesis of a changing profile of traditional farm operators. However, more in depth information is necessary to address the questions of: Who are today's farmers and ranchers? What are their preferences for learning? What are their perceived threats? What information do they believe would be helpful to them as they manage their agricultural operations?

The U.S. Census of Agriculture, conducted on a 5-year cycle by the National Agricultural Statistics Service, is a leading source of statistics about agriculture. It defines a farm as "any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year." (NASS, 2002)

Table 1: Total Number of Farms In Arizona, Colorado, and Wyoming in 2002 and 1997. (NASS, 2002)

State	2002	1997
Arizona	7,294	8,507
Colorado	31,369	30,197
Wyoming	9,422	9,443
Total for Three States	48,085	48,147

There were 48,085 farms in Arizona, Colorado, and Wyoming in 2002, according to the Census of Agriculture. A total of 22,797 farms across the three states reported harvested cropland in 2002, constituting a total of 6.533 million acres. Furthermore, 21,431 farms reported cattle and calves for a total of 4.794 million head of cattle in 2002.

Table 2. Number of Farms in Arizona, Colorado, and Wyoming in 2002 and 1997 With Annual Sales Less Than $50,000. (NASS, 2002)

	2002		1997	
State	Farms	Of Total	Farms	Of Total
Arizona	5,795	79%	6,680	79%
Colorado	25,260	81%	22,835	76%
Wyoming	6,617	70%	6,377	68%
Total for Three States	37,672	78%	35,892	75%

Smaller farms – those farms with less than $50,000 of annual sales – account for 78 percent of all farms in the three states. Farms reporting between 1 to 49 acres of harvested cropland totaled 10,204 represent fully 45 percent of farms across the 3-state region. A total of 4,982 farms reported 1 to 9 head of cattle or 23 percent of all farms (12,228 farms reported 1 to 49 head or 57 percent) of farms reporting cattle and calves in the three states. (NASS, 2002)

Survey and Preliminary Results

A statistically valid survey was conducted in 2006 of farmers and ranchers in Arizona, Colorado, and Wyoming by university Extension educators and researchers (the authors) in cooperation with the National Agricultural Statistics Service of the U.S. Department of Agriculture. The survey target population consisted of farm operations with annual sales of less than $50,000. To ensure a representative sample from each state, the numbers of survey instruments were allocated based on the population of small farm operators in each state. A total of 2,645 surveys were completed for a total response rate of 53.6 percent. Data were collected on small operator's demographics, sources of risks, information sources and preferences, resource management, and income status. To accomplish the stated objectives, various tools of multi-variate statistical analysis including cluster analysis, and classification techniques were employed. Analyses of survey results provide insights to the characteristics of small farmers and ranchers in the states of Arizona, Colorado, and Wyoming.

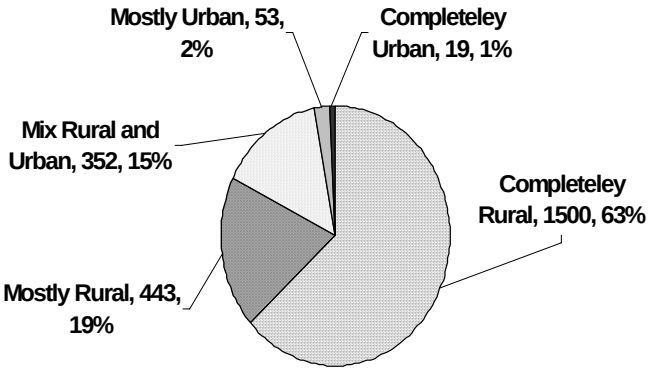
Table 3. Survey Response Rate in Arizona, Colorado, and Wyoming.1

State	Number of Surveys Mailed	Number of Surveys Returned	Return Rate	Number of Surveys & Interviews	Total Return Rate
Arizona	742	319	43.0%	353	47.6%
Colorado	3,298	1,662	50.4%	1,798	54.5%
Wyoming	899	466	51.8%	494	54.9%
Total for 3 States	4,939	2,447	49.5%	2,645	53.6%

[1] The agreement with NASS specified a 50 percent return rate for the surveys. Following the survey mailing, a post card reminder was sent to those people not yet returning their surveys. Telephone interviews were conducted with non-respondents in an attempt to reach the 50 percent return rate.

