

**MEASURING THE IMPACT OF AN INTENSIVE
COMMODITY PRICE RISK MANAGEMENT
EDUCATION PROGRAM ON AGRICULTURAL PRODUCERS**

A Dissertation

by

DEAN ALEXANDER MCCORKLE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2005

Major Subject: Agricultural Education

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ABSTRACT

Measuring the Impact of an Intensive Commodity Price Risk Management Education

Program on Agricultural Producers. (May 2005)

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The purposes of the study were to measure change in knowledge, adoption of practices, and economic impact, and to investigate relationships between selected personal and business parameters, and satisfaction, knowledge, adoption of practices, and economic impact of the Master Marketer program and marketing clubs.

A census was attempted to collect data from the 520 Master Marketer graduates and 1,058 marketing club members. Using recommendations from Dillman (2000), data from participants were collected using two mail questionnaires. This process yielded 326 usable responses from Master Marketer graduates for a return rate of 62.7%, and 407 usable responses from marketing club members for a response rate of 38.4%.

Master Marketer respondents had a statistically significant increase in self-perceived knowledge with a change in mean score of 2.06 (pre-knowledge mean = 3.33, post-knowledge mean = 5.40, where 1 = low, and 7 = excellent). Using a paired samples *t*-test, the 2-tail level of significance was beyond the .05 level of significance. Marketing club respondents also showed a statistically significant increase in self-perceived

knowledge.

Adoption of price risk management practices was measured with an adjusted response scale ranging from 0 to 12. Master Marketer respondents showed a pre-mean score of 3.15, a post-mean score of 6.61, and a change of 3.46. The 2-tailed level of significance for the overall adoption scale was less than 0.01. Marketing club respondents also showed a statistically significant increase in adoption of these practices.

Economic impact in terms of change in net income was derived using respondents' self-reported changes in commodity price received for each commodity produced, and each respondent's typical level of production. The total farm impact had a mean of \$32,288. The 2-tailed level of significance for the total farm impact was less than 0.01. The mean impact per farm of \$12,361 for marketing club respondents was also statistically significant.

For Master Marketer respondents, notable findings with respect to the correlation of independent variable with dependent variables was *total gross revenue* was negatively correlated with *knowledge change*. Participants who reported a large change in knowledge tended to also report a large change (increase) in time spent on marketing.

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CHAPTER I

INTRODUCTION

Introduction and Background

While the integration of risk into extension agricultural economics programs was slow in the first half of the twentieth century, in the 1960s and 1970s the area of commodity marketing and associated price risk became a priority in educational programs. Since then, a broader view of risk as it relates to all types of management decisions has been embraced due to a multitude of factors, including an increased emphasis on risk management by policymakers, the introduction of agricultural commodity options in the mid-1980s, and the acceleration of computer technology which has greatly simplified the task of analyzing variability in data and demonstrating in educational programs the concept of risk.

Cooperative Extension has long been a provider of agricultural production, marketing, and other business-related educational programs. Marketing and price risk management is an area that extension in many states has placed more emphasis on in the past 10 to 20 years. In fact, a study by Chizari and Taylor identified innovative marketing strategies, among several other subject matter areas, as one of the reasons for adult educational programs in agriculture (1991, p. 1). Considering the ever changing environment both producers and extension educators operate in, Trede and Whitaker stated that rapid changes in agricultural technology, in planning and delivery of

This dissertation follows the style and format of the *Journal of Agricultural Education*.

programs, and the changing structure of the farming industry clearly indicate that agricultural educators will need to reassess their role and responsibility in the planning and delivery of beginning farmer education (2000, p. 40). Re-evaluating marketing and price risk management educational needs and delivery strategies is precisely what Texas Cooperative Extension was doing when the uniquely designed Master Marketer program was born.

The proliferation of risk management educational programs conducted by Cooperative Extension in the past decade was met by the challenge of discovering effective methods of teaching risk management. Common methods of program delivery were through one-day and half-day workshops, multi-day workshops and short courses, Internet-based programs, marketing clubs, and short publications. A study by Anderson and Mapp (1996) involved interviewing twelve extension economists who had developed and delivered educational programs on making decisions in a risky environment. The results of this qualitative study reinforced the notion that producers want to learn about specific strategies they can implement that will result in increased profitability. Producers, in general, are not interested in knowing how numbers were calculated, or the underlying theory supporting a particular concept or strategy. Additionally, the study indicated that experience is the biggest factor that determines what and how extension economists teach about risk (Anderson & Mapp, 1996).

The Master Marketer Program

In January 1996, the Agricultural Economics Extension Unit of Texas Cooperative Extension launched the Master Marketer program, which is believed to be the most intensive commodity marketing and risk management educational program for agricultural producers ever offered by extension in the U.S. The program combines three successful educational concepts - master programs, master volunteers, and marketing clubs - into a unique marketing and risk management program. The Master Marketer program consists of 64 hours of intense training spread over 4 separate 2-day sessions over a 6 week period.

The primary focus of the program is on teaching price risk management strategies, how to develop a marketing plan, and how to analyze current and future market conditions. Other topics include managing production risk through crop insurance and enterprise diversification. The Master Marketer program is taught at the intermediate-to-advanced level and pre-program “leveling workshops” are held for those participants who are in need of an introductory-level course on commodity marketing and risk management to ensure that they are ready for the program. Producer participants have an expressed interest in marketing and have demonstrated leadership abilities, the latter of which is important due to the forthcoming commitment of graduates to serve as volunteers in starting a marketing club in their home area. The end results are an expansion in the number of volunteer educators and valuable educational opportunities for producers within a cost effective framework that circumvents personnel and resource constraints currently hindering marketing and production risk management

educational efforts (Waller, Amosson, Smith, Bevers, & McCorkle, 2000).

In order to talk about risk, one must also talk about uncertainty. Risk is defined as “uncertain consequences, particularly exposure to unfavorable consequences, while uncertainty is defined as imperfect knowledge” (Hardaker, Huirne & Anderson, 1997, p. 5). Subject matter taught in the Master Marketer program focuses on price and production risk management strategies that can be used to reduce the magnitude of unfavorable financial consequences. Producers have imperfect knowledge of what price will be available to them in the future.

Statement of Problem

Master Marketer graduates speak highly of the quality of the program. However, the extent to which the Master Marketer System has affected participants’ knowledge, adoption of commodity and risk management practices, and gross revenue is not known. These three domains are common areas of outcome-based program evaluation. While the Master Marketer program has always benefited from the leadership and management of program coordinators, the marketing club component of the Master Marketer System has been loosely managed by program coordinators as the management function of marketing clubs is fulfilled by the volunteer club leader and/or the County Extension Agricultural Agent. The number of marketing clubs that have been started by Master Marketer graduates and the number of producers who have participated in marketing clubs is not well documented. It is also known that some marketing clubs have functioned that were not started by a Master Marketer graduate.

In addition to these questions that are compatible with commonly used models of outcome-based program evaluation, there are basic research questions that, if answered, could benefit program coordinators in designing and delivering future Master Marketer System programs. It is not currently known whether a participant's change in knowledge is an indicator of their adoption of practices. Neither is it known whether a participant's change in either knowledge or adoption of practices is an indicator of their change in gross income.

Purpose of the Study

The primary purpose of the study was to determine change in knowledge, adoption of practices, and economic impact of the Master Marketer System. More specifically, the following six objectives were addressed in this study:

1. Describe Master Marketer System participants with respect to age, type of commodities produced, size of operations, level of education, and geographic location.
2. Measure the effectiveness of the Master Marketer System in educating participants on commodity marketing and risk management.
3. Determine the rate of adoption of commodity marketing and risk management practices of participants.
4. Determine the economic impact the Master Marketer System has had on participants.
5. Determine the effectiveness of Master Marketer graduates in starting

marketing clubs.

6. Identify the relationships between change in knowledge, adoption of practices, and economic impact on Master Marketer System participants.

Specific Research Objectives

To accomplish the purposes of the study, the following objectives were established:

2. Determine the change in knowledge of commodity marketing and risk management experienced by graduates of the Master Marketer program.
3. Determine the change in knowledge of commodity marketing and risk management experienced by marketing club members.
4. Determine the change in adoption of commodity marketing and risk management strategies for Master Marketer graduates.
5. Determine the change in adoption of commodity marketing and risk management strategies for marketing club members.
6. Determine the economic impact the Master Marketer program had on graduates.
7. Determine the economic impact that marketing clubs had on club members.
8. Determine the number of marketing clubs started by Master Marketer graduates.
9. Determine the relationship between selected personal and business

parameters, and knowledge, adoption of practices, satisfaction, and the economic impact of Master Marketer graduates.

10. Determine the relationship between selected personal and business parameters, and knowledge, adoption of practices, and the economic impact of marketing club members.

Theoretical Base of Study

This study finds theoretical support in the areas of adult learning, diffusion and adoption, and program evaluation. Several objectives of the study relate to measuring the rate of adoption of price risk management strategies taught in the Master Marketer program. Rogers (1995, p.15-16) identifies five characteristics of innovations as perceived by individuals: (1) relative advantage - the degree to which an innovation is perceived as better than the idea it supercedes, (2) compatibility - the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters, (3) complexity - the degree to which an innovation is perceived as difficult to understand and use, (4) trialability - the degree to which an innovation may be experimented with on a limited basis, and (5) observability - the degree to which the results of an innovation are visible to others. Rogers (1995, p. 20) goes on to provide five main steps in the innovation-decision process: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. This study used elements of functions 1 and 4 by measuring knowledge change and level of implementation of the innovations of concern in this research.

With regard to measuring subjects' change in knowledge as a result of their participation in the Master Marketer System, adult learning theory provides the rationale for this aspect of the study. In a review of the field of adult learning, Knowles refers to work in the 1920s by Thorndike that demonstrated that adults could learn which provided a scientific foundation for the field of adult learning (Knowles, 1978, p. 10). Knowles later formulated a theory of adult learning referred to as "androgogy," a name which he borrowed from a German educator. Psychologists define "adult" by stating that an individual becomes an adult psychologically when the individual arrives at a self-concept of being responsible for his or her own life and has reached the stage of being self-directing (Knowles, Holton III, & Swanson, 1998, p. 64). Using this view of the human transformation into adulthood, Knowles developed an androgogical model for adult learning in the 1960s, independent from the pedagogy model of teaching children which has been applied to both children and adults. The androgogical model developed by Knowles is based on six assumptions which are briefly summarized as follows (Knowles et al., p. 64-68):

1. *The need to know.* Adults need to know why they need to learn something before undertaking to learn it.
2. *The learners' self-concept.* Adults have a self-concept of being responsible for their own decisions, for their own lives.
3. *The role of the learners' experiences.* Adults come into an educational activity with both a greater volume and a different quality of experience than youths.

4. *Readiness to learn.* Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations.
5. *Orientation to learning.* In contrast to children's and youths' subject-centered orientation to learning (at least in school), adults are life-centered (or task-centered or problem-centered) in their orientation to learning.
6. *Motivation.* While adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like), the most potent motivators are internal pressures (the desires for increased job satisfaction, self-esteem, quality of life, and the like).

Considering this research project is largely an extension program evaluation study, certain elements of the large body of literature that exists on program evaluation is used for its foundation. While there are many definitions of evaluation, one that is appropriate for this study was developed by Scriven which states that evaluation is “the process of determining the merit, worth, and value of things, and evaluations are the products of that process” (1991, p. 1). One of the best known evaluation models is the CIPP model developed by Stufflebeam and Guba. CIPP is an acronym representing the four types of evaluation this model identifies, namely, context evaluation, input evaluation, process evaluation, and product evaluation (Popham, 1993, p. 34). Within the CIPP model framework, data available for this study will allow for product evaluation which focuses on the output of programs, and to some extent, process

evaluation which focuses on evaluating procedures of the instructional process.

Hypotheses

The following null hypotheses were tested:

- H₀₁: There was no change in Master Marketer graduates' perceived knowledge of price and production risk management strategies from before to after participation in the program.
- H₀₂: There was no change in marketing club members' perceived knowledge of price and production risk management strategies from before to after participation in the program.
- H₀₃: There was no change in Master Marketer graduates' use (adoption) of price risk management strategies from before to after participation in the program.
- H₀₄: There was no change in marketing club members' use (adoption) of price risk management strategies from before to after participation in the program.
- H₀₅: There was no perceived mean economic impact per graduate of the Master Marketer program as a result of participation in the program.
- H₀₆: There was no perceived mean economic impact per marketing club member as a result of participation in a marketing club.

Delimitations

In light of the study being built around questionnaire responses of all Master Marketer graduates and all identified marketing club members, the study is being conducted as a census. As such, results of the study cannot be generalized to a broader

population.

Limitations

1. With a response rate of 62.7 percent on the Master Marketer survey, and no effort made to control for non-response error, non-response error bias was introduced as a limitation.
2. The data collected for knowledge and economic impact reflects respondents' perception of their change in knowledge and economic impact.

Basic Assumptions

The following conditions are assumed for the study:

1. All subjects who responded to the questionnaire did so voluntarily and honestly.
2. All respondents interpreted each question the way the author intended.
3. The two questionnaires used in the study accurately captured the respondents' demographic information, change in knowledge, adoption of practices, and economic impact.

CHAPTER II

REVIEW OF LITERATURE

This study necessitated a review of literature in five major subject matter areas. These areas were adult learning, diffusion and adoption theory, program evaluation, and commodity price risk management.

Literature Review of Adult Learning Theory

Subjects' change in knowledge as a result of their participation in the Master Marketer System is supported by adult learning theory. As a subject matter area, adult learning theory was no different than the learning theory used for children - pedagogy. This was the case up until the 1960's when a separate theory for adult learning first began to emerge.

Evolution of Adult Learning Theory

Up until the 1970s, pedagogy was generally the only teaching theory available for use by adult educators. Pedagogy, which is a theory for teaching children, has long been the most widely used method for teaching children. Due to a lack of alternatives, adult educators also adopted and used the pedagogy model. Practitioners, and researchers, assumed that adults learned the same way as children and this belief persisted well into the twentieth century. However, as Malcolm Knowles points out in a historical review of the field of adult education, several theoretical contributions in the early part of the twentieth century have allowed the adult education profession to develop its own theory of education for adults.

In a review of the field of adult learning, Knowles refers to work in the 1920s by Thorndike that demonstrated that adults could learn which provided a scientific foundation for the field of adult learning (Knowles, 1978, p. 10). Research by Thorndike also indicated that adults possessed interests and abilities that were different from those of children and youth (p. 10). In his 1926 publication entitled “The Meaning of Adult Education,” Lindeman laid the foundation for a systematic theory about adult learning, while also identifying the following five key assumptions about adult learners (Knowles, Holton III, & Swanson, 1998, p. 40):

1. Adults are motivated to learn as they experience needs and interests that learning will satisfy; therefore, these are the appropriate starting points for organizing adult learning activities.
2. Adult’s orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations, not subjects.
3. Experience is the richest resource for adults’ learning; therefore, the core methodology of adult education is the analysis of experience.
4. Adults have a deep need to be self-directing; therefore, the role of the teacher is to engage in a process of mutual inquiry with them rather than to transmit his or her knowledge to them and then evaluate their conformity to it.
5. Individual differences among people increase with age; therefore, adult education must make optimal provision for differences in style, time, place, and pace of learning.

