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The Market for Information Services in Idaho Agriculture*

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I. Motivation

The continued growth and specialization of U.S. farms means that increasingly higher levels of management skill are required. In addition, the relatively unstable markets of recent years, heightened government regulation of agriculture, and rapidly changing production technologies have also increased the information needs of producers (Ortman, et al.). As a result, American farmers are increasingly utilizing the services of technical consultants to improve the productivity and profitability of their operations. Consultants provide services to producers in many aspects of farm management, including production decisions, marketing choices, and financial planning. Consultants offer specialized knowledge that would otherwise be difficult for producers to obtain.

Groups providing consulting services to farmers can be placed into three broad categories. First, public consultants, such as extension personnel, have been a traditional source of information for producers. Information offered by the Cooperative Extension Service has typically been provided at a minimal cost to producers -- as these programs are funded by tax dollars. However, Extension may be unable to provide the specialized services and personalized attention desired by individual producers (for example, information which is specifically tailored to the needs of a farmer's operation). Also, the historical mission of Extension has been to provide education to producers as opposed to providing services per se. For example, Extension personnel teach growers how to schedule irrigation for optimal production, but are discouraged from performing this task for individual producers.

A second source of information is industry salespeople or industry consultants. Services offered by industry consultants are generally tied to the sale of products such as fertilizers and chemicals or may be provided as part of a contractural agreement, such as production advice provided by a potato processor to one of their contract growers. The consulting services provided by industry consultants are typically offered at minimal direct cost to producers and are used to differentiate the consultant's product or establishment. As a result of the connection between the

services and products of industry consultants, producers may be skeptical regarding the objectivity and credibility of these consultants. Further, industry consultants may not have the breadth of knowledge necessary for guiding producers in making optimal choices.

The final category consists of independent consultants, both individuals and consulting firms, who sell their expertise to producers. While independent consultants may also sell products, producers must pay an explicit cost to procure the services of independent consultants. A distinct advantage of these consultants is the provision of information tailored to the specific needs of an individual's operation. Use of these private consultants has grown in recent years as producers increasingly need specialized knowledge in order to maintain the viability of their operations.

There are a limited number of studies which have examined the information sources of producers. Chavas and Pope and Taylor and Chavas indicated that outside information plays a major role in producer decision-making. However, Ford and Babb and Jones, et al. found that independent consultants were not an important source of this information. Nonetheless, in their studies, independent consultants were viewed as more important by larger farmers than by smaller farmers. In contrast, Ortman et al. found that independent consultants were an important information source for a sample of managers from large Midwestern farms. Those surveyed were attendees of the 1991 Top Farmer Crop Workshop held at Purdue University. This workshop was oriented to improving the managerial skills of Midwestern farmers. As a result, the sample consisted of producers who were more progressive and had above average managerial skills compared to the general farming population.

Taylor surveyed 1,000 commercial farmers across the United States. She found that approximately 40 percent of the producers had used a crop consultant, about 30 percent had used a marketing consultant and roughly 42 percent had employed an independent nutritionist. Jordan and Fourdraine surveyed managers of 61 of the top milk producing dairy herds in the country, as identified by the Dairy Herd Improvement Association (DHI). The objective of their survey was

to examine the production practices and information sources of these managers. Schnitkey, et al. used a multinomial logit model to examine farmers' information preferences for marketing, production, and financial decisions. In general, they found that farmers preferred information from printed sources, and that the Cooperative Extension Service ranked highly as an information source. Results did not support the contention that farmers are substituting specialist services for information received from the Extension service.

Jordan and Fourdraine found that veterinarians were the most highly rated and frequently used source of information for these managers, with farm magazines being the second most used source. The authors indicated that the ratings of other sources of information (other dairy producers, private consultants, university researchers, Extension staff, industry representatives, and DHI supervisors) were not significantly different. The researchers concluded that new relationships between Extension and other consultants will be needed to fulfill the Land-Grant mission. Lazarus and Smith attempted to characterize the information adoption patterns of New York dairy farmers, particularly for veterinarian and accounting services. Eighty-one percent of the surveyed dairy farmers indicated they routinely employed consultants for tax preparation and 40 percent used consultants for more general accounting purposes. Fifty-five percent of the farmers indicated they received veterinarian visits on a monthly basis and 7 percent on a biweekly basis. For other consulting services, such as ration formulation and sire selection, consultants were employed by smaller percentages of the farmers. The researchers used a logistic regression procedure to examine the association between farmer characteristics and consultant use. Operator age was the most important factor in determining veterinarian use (postive relationship), but statistically insignificant in determining the use of accountants. The education level of the farmer was positively related to the use of both veterinarians and accountants. Herd size and production per cow were also positively related to the use of veterinarian and accounting services. However, Lazarus and Smith found that farmer use of general consultants (that is, consultants other than veterinarians and

accountants) was statistically unrelated to these characteristics.

Carlson and Guenthner examined the information patterns of Idaho potato growers. Marketing was identified by potato farmers as the area in which the available information was the least adequate and in which assistance was most needed. Reading materials (such as farm magazines and newsletters) were the most preferred method of receiving information while individual consultation was ranked slightly lower. The potato farmers indicated that public consultants were slightly more reliable than private consultants (industry and independent).

Consistent with national trends, commercial agriculture in Idaho is also evolving toward larger and more specialized farms, with increasing use of consulting services. Two agricultural sectors of vital importance to the Idaho economy are the dairy and potato industries. In 1991, milk marketings accounted for about 12 percent of total Idaho agricultural cash receipts and the potato industry accounted for approximately 19 percent. The two commodities combined contributed over $800 million in farm cash receipts to the state economy (Idaho Agricultural Statistics, 1991). Further, when the value of potato and dairy input suppliers and processors are included, the contribution to the Idaho economy was approximately $3.5 billion, or about 21.3 percent of state GNP (Robison, et. al., 1993a and 1993b). A better understanding of the services required by dairy and potato producers can lead to increased efficiency and profitability in these industries, with resulting benefits to Idaho's economy.

Emerging patterns related to information sourcing may reveal opportunities for change in the consulting industry, particularly for the Cooperative Extension Service. If independent consultants continue to become a more important source of information to producers, the role of Extension may be transformed. For example, Extension may become more of a "wholesaler" of information, working with other consultants who then "retail" the information to producers. The fundamental mission of Extension will not have changed -- it will still be to provide education. Rather, the intended audience for this knowledge will have changed from producers to other

consultants.

The objectives of this study are:

(1) to determine the extent of agricultural consulting services desired and utilized by Idaho dairy and potato farmers;

(2) to examine the relationships between size of operation, demographic factors, and other descriptive variables with a farmer's use of agricultural consultants; and

(3) to focus particularly on the use of independent consultants in the Idaho dairy and potato industries, with respect to the above objectives.

This information can be used to develop a more productive relationship between farmers and consultants. In particular, service gaps (differences between services offered by consultants and services desired by producers) can be identified and used to provide a guide for future growth in the consulting sector. In addition, this analysis can be useful in assessing the future role of the Cooperative Extension Service as an information source for producers.

II. Data Source and Respondent Characteristics

The data sources for this study were: (1) a survey of Idaho dairy and potato farmers and (2) a survey of consultants in Idaho. Both surveys were conducted by the Social Survey Research Unit in the College of Agriculture at the University of Idaho. These surveys were designed to provide a basis for assessing producer and consultant attitudes and perceptions about available information sources and toward consulting services in particular. A pretest of both surveys was performed to ensure that the survey questions elicited the proper responses and measured the appropriate variables. In addition, a face validation was performed using input from selected potato and dairy management specialists from the College of Agriculture at the University of Idaho.

The Dillman method (Dillman) of mail surveying was utilized by the Social Survey Research Unit. Subjects are initially mailed the questionnaire and an explanatory letter. The following week, a postcard reminder is sent to all subjects. Four weeks after the initial mailing, another cover letter

and questionnaire is sent to all non-respondents. Three weeks later, a final cover letter and questionnaire is sent to the remaining non-respondents.

Producer Survey

For the producer survey, a total of 860 Idaho dairy and potato farmers received the initial questionnaire and cover letter from the Social Survey Research Unit. There were 428 dairy farmers and 432 potato farmers in the initial mailing. Farmers contacted were identified using random samples from the membership lists of the United Dairymen of Idaho and Potato Growers of Idaho. Both are groups whose members include virtually all of the dairy producers and potato growers in the state. From the initial mailing, 12 farmers refused the survey (returned unanswered) and 96 were invalid because the subject was deceased or a current address was unavailable. Hence, there were a total of 752 potential respondents.