Farm properties in the western United States were classified into five categories: completely rural, mostly rural, mix of rural and urban, mostly urban, and completely urban. There are no fine lines demarcating these five categories. However, it should be noted that this spatial identification is qualitative in nature ranging from completely rural to completely urban. The survey data suggest that 63 percent of all properties are identified as completely rural and only one percent are discovered to be completely urban. In between, 19 percent are mostly rural and two percent are mostly urban. In other words, 82 percent of all properties can be identified to be either completely rural or mostly rural. An overwhelming majority (84 percent) of operators have their primary residence on their property. This is not a surprising figure given the survey target population was small farmers and ranchers whose annual farm sales were less than $50,000.

Figure 1: Survey Respondents Self-Assessment of the Rural-ness of Their Farm Properties.



The average distance between the property and nearest metro area for the sample of small farms is approximately 25 miles, while the median and mode distances are 12 and 10 miles, respectively. Such distances are important for at least two reasons. First, the smaller the distance between farm property and nearest metro area, the greater is the access to markets for agricultural produce, finance, and other facilities that a metro area represents, as opposed to a rural area. Second, smaller distances between farm property and the nearest metro area indicate more possibilities for off-farm jobs. Thus, it can be reasonably argued that smaller distances between farm property and the nearest metro area would enhance opportunities for economic sustainability and viability of small farms. However, a farm property located very near a metro area may be more likely a target for future urban encroachment due to increasing urbanization. These results suggest that a significant percentage of small farms are located not very far from their nearest metro areas, implying relatively easy access to markets and off-farm employment opportunities.

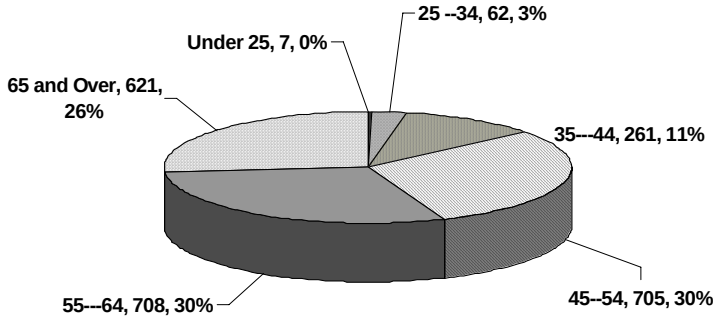
Table 4: Distance of Property from Nearest "Metro Area".

Survey Measures	Miles	Survey Measures	Miles
Count	2,297.00	Standard Deviation	37.49
Mean	24.89	Sample Variance	1,405.17
Median	12.00	Minimum	1.00
Mode	10.00	Maximum	2,297.00

In order to examine the vulnerability of small farms in the western United States, the small operators were asked whether the primary farm operators or their family members hold an off-property job, and if they do, how far does the individual who travels the farthest commute to work. Responses indicate that 71 percent of operator households have off-property jobs. This implies that 71 percent of the operator households have at least two sources of income including farm income, and therefore they are less vulnerable to external income shocks, as opposed to the remaining 29 percent households who do not have off-farm income sources. The average distance traveled by an individual holding an off-property job is approximately 29 miles, while most travel only 10 miles. A careful inspection of the data reveals that in our sample of farm operators, there are some operators who have off-property jobs but do not travel any distance at all, as is indicated by the fact that the minimum distance commuted is 0 miles. This implies there are some small farms where non-farm income activities are in practice.

The survey questionnaire asked farm operators to report their genders. It was found that 77 percent of the first operators (*operator 1*) are male, and the remaining 23 percent are female. On the other hand, 68 percent of the second primary operator (*operator 2*) are female. This suggests that if a farm is managed by two operators, it is mostly likely being managed by a couple. It should be noted that most of farms included in the sample are managed by only one operator (*operator 1*), and this in conjunction with the fact that 77 percent of *operator 1* are male, suggest that small scale farming in the West are male-dominated agricultural enterprise.