Knowles later formulated a theory of adult learning referred to as “androgogy,” a name which he borrowed from a German educator. The term adult can be defined in several ways, depending on your perspective. Adult can be defined from a legal standpoint, biological, or from a social standpoint just to name a few. The key element of the meaning of adult is found in the psychological definition, according to Knowles. Psychologists define adult by stating that an individual becomes an adult psychologically when the individual arrives at a self-concept of being responsible for our own lives, of being self-directing (Knowles, 1998, p. 64). Using this view of the human transformation into adulthood, Knowles developed an androgogical model in the 1960s for adult learning, independent from the pedagogy model of teaching children which has been applied to both children and adults. The androgogical model developed by Knowles is based on six assumptions which are briefly summarized as follows (Knowles et al., p. 64-68):

1. *The need to know.* Adults need to know why they need to learn something before undertaking to learn it. Tough (1979) found that when adults undertake to learn something on their own, they will invest considerable energy in probing into the benefits they will gain from learning it and the negative consequences of not learning it. Consequently, one of the new aphorisms in adult education is that the first task of the facilitator of learning is to help the learners become aware of the “need to know.”

2. *The learners' self-concept.* Adults have a self-concept of being responsible for their own decisions, for their own lives. Once they have arrived at this self-concept they develop a deep psychological need to be seen by others and treated by others as being capable of self-direction. They resent and resist situations in which they feel others are imposing their wills on them.
3. *The role of the learners' experiences.* Adults come into an educational activity with both a greater volume and a different quality of experience from youths. By virtue of simply having lived longer, they have accumulated more experience than they had as youths. But they also have had a different kind of experience. This difference in quantity and quality of experience has several consequences for adult education. One of which is that in any group of adults there will be a wider range of individual differences than is the case with a group of youths. The difference in quantity and quality of experience has several consequences for adult education.

It assures that in any group of adults there will be a wider range of individual differences than is the case with a group of youths. But the fact of greater experience also has some potentially negative effects. As we accumulate experience, we tend to develop mental habits, biases, and presuppositions that tend to cause us to close our minds to new ideas, fresh perceptions, and alternative ways of thinking.

4. *Readiness to learn.* Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations. An especially rich source of “readiness to learn” is the developmental tasks associated with moving from one developmental stage to the next. The critical implication of this assumption is the importance of timing learning experiences to coincide with those developmental tasks.
5. *Orientation to learning.* In contrast to children’s and youths’ subject-centered orientation to learning (at least in school), adults are life-centered (or task-centered or problem-centered) in their orientation to learning. Adults are motivated to learn to the extent that they perceive that learning will help them perform tasks or deal with problems that they confront in their life situations. Furthermore, they learn new knowledge, understandings, skills, values, and attitudes most effectively when they are presented in the context of application to real-life situations.
6. *Motivation.* While adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like), the most potent motivators are internal pressures (the desires for increased job satisfaction, self-esteem, quality of life, and the like). Tough (1979) found in his research that all normal adults are motivated to keep growing and developing, but this motivation is frequently blocked by such barriers as negative self-concept as a student, inaccessibility of opportunities or

resources, time constraints, and programs that violate principles of adult learning.

Literature Review of Diffusion and Adoption Theory

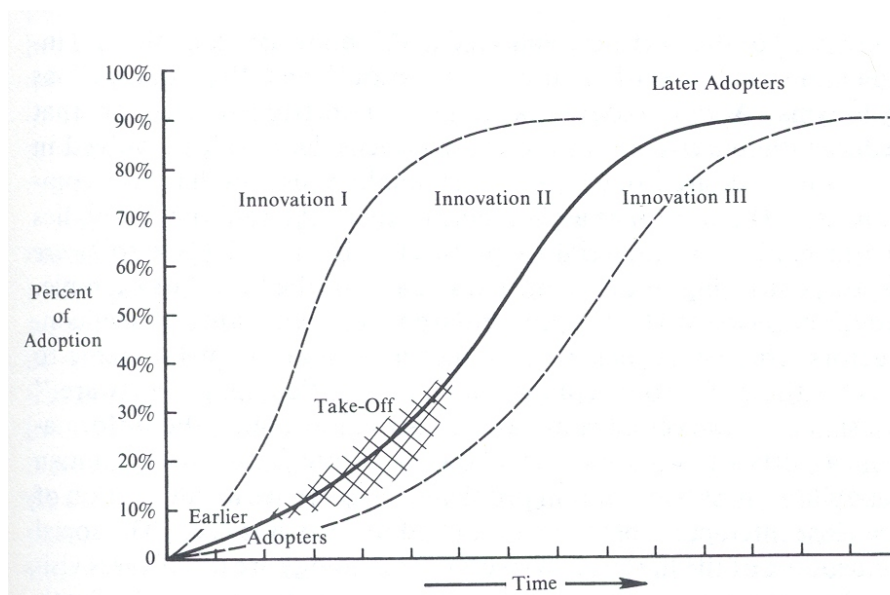
Several objectives of this study relate to measuring the rate of adoption of price risk management strategies taught in the Master Marketer program and marketing clubs. Diffusion and adoption research can be traced back to turn of the 20th century when a French lawyer named Gabriel Tarde became curious about why some innovations were widely adopted and others were not (Rogers, 1995, p. 39-40). Tarde, who is considered a forefather of sociology and social psychology, was ahead of his time when he observed that the rate of adoption of a new idea usually followed an S-shaped curve over time. During the past century, diffusion and adoption research has been conducted in many disciplines including education, rural sociology, agricultural education, public health, communications, and marketing. There were a few “breakthrough” studies that had large impacts on the diffusion and adoption research community prior to 1940. However, the Ryan and Gross investigation in 1943 of the diffusion of hybrid seed corn, more than any other study, influenced the methodology, theoretical framework, and interpretations of later students in the rural sociology tradition, and in other diffusion research traditions as well (Rogers, 1995, p. 52). Iowa State University developed hybrid corn seed and made it available to Iowa farmers in 1928. Hybrid corn was a breakthrough innovation, yielding 20% more than open-pollinated corn and was more suitable for mechanical harvesting. Ryan and Gross, researchers at Iowa State University, conducted a diffusion

and adoption study of the hybrid corn seed and personally interviewed 345 farmers in two separate farming communities in Iowa, 259 of which were used in the study. Some of the information gathered during interviews included the year the farmer adopted hybrid corn, the communication channels used at each stage in the innovation-decision process, how much of the farmer's corn acreage was planted to hybrid corn seed each year, income, travel to Des Moines and other cities, readership of farm magazines, and other variables that were later correlated with innovativeness (Rogers, p. 32). Regarding communication channels, seed salesmen were frequently cited as being responsible for making farmers aware of the hybrid corn but neighboring farmers were frequently cited as the one who ultimately led to persuasion. Rogers and others have pointed out that the sample design could have included sociometric questions such as which farmers they had acquired information about hybrid corn. However, as Katz pointed out, the data were collected from all members of the community as if they were unrelated respondents in a random sample (Rogers, p. 34). In spite of this shortcoming in the survey, Ryan and Gross did state in their notable 1941 publication the importance of this interaction between farmers and its impact on the adoption of hybrid corn. "The two rural sociologists intuitively sensed what later diffusion scholars were to gather more detailed evidence to prove: That the heart of the diffusion process consists of interpersonal network exchanges and social modeling between those individuals who have already adopted an innovation and those who are then influenced to do so (Rogers, 1995, p. 35)." The hybrid corn diffusion and adoption study was the beginning of a new paradigm in diffusion and adoption research.

The Diffusion Process

“Diffusion” is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995, p. 5).

Diffusion of an innovation typically follows an “S”-shaped curve as illustrated in Figure 1.



Source: Rogers, E. M. (1983), *Diffusion of Innovations* (3rd Ed.), p. 11.

Figure 1. Illustration of Rogers' diffusion process.

Rogers identifies the following four elements of the diffusion process (1995, p.11-23):

1. *The innovation.* An “innovation” is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. It matters little, so far as human behavior is concerned, whether or not an idea is objectively new as measured by the lapse of time since its first use or

discovery. The perceived newness of the idea for the individual determines his or her reaction to it.

2. *Communication channels.* “Communication” is defined as the process by which participants create and share information with one another in order to reach a mutual understanding. Mass media channels, such as radio and television, are often the most rapid and efficient means to inform an audience of potential adopters about the existence of an innovation, that is, to create awareness-knowledge. On the other hand, interpersonal channels are more effective in persuading an individual to accept a new idea, especially if the interpersonal channel links two or more individuals who are similar in socioeconomic status, education, or other important ways. Interpersonal channels involve a face-to-face exchange between two or more individuals.
3. *Time.* The time dimension is involved in the diffusion process in three ways: (1) in the innovation-decision process by which an individual passes from first knowledge of an innovation through its adoption or rejection, (2) in the innovativeness of an individual or other unit of adoption - that is, the relative earliness/lateness with which an innovation is adopted - compared with other members of a system, and (3) in an innovation’s rate of adoption in a system, usually measured as the number of members of the system that adopt the innovation in a given time period.

4. *Social system.* A “social system” is defined as a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal. The members or units of a social system may be individuals, informal groups, organizations, and/or subsystems.

Rogers (1995, p.15-16) identified five characteristics of innovations as perceived by individuals. All five characteristics are listed below with the portions of Rogers’ explanations that relate to this study included:

1. *Relative advantage.* The degree to which an innovation is perceived as better than the idea it supercedes. The degree of relative advantage may be measured in economic terms, but social prestige, convenience, and satisfaction are also important factors. It does not matter so much if an innovation has a great deal of objective advantage. What does matter is whether an individual perceives the innovation as advantageous. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption.
2. *Compatibility.* The degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. An idea that is incompatible with the values and norms of a social system will not be adopted as rapidly as an innovation that is compatible.
3. *Complexity.* The degree to which an innovation is perceived as difficult to understand and use. Some innovations are readily understood by most

members of a social system; others are more complicated and will be adopted more slowly. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understanding.

4. *Trialability.* The degree to which an innovation may be experimented with on a limited basis. New ideas that can be tried on the installment plan will generally be adopted more quickly than innovations that are not divisible. Ryan and Gross found that every one of their Iowa farmer respondents adopted hybrid seed corn by first trying it on a partial basis (Rogers, 1995).
5. *Observability.* The degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it. Such visibility stimulates peer discussion of a new idea, as friends and neighbors of an adopter often request innovation-evaluation information about it. Solar adopters often are found in neighborhood clusters in California, with three or four adopters located on the same block. Other consumer innovations like home computers are relatively less observable, and thus diffuse more slowly.

Another aspect of diffusion is the innovation-decision process, which Rogers (1995, p. 20) defines as the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation to forming an attitude toward

the innovation, to a decision to adopt or reject, to implementation and use of the new idea, and to confirmation of this decision. The five main steps in the innovation-decision process are (Rogers, 1995, p. 20) :

1. *Knowledge* occurs when an individual or other decision-making unit learns of the innovation's existence and gains some understanding of how it functions.
2. *Persuasion* occurs when an individual or other decision-making unit forms a favorable or unfavorable attitude toward the innovation.
3. *Decision* occurs when an individual or other decision-making unit engages in activities that lead to a choice to adopt or reject the innovation.
4. *Implementation* occurs when an individual or other decision-making unit puts an innovation into use. Re-invention is especially likely to occur at the implementation stage
5. *Confirmation* occurs when an individual or other decision-making unit seeks reinforcement of an innovation-decision that has already been made, but the individual may reverse this previous decision if exposed to conflicting messages about the innovation.

Literature Review of Program Evaluation

Several objectives of this study relate to program evaluation. Program evaluation, which can be traced back to as early as 2000 B.C. (Worthern, Sanders, & Fitzpatrick, 1997, p. 26), has evolved over the centuries to become what is now a major factor in many public and private programs. In regard to adult education programs such as Master Marketer and marketing clubs, several evaluation models are relevant in support of this study. Three of these models are discussed below in this section.

Kirkpatrick Model

Kirkpatrick first formulated his four-level evaluation model in 1959 (Kirkpatrick, 1994, p. xiii). The four levels which constitute Kirkpatrick's model are (p. 21):

Level 1 - Reaction

Level 2 - Learning

Level 3 - Behavior

Level 4 - Results

The model originated out of his doctoral work at the University of Wisconsin - Madison in an attempt to clarify the elusive term "evaluation." Evaluation was, and many would argue still is, perceived as measuring one of the following: changes in behavior, final results, customer satisfaction, knowledge, skills, and attitude. Kirkpatrick argued that "... they are all right - and yet wrong, in that they fail to recognize that all four approaches are parts of what we mean by evaluating (1994, p. xxiii)." What Kirkpatrick believed strongly in was that evaluation was much more than each the four components independently, but rather the sum of these components. Kirkpatrick's

description of the four levels of his evaluation model follows (1994).

Evaluating reaction is measuring the feelings of participants. It is a measure of “customer satisfaction.” Because reaction is so easy to measure, it is the most common type of evaluation performed (Kirkpatrick, 1983, p. 102). If participants are going to learn from a training, they must react favorably to it. Otherwise, they will not be motivated to learn. Kirkpatrick proposes the following 8 guidelines for evaluating reaction (p. 28 - 41):

1. *Determine what you want to find out.* It is imperative to get reactions to both the subject and to the leader (trainer). And it is important to separate these two ingredients.
2. *Design a form that will quantify reactions.* The ideal form provides the maximum amount of information and requires the minimum amount of time.
3. *Encourage written comments and suggestions.* Quantitative responses do not provide the reasons for those reactions or suggest what can be done to improve the program.
4. *Get 100 percent immediate response.* Having participants turn in their reaction form(s) before leaving the program increases the response rate as opposed to having participants return them at some point in the future.
5. *Get honest responses.* Not requiring participants to put their name on reaction forms increases the likelihood of getting honest responses. Also, have participants place their reaction forms in a pile rather than leaving

them at their seat.

6. *Develop acceptable standards.* Scaled responses can be used to derive mean ratings for each item on a reaction form. These mean ratings can then be used to develop standards to measure against.
7. *Measure reactions against standards, and take appropriate action.* Once realistic standards have been established, you should evaluate the various aspects of the program and compare your findings with the standards.
8. *Communicate reactions as appropriate.* Program coordinators must deal with two factors with respect to communicating reaction forms: who wants to see them and with whom program coordinators want to communicate. Instructors should be shown these reactions, especially if they request it, as well as those who make decision about staffing, budgets, salary increases, etc.

Evaluating learning is comprised of measuring changes in knowledge, skills, and attitudes. Changes in behavior cannot be expected if no learning takes place.