Of the farmers contacted, 359 (approximately 48 percent) responded to the survey. Of those responding, 163 were potato farmers and 196 were dairy farmers. Sole proprietorships accounted for 67 percent of the respondents while partnerships and corporations accounted for approximately 17 percent and 16 percent, respectively (Table 1). For 42 percent of the respondents, dairy provided the largest contribution to their total farm income. Potato production accounted for the largest income share for approximately 10 percent of the respondents. Sugar beet production accounted for the largest share of total farm income for 13 percent of the respondents. Other types of farm operations provided the largest source of income for the remaining respondents. The low percentage of producers who listed potato production as their largest income source may reflect the poor potato growing season in 1993, which substantially reduced farm receipts from potatoes. The average number of dairy cows reported by respondents was 146 while the average number of potato acres was 221. By comparison, the average herd size for Idaho was 90 cows in 1992. The state average for potato acres was 230 (U.S. Department of Commerce, 1992).

Of the respondents, 33 percent reported cash receipts of over $300,000 while 42 percent

reported cash receipts between $100,000 and $300,000. This compares to receipts of $186,332 for the average Idaho dairy farm and $325,792 for the average Idaho potato farm (Idaho Agricultural Statistics and USDA). About 48 percent of the respondents reported off-farm income. However, off-farm income accounted for less than 20 percent of gross income for over half of the producers with off-farm income. The average age of respondents was 48 years, slightly lower than the U.S. average age for farmers of 52 (U.S. Department of Commerce, 1987). Forty five percent of the respondents reported having some college or vocational training and an additional 27 percent had college degrees.

Consultant Survey

A total of 395 potential respondents were identified to receive the initial questionnaire and cover letter for consultants. Potential respondents were identified by using random samples from a list of licensed Idaho veterinarians, a list of potato consultants compiled by Extension faculty, and a mailing list of dairy consultants compiled by the Pacific Northwest Animal Nutrition Conference Committee (PNANCC). Also, persons known to provide dairy consulting services, but not on the PNANCC mailing list, were added to the list of potential respondents (Sanchez). Two surveys were refused (returned unanswered) and 63 were invalid. Invalid surveys were received from individuals who did not consider themselves to be in the consulting business. Hence, there were a total of 330 valid mailings of which 184 were returned complete, for a response rate of 56 percent. Seventy-three (40 percent) identified themselves as dairy consultants while 61 (33 percent) identified themselves as potato consultants. The remainder engaged in both dairy and potato consulting.

Various demographic characteristics of the consultant survey respondents are provided in Table 2. The mean age of the respondents was about 37 years, with the oldest consultant being 74 and the youngest 25. The consultants were overwhelmingly male, accounting for 91 percent of the respondents. The consultants were highly educated in general, with 20 percent having an undergraduate degree and 60 percent having an advanced college degree. For almost 62 percent

of the respondents, their consulting business was a full-time occupation. The most common size of consulting operation had a gross consulting income of $25,001 to $50,000, which was reported by about 35 percent of the respondents. Twenty seven percent of the respondents reported gross consulting income of less than $15,000.

Independent consultants, operating as individuals, accounted for 43 percent of the respondents (Table 3). About 75 percent of these individual consultants also sold products while the remaining 25 percent did not. Retail businesses made up almost 39 percent of the respondents. Independent consultants, operating as a consulting firm, accounted for slightly less than 12 percent of the respondents. Roughly 54 percent of the consulting firms also sold products. Thus, independent consultants in total (including both individuals and consulting firms) accounted for approximately 55 percent of the sample.

Animal nutrition and veterinary services were the most common types of consulting services offered with approximately 45 percent and 42 percent respectively of the respondents providing such services (Table 3). Crop management and soil fertility services were offered by 34 percent and 26 percent of the respondents, respectively. Marketing and financial management services were relatively less important, being offered by 13 percent and 9 percent of the respondents, respectively. For those consultants who also engaged in retail sales (84 percent), animal health and livestock feed products were the most common products sold (Table 4). Fertilizer and various other products were also sold by consultants involved in retail sales.

III. Results

Information Sources

The initial focus of the survey was to question Idaho potato and dairy farmers regarding the value of different sources of information that they use for making managerial decisions. Three decision areas were identified: 'production'-- related to producing the crops or livestock, 'marketing' -- related to selling the farm products produced and 'financial management' -- related to managing

the monetary resources, and preparing the financial statements and tax returns. Respondents were asked to identify the value of information from various sources for each of these three decision areas (Table 5).

Respondents indicated their own farm records/budgets were the most valuable source of information among those listed for making production decisions. Other farmers and veterinarians were also identified as valuable sources of production information. Independent consultants ranked slightly lower regarding production decisions, in terms of average response than did both farm magazines and county extension agents. As far as decisions in marketing were concerned, farmers again indicated their own farm records/budgets were the most important source of information. This source was followed by other farmers and agricultural newspapers and newsletters. Farmers' own records/budgets were also found to be the most important source of information for financial decisions. However, tax preparers and accountants were indicated to be the second most valuable information source. Lenders were the third most valuable source of financial information among the choices listed.

The high ranking of farmers' own records/budgets for making production, marketing, and financial decisions is consistent with the results of Ortman et al. In all three decision-making areas, this information source was ranked the highest by those surveyed in both studies. Also consistent with Ortman et al. is the relatively greater importance of sources of production information than sources of marketing and financial information. In part, this may reflect the fact that farmers often tend to view themselves primarily as "producers" as opposed to "businessmen." Also, the severe financial difficulties in agriculture in the 1980's may have left farmers more wary of all sources of marketing and financial information.

Satisfaction with and reliability of differing information sources are reported in Table 6. For the purposes of this analysis, information providers were grouped into three general categories: 1) those in the public sector, such as Federal, State and County agencies (including USDA agencies,

land grant university Extension faculty, etc.); 2) those in the industry, such as salespeople and field people for private enterprises; and 3) independent consultants who charge for their services. Information received from the private sector provided the greatest satisfaction to producers. It was lowest for the public sector, relative to the other two categories. Regarding reliability, in this survey independent consultants were viewed as providing the most reliable information. According to Idaho potato and dairy farmers, the public sector provided information that was less reliable relative to industry and independent consultants.

There are a variety of factors influencing the value of management information. Producer assessments of these factors are provided in Table 7. The largest percentage of farmers (82 percent) indicated that it was "very" important for them to know that the information source is dependable. Smaller percentages of farmers (but still a majority of those responding) indicated that it was "very" important: 1) that the benefits of the information received outweigh the costs (69 percent); 2) that the information received apply specifically to their farm (65 percent); and 3) the age of the research that the information is based on (50 percent). The cost of the information and how the information is presented were only "somewhat" important to farmers (44 and 51 percent, respectively). In addition, distribution of the response regarding the importance of cost and presentation tended to be more spread out than the other factors, suggesting that they were not as important overall.

Consultants were also questioned regarding their perceptions about how producers felt about issues influencing the value of information. Consultants felt their clients regarded the cost of the information as an even less important factor than did producers (which is probably to be expected, given that many consultants charge for their services -- and they feel they're worth the cost!). Only 25 percent of the consultants ranked cost as a "very" important factor as opposed to 33 percent of producers, while almost 11 percent of consultants considered cost to be "not" important versus 6 percent of producers. Compared to producers, consultants regarded specificity of the information,

dependability of the source, a positive benefit/cost ratio of the information, and age of the research to be somewhat more important factors. Consultants and producers differed substantially on the importance of how the information is presented. Almost 57 percent of consultants considered this to be a "very" important factor versus only 33 percent of producers. It appears that producers are less interested in the manner of presentation than consultants generally believe.

Table 8 outlines how Idaho farmers like to receive their information. The most preferred method of receiving information was newsletters, for which producers indicated a medium to high preference. This finding is consistent with that of Schnitkey, et al., who found that farmers preferred information from printed sources. Articles in farm and ranch magazines and "learn-at-home" materials were ranked next. Newspapers, feature stories and news articles, were ranked almost equal to individual consultation. The least preferred method of information reception was recorded telephone messages for which producers indicated a very low preference.