Figure 2: Age Distribution of the Primary Farm Operator in Arizona, Colorado, and Wyoming as Reported by Survey Respondents.



An unmistakable inference can be drawn about the age distribution of farm operators in the western United States. More than 45 percent of both operators (*operator 1* and *operator 2*) are in the age group 55 years and over. This observation is important because this significantly older age group of farmers who are most likely to retire from farm activities in the next decade or so. What happens to their farms after they retire is uncertain. It is not guaranteed that after their retirements, farms will remain as farm land and not converted to non-farm uses. Furthermore, since this is an older group of farmers, they are less likely to be receptive to new technologies and risk management strategies such as farm diversification strategies.

In the development and delivery of educational programs, it is important to know the educational attainments of farm operators. Here educational attainment refers to the highest level of education obtained by the operators. Approximately 50 percent of the *operator 1* reported having at least two years of college, while an additional 33 percent have a high school education and one percent claims no formal schooling. A similar picture emerges for *operator 2*.

On the surface it appears that small farm operators in the western U.S. are well educated. Careful inspection of the survey data reveals the facts are not as they appear to be at a tangential look. In particular, a significant percentage of both operators (42 percent for *operator 1* and 42 percent for *operator 2*) reported either trade school or high school as their highest level of education. This shows there is a great diversity of the Extension clients. Moreover, delivery mechanisms such as meetings and publications are less useful for these audiences. This poses a challenge for Extension education for improving the efficiency of program delivery.

Table 5. Tenure of Primary Operators on Their Properties and In The Communities, according to Survey Respondents.

Summary Measures	Tenure on Property (Years)	Tenure in Community (Years)
Count	2,317.00	2,304.00
Mean	18.98	31.41
Median	14.00	29.00
Mode	0.00	30.00
Standard Deviation	16.33	19.99
Sample Variance	266.73	399.53
Minimum	0.00	0.00
Maximum	94.00	94.00

The longer a farmer has managed his/her farming enterprise, the greater is his/her ability to understand the various complexities of production agriculture. Alternatively, if an operator has managed his/her property for a long period, it would be expected that he/she has a much better understanding of various sources of agricultural risks and vulnerabilities of his/her farm operation, as opposed to an operator new to a farming enterprise. Summary statistics of durations of association of farm operators with their farm property and communities indicate that on average *operator 1* have lived for 19 years on their properties. However, there are some operators who have not lived on their properties for any duration. At the same time there are farmers who have lived on their properties for 94 years. Is it a surprising discovery? Not at all! It simply shows that these operators have been life-long farmers. Similar inferences can be drawn for *operator 2*.

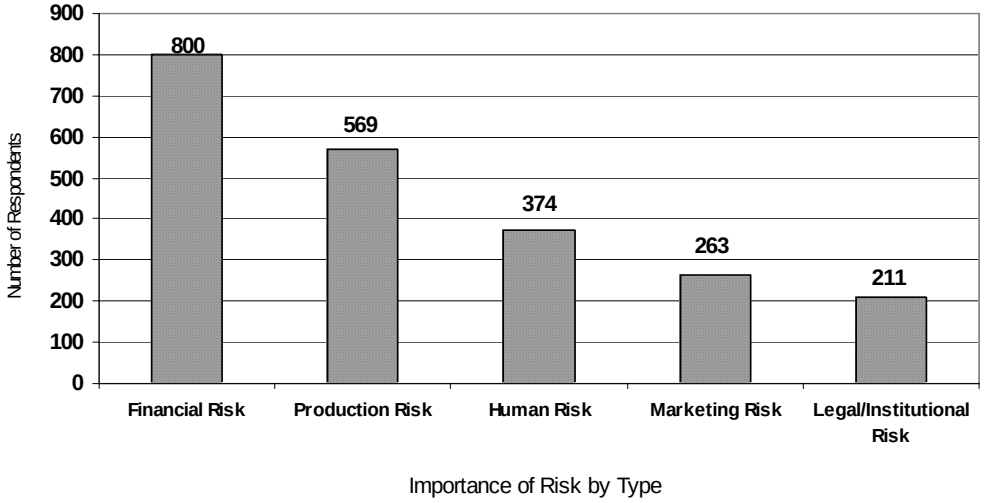
There is a very high correlation between the number of years operators have lived on their property and the number of years they have lived in their respective communities. In analysis of the survey data it was found that one of the major current sources of receiving risk management information about agricultural enterprise is the support from peers groups. Thus, it can be concluded that a farmer having lived in his/her community for a long duration of time is more likely to have peers' help, as opposed to those who are new to their communities.