Kirkpatrick offers four guidelines for evaluating learning (p. 42 - 51):

1. *Use a control group if practical.* Control groups can provide better evidence that change has taken place. If a training program is conducted for managers in a large organization, there would be enough managers that using a control group would be practical. For a small organization, a control group may not be practical.
2. *Evaluate knowledge, skills, and/or attitudes both before and after the*

program. Pre and post-tests are recommended as a means of measuring changes in knowledge and attitudes. For measuring skills, a performance test is recommended.

3. *Get a 100 percent response.* Anything less than a 100 percent response rate requires a carefully designed approach to select a sample group and analyze the results statistically.
4. *Take appropriate action.* This item refers to taking action to improve the instruction component of a program. It is important to remember that we are measuring our own effectiveness as instructors when we evaluate participants' learning. If it is discovered that instructors have not been successful, it needs to be determined how to be more effective in the future.

Evaluating behavior is aimed at determining the change in behavior that resulted from the training program or experimental treatment. Participants cannot change their behavior until they have had a chance to do so. They may decide to change their behavior the first opportunity they have, or they may never change their behavior. As a result, it is impossible to predict when a behavioral change will occur. The following are seven guidelines for evaluating behavioral changes offered by Kirkpatrick (p. 53 - 61):

1. *Use a control group if practical.*
2. *Allow time for behavior change to take place.* Give participants time after they return to their work environment to consider the new practices or suggested behaviors, and try it out.

3. *Evaluate both before and after the program if practical.*
4. *Survey and/or interview persons who know the behavior.* Evaluators should survey and/or interview one or more of the following: trainees, their immediate supervisor, their subordinates, and others who are knowledgeable about their behavior.
5. *Get 100 percent response or a sampling.*
6. *Repeat the evaluation at appropriate times.* The purpose of repeating the evaluation is because some participants may change their behavior, then later revert back to their original behavior.
7. *Consider cost versus benefits.* Just with other investments, evaluators should compare the cost of evaluating change in behavior with the benefits that could result from the evaluation.

Kirkpatrick offers a familiar set of guidelines for evaluating results (p. 63 - 69):

1. *Use a control group if practical.*
2. *Allow time for results to be achieved.*
3. *Measure both before and after the program if practical.*
4. *Repeat the measurement at appropriate times.*
5. *Consider cost versus benefits..*
6. *Be satisfied with evidence if proof is not possible.* External factors can affect results and make it difficult to determine how much of the result was due to the training program or experimental treatment.

Logic Model

The logic model describes logical linkages among program resources, activities, outputs, audiences, and short-, intermediate-, and long-term outcomes related to a specific problem or situation (McCawley, 2001, p. 1). Program managers and evaluators have used logic models for more than 20 years to describe the effectiveness of their programs (p. 1). A logic model is primarily a communications device.

Figure 2 represents the typical layout of the logic model. Components of the model typically include: (1) issue, (2) situation, (3) inputs, (4) outputs, and (5) outcomes. Logic models can vary somewhat from the model presented in Figure 2, which does not include a component for the issue being addressed, depending on the situation and type of program.

The logic model was originally used by program evaluators as a tool for identifying performance measures. Since that time, the logic model has evolved into a tool applicable for both program planning and evaluation. Use of the logic model in planning allows for establishing and communicating the purpose of the program, its components, and the sequence of activities and accomplishment. It is crucial in program planning to communicate those aspects of a program that will stimulate support from stakeholders. The logic model provides a user-friendly framework for designing, documenting, and communicating important aspects of programs to stakeholders. Due to the design of the logic model, it seems logical to work from left to right, e.g. describe the issue, situation, inputs, outputs, outcomes, and evaluation. Israel (2001) and McCawley

PROGRAM DEVELOPMENT

Planning – Implementation – Evaluation

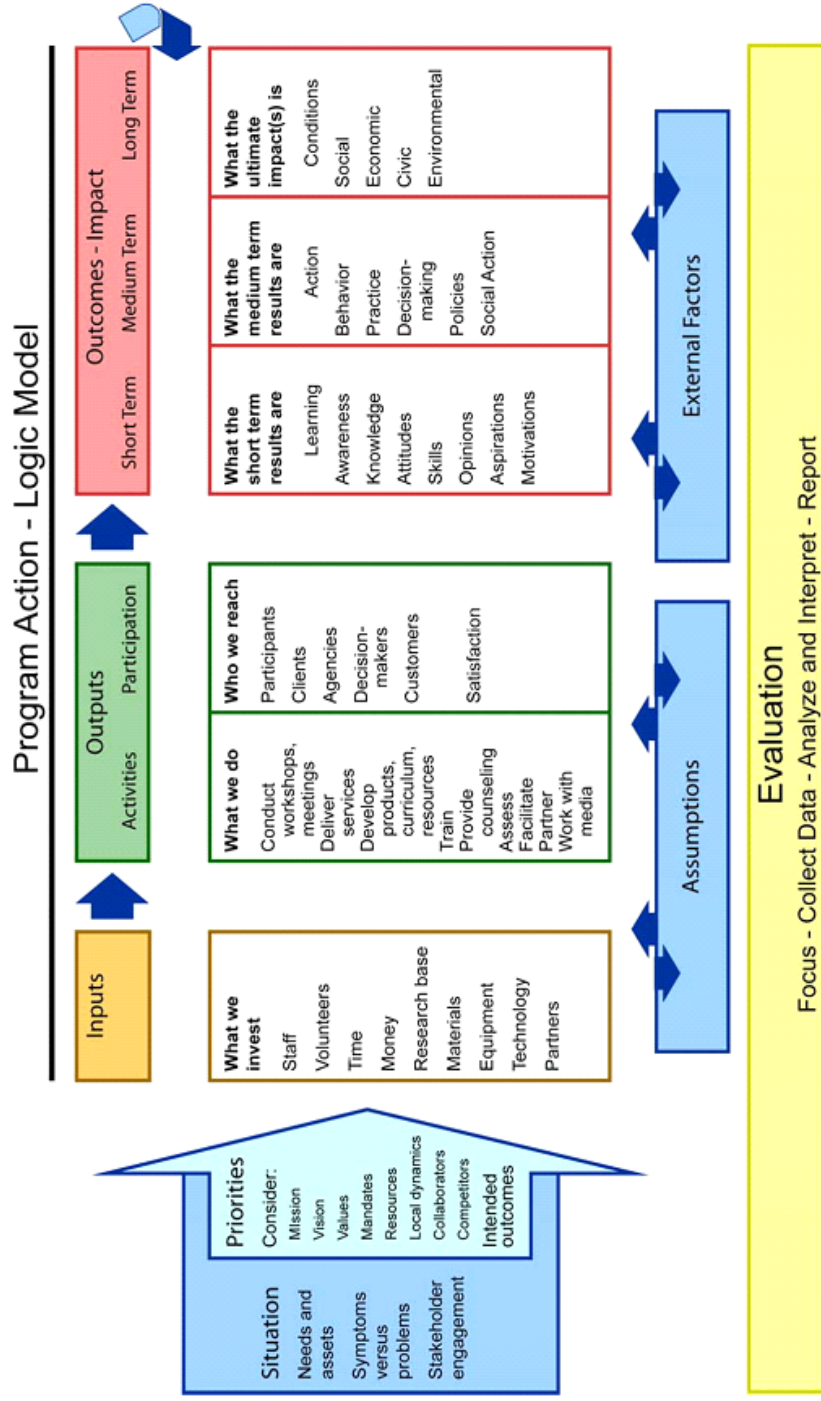


Figure 2. Illustration of Logic Model

(2001) both advise logic model users work from right to left, after the issue is defined. Describing intended outcomes first, then working to the left with outputs and inputs, encourages program developers to design the program to achieve the desired outcomes. Designing inputs before outputs and outcomes tends to lead to the status quo.

The following description of each component of the logic model contained in Figure 2 was adapted from McCawley.

Issue

The issue that the program is designed to address is summarized briefly. The issue is the reason why the program exists.

Situation

The situation statement provides an opportunity to communicate the relevance of the program. The situation component of the model may include a statement of the problem, as well as answers to questions such as: What are the causes? What are the social, economic, and/or environmental symptoms of the problem? What are the likely consequences if nothing is done to resolve the problem? What are the projected costs?

The situation component may also describe the audience affected by the problem, stakeholders, and any current or prior programs that addressed the problem. The audience description can address where the audience lives, works, and what role they play in the community or other area. The situation component forms somewhat of a baseline with which program impacts can be compared.

Inputs

The input component describes all the resources invested into the program.

Describing these inputs allows the opportunity to communicate the quality of the program by highlighting the valuable inputs being put into the program. Types of resources to describe include: (1) human resources, including faculty, staff, volunteers, and partners, (2) fiscal resources, including appropriated funds, special grants, donations, and user fees, (3) facilities and equipment, (4) knowledge base for the program, including teaching materials, curriculum, and research results, and (5) involvement of collaborators, including local, state, federal agencies and private organizations involved in planning, delivery, and evaluation.

Program inputs are critical to the effectiveness of the program and the inputs component is the place to describe the quality of inputs being invested into the program.

Outputs

Outputs from a program include the products, goods and services provided to participants, and the reaction, knowledge and skills gained by participants. The outputs component describe the linkage between the situation and intended outcomes. Products, goods, and services can include: (1) written materials and web pages, (2) decision aids such as worksheets and software, and (3) teaching events such as workshops, field days, product trials, and demonstrations.

Output in the form of participants include: (1) their characteristics and behaviors, (2) the proportion of the target audience reached by the program (attendance), (3) participants' learning objectives, and (4) satisfaction of participants.

Outcomes

There are three types of possible program outcomes: (1) short-term, (2)

intermediate-term, and (3) long-term. All of these outcomes describe what program planners hope happens as a result of the program.

Short-term outcomes of educational programs may include changes in awareness, knowledge, skills, and attitude. Intermediate-term outcomes may include changes in practices adopted by participants, behavior, policies adopted by various groups, technologies adopted, and management strategies adopted. Long-term outcomes occur when wide-spread changes in behavior lead to changes in economic conditions, societal conditions, environmental conditions, and political conditions.

Evaluation

The evaluation component describes the method of evaluation that will be used to evaluate the program. The evaluation plan can briefly outline the evaluation of inputs, process, outputs, and outcomes.

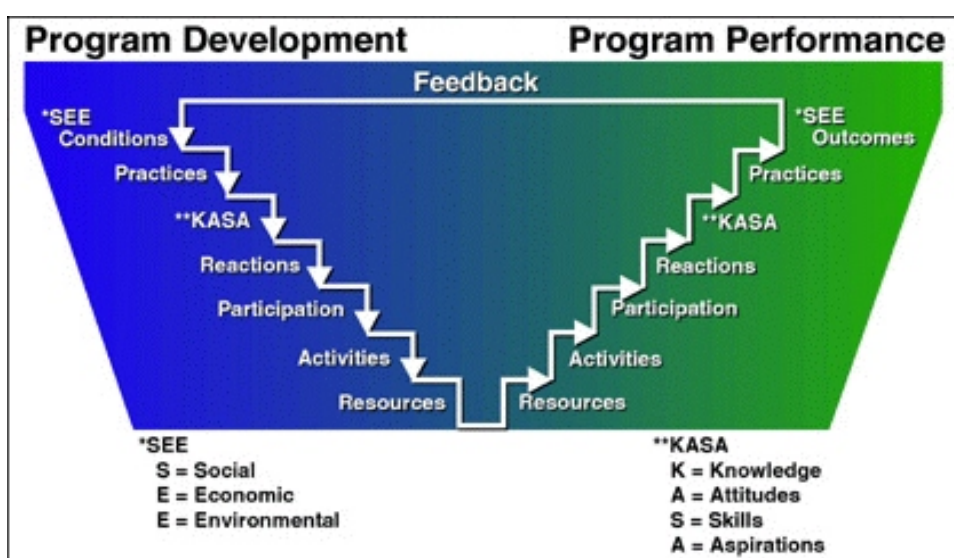
An example of the logic model being used in research is a study by Lafferty and Mahoney (2003, p. 31) who used the logic model to evaluate the “Portage Elevates Assets in Kids” (PEAK) youth development program in Portage County, Ohio. Additionally, the Extension Service in several states use the logic model in their program development and evaluation work.

Targeting Outcomes of Programs (TOP)

Bennett (1975) developed an evaluation model for Cooperative Extension educational programs referred to as the Hierarchy model. The Hierarchy model was based on seven categories of criteria for evaluating extension programs. The categories were based on a seven-link “chain of events” (Bennett, p. 7). Bennett and Rockwell later

incorporated a program planning and development component into it, and the revised model became known as the Targeting Outcomes of Programs (TOP) model.

The Targeting Outcomes of Programs (TOP) model is designed to aid in planning, implementing, and evaluating programs (Bennett and Rockwell, undated web site, TOP chapter). The foundation of the TOP model, presented in Figure 3, is a hierarchy that integrates program evaluation within the program development process.



Source: Bennett and Rockwell. [Http://citnews.unl.edu/TOP/english/index.html](http://citnews.unl.edu/TOP/english/index.html)

Figure 3. Illustration of TOP model.

The TOP model is comprised of a two-sided hierarchy with seven levels. In program development, you start at the top of the level on the left side and work down. In assessing program performance, you start at the bottom level on the right side and work up the right side. There are two key assumptions inherently built into the TOP model. First, the model assumes that program development and program evaluation reflect the same seven levels. Second, it is assumed that your program can be represented by the

two-sided, seven-level hierarchy.

Program Development Using TOP

Level 1 - Social, Economic, and Environmental Conditions (SEE)

Bennet and Rockwell stress the importance of identifying social, economic, and environmental conditions, or SEE, that needs to be improved (Overview of Seven Levels chapter, undated). Thus the reason that these SEE conditions are located at the top of the staircase. For the specified SEE conditions to improve, the program must lead to changes that result in improved conditions. One key aspect of program planning is to determine those behaviors and practices with which change would improve SEE conditions.

Level 2 - Practices

In order for SEE conditions to improve, participants must adopt targeted practices or behaviors that influence these conditions. As a result, when planning a program, planners target changes in specific practices necessary to achieve the targeted changes in SEE conditions.

Level 3 - KASA

The next step in the hierarchy, KASA, focuses on knowledge, attitudes, skills, and aspirations (KASA) required to achieve the changes in practices and behaviors that have been targeted. Practices change as people increase their knowledge, modify their attitudes, improve their skills, and raise their aspirations, and then apply these KASA's changes in their own living and working situations (Bennett and Rockwell, undated web site, Overview of Seven Levels chapter).

Level 4 - Reaction

Reaction is the next step. Since program participants change their KASA's through participation in program activities, program planners must next target the types of reactions needed to ensure sufficient participation in these activities.

Level 5 - Participation

Participants include the individuals, families, groups, organizations, or communities that participate in the program. Bennett and Rockwell stress that participants must be sufficiently involved in program activities to acquire KASA and adopt practices needed to improve SEE conditions (Bennett and Rockwell, undated web site, Overview of Seven Levels chapter).

Level 6 - Activities

Program activities are the educational strategies and events used to inform, educate, and train target audiences. Strategies can include direct personal contact or indirect approaches such as mass media and video conferencing. The activities utilized must be conducive for achieving positive reactions from participants and the desired changes in KASA and practices.