Consultants were asked to assess the importance of various methods they use to convey information to producers. Consultant responses are provided in Table 9. Almost 76 percent of consultants considered regular visits to a client's farm to be a very important means of providing information. Lab test results with written recommendations and telephone consultation were both rated as very important by slightly over 50 percent of the consultants. For all three of these methods, only 10 percent or less of the consultants considered these to be only "slightly" important or "not" important methods of providing information to producers. Interestingly, over 75 percent considered newsletters to be only "somewhat" or "slightly" important method of providing information to producers. Yet, producers indicated that newsletters are their most preferred method of receiving information (Table 8).

Specific Types of Information

All producers in the survey were asked to note areas where they received outside advice. Furthermore, producers were also asked to record if they needed advice, but failed to receive it in

a particular area. This failure to receive outside advice may represent potential service gaps. For all producers, the largest percentage (78 percent) of respondents received outside advice in the area of accounting (Table 10). Over 56 percent of both potato and dairy farmers indicated that they had received outside advice regarding the use of new technology. The area where the smallest number of producers (20 percent) received outside advice was in farm diversification. Looking at the largest area of potential service gaps, 17 percent of the surveyed producers said that they needed outside advice on improving farm profitability, but failed to receive such information This area was closely followed by not being able to get information on farm programs and subsidies (14 percent) and using new technology (13 percent).

Looking specifically at dairy farmers, the largest percentage of producers (70 percent) received outside advice on disease prevention and vaccination programs. This category was followed by those who received advice on animal health products and herd nutrition, at 69 and 62 percent, respectively. While the percentage of dairy farmers receiving nutritional information was among the largest, this category was also the one where the largest percentage (9 percent) of respondents reported that they needed outside advice, but failed to receive such advice. Also, slightly less than 9 percent of the dairy farmers indicated they needed but did not obtain information on mastitis control.

For the surveyed potato farmers, 69 percent received outside advice on crop management, closely followed by 68 percent who received advice on identification and control of diseases, weeds and insects. The smallest percentage of respondents received outside advice on potato storage and management. Of the areas where producers felt they needed but were unable to obtain advice, the largest percentage of respondents (5 percent) cited the identification and control of diseases, weeds and insects, followed by petiole testing at 3 percent. It is interesting to note that overall, the areas with the largest service gaps were in the general categories that applied to both dairy and potato producers (marketing and sales planning, improving farm profitability, information on farm program

and subsidies, and using new technology). The average percentage of respondents indicating that they needed but did not receive outside advice in the general categories was 10 percent. Among the categories that apply specifically to dairy farmers, the average percentage of respondents indicating that outside advice was needed but not received was less than 6 percent. The average percentage among the categories applying specifically to potato producers was 3 percent.

Dairy and potato consultants were asked about the types of services they offered. Their responses are reported in Table 11. Among dairy consultants, herd nutrition and replacement heifer rearing information were the most common services provided, at 47 percent and 46 percent respectively. Animal health information (mastitis control, disease prevention/vaccination, health product choices) were offered by 35-38 percent of the dairy consultants while information on new technologies was a service provided by about 40 percent of the dairy consultants. Information on improving farm profitability was offered by about 32 percent of the dairy consultants.

Among potato consultants, pest identification/control and crop management were the most common services offered, in both cases being provided by approximately 38 percent of the consultants. Other production based services, such as irrigation scheduling, petiole testing, and planting/harvest assistance, were provided by 20-30 percent of the potato consultants. As with dairy consultants, information on new technologies was a commonly offered service, being provided by over 32 percent of the potato consultants. Information on improving farm profitability was offered by 21 percent of the potato consultants. Among both dairy and potato consultants, marketing and sales planning were provided by only a few of the consultants (4 percent and 7 percent respectively). In general, production based services were much more frequently provided than marketing and financial services by both dairy and potato consultants. Yet, producers indicated that information on marketing and sales planning and on financial aspects such as estate planning are areas where outside advice is needed, but where they were unable to obtain such help (Table 10). It appears that producers are satisfied with the breadth of production based services available, but a possible

gap exists between the marketing and financial services desired and those available.

Table 12 reports how farmers in this study pick their sources of information. In seven of the nine categories of information providers, the majority of the farmers surveyed indicated that their decisions were based on word of mouth. For accountants and lawyers, the majority of respondents (47.8 and 46.6 percent, respectively) indicated that they chose these service providers because of specific recommendations. Various media outlets (TV, radio, newspapers, and the Yellow Pages) were relatively unimportant to producers in making decisions about information sources. Consultants appear to recognize this as these various media outlets were rated as "very effective" by 5 percent or less of the consultants (Table 13). Word of mouth and customer referrals were considered to be much more effective as both were rated as "very effective" by 77 percent of the consultants.

Independent Consultants

As discussed previously, one of the objectives of this study was to focus specifically on independent consultants. In Table 14, some of the opinions that Idaho farmers hold regarding these consultants are reported. In addition, consultant opinions of their profession are also provided in Table 14. The statement that the sampled farmers agreed with the most was that a frank and open relationship between the farmer and the consultant is very important. Farmer respondents disagreed most with the statement that a consultant should be a male. One interesting finding was that farmers were relatively neutral regarding whether a consultant should call on a farmer only during the business day (8 am - 5 pm).

Idaho dairy and potato farmers also felt strongly that a consultant should explain his/her recommendations. Farmer respondents were generally neutral in their feeling that hiring a general farm adviser is usually better than hiring a consultant specialized in only one field. Since this study focused on independent consultants who offer their services for a fee, it was interesting to note that farmers were also neutral in their feeling that a consultant they paid for offers better information

and advice than those offering free service. Not surprisingly, the surveyed farmers did agree fairly strongly that their objectives and those of their family or partners should serve as the basis for a consultant's work. The surveyed farmers also agreed that a consultant is an expert that producers can go to for precise questions. Farmer respondents disagreed with the statement that male consultants understand farm situations better than female consultants.

Consultant opinions of characteristics associated with consultants are generally in line with those of producers. As with producers, consultants felt that a frank and open relationship was important, as this was the most strongly held opinion in Table 14. Similarly, another strongly held opinion was that a consultant should explain his/her. In general, consultants appear to place slightly greater emphasis on the personal aspects of the producer-consultant relationship than do farmers. Notable differences in producer and consultant opinions are evident in the statements that a consultant should not sell a specific company's product and that a consultant should have a farm background. Consultants are close to neutral regarding both statements while producers tend to agree much more strongly with these statements. Given the preponderance of consultants who also sell products in the consultant survey, it is surprising that consultants did not disagree with the statement on selling a product more strongly. Given the preponderence of consultants who charge for their services, it is also interesting to note that like farmers, constultants were relatively neutral regarding the statement "a paid consultant offers better information and advice than those offering free service."

Looking at the value of differing types of consultants regarding production, marketing and financial decisions made by Idaho farmers, soil fertility along with herd health and nutrition consultants both ranked equally and received the highest ranking for type of consultant based on the average responses (Table 15). Not surprisingly, marketing consultants were ranked as the most valuable for marketing decisions, and financial management consultants were ranked as the most useful for financial decisions. However, in the cases of both marketing and financial decisions, farm

management consultants ranked second in terms of the average responses and ranked above "medium" in terms of value.

Regarding preference for payment of services, the overwhelming majority of farmers surveyed (72 percent) preferred to pay for consulting services on a flat fee per conultation basis (Table 16). A much smaller percentage (18 percent) preferred an hourly rate. The remainder either preferring payment as a percentage of their gross income (6 percent) or on an annual retainer fee basis (5 percent).

Regarding the methods of payment actually used by the surveyed consultants, hourly rates and flat fees were the most common (Table 17). Flat fees or hourly rates were "usually" or "sometimes" used by 23 and 27 percent of the consultants, respectively. Annual retainers and charging producers a percentage of gross income were seldom used payment methods. This is generally consistent with the preferences of producers, though producers indicated a marked preference for flat fees as opposed to other payment methods. Given the large number of retail establishments in the consultant survey, the large percentage of respondents who report not charging for services is not surprising.

There are several ways a producer can improve profitability on his or her farm operation. One of the aspects examined in this study was the trade-offs between information and technology. Increased efficiencies can arise through the application of new technology as well as using new information and knowledge to improve current operations. When farmers compared these two methods, applying cutting edge information to improve their operation and obtaining off-farm advice were ranked more important on average than was the purchase of state of the art equipment (Table 18). This has important implications for constultants, because it indicates that producers are willing to invest in information and advice more readily than new equipment.