Why are people involved in agriculture? It might not be easier to run an enterprise with family members. But when family enterprises work, they possess a competitive advantage no other business can match. An enterprise run by family members is often more resilient and more likely to succeed than any other forms of enterprises, simply because of its makeup. Family members know how to sacrifice. They have resilience in tough times. And customers perceive family businesses as being in business for the long duration.

Just as there is no one-type of family business, the reasons people are involved in rural family businesses vary. When asked to indicate why they engaged in their particular enterprise, respondents indicated that "working close to nature" was the most frequently stated reason for engaging in their particular enterprise. And certainly, a prime reason for family businesses is to earn money and support the family income. The respondents corroborated this assumption. Though it was hypothesized that factors such as rural isolation, lifestyle changes, and inheritance would be significant reasons for owning/operating a rural family business; "limited alternatives", "change in career", and "inherited" were not seen by the respondents as major reasons for engaging in their rural family business.

For many, living and working in a rural family business is more than being in business. Some would say it is almost like a calling. The general impression is that family business owners are totally committed to the family business. The researchers wanted to know if this held true for survey respondents; or would certain developmental or lifestyle conditions lead rural family business operators to leave their business? The results of this survey clearly illustrate that respondents overwhelmingly expect to manage their property, "until I can no longer do the work".

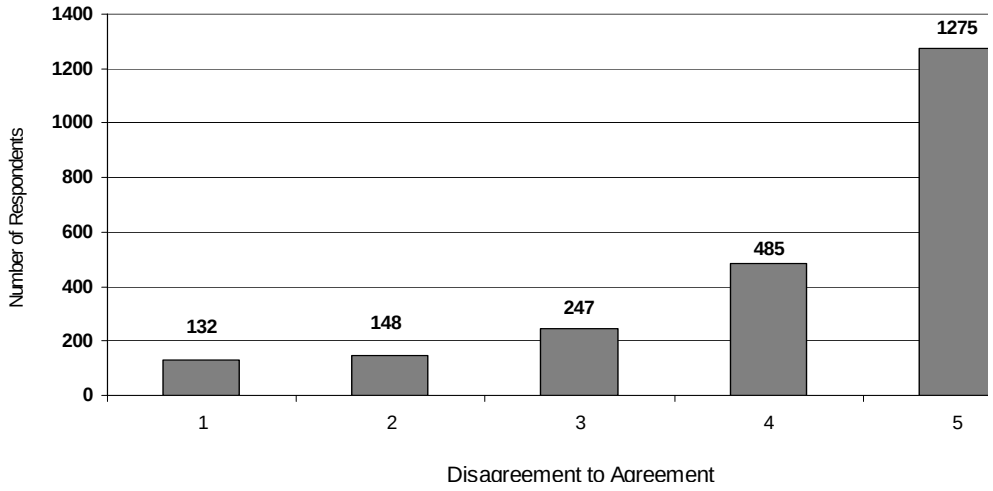
Figure 3: Survey Respondents Ranking of Importance of Risk Type.



Risk is the possibility of adversity or loss, and refers to "uncertainty that matters." Consequently, risk management involves choosing among alternatives to reduce the effects of risk. It typically requires the evaluation of tradeoffs between changes in risk, expected returns, entrepreneurial freedom, and other variables.

Survey respondents ranked financial risk as the most important source of risk. More respondents ranked financial risk either first or second than any other area of risk. Overall, production risk ranked as the second most important source of risk as over 1100 respondents ranked it either first or second. Though the highest number of respondents (583) ranked marketing as third, respondents to this survey were less definite in this area of risk than an any of the sources of risk. Respondents ranked legal risk management the least important as 1361 individuals ranked it either fourth or fifth. In addition, fewer respondents ranked this area as the most important source of risk in their operation. Next to legal risk, more respondents ranked human risk the least important. More respondents did, however, give human risk a most important ranking than respondents did for marketing or legal risk.