Level 7 - Resources

Program resources include faculty, staff, volunteers, educational materials, facilities, and money used to plan, promote, and implement the program.

Using the TOP Model

Bennett and Rockwell acknowledge that the hierarchy model oversimplifies the program development and evaluation process. This simplification aids in recognizing

the linkages between program components and in viewing the entire scope of program planning and evaluation. The strength of the TOP model is that it integrates program planning and program evaluation by using the same concepts (levels) in both program planning and program evaluation.

In addition to needs assessment, which is typically the first step in program planning, Bennett and Rockwell (undated web site, Assessing Needs and Opportunities chapter) also refer to opportunity assessment. Bennett and Rockwell define opportunity assessment as identifying the combination of circumstances that are favorable for program development and implementation (undated web site, Assessing Needs and Opportunities chapter). Agencies and organizations assess the opportunity, or the prospect, they have to make a positive impact on the targeted social, economic, or environmental condition. Opportunity assessments identify the activities that can most effectively address the targeted SEE condition using the least amount of resources. In the TOP model, needs and opportunity assessments intersect and overlap, and form the basis for outcome and impact evaluations. For program development, needs assessment occurs in the upper three levels (SEE, practices, and KASA). Using the TOP model, for SEE conditions, desired and baseline conditions are identified which leads to the need or issue. For both practices and KASA levels, the required and baseline levels are identified which needs to program needs. At the reactions, participation, activities, and resource levels, the required change in each are identified. Then, the likelihood of obtaining the required changes of each of these four levels are specified.

Evaluation of Programs with TOP

Indicators are useful in evaluating the effectiveness of programs with the TOP model. Indicators, which are used to represent targets, are measurable characteristics that can be used as a guide in measuring how well a program is performing (Bennett & Rockwell, undated web site, Indicators chapter). Bennett and Rockwell refer to objective and subjective indicators. Objective indicator data are gathered through direct observations of peoples actions, as well as observations of natural phenomena (Bennett & Rockwell, undated web site). Subjective indicators typically are collected via self-report methods by program participants. Both types of indicators are used to establish specific outcome objectives for some or all levels of the TOP model, and to measure any change relative to the target values.

Each level of the TOP model is classified as either an output, outcome, or combination for evaluation purposes. Outcome evaluation assesses the extent to which the targets at the upper three levels - KASA, practices, and SEE - are achieved (Bennett and Rockwell, undated web site, Evaluating outcomes chapter). The resource level describes the scope of inputs and dollars invested. Other levels are classified as follows:

Output - *Activities and participation levels*. These levels indicate the amount of work accomplished and is evidence of program implementation.

Output & Outcome - *Reactions*. The reactions level is a mix of output and outcome and represents participants' immediate satisfaction with the program.

Intermediate Outcomes - *KASA and practices*. The KASA level focuses on knowledge gained, attitudes changed, skills acquired, and aspirations changed. At the practice level,

the focus is on the extent to which participants implement best management practices. These outcomes may be measured several months or years after the conclusion of the program. These intermediate outcomes are what lead to the long-term outcomes at the SEE level.

Long-term Outcomes - *Social, economic, and environmental (SEE)*. SEE outcomes represent the long-term outcomes of programs and result from effective program output and intermediate outcomes at the other levels of the TOP model.

One example of the TOP model being used in research was in a study by Haygood, Harman, Akers, and Thorvilson (2003) where the TOP model was used in assessing programming needs of county agents in regard to red imported fire ants in Texas.

Literature Review of Price Risk Management

The primary purpose of the Master Marketer Educational System (MMES) is to teach producers how to better manage their price risk by using a wide-array of marketing tools that are available, including a marketing plan, and preferably a written marketing plan. A marketing plan outlines the operation's marketing goals and objectives, target prices, target dates for commodity sales and/or purchases, and possible marketing strategies to use. Other tools include forward cash contracts, basis contracts, futures contracts, options contracts, and various combinations of these tools. Additionally, MMES participants are taught how to use technical and fundamental analysis in

developing the price outlook component of their marketing plan.

Futures markets provide a number of very useful economic functions that include (Ferris, 1998, p. 237-238):

1. Enabling hedgers to transfer price risk to speculators
2. Facilitating price discovery
3. Enhancing information collection and dissemination
4. Assisting in the coordination of economic activity
5. Stabilizing markets and providing liquidity
6. Provide flexibility in forward pricing

While there is little debate on the functions served by futures markets, there are differing views as to the impact of these functions. Some question whether futures markets help stabilize prices and cite examples of high volatility in futures prices at times (Ferris, p. 239). In the short-term, futures markets may be more volatile because market information can quickly be reflected in price moves as compared to more dispersed and less coordinated cash markets for commodities that are not traded on futures markets (Ferris, p. 239).

Hieronimus (1971, p. 100) stated that the existence of futures markets results in the generation of a vast amount of information about commodities that would not otherwise exist. Markets themselves collect and make available a large amount of information about production, stocks, movement, and use of the commodities traded. This information is vitally important to the price discovery process and enabling markets to operate more efficiently. As Hieronimus points out, anything that contributes to the

completeness and accuracy of information contributes to the efficiency of the economic process. Herein lies an ongoing debate among agricultural marketing researchers. One view, commonly referred to as the “efficient market” view, is that futures markets yield the best expectation of a commodity’s price in the future and, as a result, producers are unlikely to profit consistently from forward pricing strategies (McNew & Musser, 2002, p. 200). As a result, the main incentive for using forward markets is that of risk aversion. In a meta-analysis study of previous market efficiency studies, Garcia, Hudson, & Waller (1988, p. 119) found consistencies with regard to the conclusions of these studies, but also suggested that research design, time period used in the analysis, and other features of the studies do have an effect on the conclusions.

Futures markets allow for agricultural producers to either hedge a commodity or take a speculative position in the market. The Master Marketer program focuses on teaching producers how to use selected marketing tools to possibly enhance their price and better-manage their risk exposure relative to how they marketed their commodities prior to attending the program. “Outguessing” the market is not a part of the curriculum, but understanding how the various marketing tools work, what their advantages and disadvantages are, how they affect your risk exposure are, and making more informed marketing decisions are.

There has been a vast amount of research on the efficiency of futures markets, factors that affect producers’ commodity marketing practices, and optimal hedge ratios. Additionally, extension agricultural economists in most states offer educational programs that focus on hedging strategies, marketing plans, and price outlook. The importance of

having a written marketing plan has been emphasized by Boehlje and others to provide a disciplined approach to marketing in what is a frequently changing and emotionally charged environment (Patrick, Musser, & Eckman, p. 45). Patrick, Musser, and Eckman (1998) conducted a study using survey data from large scale Midwestern corn and soybean producers who participated in crop marketing workshops from 1993 to 1995. The study focused only on preharvest forward pricing methods.

These authors also stated that improved marketing skills, written marketing plans, and marketing consultants are commonly suggested as the “magic bullets” to solve the marketing problems of producers, but information on their actual effects is very limited. Among their findings were that the average price received by producers using written marketing plans, while higher, were not statistically different from those who did not use a written marketing plan. The authors also found no significant differences in prices received between groups of producers with “average or below” and “above average” self-assessed marketing skills. Considering that 74 surveys were the most that were returned in any one of the three years (1993), Brorsen and Irwin suggested that a larger sample size could find statistically significant differences (Patrick, et. al., p. 49).

Sartwelle, O’Brien, Tierney, and Eggers (2000) conducted a study using survey data from producers in Kansas, Texas, and Iowa to examine the factors affecting their grain marketing practices. The focus of the study was to determine whether a producer’s use of cash market, forward contract, or strategies using futures and/or options were significantly affected by selected personal and farm business characteristics. Among the study’s findings were that a producer’s use of cash marketing practices was positively

affected by geographic location and years of farming experience (Sartwelle, et. al., p. 110). Cash marketing-oriented practices were negatively affected by specialization in grain enterprises, use of crop insurance, average farm size, and farm size relative to others. The use of forward contracts was positively affected by geographic location, average crop acreage, specialization in grain enterprises, and use of on-farm storage. The use of futures and options was positively affected by the use of crop insurance, proximity to grain demand centers, and relative farm size. Conversely, the use of futures and options was negatively affected by geographic location, years of farming experience, and use of on-farm grain storage.

CHAPTER III

METHODS AND PROCEDURES

This chapter describes the research design used in the study, selection of participants, instrument design, data collection process, and methods used to analyze the data.

Research Design

The study was primarily a descriptive-correlational study. The purpose of this design was to assess the impact of the Master Marketer program and marketing clubs on participants' self-perceived levels of satisfaction, knowledge, adoption of practices, and economic impact, and the relationship these variables may have with selected business and personal characteristics. For the Master Marketer program, all participants from 1996 to 2001 were included in the study. For marketing clubs, all club members who were located were included in the study. The oldest marketing club included in the study started in 1989; all other clubs started in 1990 or later with most of them forming after 1996.

Selection of Participants

Master Marketer

All Master Marketer classes that had the 2 ½ year post evaluation questionnaire administered to them were included in the study. The Master Marketer evaluation data are comprised of respondents from graduates of 11 Master Marketer classes with the 1996 Amarillo class being the first, and the 2001 Abilene class being the most recent.

The total number of graduates from these 11 classes is 520 (Table 1).

Table 1
Master Marketer Classes Included in Study

Program		
Location	Year	Graduates
Amarillo	1996	60
Lubbock	1997	64
Wharton	1997	47
Vernon	1998	41
Waco	1998	47
Amarillo	1999	62
Victoria	1999	44
Lubbock	2000	64
Uvalde	2000	27
Vernon	2001	43
Abilene	2001	21
Total		520

A census was attempted to collect data from both the Master Marketer graduates and marketing club members. Sampling frame error, the extent to which the sampling frame does not account for the entire population, was present in the data collection process due to the death of some participants after their participation, and participants whose mailing address was not accurate in the database. These participants were removed from the data base as they were discovered.

Dillman (2000) identifies four key sources of error that are associated with collecting data with surveys: “coverage error, sampling error, nonresponse error, and measurement error.” Coverage error exists when the list from which the sample is drawn doesn’t include all elements of the population (Dillman, 2000, p. 9). As a result, each

element of the population doesn't have an equal chance of being included in the sample. Since this study used a census, coverage error was controlled.

Sampling error results from surveying some, but not all the elements of a population (Dillman, 2000, p. 9). Since a census was used in this study, sampling error was controlled.

Dillman (2000) describes non-response error as when a significant number of people do not respond to the survey, the non-responders have different characteristics than those who did respond, and when those characteristics are important to the study. Lindner, Murphy, and Briers (2001) recommend the following three procedures for controlling non-response error: (1) compare early respondents to late respondents, (2) use "days to respond" as a regression variable, and (3) compare respondents to nonrespondents by sampling nonrespondents. To control for nonresponse error with regard to the marketing club data, procedure 3 was utilized. A short nonrespondents questionnaire (Appendix G) was developed using selected questions from the original questionnaire. The nonrespondents questionnaire was then administered to all nonrespondents to facilitate a comparison of respondents to nonrespondents. For the Master Marketer data, non-response error exists because no effort was made to control for non-response error.

"Measurement error occurs when a respondent's answer to a question is inaccurate, imprecise, or cannot be compared in any useful way to another respondent's answers. Measurement error results from poor question wording and questionnaire construction" (Dillman, 2000, p. 9). To control for measurement error in this study, the

questionnaires were administered following the guidelines of the Tailored Design Method (Dillman, 2000), and the questionnaires were developed using experts in the fields of extension program evaluation and of agricultural marketing and risk management.

Marketing Clubs

The compilation of the list of past and present marketing clubs in Texas began with the use of a partial list of known marketing clubs assembled by the Master Marketer executive committee in the Agricultural Economics program unit, Texas Cooperative Extension. Each district-based extension economist was contacted and asked to review the partial list and make any corrections to it. This resulted in a list of 66 counties that were believed to have had a marketing club functioning in the county. The County Extension Agricultural Agent in each of these counties was called during June and July 2002 to verify whether a marketing club had existed in the county. If the agent indicated a club or clubs did exist, the agent was asked for some basic information about the club, including the list of club members and their addresses. This process resulted in a list of 77 marketing clubs and 1,092 club members. These 77 clubs were located in 56 counties, representing all 12 extension districts in the State.

Instrumentation

Two mail questionnaires were used to collect data for this study; one for Master Marketer graduates and another for marketing club members. The purpose of these questionnaires was to collect data pertaining to the following primary areas:

1. Participants' self-perception of knowledge related to marketing and risk management strategies.
2. Participants' adoption of marketing and risk management strategies.
3. Economic impact of the two programs with the collection of price impacts for specified commodities, and participants' level of production.
4. Participants' level of satisfaction with the program.
5. Demographic information for participants including age, highest level of education, and number of years in the business.
6. Descriptive information such as the quantity of on-farm grain storage capacity available, extent the farm or ranch business is vertically integrated, and whether each participant is involved with a marketing pool or cooperative marketing association.
7. Legal form of participant's business (e.g., corporation or sole proprietorship).

Master Marketer Questionnaire

The Master Marketer questionnaire (Appendix A) was developed primarily by two faculty members in the Agricultural Economics unit of Texas Cooperative Extension (TCE), with input and guidance from two faculty members in the Agricultural Education unit of TCE who specialized in program evaluation. When designing a testing or evaluation instrument, it is important to maintain content validity. Tuckman (1999, p. 202) states that a test has content validity if the sample of situations or performances it measures is representative of the set from which the sample was drawn, and about which the research will make generalizations. To maintain content validity, the questionnaire was reviewed by seven faculty members in the Department of Agricultural Economics (TAMU). Four of the faculty members were extension specialists who specialized in commodity marketing and risk management, and three held research appointments and had strong backgrounds in using survey data in research.

The Master Marketer questionnaire, found in Appendix A, had 6 sections. The purpose of Section 1 was to gather general information about graduates' marketing practices. Eight of the 9 questions in this section were in close-ended, two-option response format (yes/no) for 2 time periods - before attending the program and after attending the program. Questions in this format followed the post-then-pre design as described by Rockwell and Kohn (1989). The ninth question asked graduates to rate the educational value of the program using a 1 - 7 response scale where 1 = poor and 7 = excellent. When the Likert scale was first proposed in 1932, Likert's scale had 5 points, ranging from strongly approve, to strongly disapprove. Likert noted that descriptors

could be anything, and it was not necessary to have negative and positive responses (Clason & Dormody, 1994, p. 31)

Section 2 dealt with the types of market analysis a producer might use to develop their personal market outlook. Three of the four questions in this section asked graduates to rate their knowledge of a specific market analysis tool before and after the program, and asked if they used the tool before and after the program. Graduates were asked to respond to the knowledge portion of the questions using a 1 - 7 response scale where 1 = poor and 7 = excellent. The three questions asking about graduates' use of these tools pre and post were in close-ended, 2 response option format (yes/no). The fourth question in this section asked graduates to rate their ability to develop their personal market outlook and apply the appropriate tools, both before and after the program.