Table 18 also reports consultant perceptions of the importance producers attach to these methods of improving farm profitability as well as consultants' personal opinions of these methods.

Across all categories of responses, a focus on increasing crop/herd productivity is regarded as the most important means of improving profitability while increasing farm size is regarded as the least important. However, consultants seem to believe that farmers attach greater importance to increasing farm size than farmers actually do. Conversely, consultants believe farmers place less importance on educating themselves to become better managers than farmers actually do. In general, consultants' personal opinions regarding these methods of improving farm profitability align closely with those of producers. However, there are differences between what farmers feel is important versus what consultants perceive farmers to feel is important.

Table 19 highlights one of the significant findings of this study. Of the farmers surveyed, 27 percent had hired the services of an independent consultant during the past three years. Of those that had hired a consultant, the majority (67 percent) had used a soil fertility consultant for an average of 22.9 hours per year. Herd health and nutrition consultants and crop management consultants were also used by a significant percentage of the respondents (64 and 43 percent, respectively). Marketing consultants were the least utilized type of consultant, being used by only 15 percent of the farmers who said they had employed an independent consultant.

The relationship between a provider of information such as a consultant and the producer is a crucial area. This study looked at the perceived needs in this relationship (Table 20). The needs that were ranked as most important by both the farmers and consultants surveyed were: a consultant should explain his/her recommendations, a frank and open relationship should exist between the consultant and producer, a consultant should speak in a way the farmer can understand, a consultant should be well-informed, and a consultant should care about the success of the farmer's enterprise. Producers and consultants indicated that these statements should essentially always be true. The perceived need that was ranked as the least important by both producers and consultants was that a consultant should know each farm family's needs. Producers and consultants both indicated that this statement should only "sometimes be true."

In addition to looking at reasons why farmers use consultants, a brief analysis was done to determine the relative importance of reasons farmers have for not using a consultant (Tables 21 and 22). The first group investigated were those that had never used the services of an independent consultant (41 percent). Based on the average responses of this group, the most important reason not using a consultant was that consultants are too expensive. The reason given as being the least important for not hiring a consultant was the inavailability of consultants.

The second group was those respondents that had hired the services of an independent consultant sometime prior to the last 3 years (32 percent). The most important reason given by this group for not presently using a consultant was that the had received poor advice. Forty-five percent of the indicated that this was a very important reason for no longer using the services of a consultant. "Too expensive," "too impersona"l and "wanting to solve their own problems" were reasons given as "somewhat important" by 45, 49 and 45 percent of prior users, respectively.

Demand for Independent Consulting Services

A stated objective of this study was to assess the demand for independent consulting services. As noted above, approximately 27 percent of the farmer respondents indicated they had hired the services of an independent consultant during the last 3 years. Ortman et al. provide a delineation by type of consultant hired and found generally comparable results regarding the percentage of farmers employing a consultant. The major difference was that over half of the producers in the Ortman et al. sample reported the use of marketing consultants compared to only 28 percent in this study. A possible explanation for this difference is the type of markets available to producers of corn, soybeans, milk, and potatoes. A futures market is available for producers of corn and soybeans to use as a hedge against price variability. As a result, marketing consultants are able to provide a useful and desired service. The dairy industry in Idaho, however, is subject to Federal Milk Marketing Orders which effectively set the price paid to dairy producers. With regard to potato production, about 50 percent is grown under contract to potato processors,

eliminating the need for marketing consultants. The remainder is sold on the open market; however, a futures market does not exist for potatoes. Hence, potato producers are forced to accept the open market price.

Estimation of Demand Equations

In order to assess the demand for independent consulting services, a logistic regression procedure was used to estimate the demand functions where the dependent variable was a dichotomous choice variable, that is whether or not the producer hired an independent consultant. Three demand functions were estimated: (1) for all respondents; (2) for dairy farmers; and (3) for potato farmers. The purpose here was to determine if dairy and potato farmers differed in their demand for independent consultants. These demand functions were intended for exploratory purposes rather than rigorous hypothesis testing. The objective was to examine general relationships, not to determine the statistical significance of these relationships. As such, a set of explanatory variables deemed likely to influence producers' demand for independent consulting services was identified and used in the regression procedures. The statistical results from these regressions were not then used to reformulate the model specifications to satisfy various statistical criteria.

A common set of explanatory variables was specified for all three demand functions. These variables included age category (AGECAT), satisfaction with private consultants (SATPRIV), satisfaction with public consultants (SATPUB), satisfaction with independent consultants (SATINDCN), education level (EDULEVEL), cash receipts (CASHRECP), and off-farm income (OFFFARM). A priori, it was expected that younger and more educated producers would have a greater propensity to hire an independent consultant, as a result of "knowing what they don't know," and being aware that specialized help is available. Also, demand for independent consults was expected to increase as farm size increased, with the thought here being that larger operations could speed consultant costs over more cows or acres and would likely have a greater need for specialized

information. While off-farm income is likely to affect the demand for independent consulting services, it is uncertain, a priori, whether it serves to increase or decrease consulting services demand. Increased off-farm income reduces the importance of the farm operation (possibly decreasing the demand for consulting services), while also leaving a producer less time available for properly managing the farm (therefore possibly increasing the demand for consulting services). Finally, it was expected that demand for independent consultants would increase as the value of these consultants was rated higher relative to public and private consultants -- in other words as producers viewed them as good substitutes.

In Table 23, the categorical breakdown of all variables is presented. In Tables 24-29, regression results for the three estimations are presented. For the overall demand equation, approximately 80 percent of the in-sample responses are predicted correctly (Table 24). However, the estimated equation performs noticeably better at predicting that a producer did not hire an independent consultant (86 percent) than at predicting whether a producer hired a consultant (67 percent). Two goodness of fit tests were performed -- a G-squared and a chi-squared. The model significance as determined by these two tests was 0.9392 and 0.5477 respectively, both of which indicate adequate performance. The G-squared test may be a more appropriate test for small samples, as some expected values of the dependent variable (that is, whether or not an independent consultant was hired) are very small, potentially leading to spurious results with the chi-squared test (Steinhorst).

Turning to the coefficient estimates; as all explanatory variables are categorical, a coefficient is estimated for each category for all explanatory variables. These coefficients, however, are deviation coefficients in that they represent the propensity of a given category to hire a consultant, relative to the average of all categories for each variable. For example, there are five categories which comprise the age category variable (AGECAT). The average response (averaged across all five categories) is calculated and implicitly assigned a coefficient value of zero. The individual

coefficients are then estimated as the propensity of a given category to hire an independent consultant relative to the average response of the variable. In addition, the dependent variables are coded such that a positive response (an independent consultant was hired) takes a value of one while a negative response (not hiring a consultant) takes a value of zero. As a result, a positive coefficient indicates that a particular category of respondents is more likely to hire an independent consultant than the average (that is, results in a value of the dependent variable closer to one) while a negative coefficient has the opposite interpretation. Further, a larger positive coefficient indicates a greater propensity to hire an independent consultant.

Beginning with the age category variable (AGECAT), respondents aged 60+ are the most likely to hire an independent consultant. The 60+ age group has the largest positive coefficient (Table 25). Those aged 40-49 are the second most likely to hire an independent consultant. Those aged 50-59 and 30-39 are somewhat less likely to hire an independent consultant. The youngest group (20-29), shows a strong propensity to not hire consultants as evidenced by the large negative coefficient. A possible explanation for this is that younger farmers typically have smaller operations and limited cash flows. Hence, they may find it difficult to justify the expense of an independent consultant.

Examining the results for the cash receipts variable (CASHRECP), the results more nearly align themselves with hypothesized relationships. As cash receipts increase, producers are more likely to hire an independent consultant. The category "less than $50,000" had a very large negative coefficient, indicating that the probability of this group hiring an independent consultant is very small. As cash receipts increase, progressively smaller negative coefficients resulted and turned positive for the "$200,000-299,999" category. These results also appear to support the explanation offered for the somewhat unexpected results with respect to the age variable. Younger farmers typically have smaller operations and cash receipts. As a result, younger farmers are less able to afford the services of an independent consultant.