Figure 4: Survey Respondents Self-Assessment of Optimism.



Farmers and ranchers are the original entrepreneurs. From this study, a picture of the operators of rural family enterprises emerges.

1: They appear very comfortable in handling uncertainty in the family business environment. Many factors that will help determine the ultimate success are outside of one's control. To be successful, the family business operator must accept (some say relish) uncertainty and be willing to take risks.

2: They strongly believe in their ability to create success for their business. A rural family business operator must have confidence in him or herself and their ability to run a successful operation. There may be plenty of people offering help and advice but the final decision is the operator's.

3: They consider themselves successful operators. A farmer or rancher in a family business is responsible for achieving his or her business success. The operator must have an attitude that "I will succeed". If this attitude is not present, operators may not be inclined to put forth the effort needed to succeed.

4: They have will power. Will power is the ability of an individual to control and direct behavior in accordance with chosen goals and values. It involves determination, resourcefulness, and responsibility for achieving goals. Overall, the respondents to this survey appear to have the attitude that they are achieving the goals they set for themselves and their business.

5: They are fairly optimistic about the future of their business. To be successful in family businesses, one needs to be optimistic; have hope and a positive expectation for the future of the business. Though respondents were strongly confident in their own abilities, they were somewhat less optimistic about the future of their business.

6: They are mostly confident in their ability to deal with changes taking place in their business environment. It is unusual for all plans and goals to come together as envisioned. Changes in the business environment, market place, interrelations with employees and family members require the business operator to be flexible and persistent.

Summary

From the 2002 U.S. Census of Agriculture it can be seen that 78 percent of all farms and ranches in Arizona, Colorado, and Wyoming have annual sales less than $50,000. Empirical analyses were conducted using survey data of 2,645 farm operators. Results suggest that farmers within the targeted population are highly heterogeneous with respect to their social and demographic attributes.

Many people operating small agricultural operations do not see themselves as farm and ranch operators. Generally, the income generated by these smaller farming and ranching operations accounts for less than 20 percent of total household income for more than 80 percent of the operations.

A great majority of small farm operators have lived many years within their communities and on their farms and ranches. The properties tend to be about 25 miles from the nearest metro area. While some operators have off-farm jobs, they do not commute very far from their homes. Small farm operators are typically male and older than 54 years of age. Survey data suggests that such farm and ranch operators consider their spouses to help manage the business. About one half of the two primary operators of the farm have at least a two year college degree.

They are engaged in their particular family business to support their lifestyle and their family; to utilize their skill and knowledge; and to make money. With that, they believe financial risk to be their greatest challenge followed by risks associated with the production of their commodity/product. Overall, they are confident of their ability to manage their family business and achieve their goals; though somewhat less confident to deal with changes in the business environment. They appear optimistic about their ability and the future of the business. However, they appear less comfortable in balancing work and family demands. They enjoy what they do and strive for quality in the family business. For the most part, they do not envision themselves doing anything else.

More information about the survey and additional results (as they are completed) can be found at the Rural Family Ventures web site http://RuralFamilyVentures.org.

Future Discovery Efforts

The authors plan to investigate the possibilities of additional surveys, including traditional clientele, follow up contacts with survey respondents expressing willingness to participate in additional research, and conduct further analysis of existing data with the intention of further clarifying the implications for Extension education and sustainability of agricultural business activities. Future discovery efforts might include:

1. Investigate qualitative information on the sources of farmer information and their openness to technology adoption.
2. Expanding the survey to states beyond the initial study states of Arizona, Colorado, and Wyoming.
3. Conduct focus groups to test survey results and to enhance researchers' understanding of survey responses.
4. Conduct a survey of commercial agricultural producers. Not only would such work lead to a better understanding of the educational needs of commercial-sized operators, but would also allow for comparisons between groups.
5. Further investigate findings and relationships between this study, NASS data, and other published data sources. Additional references could be drawn about the total farm and ranch population and particular subsets of the agricultural community as Extension clientele.

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