Section 3 was designed to gather information about graduates' ability to correctly use specific risk management strategies. This section contained 12 questions. One question asked graduates to rate their overall ability to manage price and production risk, both before and after. Two questions asked graduates to rate their knowledge of a specific marketing strategy, both pre and post. Seven questions asked graduates to rate their knowledge of specific marketing strategies, and if they knew when the use of the strategy was appropriate. Both questions required a response for both the pre and post periods. Most of the strategies taught in Master Marketer require two things from the producer: 1) know mechanically how the strategy works, and 2) know when the use of each marketing strategy is appropriate. For example, a producer might know how a put

option works, but if he doesn't know that it provides price protection when prices decline versus prices increasing, then the producer could misuse the put option even though he thinks he knows how it works. The last two questions in this section related to graduates' participation in marketing pools or cooperative marketing associations, and the quantity of on-farm grain storage available. If graduates answered "yes" to the question asking if they participated in a marketing pool or cooperative marketing association, they were then asked to check 1 of the 4 ranges of percentages of their crop that was marketed this way. The next question asked if they had increased the quantity marketed this way since their completion of the Master Marketer program. For the grain storage question, the format of the questions were the same as the marketing pool question.

The purpose of Section 4 was to gather information about graduates' efforts and experiences with starting and leading a marketing club. The first question asked if the graduate attempted to start a marketing club. If graduates answered "no" to this question, they were to select from a list of reasons why they did not attempt to start a marketing club. Space was made available for graduates to write in a reason that wasn't on the list. If graduates did attempt to start a club, several questions were asked about their experience. The main purpose for these questions was to ascertain: 1) why some clubs did not successfully get established even though an effort was made, 2) how many members were in the club, 3) how many regularly attended the meetings, 4) how long did the club exist, and 5) if the club traded in the futures or options market. There were also three questions that utilized a 1 - 7 response scale where 1 = poor and 7 = excellent.

These three questions related to the perceived educational value of the club making futures or options trades, the club's effectiveness in meeting its objectives, and the value of the experience of serving as the marketing club leader.

Section 5 asked graduates for the estimated price impact as a result of their participation in the Master Marketer program. As the instructions at the beginning of the section explained, the price impacts should have represented the difference in the price received using the tools learned in the Master Marketer program versus the price they likely would have received had they marketed their commodities using the methods they employed before attending the Master Marketer program. A list of price impact ranges for corn, wheat, grain sorghum, cotton, soybeans, cattle, sunflowers, and hogs were provided for graduates to choose from. This was a close-ended question with ordered response structure (9 price impact categories). For each commodity, the choices of price impacts included "no change," four ranges of price decreases, and four ranges of price increases. The price ranges were intended to represent the realistic range of possible impacts that could have been experienced by graduates.

The purpose of Section 6, the last section of the questionnaire, was to collect production-related information on crop and livestock enterprises, the typical amount of gross sales, demographic information, and space was made available for graduates to provide any open-ended comments they desired. In the crop enterprise table, space was provided for graduates to write down the number of acres and corresponding yields for each crop they produce. Space was also provided to write in a crop not listed. Each crop was divided into irrigated and dryland acres. For livestock enterprises, graduates were

asked for the number of head of cows, stocker calves, fed cattle, and hogs (non-contract and contract). Space was also provided to write in a livestock enterprise not listed.

Section 6 also had a yes-no question related to vertical integration. Following this question was a table that listed ranges of gross crop and livestock sales between \$0 and \$5 million and up, in \$50,000 increments. This was a close-ended ordered response structure with 13 categories to choose from. These data allowed for comparing economic impact estimates relative to typical gross sales. The demographic questions included age, number of years as the principal operator, highest level of education, structure of the business, and how they allocate their time to the various aspects of managing their farm or ranch. The latter was for both pre and post Master Marketer program.

Marketing Club Questionnaire

The marketing club questionnaire was developed by the researcher and Mr. Robert Borchardt, Extension Specialist and Marketing Club Coordinator, with input from two faculty members in the Department of Agricultural Education (TAMU) specializing in program evaluation. In order to maintain content validity, the marketing club questionnaire was reviewed by four faculty members in the Agricultural Economics Unit of Texas Cooperative Extension (TCE). These faculty members were all extension specialists that specialized in commodity marketing and risk management. A large part of the questionnaire was identical to the Master Marketer questionnaire in order to facilitate comparison of the two groups as much as possible.

The marketing club questionnaire, found in Appendix B, had 7 sections. The

purpose of Section 1 was to gather background information about the club members. Five of the six questions in this section were close-ended with between 3 and 14 answer choices. These questions revolved around how regularly the club member attended the marketing club meetings, why the club member rarely or never attended marketing club meetings if they indicated so on question 1, how the club member became aware that a club existed in their area, and identifying if the club member participated in the Master Marketer program prior to getting involved with the marketing club. The sixth question asked club members if they felt the club received adequate support from the extension agent, extension specialists, interested producers, and the marketing club leader. Club members were asked to circle “yes” or “no” for each of these.

Section 2 contained seven questions that focused on club members’ adoption of certain marketing practices. These questions were in close-ended, two-option response format (yes/no) for two time periods - before attending the program and after attending the program. This represented the post-then-pre design. Another close-ended yes/no question was for the post period only and it asked if club members had sought out additional marketing education since participating in the marketing club. The final question in this section was an open ended, fill-in-the-blank question that asked for the percent of time that the club member spent on production, farm/ranch management, marketing, and off-farm employment activities, for both the pre and post periods. A write in space was also provided for those producers who needed an additional activity that was not listed. The values they provided should have totaled 100%. If the values provided did not sum to 100%, the researcher adjusted each value by dividing each value

by the sum of all the values to yield adjusted percentages that do sum to 100%.

Section 3 contained more adoption of practices questions in addition to several knowledge questions. The section contained 17 total questions. Fourteen questions involved asking participants to rate their knowledge of seven particular marketing activities using a 7-point Likert scale, along with a second question asking if participants actually use the marketing activity (yes/no response). Section 3 also asked two questions related to the marketing club trading as a group, as well as one final question asking participants to rate four types of benefits that participants may have received from their participation in a marketing club. This question used a 7-point response scale.

Section 4 asked club members for the estimated price impact as a result of their participation in the marketing club. This section was identical to the price impacts section in the Master Marketer questionnaire except that dairy price impacts were included in place of rice for the few dairy producers that participated in a marketing club.

The purpose of Section 5 was to collect production-related information for crop and livestock enterprises. In the crop enterprise table, space was provided for graduates to write down the number of acres and corresponding yields for each crop they produce. Space was also provided to write in a crop not listed. Each crop was divided into irrigated and dryland acres. For livestock enterprises, graduates were asked for the number of head of cows, stocker calves, fed cattle, and hogs (non-contract and contract). Space was provided to write in a livestock enterprise not listed.

The purpose of Section 6 was to collect information from marketing club members about the typical annual gross income of their farm or ranch. This was a close-

ended with ordered response structure with 13 gross income ranges to choose from ranging from a low of \$0 to a high of \$5 million and higher. These data allowed for comparing economic impact estimates relative to typical gross sales. These ranges were provide for both crops and livestock.

Section 7 contained four questions that related to the club member's highest level of education, business structure, age of the club member, and the number of years the club member has been the principal operator. Space was provided at the end of this section for club members to write in comments.

Data Collection Procedures

Master Marketer

The Master Marketer evaluation survey procedure was developed by the Master Marketer executive committee. The evaluation procedure for each Master Marketer program was administered by the district-based extension economist who hosted each program as evaluations were administered on a program-by-program basis. Each Master Marketer class was mailed the evaluation questionnaire 2 ½ years after graduation. The 2 ½ year time lag allowed participants to experience 2 crop marketing years after graduation before completing the evaluation questionnaire. The executive committee believed that this was an adequate amount of time for program graduates to base their self-assessments of adoption of specific marketing and risk management strategies, and economic impact.

The procedure used each time to administer the evaluation questionnaires began

with sending the questionnaire to each graduate with an introductory cover letter stressing the importance of their response. One week later, a reminder post card was sent to those who had not responded. A second letter and questionnaire was sent one week later to those who had not responded. A week after the second letter and questionnaire was mailed, a second reminder post card was sent to those who had not responded. A week later, the district-based extension economist called the graduates who had not sent back a completed questionnaire and made a final attempt at encouraging them to return their completed questionnaire.

From the first 11 Master Marketer programs, 520 graduates were surveyed and 326 usable questionnaires were returned, yielding a return rate of 62.7% (Table 2). The response rates for the Master Marketer programs ranged from a low of 50% for the 1999 Victoria program, to high of 90.2% for the 1998 Vernon program.

Table 2

Master Marketer Questionnaire Response Statistics (N=520, n=326)

Program				
Location	Year	Graduates	Responses	Response Rate
Amarillo	1996	60	38	63.3%
Lubbock	1997	64	42	65.6%
Wharton	1997	47	33	70.2%
Vernon	1998	41	37	90.2%
Waco	1998	47	31	65.9%
Amarillo	1999	62	37	59.6%
Victoria	1999	44	22	50.0%
Lubbock	2000	64	37	57.8%
Uvalde	2000	27	14	51.9%
Abilene	2001	21	12	57.1%
Vernon	2001	43	23	53.5%
Total		520	326	62.7%

Marketing Clubs

The survey procedure used for marketing club members closely proxies the procedure outlined in Dillman's Tailored Design Method (Dillman, 2000). Each survey was coded with a unique identification number which was hand written on the bottom of the back page of the questionnaire. The identification number contained two digits for the extension district they resided in, three digits for the county they resided in, two digits for their club number within the county, and a digit representing each member of the club. The identification numbers were used to keep track of non-respondents.

A pre-notice letter (Appendix C) was mailed to each of the 1,092 marketing club members on December 31, 2002. The purpose of this letter was to make recipients aware of the study being conducted, and the forthcoming survey they would be receiving

in the mail. A questionnaire, cover letter (Appendix D), and a postage-paid, business reply envelope addressed to the researcher was mailed to each marketing club member on January 7, 2003. The business reply envelope was to be used by marketing club members to mail the completed survey back to the researcher. The cover letter, which was different than the pre-notice letter, explained the purpose of the study and stressed the importance of their response. Both the pre-notice letter and the cover letter were signed by the researcher and Robert Borchardt, Extension Specialist and Statewide Marketing Club Coordinator. On January 17, a reminder postcard (Appendix F), also signed by the researcher and Robert Borchardt, was mailed to 1,026 marketing club members whose survey had not yet been returned. A second survey, revised cover letter (Appendix E), and a business reply envelope was mailed to 667 non-respondents on January 28, 2003.

Incorrect addresses led to the mailing of a second group. On January 21, the survey and cover letter was mailed to 136 marketing club members who did not receive the first mailing. The pre-letter was not resent to this group. On January 31, a reminder postcard was mailed to 110 non-respondents. A second survey was mailed to 97 non-respondents in the second group on February 11. Identification numbers used for surveys in the second group included an additional identifier signifying that each survey was part of the second group.

The original frame consisted of 1,092 names and addresses. Removing 29 club members' names and addresses for invalid addresses, and three who had deceased resulted in an accessible population of 1,060 marketing club members. From the

accessible population, 608 survey responses were received for a total return rate of 57.4%. Among the 608 responses were 201 surveys that were returned blank. Removing these blank surveys produced 407 usable responses for a response rate of 38.4% of the accessible population.

To evaluate non-responders, 506 surveys were mailed on July 9, 2003 to marketing club members that did not respond to the initial questionnaire. No reminder card or second survey was administered with the non-response survey. By August 20, 62 completed questionnaires had been returned and data collection was terminated. This represents a return rate of 12.25%.

Analysis of Data

Data were analyzed using SPSS version 10.1 for Windows. To describe the data for both the Master Marketer program and marketing clubs, frequencies, measures of central tendency, and minimums and maximums for demographic data are presented in Chapter IV.

Non-response Error for Master Marketer

Information needed to attempt to control for non-response error within the Master Marketer data set, such as the date a questionnaire was returned, was not collected. As a result, no attempt was made to control for non-response error.

Non-response Error for Marketing Clubs

Because the 38.4% response rate was not high enough to avoid non-response error as a threat to external validity, responses to the original marketing club questionnaire were compared to the responses to the marketing club non-respondents questionnaire using Chi-Square tests and cross-tabulation. Demographic information was not compared. When you take into account the pre and post component of 5 of the questions on the non-response questionnaire, there were 21 total response variables on the non-response questionnaire. There was no statistically significant difference found between the responders and the non-responders on 20 of the response variables. The response variable where a statistically significant difference was found was attendance at marketing club meetings (question 1). Caution was used when conducting analyses that involved this variable. With the exception of this one data item that was not similar to the respondents, the data collected via the non-response questionnaire was pooled together with the data from respondents. Miller and Smith (1983) stated that if the respondents and non-respondents were similar, the respondents are assumed to be representative of the entire sample since they are not different than the non-respondents and, when combined, both groups comprise the probabilistic sample.

The reliability of the items in both instruments was tested using Cronbach's alpha. Relationships between selected variables were measured using Pearson's product moment correlation coefficient. Additionally, tests for statistical significance were set at the .05 level. More detail regarding these analyses can be found in Chapter IV.

CHAPTER IV

RESEARCH FINDINGS AND DISCUSSION

A Profile of Responding Participants

In order to understand the results of this research, it is important to understand the demographic make-up of the participants and their farm and ranch businesses. A description of both groups are presented here.

Master Marketer Program Respondents

Table 3 provides a description by program location of the 520 Master Marketer graduates. Amarillo, Lubbock, and Vernon had hosted the program twice when this study was conducted. It is worth noting that 122 of the 520 (23.5%) graduates were from Amarillo (1996 and 1999), 128 were from Lubbock (24.6%), and 84 (16.2%) were from Vernon. As a result, Master Marketer graduates are most heavily concentrated (64.3%) in the Panhandle and South Plains area of the state.

Table 3

Profile of Master Marketer Graduates and Respondents by Program Location (n=520, n=326)

Program Location/Year	Number of Graduates	Percent of Tot. Graduates	Number of Respondents	Percent of Respondents
Amarillo 1996	60	11.5	38	63.3%
Lubbock 1997	64	12.3	42	65.6%
Wharton 1997	47	9.0	33	70.2%
Waco 1998	47	9.0	37	90.2%
Vernon 1998	41	7.9	31	65.9%
Amarillo 1999	62	11.9	37	59.6%
Victoria 1999	44	8.5	22	50.0%
Lubbock 2000	64	12.3	37	57.8%
Uvalde 2000	27	5.2	14	51.9%
Abilene 2001	21	4.0	12	57.1%
Vernon 2001	43	8.3	23	53.5%
Total	520	100.0	326	62.7%

The average age of Master Marketer graduates was 45.7 years with a median of 45.0 (Table 4). The distribution of age contained 120 participants (38.2%) between the ages of 41 and 50 years - the range which contained both the mean and median. By program location, the mean age ranged from a low of 41.4 in the 1998 Waco program to a high of 52.0 in the 2001 Abilene program. The youngest graduate was 21 years old while the oldest was 82 years old. For comparison purposes, the National Agricultural Statistics Service (NASS) reports an average age for Texas producers of 57 years (2002 Census of Agriculture, 2004), 11 years older than the Master Marketer participant average age. For the U.S., NASS reports an average of 55.3 years (2004).