The education level variable also displayed the expected results as the propensity to hire an independent consultant increased with the level of education. The least educated respondents (8th grade or less) had a large negative coefficient, and hence, a very low likelihood of hiring an independent consultant. As education level increased, respondents exhibited a greater propensity to hire an independent consultant. The group with the most education (advanced degree) showed by far the greatest likelihood of hiring an independent consultant.

The variable off-farm income (OFFFARM) was included to determine the effects of off-farm employment on the propensity to hire an independent consultant. The variable OFFFARM included all off-farm income, not just income from off-farm employment. As a result, it may not directly address the issue of concern (that is, the effect of off-farm employment on the propensity to hire an independent consultant). Looking at the coefficient estimates, the propensity to hire an independent consultant appears to decline as off-farm income increases. When off-farm income was relatively small as a percent of total income (for example, categories "none" and "1-20 percent"), producers displayed a much greater propensity to hire consultants than did producers for whom off-farm income was a larger share of total income. Producers with higher off-farm income generally had smaller operations, and thus a lower probability of hiring an independent consultant.

Producer ratings of satisfaction with public consultants (SATPUB), private consultants (SATPRIV), and independent consultants (SATINDCN) were also included as explanatory variables. The hypothesis was that as satisfaction with independent consultants increased relative to satisfaction with public and private consultants, producers would have a greater propensity to hire independent consultants. The results obtained in this study do not appear to support this hypothesis, however. Greater satisfaction with independent consultants did correspond to a greater likelihood of hiring an independent consultant. However, satisfaction ratings of public and private consultants did not generate such clear results. In fact, the category "not satisfied" had negative coefficient estimates for both variables (SATPUB and SATPRIV), indicating that lower satisfaction

with public and private consultants leads to a lower propensity to hire an independent consultant. Producers seemingly do not regard these various consultant types as substitute sources of information. Perhaps a negative experience with a particular consultant leads producers to not use consultants in general. This finding supports results obtained by Schnitkey, et al., who found in their study that Ohio farmers were not substituting specialist services for information received from the Cooperative Extension Service.

A logistic regression procedure was also used on two subsets of the farmer respondents -- dairy farmers and potato farmers. The objective here was to determine if dairy and potato farmers differed in their demand for independent consultants. The overall predictive ability of the dairy producer demand equation was 85 percent (Table 26). For dairy farmers who employed an independent consultant, the predictive ability was 74 percent while it was 89 percent for those who had not. The G-squared test significance was acceptable at 0.8276. An interesting phenomenon is the very low significance indicated by the chi-squared test at less than 0.02. This seems to reflect the point made above about the chi-squared test being sensitive to very small expected values of the dependent variable in small samples. For the potato producer demand equation, the overall predictive ability was about 90 percent, 83 percent for producers who had hired a consultant and 93 percent for producers who had not (Table 28). The G-squared and chi-squared goodness of fit tests were both very good at 0.9866 and 0.9493 respectively. Thus, it appears that the potato producer demand equation is somewhat better than the dairy producer demand equation from a statistical standpoint, given the greater predictive ability and larger significance of the goodness of fit tests.

Comparing the coefficient estimates between dairy and potato farmers, similar behavior is exhibited by the various satisfaction variables (Tables 27 and 29). As the level of satisfaction with independent consultants increases, the propensity to hire an independent consultant also tends to increase for both dairy and potato farmers. Also, the level of satisfaction with public and private

consultants appears to have no consistent effect on the demand for independent consulting services, just as with the overall demand equation.

Some divergence between dairy and potato farmers occurs with respect to the level of education. For both groups, the least educated producers have a very low propensity to hire an independent consultant. All dairy producers with a high school education or above show a greater likelihood of hiring a consultant. Among potato producers, however, those with some graduate work are far less likely to hire a consultant than all other categories. This is likely due to the limited number of potato producers (2) in this category.

With regard to cash receipts, both dairy and potato producers become more likely to hire independent consultants as their operations become larger. For dairy producers, however, the transition occurs in the $100,000-199,999 category while it occurs in the $200,000-299,999 category for potato producers. Regarding off-farm income, neither group of producers exhibits a discernible trend between use of independent consultants and off-farm income. The final variable is the age category variable. It is with respect to this variable that dairy and potato producers exhibit the greatest differences. Among dairy producers, only the youngest category (20-29) of producers is more likely to hire an independent consultant than the average dairy farmer. Among potato producers, however, this is the only category with a likelihood of hiring an independent consultant lower than the average.

It appears that Idaho dairy and potato producers do not differ greatly in their demand for independent consulting services, at least when related to demographic characteristics and satisfaction ratings, with the exception of age. For both groups, the propensity to hire an independent consultant increases with the size of the operation and the producers' level of satisfaction with independent consultants. In addition, the use of independent consultants tends to increase with the level of education of the producer. Satisfaction with public and private consultants and off-farm income have ambiguous effects.

IV. Conclusion

This study has examined the sources of information used by Idaho dairy and potato farmers in the management of their operations. Producers indicate that their own records and budgets were the most valuable source of information for making production, marketing, and financial decisions. Other farmers were also a highly ranked source of information in all three areas. Consultants, be they public, private, or independent, generally received moderate ratings in terms of their value as a source of information to producers. Consultants were most widely used in the area of production decisions. This was also the area that producers perceived the greatest need for consultants. However, it appears that there is a gap between the marketing and financial services desired by farmers and those available from consultants. Otherwise, consultants seem to have a good "feel" for the needs and desires of producers as reflected in these surveys.

Comparing satisfaction and reliability of public, private, and independent consultants, satisfaction was highest with private consultants and lowest with public consultants. In terms of reliability, independent consultants were rated the most reliable while public consultants again received the lowest rating. However, some inconsistency in producer responses is also present as producers rated the value of information provided by public consultants higher than that of independent consultants in all three areas of decision making. Further, it does not appear that producers hold strong views of public, private and independent consultants as alternative sources of information. In particular, dissatisfaction with public and private consultants did not lead producers to have a greater propensity to hire the services of an independent consultant. Yet, there was a very strong relationship between satisfaction with independent consultants and the propensity to hire such a consultant. Perhaps producers view each type of consultant as providing a unique type of information. Farm size was also very important in determining the likelihood of hiring an independent consultant. As hypothesized, larger farms were much more likely to hire an independent consultant than smaller operations. Other factors, such as age and education, were not

found to be very important in this decision.

It is likely that the trends toward increased use of consultants, particularly independent consultants, will continue. Larger and more specialized farms, heightened government regulations, and unstable markets all increase the complexity of the management task producers face and the risk exposure from poor decision-making. Independent consultants can offer information and advice tailored to the specific needs of an individual operation, and possibly reduce the management and risk burdens. Public consultants are unable to provide the specialized information which may be required by producers in this environment, and further, providing such information is antithetical to the fundamental mission of Extension. However, given that producers apparently do not view public, private and independent consultants as alternative sources for the same information suggests there remains a unique role for Extension. The evolving patterns of information sourcing by producers suggest a cooperative, rather than adversarial, model of the roles of the various consultants may be appropriate. In particular, private and independent consultants can serve as conduits for the information provided by public consultants, tailoring this information to an individual's operation as necessary.

Table 1. Demographic Characteristics of Responding Idaho Dairy and Potato Farmers*

Mean Age**	48.2	Education	
Maximum**	94	8th grade or less	1.1
Minimum**	22	Some high school	2.5
Legal Form of Farm		High school grad	24.4
Sole Proprietorship	67.2	Some college or voc	44.8
Partnership	16.8	College grad	20.1
Corporation	15.9	Some grad work	2.8
Gross Cash Receipts		Advanced degree	4.2
Less than $50,000	9.5	Farm Classification	
$50,000 to $99,999	15.9	Dairy cows	42.0
$100,000 to $199,999	24.0	Dairy heifers	0.6
$200,000 to $299,999	17.6	Feeder calves	0.6
$300,000 or more	32.9	Cow-calf beef	1.4
Off-Farm Income		Potatoes	9.8
None	51.6	Small grains	2.0
1% to 20%	28.2	Sugar beets	12.6
21% to 40%	5.7	Alfalfa	0.9
41% to 50%	4.8	Other	30.2
50% or more	9.7		

* Cell values are percentage of respondents unless otherwise noted.
** Actual ages.