Table 4
Profile of Master Marketer Participants by Age (n=314)

Age Range	Frequency	Percent
21-30	25	8.0
31-40	78	24.8
41-50	120	38.2
51-60	61	19.5
61-70	24	7.6
71 and up	6	1.9
Total	314	100.0

Mean = 45.7 years, Median = 45.0, SD = 10.8.

With regard to education, graduates were asked for their highest level of education. Ninety-nine percent (99 %) of the graduates had at least a high school degree (Table 5). Forty-eight percent (48%) reported having a B.S. degree, while 22 % had some college progress. Almost 10 % reported some type of advanced professional degree.

Table 5
Profile of Master Marketer Participants by Highest Education Level (n=314)

Level of Education	Frequency	Percent
Some High School	3	1.0
High School	31	9.9
Vocational or Technical	10	3.2
Some College	69	22.0
B.S. Degree	152	48.4
Graduate School	18	5.7
Advanced Professional	31	9.9
Total	314	100.0

Many respondents to the business structure question indicated more than one type of business entity (Table 6). Thus, the sum of the total types of business structures is

greater than $n = 355$. One-half of the responses indicated a sole proprietorship and 44.2 % reported having a partnership or corporation. Having some portion of the farm or ranch business in an estate or trust was reported by 5.5 % of the responses. NASS reported the following distribution of business structures by farms in Texas: 91.9 % sole proprietorship, 5.5 % partnership, 1.9 % corporation, and 0.7 % estates and trusts (2002 Census of Agriculture, 2004). These data represent the business's primary structure rather than the use of multiple of structures as in the Master Marketer and marketing club data. The wide disparity between the business structure in the NASS data and the data used in this study is primarily due to a significant proportion of farms in the NASS data set that are small farms (44.6 % have annual gross income under \$2,500) while a majority of the farms in the Master Marketer data set are medium size to large commercial operations.

Table 6
Profile of Master Marketer Participants by Business Structure (n=355)

Organization	Frequency	Percent
Sole Proprietorship	192	50.3
Partnership	110	28.8
Corporation	59	15.4
Estate	8	2.1
Trust	13	3.4
Total*	382	100.0

* Because participants could check more than one business entity, the total frequency of 382 is larger than the total responses to the questionnaire (355).

A majority (73.9 %) of the respondents have been the primary operator of the business for over 10 years (Table 7). Respondents who have been the primary operator

for more than 30 years made up 12.8 % of the participants. The mean number of years as the principal operator was 19.8.

Table 7
Profile of Master Marketer Participants by Years as Principal Operator (n=291)

Organization	Frequency	Percent
0 - 10 Years	76	26.1
11 - 20 Years	88	30.2
21 - 30 Years	90	30.9
Over 30 Years	37	12.8
Total	291	100.0

Mean = 19.8 years, Median = 20.0, SD = 10.9.

Of the 355 Master Marketer graduates who provided a valid response to the questionnaire, 233 (66%) of them indicated having dryland crop production, and most indicated they produce more than one crop on their farm (Table 8). Excluding pasture acres, the mean total dryland crop acres was 1,835 while the median was 1,125. The most common crop was wheat and was indicated by 63.5 % of the respondents. The median acres for wheat was 600 with a mean of 1,321. Forty-three percent (43%) of the respondents reported producing milo, and 43% cotton, with median acres of 500 and 615 for milo and cotton, respectively. The median acres for corn and hay was 555 and 150, respectively.

Table 8
Profile of Master Marketer Participants by Dryland Crops (n=233)

Crop	Frequency	Percent	Mean Acres	Median Acres	Min.	Max.
Corn	48	20.6	726	555	50	3,000
Milo	100	42.9	687	500	30	5,600
Wheat	148	63.5	1,321	600	30	2,000
Cotton	100	42.9	912	615	15	6,500
Sunflowers**	1					
Soybeans	14	6.0	437	400	100	800
Hay	43	18.5	243	150	10	1,000
Improved Pasture	52	22.3	741	205	20	15,000
Native Pasture***	78	33.5	11,501	800	25	20,000+
Other Crops	13	5.6	641	500	21	1,500
Total Dryland Farms*	233		1,835	1,125	30	12,500+

*The mean acreage for total dryland farms does not include pasture acres. Percent totals more than 100% because most farms have more than one crop.

**Due to the frequency for sunflowers being less than 5, production information is not reported to protect the confidentiality of the respondent.

***Two responses representing very large native pasture acres are not included in maximum acres to protect the confidentiality of the respondents.

Table 9 reports descriptive statistics for dryland crop yields. Yield data represent responders' expected, or budgeted yields. The mean yield for corn was 84.4 bushels with a median of 84.0. Corn yields ranged from a low of 30 bushels to a high of 135 bushels. Milo, wheat, cotton, and soybeans were the other crops where price impacts were collected and thus yield data are reported.

Table 9
*Profile of Master Marketer Participants by Dryland Crop Yield (n=304)**

Crop	Frequency	Yield Unit	Mean Yield	Median Yield	Min.	Max.
Corn	48	bu	84.4	84.0	30	135
Milo	100	cwt	34.0	30.0	12	70
Wheat	148	bu	27.9	25.0	10	62
Cotton	100	lbs	407.9	332.5	100	1,200
Soybeans	14	bu	29.9	29.0	20	45

* Yields are reported only for the crops where price impacts were collected.

There were 161 respondents (45.4 %) who reported having irrigated crop production (Table 10). Excluding pasture acres, the mean total irrigated crop acres was 1,343 while the median was 825. For irrigated crops, cotton and wheat were the most common with 50.9% and 50.3% of the respondents reporting them respectively. However, there were more acres planted to cotton (64,922) versus wheat (41,156). The median wheat acres was 250 with a mean of 508. Corn was the third most common crop and was indicated by 75 of the respondents (46.6%).

Table 10
Profile of Master Marketer Participants by Irrigated Crop Acres (n=161)

Crop	Frequency	Valid %	Mean Acres	Median Acres	Min.	Max.
Corn	75	46.6	760	500	60	4,800
Milo	60	37.3	308	200	20	1,839
Wheat	81	50.3	508	250	30	3,200
Cotton	82	50.9	791	480	30	4,100
Sunflowers*	4					
Soybeans	9	5.6	368	300	180	814
Rice*	3					
Hay	25	15.5	207	120	8	1,500
Improved Pasture	9	5.6	291	120	25	800
Native Pasture*	4					
Other Crops	23	14.3	758	325	60	4,524
Total Irrigated Crops**	161		1,343	825	14	9,934

* Since the frequencies for sunflowers, rice and native pasture are less than 5, production data are not reported to protect the confidentiality of the respondents.

Percent totals more than 100% because most farms have more than one crop.

**Total irrigated crops does not include pasture acres.

There were 170 respondents (48%) who indicated having at least one of three types of cattle enterprises (Table 11). Many of the respondents reported having more than one type of livestock enterprise. Having a cow herd was indicated by 126 respondents, or 74%. The median size cow herd was 100 head. There were 91 respondents (39%) that indicated having a stocker cattle enterprise, and 43 respondents (25%) that reported finishing cattle in a feedlot. The median size for stocker and feedlot enterprises was 500 and 400 head, respectively.

Table 11
Profile of Master Marketer Participants by Cattle Production (n=170)

Type of Cattle Operation.	Frequency	Percent	Mean No. Head	Median No. Head	Min.	Max**
Cow-Calf	126	74.1	388	100	9	1,400
Stocker Cattle	91	39.1	1,248	500	14	9,500
Feedlot Cattle	43	25.3	2,058	400	10	5,000
Total Farms with Cattle*	170					

* Total number of farms reporting cattle does not equal the total farms with cattle due to many farms reporting more than one type of cattle enterprise.

**Two responses representing very large cattle enterprises are not included in the maximum number of head to protect the confidentiality of the respondents.

Table 12 contains the distribution of typical annual gross income by crop income, livestock income, and total. Most of the respondents represent medium to large size commercial operations. Only 2.8% of the farms had gross income in the \$0 to \$49,000 range. There were 91 farms (31.4%) that indicated gross income between \$50,000 and \$249,000. One hundred forty-eight (66%) farms had typical gross income greater than \$250,000. One major difference with the respondents is that there were more small livestock operations than crop operations as evident by only 8.6% (23) of those with crop income indicated the \$0 to \$49,000 range whereas 38% (73) of those with livestock income indicated the same income range. It is important to note that many respondents have both crop and livestock operations and, when you combine both to arrive at total farm gross income, only 8 farms (2.8%) are in the lowest gross income range. The median total gross income was \$425,000.

Table 12

Profile of Master Marketer Participants by Typical Gross Income Level (n=290)

Gross Income Range	Frequency			Total Gross Percent
	Crop	Livestock	Total Gross	
\$0 - 49,000	23	73	8	2.8
\$50,000 - 249,000	96	63	91	31.4
\$250,000 - 499,000	71	25	79	27.2
\$500,000 - 1,749,000	65	24	89	30.7
\$1,750,000 - 3,749,000	11	3	15	5.2
\$3,750,000 or higher	1	4	8	2.7
Total	267	192	290	100.0
Mean	\$504,541	\$363,932	\$703,965	
Median	\$312,500	\$75,000	\$425,000	

Table 13 contains summary information obtained from five questions pertaining to various aspects of graduates' farm and ranch businesses. When asked if the business participated in a marketing pool or cooperative marketing association, 65.2% said "no" and 34.8% said "yes." Of the 112 respondents who said "yes", 62.5% indicated they market 50% or more of their production this way. When asked if graduates had increased the percent of their crop marketed via cooperatives or marketing pools, 23.1% said "yes." When asked if their farm had an on-farm grain storage facility, 34.3% said "yes." Additionally, only 8% of the respondents indicated that they had expanded their on-farm grain storage facility since participating in the Master Marketer program.

Table 13
Profile of Master Marketer Participants by Various Business Characteristics (n=322)

Business Characteristics	Frequency	Percent
Business participates in a marketing pool or cooperative marketing association:		
No	210	65.2
Yes	112	34.8
Total	322	100.0
If yes, the % of crops marketing annually by the cooperative or pool:		
< 25%	17	15.2
25% - 49%	25	22.3
50% - 74%	24	21.4
75% - 100%	46	41.1
Total	112	100.0
Have you increased the % of your crop marketed by the cooperative or pool since attending the Master Marketer program:		
No	163	76.9
Yes	49	23.1
Total	212	100.0
Business has on-farm grain storage:		
No	207	65.7
Yes	108	34.3
Total	315	100.0
If yes, the % of crop production that can be stored on the farm:		
< 25%	38	35.2
25% - 49%	22	20.4
50% - 74%	17	15.7
75% - 100%	31	28.7
Total	108	100.0
Did participants increase their on-farm storage capacity since attending the program:		
No	195	92.0
Yes	17	8.0
Total	212	100.0

Marketing Club Respondents

Table 14 provides a breakdown of the number of marketing clubs and members by extension district. There were a total of 1,058 club members representing 73 marketing clubs across the state. Extension district 2 had the most clubs with 22, and 298 total club members. District 3 had the second most number of clubs with 12 and a total of 184 club members. Marketing clubs were most heavily concentrated in the Panhandle and South Plains area of the state, with 41 clubs (56%) and 594 (56%) club members being located in that region.

Table 14

Profile of Marketing Club Members by Extension District (n=469)

District	No. of Clubs in District	No. of Members in District	No. of Responses	Percent
1	7	112	30	6.4
2	22	298	97	20.7
3	12	184	77	16.4
4	4	56	33	7.0
5	2	28	10	2.1
6	1	13	4	0.9
7	6	111	53	11.3
8	4	49	23	4.9
9	1	15	10	2.1
10	3	27	18	3.8
11	8	116	43	9.2
12	3	49	9	1.9
NR*	n/a	n/a	62	13.3
Total	73	1058	469	100.0

* NR represents non-respondents who returned a “non-respondent survey,” which did not indicate club or location. Non-respondents belong to clubs in extension districts.

The age distribution for marketing club members is presented in Table 15. Just over 60% (60.1) of the respondents were between 41 and 60 years old. Only 13

respondents (3.1%) were between 20 and 30 years old. Similarly, only 14 respondents (3.2%) were 71 years of age or older. The mean and median age were very similar, 49.9 and 49.5 years respectively.

Table 15
Profile of Marketing Club Members by Age (n=426)

Age Range	Frequency	Percent
20-30	13	3.1
31-40	77	18.1
41-50	136	31.9
51-60	120	28.2
61-70	66	15.5
71 and up	14	3.2
Total	426	100

Mean = 49.9 years, Median =49.5, SD =10.8.

Descriptive statistics for highest level of education can be found in Table 16.

More than 99% of the club members had at least a high school degree. Forty-four (44) % reported having a B.S. degree, while 21 % had some college progress. These values compare to 48% and 22% respectively for Master Marketers. Just over 17 % reported having either a graduate degree or some type of advanced professional degree.

Table 16
Profile of Marketing Club Members by Highest Education Level (n=449)

Level of Education	Frequency	Percent
Some High School	1	0.2
High School	68	15.2
Vocational or Technical	9	2.0
Some College	96	21.4
B.S. Degree	198	44.1
Graduate School	25	5.6
Advanced Professional	52	11.5
Total	449	100.0

Like the Master Marketer data, many marketing club respondents to the business structure questions indicated more than one type of business entity. Thus, the sum of the total types of business structures is greater than $n = 469$ (Table 17). A sole proprietorship was indicated by 61.6% of the respondents, 22.2% reported a partnership, and 13.9% reported a corporation. The remaining 2.3% were estates and trusts. The comparative Master Marketer values were 50.3%, 28.8%, 15.4%, and 5.5%, respectively.

Table 17
Profile of Marketing Club Members by Business Organization (n=469)

Organization	Frequency*	Percent
Sole Proprietorship	298	61.6
Partnership	107	22.2
Corporation	67	13.9
Estate	2	.4
Trust	9	1.9
Total*	483	100

* Because participants could check more than one business entity, the total frequency of 483 is larger than the total responses to the questionnaire (469).

Eighty-seven (87) % of the respondents have been the primary operator of the business for over 10 years (Table 18). Respondents who have been the primary operator

for more than 30 years made up 24.2% of the respondents. The mean number of years as the principal operator was 24.4, compared to 19.8 for Master Marketer graduates.

Table 18
Profile of Marketing Club Members by Years as Principal Operator (n=401)

Organization	Frequency	Percent
0 - 10 Years	52	13.0
11 - 20 Years	108	26.9
21 - 30 Years	144	35.9
Over 30 Years	97	24.2
Total	401	100.0

Mean = 24.4 years, Median = 24.0, SD = 11.0.