Table 2. Demographic Characteristics of Responding Agricultural Consultants*

Mean Age**	36.5	Gross Consulting Income	
Max**	74	Less than $15,000	27.0
Min**	25	$15,001-$25,000	8.5
Gender		$25,001-$50,000	34.8
Male	91.2	$50,001-$75,000	16.3
Female	8.8	$75,001-$100,000	6.4
Education Level		Greater than $100,000	7.1
Less than high School	0.6	Consulting Business Status	
High school graduate	2.9	Full time	61.5
Some college or vocational	16.9	Part time	38.5
College graduate	19.8		
Advanced college degree	59.9		

* Cell values are percentage of respondents unless otherwise noted

Table 3. Type of Services Offered by Consultants and Consulting Arrangements*

Type of Consultant		Consulting Arrangement	
Financial Management	8.7	Independent, Sell No Products	10.9
Marketing	13.0	Independent, Sell Products	32.2
Crop Management	34.2	Consulting Firm, Sell No Products	5.2
Soil Fertility	25.5	Consulting Firm, Sell Products	6.3
Animal Nutrition	44.6	Retail Business	38.5
Veterinary Services	41.8	Other Arrangement	6.9
Farm Management	15.2		
Other Services	4.3		

* Cell values are percentage of respondents

Table 4. Type of Products or Services Sold by Consultants Engaged in Retail Sales*

Animal Health Products	36.7
Livestock Feed	25.2
Fertilizer	19.0
Lab Analysis	4.1
Irrigation Equipment	0.1
Other	11.6

* Cell values are percentage of respondents

Table 5. Value of Sources of Information for Making Farm Decisions by Idaho Farmers

	Decision Making Area		
Source of Information	Production*	Marketing*	Financial*
Farm Magazines	1.89	1.69	1.60
Agric. Newspapers & Newsletters	2.04	1.99	1.74
Radio & Television reports	1.51	1.65	1.43
Own farm records/budgets	2.67	2.45	2.64
County Extension Agents	1.89	1.57	1.50
University specialists	2.06	1.63	1.56
Field Days/conferences	2.02	1.64	1.52
Salespeople	1.72	1.55	1.39
Other farmers	2.29	2.14	1.85
Your farm's work force	1.99	1.63	1.59
Tax preparer/accountant	1.54	1.63	2.39
Computerized information services	1.51	1.54	1.48
Lenders	1.50	1.56	2.13
Veterinarians	2.08	1.45	1.39
Lawyer	1.20	1.18	1.44
Independent consultants	1.83	1.52	1.44

* Values are an average of responses based on the following scale regarding value of information: 1 = Low, 2 = Medium, 3 = High.

Table 6. Satisfaction & Reliability of Information Sources of Idaho Farmers

	Public Sector	Private Sector	Independent Consultants
Satisfaction*	2.35	2.05	2.19
Reliability*	2.16	2.05	2.01

* Values are an average of responses based on the following scale regarding satisfaction or reliability: 1 = very satisfied or reliable, 2 = somewhat satisfied or reliable, 3 = slightly satisfied or reliable, 4 = not satisfied or reliable.

Table 7. Importance of Factors Influencing Information Received by Idaho Farmers.

	Very*	Somewhat*	Slightly*	Not*
		Producers		
The cost of the information	33.1	43.6	17.0	6.2
That it apply specifically to my farm operation	65.3	24.0	7.6	3.1
Knowing that the information source is dependable	81.9	12.4	2.8	2.0
That the benefits of the information outweigh the costs	68.7	22.3	5.9	3.1
The age of the research that the information is based on	49.7	38.5	9.0	2.8
How the information is presented	33.1	51.3	13.2	2.5
		Consultants		
The cost of the information	25.0	47.2	17.2	10.6
That it apply specifically to the farm operation	72.9	22.7	3.9	0.6
Knowing that the information source is dependable	88.0	12.0	0.0	0.0
That the benefits of the information outweigh the costs	77.3	19.3	3.3	0.0
The age of the research that the information is based on	58.5	37.2	4.4	0.0
How the information is presented	56.6	37.4	6.0	0.0

* Cell values are percentage of respondents.

Table 8. Preferred Methods of Receiving Information by Idaho Farmers

Method to Receive Information	Average Preference*
In-depth short courses or workshops	2.06
Public meetings, tours, demonstrations	2.07
Individual consultation	2.14
Commodity schools	1.88
Recorded telephone messages	1.30
"Learn-at-home" materials	2.17
Radio	1.63
Television - public and commercial	1.66
Videotapes	2.02
Computer networks	1.71
Newspapers, feature stories, news articles, etc.	2.18
Articles in farm/ranch magazines	2.38
Newsletters	2.43

* Values are an average of responses based on the following scale regarding method preferred to receive information: 1 = Low, 2 = Medium, 3 = High.

Table 9. Importance of Methods Used by Consultants to Provide Information to Clients

	Very*	Somewhat*	Slightly*	Not*
Weekly or monthly reports specific to client's farm	25.7	34.1	24.6	15.6
Dairy production records analysis	40.4	19.2	7.9	32.5
Lab test results & written recommendations	54.4	36.8	6.6	2.2
Newsletter or information report	13.4	44.1	31.3	11.2
Regular visits to client's farm	75.8	22.0	1.6	0.5
Telephone consultation	51.9	37.7	9.3	1.1
Client seminars	27.5	44.0	22.0	6.6
Other	57.1	28.6	0.0	14.3

* Cell values are percentage of respondents

Table 10. Demand for Farm Information by Idaho Farmers

	Received outside advice*	Needed outside advice, but did not get it*
ALL PRODUCERS		
Hiring and planning of labor	14.0	4.4
Marketing and sales planning	28.4	12.7
Accounting	78.2	4.1
Cash flow management	40.5	8.5
Business growth/expansion	30.8	8.6
Estate planning	48.7	12.5
Farm diversification	20.2	7.7
Improve farm profitability	41.6	17.1
Information on farm programs & subsidies	39.4	14.1
Using new technology	56.6	13.1
LIVESTOCK PRODUCERS		
Genetics & reproduction	59.4	5.3
Herd nutrition	61.6	8.9
Mastitis control	52.9	8.8
Milk production quality	50.0	5.4
Replacement heifer rearing program	24.7	4.6
Disease prevention/vaccination program	69.7	1.5
Animal housing/facilities/ waste management	26.1	4.3
Animal health products	68.8	5.1

* Cell values are percentages of respondents.

Table 10 Cont. Demand for Farm Information by Idaho Farmers

	Received outside advice	Needed outside advice, but did not get it
CROP PRODUCERS		
Irrigation scheduling	28.0	3.2
Petiole testing	47.6	3.4
Potato storage management	16.6	1.9
Identification and control of diseases, weeds & insects	67.8	4.6
Crop management	69.3	3.2

* Cell values are percentage of respondents.

Table 11. Services Offered by Dairy and Potato Consultants

Dairy Consultants*		Potato Consultants*	
Fertility/pregnancy program	31.2	Irrigation scheduling	20.3
Milk production quality	29.0	Petiole testing	29.0
Mastitis control	35.5	Potato storage management	13.8
Herd nutrition	47.1	Pest identification & control	38.4
Replacement heifer rearing program	46.4	Crop management	37.7
Disease prevention/vaccination program	37.0	Labor hiring & planning	4.3
Animal housing/facilities/waste management	27.5	Marketing & sales planning	7.2
Animal health product choices	38.4	Accounting	2.9
Labor hiring & planning	3.6	Cash flow management	1.4
Marketing & sales	4.3	Business growth/expansion	3.6
Accounting	0.0	Estate planning	0.7
Cash flow management	7.2	Farm diversification	5.1
Business growth/expansion	13.0	Farm program information	13.8
Estate planning	0.0	Information on new technologies	32.6
Farm diversification	4.3	Improving farm profitability	21.0
Farm program information	8.0	Seed potato selection	26.1
Information on new technologies	39.9	Planting assistance	24.6
Improving farm profitability	31.9	Harvest assistance	24.6

* Cell values are percentage of respondents

Table 12. How Farmers Pick Information Sources

	Word of Mouth*	Specific Recommend.*	Yellow Pages*	Radio or TV ad*	Newspaper or Magazine ad*	Other
Supplier Sales Representative	62.8	20.1	.6	1.0	2.9	12.6
County Extension Agent	53.2	22.8	1.7	4.2	5.9	12.2
Lender	43.2	40.4	.4	2.0	.8	13.2
Veterinarian	57.8	30.3	2.0	.8	.8	8.2
Accountant	37.5	47.8	2.7	.7	1.0	10.3
Lawyer	36.6	46.6	3.4	.4	2.2	10.8
Independent Consultant	47.8	30.5	3.4	1.0	6.4	10.8
University Specialist	51.4	22.2	2.3	2.8	10.6	10.6
Processor Field Representative	46.8	30.7	1.4	.9	4.6	15.1

* Cell values are percentage of respondents.