Of the 469 respondents who provided a valid response to the questionnaire, 304 (65%) of them indicated having dryland crop production, and most indicated they produced more than one crop on their farm (Table 19). This compares to 66% in the Master Marketer data set. Excluding pasture acres, the mean total dryland crop acres was 1,613 while the median was 950. The most common crops were wheat and cotton as indicated by 172 respondents (56.6 %) each. The median acres for wheat was 500 and 600 for cotton. The third most common dryland crop was milo and was reported by 39.8% of the respondents. The median acres for milo was 450 while the mean was 726 acres.

Table 19
Profile of Marketing Club Members by Dryland Crop Acres (n=304)

Crop	Frequency	Percent	Mean Acres	Median Acres	Min.	Max.
Corn	50	16.5	596	500	20	2,400
Milo	121	39.8	726	450	10	6,000
Wheat	172	56.6	762	500	5	4,000
Cotton	172	56.6	810	600	30	6,000
Soybeans	16	5.3	436	312	50	1,000
Hay	72	23.7	207	110	20	2,500
Improved Pasture	57	18.8	469	250	24	5,000
Native Pasture**	80	26.3	1,599	400	5	9,000+
Other Crops**	6	2.0	14,922	200	25	2,000+
Total Dryland Farms*	304		1,613	950	5	7,200+

* The mean acreage for total dryland farms does not include pasture acres. Percent totals more than 100% because most farms have more than one crop.

** Up to 3 responses representing very large native pasture acres, and other crop acres are not included in maximum acres to protect the confidentiality of the respondents.

Table 20 reports descriptive statistics for dryland crop yields. Yield data represents responders' expected, or budgeted yields. The mean yield for corn was 84.7 bushels with a median of 83.5. Corn yields ranged from a low of 38 bushels to a high of 120 bushels. Milo, wheat, cotton, and soybeans were the other crops where price impacts were collected and thus yield data are reported.

Table 20
*Profile of Marketing Club Members by Dryland Crop Yield (n=304)**

Crop	Yield Unit	Frequency	Mean Yield	Median Yield	Min.	Max.
Corn	bu	50	84.7	80.0	38	120
Milo	cwt	121	34.2	35.0	10	67
Wheat	bu	172	28.1	25.0	10	60
Cotton	lbs	172	391.1	330.0	20	1,000
Soybeans	bu	16	32.9	35.0	15	40

* Yields are reported only for the crops where price impacts were collected.

There were 175 respondents (37.3 %) who reported having irrigated crop production (Table 21). Excluding pasture acres, the mean total irrigated crop acres was 1,263 while the median was 700. Cotton was by far the most common irrigated crop with 72% of the respondents producing it. The median cotton acres was 500 while the mean was 1,081. The second most common crop was wheat with 31.4% of the respondents producing it. The median wheat acres was 240 acres while the mean was 410 acres.. Both corn and milo were reported by 22.9% and 22.3% of the respondents respectively.

Table 21
Profile of Marketing Club Members by Irrigated Crops Acres (n=175)

Crop	Frequency	Percent	Mean Acres	Median Acres	Min.	Max.
Corn	40	22.9	561	400	60	3,500
Milo	39	22.3	394	200	7	6,000
Wheat	55	31.4	410	240	20	2,500
Cotton	126	72.0	1,081	500	35	60,000
Rice	13	7.4	966	500	225	4,800
Soybeans	8	4.6	240	200	120	400
Hay	22	12.6	235	123	10	1,500
Improved Pasture	11	6.3	300	120	18	1,500
Native Pasture	3	1.7	4,750	700	550	13,000
Other Crops	16	9.2	271	285	13	600
Total Irrigated Crops*	175		1,263	700	10	60,000

*Total irrigated crops does not include pasture acres. Percent totals more than 100% because most farms have more than one crop.

Table 22 contains descriptive statistics for irrigated crop yields. Both the mean and median yields for corn were 160 bushels. Corn yields ranged from a low of 55 bushels to a high of 260 bushels. Milo, wheat, cotton, rice and soybeans were the other crops where price impacts were collected and thus yield data is reported.

Table 22
*Profile of Marketing Club Members by Irrigated Crop Yield (n=175)**

Crop	Yield Unit	Frequency	Mean Yield	Median Yield	Min.	Max.
Corn	bu	40	160.6	160.0	55	260
Milo	cwt	39	53.8	50.0	25	100
Wheat	bu	55	52.4	50.0	20	90
Cotton	lbs	126	851.7	800.0	400	1,450
Rice	cwt	13	68.0	70.0	51	85
Soybeans	bu	8	65.6	67.5	50	75

* Yields are reported only for the crops where price impacts were collected.

There were 203 respondents (43%) who indicated having at least one of three types of cattle enterprises (Table 23). This compares to 48% in the Master Marketer data set. Many of the respondents reported having more than one livestock enterprise. Having a cow herd was indicated by 181 respondents, or 89%. The median size cow herd was 80 head. There were 98 respondents (48%) who indicated having a stocker cattle enterprise, and 32 respondents (15%) that reported finishing cattle in a feedlot. The median size for stocker and feedlot enterprises was 200 and 500 head respectively.

Table 23
Profile of Marketing Club Members by Cattle Production (n=203)

Type of Cattle Oper.	Frequency	Percent	Mean No. Head	Median No. Head	Min.	Max.
Cow-Calf	181	89.2	143	80	2	1,600
Stocker Cattle	98	48.3	450	200	10	6,000
Feedlot Cattle	32	15.8	543	500	4	3,000
Total Farms with Cattle*	203					

* Total number of farms reporting cattle does not equal the sum of farms reporting each type of cattle due to many farms reporting more than one type of cattle enterprise.

Table 24 contains the distribution of typical annual gross income by crop income,

livestock income, and total. Most of the respondents represent medium to large size commercial operations. There were slightly more marketing club members (6.2%) who reported typical gross income in the \$0 to \$49,000 range than Master Marketer graduates in this same range (2.8%). There were 166 farms (46.4%) that indicated gross income between \$50,000 and \$249,000. Forty-seven (47) % of the farms had typical gross income greater than \$250,000. Like the Master Marketer data set, there were more small livestock operations than small crop operations as evident by only 15.2% (47) of those with crop income are in the \$0 to \$49,000 range whereas 49.1% (106) of those with livestock income fell into the same income range. The median total gross income was \$237,500, compared to \$425,000 in the Master Marketer data set.

Table 24
Profile of Marketing Club Members by Typical Gross Income Level (n=358)

Gross Income Range	Frequency			Total Gross Percent
	Crop	Livestock	Total Gross	
\$0 - 49,000	47	106	22	6.2
\$50,000 - 249,000	129	72	166	46.4
\$250,000 - 499,000	81	23	99	27.7
\$500,000 - 1,749,000	48	9	58	16.2
\$1,750,000 - 3,749,000	3	4	11	3.1
\$3,750,000 or higher	1	2	2	0.6
Total	309	216	358	100.0
Mean	\$325,427	\$229,108	\$419,118	
Median	\$212,500	\$75,000	\$237,500	

Analysis of the Impact of the Master Marketer Program

Research question 1 was aimed at determining whether there was a perceived change in knowledge from before to after the program. To analyze this question, the 12 knowledge questions in Sections 2 and 3, as well as an overall knowledge scale for those questions, were used in measuring the significance of the change in participants' perceived knowledge from pre to post. The knowledge questions related to specific marketing strategies and practices using a seven-point Likert scale where 1 = Poor through 7 = Excellent. The design of the questionnaire used a post-then-pre design which allowed respondents to rate their perceived knowledge level through a retrospective pre-test and post-test using the same frame of reference. This type of design is frequently used in social science research. An evaluation of an Animal Science Extension educational program in Texas employed a similar design as described by Kistler (2002, p. 39). Response-shift bias can be a source of contamination in self-report data. If the standard of measurement used in the instrument were to change, the post-test ratings would reflect this shift in addition to the actual changes in the person's level of functioning (Rohs, 1999, p. 28). The retrospective pre-test and post-test design can avoid response-shift bias problems by employing consistent framework for key concepts (Rohs, 2000, p. 17). Cronbach's alpha was used to measure the reliability of knowledge portion of the instrument (Section 3). The knowledge scales for both the pre and post questions had alpha levels of 0.93 and 0.92, respectively. Table 25 contains the change (post minus pre) in mean perceived level of knowledge for each of the knowledge

questions and overall. The largest pre-to-post change occurred on Section 2, question 3 (technical fundamental analysis) with a positive change of 2.44 (2.52 pre to 4.97 post). The overall scale showed a pre-to-post change in mean score of 2.06. A paired samples *t*-test was used in this analysis with a .05 level of significance. The 2-tailed level of significance for the overall knowledge scale, as well as all individual items, was less than 0.01. This significance is important as reflected in the large effect size of 1.91. As noted by Olejnik and Algina (2000), statistical significance testing does not imply meaningfulness. Testing for statistical significance evaluates the probability of obtaining the sampling outcome by chance, while effect size provides some indication of practical meaningfulness (Fan, 2001). Considering the type of data used in the analysis, and the scales set forth by Cohen (1988), the author deems the 1.91 effect size as very strong and meaningful. As a result, H_{01} is rejected. H_{01} stated that there is no difference in Master Marketer respondents' perceived level of knowledge before and after their participation in the program.

Table 25
Pre-to-Post Change in Perceived Level of Knowledge for Master Marketer Respondents

Knowledge area, section and question number	Frequency	Pre	Post	Mean Diff. ^a	SD	d ^b	t-value	Sig.
Fundamental analysis (2.1)	308	3.44	5.51	2.07	1.30	1.59	27.86	<.01
Seasonal price analysis (2.2)	310	3.57	5.61	2.04	1.43	1.43	25.05	<.01
Technical price analysis (2.3)	313	2.53	4.97	2.44	1.52	1.61	28.47	<.01
Production risk management (3.2)	315	3.99	5.68	1.69	1.28	1.32	23.44	<.01
Marketing tools (3.3)	317	3.46	5.84	2.37	1.46	1.62	28.78	<.01
Forward cash contracts (3.4)	316	4.32	5.69	1.37	1.29	1.06	18.78	<.01
Basis contracts (3.5)	316	3.15	5.26	2.11	1.47	1.43	25.47	<.01
Minimum price contracts (3.6)	316	2.79	4.82	2.03	1.45	1.40	24.84	<.01
Hedging with futures (3.7)	318	3.49	5.62	2.13	1.47	1.45	25.88	<.01
Hedging with options (3.8)	319	3.21	5.61	2.39	1.47	1.63	29.11	<.01
Production contracts/alliances (3.9)	317	2.92	4.76	1.84	1.31	1.40	24.86	<.01
Post harvest strategies (3.10)	318	3.06	5.45	2.38	1.49	1.60	28.45	<.01
Overall knowledge scale	321	3.34	5.40	2.06	1.08	1.91	33.93	<.01

^a Mean difference = post response - pre response. Scale: 1-7, where 1 = Poor and 7 = Excellent.

^b Cohen's measure of effect size (.20 = small, .50 = medium, .80 = large)

Adoption of marketing and risk management practices data was captured in 10 questions found in Sections 1 (questions 1-7) and 2 (questions 1, 2, and 3b, and 1, 2, and 3d) of the Master Marketer questionnaire. Since each adoption question was of two-option (yes/no) response format, the responses were re-scaled to facilitate a single scale with which to measure participants' overall adoption of all practices addressed in the adoption questions. Pre-responses were summed as were post responses which generated a minimum pre-response of 0 (all no responses) and maximum of 12 (all yes responses). The resulting data was assumed to be distributed normally. Reliability of the adoption scales was analyzed using Cronbach's alpha. The scales for the adoption questions in Sections 1 and 2 had an alpha level of 0.72 for the pre and 0.71 for the post. Table 26 contains the results of the paired samples *t*-test used to test for means difference

in the adoption responses. A .05 level of significance was used. The overall scale showed a pre-mean score of 3.15, a post-mean score of 6.61, and a change of 3.45. The 2-tailed level of significance for the overall adoption scale was less than 0.01. As a result, H_{03} is rejected. H_{03} stated that there was no change in Master Marketer Graduates' use (adoption) of marketing and risk management strategies from before to after participation in the program. The magnitude of the significance is deemed to be large given the effect size of 1.39.

Table 26
Pre-to-Post Change in Adoption of Marketing and Risk Management Practices for Master Marketer Respondents

	Frequency	Mean ^a	SD	d ^b	t-value	Sig.
Pre-Adoption Level	319	3.15	2.17			
Post-Adoption Level	319	6.61	2.16			
Adoption change (post - pre)	319	3.45	2.40	1.39	25.67	<.01

^a No = 0, yes = 1. Scale: 0-10 where 0 = all no responses and 10 = all yes responses to adoption questions

^b Cohen's measure of effect size (.20 = small, .50 = medium, .80 = large)

The economic impact of the Master Marketer program, as well as marketing clubs discussed in the next section, was measured by participants' change in gross income. Economic impact was derived using the following equations:

$$\text{Crop Impact} = \sum \text{Crop} (P_{\text{crop}} \times Y_{\text{crop}} \times A_{\text{crop}})$$

where *crop* is the crops included in the price impact section of the questionnaire (section 4 of marketing club questionnaire, section 5 of the Master Marketer questionnaire), P_{crop} is the price (\$/unit) impact for each crop, Y_{crop} is the yield for each crop, and A_{crop} is the

acreage for each crop.

The livestock impacts include cow-calf production, stocker calves, feedlot cattle, and contract and non-contract hog production as illustrated in the following equation:

$$\text{Livestock Impact} = \sum_{ave} (P \times N_{cow} \times 4.5cwt) + (P \times N_{stock} \times 7.5cwt) + (P \times N_{fed} \times 12cwt) \\ + (P_{swine} \times N_{swinecon} \times 2.5cwt) + (P_{swine} \times N_{swinenon} \times 2.5cwt)$$

where P is the price impact for all cattle (\$/cwt), N_{cow} is the number of cows in the cow herd, N_{stock} is the number of stocker calves produced, N_{fed} is the number of feedlot cattle produced, P_{swine} is the price impact for both contract and non-contract produced swine, $N_{swinecon}$ is the number of hogs produced under a production contract, and $N_{swinenon}$ is the number of non-contracted hogs produced. The following sale weights are used for each livestock enterprise: cow-calf (450 lbs), stocker cattle (750 lbs), feedlot (1200 lbs), and all swine (250 lbs). All weights are net sale weights per head after taking into account calving rates and death loss. For simplicity in questionnaire design, only one cattle price impact was sought and it was applied to both raised calves produced, stocker cattle produced, and feedlot cattle produced. In reality, the price impact could have varied across these three different types of cattle production enterprises. However, the author, as well as the Master Marketer executive committee, did not feel that participants could have accurately distinguished between any perceived impact differences across these livestock production enterprises. In regard to cattle production, the questionnaire does not allow for identifying where stocker cattle and/or feedlot cattle came from; e.g, it is not possible to determine if stocker cattle and feedlot cattle are raised (retained

ownership) or purchased. Therefore, to avoid possible double and triple counting of impacts, only the cattle enterprise with the largest impact was used in the derivation of the total livestock impact. As an example, for respondents who had all three types of cattle enterprises (cow-calf, stockers, feedlot), two of them would drop out of the equation. This results in an underestimation of the cattle impacts due to not counting all three impacts for those producers who have a cowherd, and also purchase cattle stocker and/or feedlot cattle.