Table 13. Effectiveness of Methods Used by Consultants in Publicizing Their Services

Method of Publicizing	Very*	Somewhat*	Slightly*	Not at All*	Not Used*
Yellow pages	4.1	25.0	31.4	10.5	29.1
Radio/TV advertisements	1.7	11.6	14.5	8.1	64.2
Direct mail	5.2	23.1	14.5	6.4	50.9
Word of mouth	77.0	20.1	0.6	0.0	2.3
Referral from customers	77.7	17.1	1.1	0.0	4.0

* Cell values are percentage of respondents

Table 14. Comparative Views of Independent Consultants

Consultant Characteristic	Producer Ranking*	Consultant Ranking*
A frank and open relationship between the farmer & consultant is very important	1.42	1.25
A consultant should have a lot of experience	1.47	1.79
A consultant should explain his/her recommendations	1.61	1.32
A consultant should pay close attention to farmer's ideas	1.75	1.40
A consultant should not sell a specific company's product	1.81	2.70
Farm operator objectives should serve as the basis for a consultant's work	1.82	1.70
A consultant should have a farm background	1.98	2.65
The consultant is an expert that farmers can go to for precise questions	2.02	1.87
A consultant should limit practice to a local region	2.67	3.25
A paid consultant offers better information and advice than those offering free service	2.90	2.96
A consultant should have an advanced college degree (Masters or Doctorate)	3.12	3.03
A consultant should call on a farmer only during the business day (8 am - 5 pm)	3.19	3.58
Male consultants understand farm situations better than female consultants	3.55	3.85
A consultant should be a male	3.62	3.97

* Values are an average of responses based on the following scale regarding agreement with the accompanying statement: 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree.

Table 15. Value of Differing Types of Consultants Related to Production, Marketing and Financial Decisions Made by Idaho Farmers

	Decision Making Area		
Type of Consultant	Production*	Marketing*	Financial*
Financial management consultant	1.66	1.87	2.40
Marketing consultant	1.78	2.43	1.87
Crop management consultant	2.47	1.84	1.64
Soil fertility consultant	2.64	1.64	1.61
Herd health & nutrition consultant	2.64	1.87	1.85
Farm management consultant	2.14	2.08	2.06

* Values are an average of responses based on the following scale regarding the value of the consultant: 1 = Low, 2 = Medium, 3 = High.

Table 16. Preference of Idaho Farmers Regarding Payment of Consultants

Method of Payment	Percentage of Respondents
Flat fee for services rendered	71.8
Hourly rate	17.6
Annual retainer fee	4.7
Percentage of producer's gross income	5.9

Table 17. Methods of Payment Used by Consultants

Method of Payment	Always*	Usually*	Sometimes	Seldom*	Never*
Flat fee for services rendered	4.9	18.3	28.0	8.5	40.2
Hourly rate	1.2	25.8	20.2	8.6	44.2
Annual retainer fee	0.0	1.9	6.3	6.9	84.9
Percentage of producer's gross income	0.6	0.6	0.6	2.2	82.6
Per acre fee	5.8	1.3	3.2	0.6	89.1
Per cow fee	1.3	14.1	18.6	5.1	60.9
No charge	31.6	8.8	32.7	17.0	9.9

* Cell values are percentage of respondents

Table 18. Importance of Differing Methods of Improving Profitability

Method of Improving Profitability	Producer Ranking*	Consultant view of Producers*	Consultant Ranking*
Focus on increasing crop & herd productivity	1.29	1.23	1.16
Educating farm operators to be better managers	1.32	1.93	1.16
Focus on cutting costs of farm production	1.43	1.34	1.39
Training hired help	1.89	2.23	1.56
Apply "cutting edge" information to imrove farm operation	2.07	1.98	1.48
Obtaining off-farm advice	2.16	2.19	1.66
Purchase "state of the art" equipment	2.50	2.09	2.01
Increasing farm size	2.70	2.28	2.79

* Values are an average of responses based on the following scale regarding importance of methods to improve farm profitability: 1 = Very Important, 2 = Somewhat Important, 3 = Slightly Important, 4 = Not Important.

Table 19. Types of Consultants Used and Duration of Use by Idaho Farmers

Percentage of Idaho Farmers that hired the services of an independent consultant during the past 3 years	27.4	
Type of Consultant	Percentage of Farmers Who Used	Average Hours/Year
Financial Management consultant	41.3	36.3
Marketing consultant	14.6	5.6
Crop management consultant	42.7	36.7
Soil fertility consultant	67.0	22.9
Herd health and nutrition consultant	64.0	43.8
Farm management consultant	15.1	12.4

Table 20. Perceived Needs Regarding the Relationship Between Consultants and Idaho Farmers Who Employ Them

Farmer/Consultant Relationship	Producer Response*	Consultant Response*
A consultant should explain his/her recommendations to the farmer	1.05	1.07
A consultant should care about the success of the farmer's enterprise	1.06	1.02
A consultant should speak in a way the farmer can easily understand	1.06	1.02
A frank & open relationship should exist between consultant & farmer	1.06	1.08
A consultant should be very well informed	1.08	1.09
A consultant should understand how each farm works	1.12	1.17
A consultant should supply information that could easily be applied to the farmer's operation	1.13	1.25
A consultant should consider what the farmer tells him/her	1.25	1.12
A consultant should be avaiable to discuss the farmer's ideas or problems	1.28	1.15
A consultant should try to find out the farmer's level of satisfaction with his/her advice	1.44	1.34
A consultant should know each farm family's needs	1.75	1.57

* Values are an average of responses based on the following scale regarding whether the statement should 1 = Always, 2 = Sometimes, 3 = Seldom, 4 = Never, be true about the relationship between a farmer and a consultant.

Table 21. Relative Importance to Idaho Farmers of Reasons for Not Using a Consultant

Reason for NOT Using a Consultant	Average Response*
The consultants I would need are not available in my area	2.79
Consultants are too expensive	2.00
I have never felt that I needed the services of a consultant	2.20
I would rather solve my own problems than have someone else do it for me	2.26

* Values are an average of responses based on the following scale regarding importance of reasons for not using a consultant: 1 = Very Important, 2 = Somewhat Important, 3 = Slightly Important, 4 = Not Important.

Table 22. Reasons Given for Not Using Consulting Services by Idaho Farmers Who Had Used Such Services in the Past

Percentage of Idaho Farmers who hired the services of an independent consultant sometime prior to the last 3 years	32.4

	Importance			
Reason for Not Presently Using	Very*	Somewhat*	Slightly*	Not*
Too expensive	39.0	44.8	10.5	5.7
Too impersonal	14.1	48.5	17.2	20.2
Poor advice	45.0	25.0	14.0	16.0
Rather solve my own problems	19.6	45.1	21.6	13.7
No longer available in my area	18.9	24.4	8.9	47.8

* Cell values are percentage of respondents.

Table 23. Variables, Categories, and Percentage of Respondents by Category in the Demand Equations

Variables	Categories	Percent*	Variables	Categories	Percent*
AGECAT**	1=20-29	2.9	SATPRIV**	1=Very satisfied	22.8
	2=30-39	24.8		2=Somewhat satis	47.9
	3=40-49	32.6		3=Slightly satis	22.8
	4=50-59	19.9		4=Not satisfied	2.6
	5=60+	19.9		5=Never used	3.9
CASHRECP**	1=Less than $50,000	9.4	SATPUB**	1=Very satisfied	12.0
	2=$50,000-$99,999	15.6		2=Somewhat satis	47.6
	3=$100,000-$199,999	24.1		3=Slightly satis	23.1
	4=$200,000-$299,999	18.2		4=Not satisfied	10.4
	5=$300,000 or more	32.6		5=Never used	6.8
EDULEVEL*	1=Grade 8 or less	1.3	SATINDCN**	1=Very satisfied	13.3
	2=Some high school	2.3		2=Somewhat satis	29.6
	3=High school grad	21.2		3=Slightly satis	14.7
	4=Some college or voc	45.3		4=Not satisfied	5.5
	5=College grad	22.5		5=Never used	36.8
	6=Some grad work	2.99			
	7=Advanced degree	4.6			
OFFFARM**	1=None	51.1			
	2=1-20%	29.6			
	3=21-40%	5.2			
	4=41-50%	4.62			
	5=More than 50%	9.4			

* Cell values are percentage of respondents. Totals (by variable) may not add to 100% due to rounding.

** AGECAT - Age; CASHRECP - Total cash receipts from selling agricultural products; EDULEVEL - Highest education level completed; OFFFARM - Percentage of gross income coming from off-farm sources; SATPUB - Satisfaction with public consultants; SATPRIV - Satisfaction with private consultants; SATINDCN - Satisfaction with independent consultants.

Table 24. Predictive Performance of Demand Equation Estimation Across All Respondents

	Actual		
Predicted	Hired	Not Hired	Percent Correct
Hired	60	30	66.67
Not Hired	30	187	86.18
Overall			80.46
Model Fit	G^2	χ^2	
	0.9392	0.5477	

Table 25. Results of Demand Equation Estimation Across All Respondents

Variables	Categories	Coefficient*	Variables	Categories	Coefficient*
AGECAT**	1=20-29	-1.44(.95)	SATPRIV**	1=Very satisfied	-0.41(.42)
	2=30-39	0.24(.36)		2=Somewhat satis	-0.21(.39)
	3=40-49	0.36(.37)		3=Slightly satis	0.22(.44)
	4=50-59	0.21(.39)		4=Not satisfied	-0.40(.75)
	5=60+	0.64		5=Never used	0.80
CASHRECP**	1=Less than $50,000	-1.16(.72)	SATPUB**	1=Very satisfied	0.34(.48)
	2=$50,000-$99,999	-0.66(.44)		2=Somewhat satis	-0.38(.31)
	3=$100,000-$199,999	-0.01(.35)		3=Slightly satis	-0.79(.37)
	4=$200,000-$299,999	0.81(.39)		4=Not satisfied	-0.32(.47)
	5=$300,000 or more	1.03		5=Never used	1.15
EDULEVEL*	1=Grade 8 or less	-5.28(12.46)	SATINDCN**	1=Very satisfied	1.40(.39)
	2=Some high school	0.18(2.46)		2=Somewhat satis	1.22(.31)
	3=High school grad	0.68(2.12)		3=Slightly satis	1.12(.38)
	4=Some college or voc	0.74(2.11)		4=Not satisfied	-0.41(.59)
	5=College grad	0.54(2.11)		5=Never used	-3.34
	6=Some grad work	0.75(2.28)			
	7=Advanced degree	2.39			
OFFFARM**	1=None	0.42(.34)			
	2=1-20%	0.47(.36)			
	3=21-40%	0.11(.69)			
	4=41-50%	-0.09(.66)			
	5=More than 50%	-0.91			

* Standard errors are in parentheses. SPSS-X does not calculate standard for the last categories.

** AGECAT - Age; CASHRECP - Total cash receipts from selling agricultural products; EDULEVEL - Highest education level completed; OFFFARM - Percentage of gross income coming from off-farm sources; SATPUB - Satisfaction with public consultants; SATPRIV - Satisfaction with private consultants; SATINDCN - Satisfaction with independent consultants.

Table 26. Predictive Performance of Demand Equation Estimation Across Dairy Producers

	Actual		
Predicted	Hired	Not Hired	Percent Correct
Hired	37	13	74.00
Not Hired	13	106	89.08
Overall			84.62
Model Fit	G^2	χ^2	
	0.8276	0.0159	

Table 27. Results of Demand Equation Estimation Across Dairy Producers

Variables	Categories	Coefficient*	Variables	Categories	Coefficient*
AGECAT**	1=20-29	1.37(1.30)	SATPRIV**	1=Very satisfied	-0.41(.42)
	2=30-39	-0.45(.55)		2=Somewhat satis	-0.21(.39)
	3=40-49	-0.17(.51)		3=Slightly satis	0.22(.44)
	4=50-59	-0.55(.60)		4=Not satisfied	-0.40(.75)
	5=60+	-0.20		5=Never used	0.80
CASHRECP**	1=Less than $50,000	-2.35(1.25)	SATPUB**	1=Very satisfied	0.34(.48)
	2=$50,000-$99,999	-0.76(.61)		2=Somewhat satis	-0.38(.31)
	3=$100,000-$199,999	0.68(.53)		3=Slightly satis	-0.79(.37)
	4=$200,000-$299,999	0.22(.60)		4=Not satisfied	-0.32(.47)
	5=$300,000 or more	2.21		5=Never used	1.15
EDULEVEL*	1=Grade 8 or less	-5.94(20.27)	SATINDCN**	1=Very satisfied	1.40(.39)
	2=Some high school	-2.87(28.44)		2=Somewhat satis	1.22(.31)
	3=High school grad	1.55(5.77)		3=Slightly satis	1.12(.38)
	4=Some college or voc	0.72(5.76)		4=Not satisfied	-0.41(.59)
	5=College grad	0.65(5.77)		5=Never used	-3.34
	6=Some grad work	2.11(5.87)			
	7=Advanced degree	4.49			
OFFFARM**	1=None	-0.20(.14)			
	2=1-20%	0.77(.61)			
	3=21-40%	-0.52(.89)			
	4=41-50%	-0.07(1.14)			
	5=More than 50%	0.02			

* Standard errors are in parentheses. SPSS-X does not calculate standard for the last categories.

** AGECAT - Age; CASHRECP - Total cash receipts from selling agricultural products; EDULEVEL - Highest education level completed; OFFFARM - Percentage of gross income coming from off-farm sources; SATPUB - Satisfaction with public consultants; SATPRIV - Satisfaction with private consultants; SATINDCN - Satisfaction with independent consultants.

Table 28. Predictive Performance of Demand Equation Estimation Across Potato Producers

	Actual		
Predicted	Hired	Not Hired	Percent Correct
Hired	33	7	82.50
Not Hired	7	91	92.86
Overall			89.86
Model Fit	G^2	χ^2	
	0.9866	0.9493	

Table 29. Results of Demand Equation Estimation Across Potato Producers

Variables	Categories	Coefficient*	Variables	Categories	Coefficient*
AGECAT**	1=20-29	-19.20(115.1)	SATPRIV**	1=Very satisfied	-0.41(.42)
	2=30-39	4.56(28.78)		2=Somewhat satis	-0.21(.39)
	3=40-49	4.73(28.78)		3=Slightly satis	0.22(.44)
	4=50-59	4.40(28.78)		4=Not satisfied	-0.40(.75)
	5=60+	5.51		5=Never used	0.80
CASHRECP**	1=Less than $50,000	-0.82(1.27)	SATPUB**	1=Very satisfied	0.34(.48)
	2=$50,000-$99,999	-0.43(.99)		2=Somewhat satis	-0.38(.31)
	3=$100,000-$199,999	-1.00(.84)		3=Slightly satis	-0.79(.37)
	4=$200,000-$299,999	1.40(.80)		4=Not satisfied	-0.32(.47)
	5=$300,000 or more	0.85		5=Never used	1.15
EDULEVEL*	1=Grade 8 or less	---	SATINDCN**	1=Very satisfied	1.40(.39)
	2=Some high school	-5.47(55.22)		2=Somewhat satis	1.22(.31)
	3=High school grad	3.26(43.22)		3=Slightly satis	1.12(.38)
	4=Some college or voc	3.79(43.22)		4=Not satisfied	-0.41(.59)
	5=College grad	3.56(43.22)		5=Never used	-3.34
	6=Some grad work	-10.81(213.3)			
	7=Advanced degree	5.67			
OFFFARM**	1=None	-2.06(11.91)			
	2=1-20%	-2.67(11.91)			
	3=21-40%	12.75(47.6)			
	4=41-50%	-2.80(11.96)			
	5=More than 50%	-5.22			

* Standard errors are in parentheses. SPSS-X does not calculate standard for the last categories.

** AGECAT - Age; CASHRECP - Total cash receipts from selling agricultural products; EDULEVEL - Highest education level completed; OFFFARM - Percentage of gross income coming from off-farm sources; SATPUB - Satisfaction with public consultants; SATPRIV - Satisfaction with private consultants; SATINDCN - Satisfaction with independent consultants.