The economic impact for dairies is derived with the following equation:

$$\text{Dairy Impact} = (P_{\text{milk}} \times N_{\text{dairy}} \times M)$$

where P_{milk} is the price impact for milk (\$/cwt), N_{dairy} is the number of cows in the dairy herd, and M is the milk produced (cwt) per head.

Using the above equations, the total farm impact is derived as follows:

$$\text{Total farm impact} = \text{cropimpact} + \text{livestockimpact} + \text{dairyimpact}$$

Information pertaining to price impacts and the number of respondents reporting price impacts for their crop and livestock enterprises can be found in Table 27. Price impacts for 7 crops and cattle were reported by 284 respondents. Hog production was not reported by any of the respondents and milk was not included in the questionnaire. A corn price impact was indicated by 131 respondents with a mean price impact of \$0.126 per bushel. The median price impact for corn was \$0.155, the SD was \$0.105, and the minimum and maximum were -\$0.30 and \$0.30 respectively. This type of information is listed for the other 6 crops as well. The mean price impact was statistically

significantly ($\alpha < .05$) different from zero (zero is no impact) for all crops except rice. The 125 respondents reporting a cattle price impact had a mean price impact of \$4.42 per cwt, a median of \$3.00, and a SD of \$4.97. The minimum and maximum were -\$8.00 and \$15.00 respectively. The cattle price impact was statistically significantly different from zero ($\alpha < .05$). While the price impact itself is extremely important for each commodity, this study focuses more on the total impact on gross income which takes into account the level of production for all commodities produced on a farm.

Table 27
Price Impacts Self-Reported by Master Marketer Respondents

Crop	Frequency	Percent	Mean Price ^a	Median Price	SD	Min.	Max.
<u>Crops</u>							
Corn	131	46.1	\$0.126 ^b	\$0.155	\$0.105	-\$0.300	\$0.300
Wheat	173	60.9	\$0.091 ^b	\$0.055	\$0.137	-\$0.300	\$0.300
Milo	139	48.9	\$0.157 ^b	\$0.080	\$0.172	-\$0.450	\$0.450
Cotton	136	47.9	\$0.020 ^b	\$0.013	\$0.028	-\$0.076	\$0.076
Soybeans	31	10.9	\$0.142 ^b	\$0.155	\$0.103	\$0.000	\$0.300
Rice ^c	2						
Sunflowers ^c	1						
<u>Livestock and Milk</u>							
Cattle	125	44.0	\$4.424 ^b	\$3.000	\$4.971	-\$8.000	\$15.000
Hogs	0						
Milk	0						
Total	284						

^aPrice units are: corn, wheat and soybeans are per bushels; cotton is per pound, and milo, rice, cattle, hogs, and milk are per hundred weight (cwt).

^b Mean price is statistically significantly different from zero at $\alpha = .05$.

^c Since less than 5 respondents reported a price impact for rice and sunflowers, summary statistics are not reported to protect the confidentiality of the respondents.

Percent totals more than 100% because most farms have more than one crop or livestock enterprise.

The impact on gross income for Master Marketer graduates is presented in Table 28 which contains the frequency, percent, mean, median, SD, and significance test information for each commodity and for the total farm impact. Impacts were calculated only for respondents' farms that reported all of the following: price impact, yield, and crop acreage for crop producers; and price impacts and number of head for livestock producers. Corn had the largest mean impact on gross income for crops with a mean of \$14,335, median of \$6,742, and a SD of \$21,497. The mean impact for cotton was \$14,160, just slightly lower than the impact for corn. Cattle impacts, which had the highest mean impact per farm of all commodities and were reported by 163 respondents, had a mean of \$30,273 per farm, a median of \$6,952, and a SD of \$66,406. The total farm impact had a mean of \$32,288, a median of \$13,457, and a SD of \$62,960. The 2-tailed level of significance for the total farm impact was less than 0.01. As a result, H_{05} is rejected. H_{05} stated that there was no perceived mean economic impact per graduate of the Master Marketer program as a result of participation in the program. The magnitude of the significance is deemed to be medium given the effect size of 0.51.

Table 28
Price Impacts on Gross Income for Master Marketer Graduates (n = 260)

Commodity	Frequency	Percent	Mean Change in Gross Income	SD	d ^a	t-value	Sig. ^b
<u>Crops</u>							
Corn	109	41.9	\$14,335	\$21,497	0.67	6.96	<.01
Wheat	150	57.7	\$6,582	\$18,243	0.36	4.41	<.01
Milo	111	42.7	\$4,494	\$8,153	0.55	5.80	<.01
Cotton	117	45.0	\$14,160	\$33,877	0.42	4.52	<.01
Soybeans	20	7.7	\$2,238	\$2,522	0.89	3.96	<.01
Rice ^c	3	1.2					
<u>Livestock and Milk</u>							
Cattle	118	45.4	\$30,273	\$66,406	0.46	4.95	<.01
Hogs	0						
Milk	0						
Total farm impact	260		\$32,288	\$62,960	0.51	8.26	<.01

Valid % totals more than 100% because most farms have more than one crop.

^a Cohen's measure of effect size (.20 = small, .50 = medium, .80 = large)

^b 2-tailed

^c Since fewer than 5 respondents reported a price impact for rice, statistics are not reported to protect the confidentiality of the respondents.

Research objective seven was aimed at identifying the effectiveness of Master Marketer graduates in starting a marketing club. Analysis of the data indicates that 316 graduates provided a valid response to the question asking graduates if they had attempted to start a marketing club in their home area, of which 63 percent (199) indicated they had and 37 percent (117) indicated they had not. Of the 199 respondents who indicated they had attempted to start a marketing club, 197 of them responded to the follow-up question that asked if their effort to start a club was successful. Of these respondents, 62.4 percent of them indicated their effort resulted in the successful creation

of a marketing club. Based on the analysis of these data, there were 123 marketing clubs formed by Master Marketer graduates which is substantially higher than the 73 clubs located based on preliminary records maintained by the Master Marketer Executive Committee and Marketing Club coordinator, and telephone interviews with selected County Extension Agricultural Agents.

Research objective eight was aimed at determining the relationship between selected personal and business parameters, and knowledge, adoption of practices, satisfaction, and the economic impact of Master Marketer graduates. Correlation coefficients (Pearson's product moment) were derived to identify the relationship between several personal and business parameters, and four dependent variables: *pre-knowledge*, *post-knowledge*, *overall knowledge change*, *overall adoption change*, *satisfaction*, and *economic impact*. These dependent variables are listed across the top of Table 29. The personal and business parameters selected were: *on-farm grain storage* (have it = yes, don't have it = no), *started a marketing club* (did = yes, did not = no), *total crop acres*, *crop gross revenue*, *livestock gross revenue*, *total gross revenue*, *age of operator*, *years as principal operator*, *education level*, change in percent of time spent on marketing (*marketing time change*), *pre-marketing time* (spent), *post-marketing time* (spent), *post-use of a marketing plan*, and *post-use of a written marketing plan*. These variables are listed down the left side of Table 29.

Independent variables that had a statistically significant correlation coefficient with one or more of the dependent variables were *on-farm grain storage*, *total crop acres*, *gross crop revenue*, *livestock gross revenue*, *total gross revenue*, *age*, *years as*

principal operator, marketing time change, pre-marketing time, post-marketing time, post-marketing plan, and post-written marketing plan.

The correlation coefficient for *on-farm grain storage* and *economic impact* was statistically significant. Participants with an on-farm grain storage facility tended to report a higher economic impact. *Total crop acres* was statistically significantly correlated with both *pre-knowledge* and *economic impact*, meaning participants with higher crop acres tended to have a self-reported knowledge level and a higher economic impact, which would be expected because the per unit price impacts were multiplied by total production. *Crop gross revenue* was statistically significantly correlated with *pre-knowledge*, *overall knowledge change* and *economic impact*. *Crop gross revenue*, as well as *total gross revenue*, were negatively correlated with *knowledge change*, meaning the more crop gross revenue earned, the less change there was in knowledge. To explain this, linear regression supports the rationale that operators of higher grossing farms tend to have been in business longer, and thus have acquired more experience and knowledge prior to participating in Master Marketer, which leads to experiencing a smaller change in knowledge. A higher *crop gross revenue* usually led to a higher *economic impact* because participants with higher revenues would normally have a relatively high number of crop acres which would support a higher economic impact. This same rationale also applies to *livestock gross revenue* and *total gross revenue* in their relationship to *economic impact*. *Crop gross revenue* and *total gross revenue* both were statistically significantly correlated with *pre-knowledge*, meaning that larger operations tended to report a higher knowledge level before program participation. *Age of operator* had a

statistically significant negative correlation with *post-knowledge*, meaning that older respondents tended to report a lower level of knowledge after the program than did younger respondents. *Years as principal operator* was also negatively correlated with *overall knowledge change*, and *overall adoption change*. The longer respondents' had been the principal operator, the less of a change they experienced in knowledge and adoption of marketing practices. This is consistent with results reported by Kistler (2002, p. 70) in a study of Texas Cooperative Extension's Ranch to Rail program, except that the change in adoption coefficient was not significant in Kistler's study.

Another independent variable that was statistically significant was *marketing time change*, the difference between the percent of time spent on marketing activities before the program and after the program. *Marketing time change* had a statistically significant negative correlation with *pre-knowledge*, meaning the respondents that indicated a relatively large change in time spent on marketing tended to report a lower level of pre-knowledge. Participants that reported a large change in time spent on marketing tended to also report a large change (increase) in knowledge. *Pre-marketing time* had a statistically significant correlation with *pre-knowledge*, *post-knowledge*, and *knowledge change*. Respondents that reported a relatively large amount of time spent on marketing before the program tended to report higher knowledge levels before and after the program. *Pre-marketing time* had a statistically significantly negative correlation to *knowledge change*, meaning the higher portion of their time spent on marketing before the program, the less change in knowledge they reported. This is most likely explained by these participants having hands on experience with these marketing

concepts, and thus had a relatively high level of knowledge before attending the program. *Post-marketing time* was also statistically significantly correlated to *post-knowledge*, *overall adoption change* and *economic impact*. The more time participants reported spending on marketing after the program, the more likely they were to report a higher level of knowledge after the program and to indicate adoption of marketing strategies. Along the same lines, participants that spent more post-time on marketing tended to report having an economic impact.

Post-marketing plan was positively correlated to *post-knowledge*, *overall adoption change*, *satisfaction*, and *economic impact*. Participants that had a marketing plan after the program tended to indicate a higher knowledge level after the program, adopt the marketing practices, were satisfied with the program, and reported an economic impact. This was the only independent variable that had a statistically significant correlation with *satisfaction*. *Post-written marketing plan* was statistically significantly correlated with *post-knowledge*, *knowledge change* and *adoption change*. Participants that had a written marketing plan after the program tended to report a higher level of knowledge after the program, a change in knowledge, and adopt the marketing practices.

Table 29
Correlations of Selected Independent Variables to Knowledge, Adoption, Satisfaction, and Economic Impact for Master Marketer Respondents

	Overall Satisfaction	Pre-Knowledge	Post-Knowledge	Overall Knowledge Change	Adoption Change	Economic Impact
On Farm Grain Storage	-.036 (n=315)	-.015 (n=311)	-.066 (n=315)	-.044 (n=444)	-.051 (n=309)	.181** (n=260)
Started Mktg. Club	.040 (n=197)	.016 (n=195)	.050 (n=197)	.017 (n=195)	.043 (n=195)	.001 (n=159)
Total Crop Acres	-.030 (n=261)	.150* (n=257)	.106 (n=260)	-.096 (n=257)	.023 (n=256)	.453** (n=233)
Crop Gross Rev.	-.082 (n=267)	.161** (n=262)	.058 (n=266)	-.151* (n=262)	-.043 (n=261)	.256** (n=236)
Livestock Gross Rev.	.027 (n=192)	.124 (n=190)	.061 (n=192)	-.099 (n=190)	-.005 (n=190)	.526** (n=172)
Total Gross Rev.	-.026 (n=290)	.191** (n=285)	.077 (n=289)	-.163** (n=285)	-.024 (n=284)	.505** (n=254)
Age of Operator	.026 (n=314)	-.027 (n=309)	-.141* (n=313)	-.080 (n=309)	-.144 (n=307)	-.051 (n=258)
Years as Prin. Oper.	.074 (n=291)	.082 (n=286)	-.083 (n=290)	-.162** (n=286)	-.136* (n=285)	.069 (n=250)
Education Level	.028 (n=314)	.032 (n=309)	.042 (n=313)	.004 (n=309)	-.031 (n=308)	-.045 (n=258)
Mktg. Time Change	-.016 (n=250)	-.323** (n=247)	.037 (n=250)	.421** (n=247)	.336** (n=247)	.028 (n=212)
Pre-Marketing Time	-.032 (n=250)	.350** (n=247)	.214** (n=250)	-.245** (n=247)	-.112 (n=247)	.116 (n=212)
Post-Marketing Time	-.029 (n=289)	.028 (n=286)	.183** (n=289)	.116 (n=286)	.180** (n=285)	.141* (n=249)
Post-Marketing Plan	.228** (n=312)	.100 (n=306)	.279** (n=310)	.102 (n=306)	.270** (n=306)	.132* (n=253)
Post-Written Mktg Plan	.074 (n=312)	.067 (n=306)	.256** (n=310)	.128* (n=306)	.257** (n=306)	.093 (n=254)

* correlation is significant at .05 level

** correlation is significant at .01 level

Analysis of the Impact of Marketing Clubs

Research question 2 is aimed at determining whether there was a perceived change in knowledge from before to after the program. To analyze this question, the seven knowledge questions in Section 3, as well as an overall knowledge scale for those questions, were used in measuring the significance of the change in participants' perceived knowledge from pre to post. The knowledge questions related to specific marketing strategies and practices using a seven-point Likert scale where 1 = Poor through 7 = Excellent. Like the Master Marketer questionnaire, the design of the marketing club questionnaire used a post then pre design. Cronbach's alpha was used to measure the reliability of knowledge portion of the instrument (Section 3). The knowledge scales for both the pre and post questions had alpha levels of 0.86 and 0.92 respectively. Table 30 contains the change (post - pre) in mean perceived level of knowledge for each of the seven knowledge questions and overall. The largest pre-to-post change occurred on question 16 (fundamental analysis) with a positive change of 1.58 (3.16 pre to 4.74 post). The overall scale showed a pre-to-post change in mean score of 1.38. A paired samples *t*-test was used in this analysis with a .05 level of significance. The 2-tailed level of significance for the overall knowledge scale, as well as all individual items, was less than 0.01. This significance is important as reflected in the large effect size of 1.27. Considering the type of data used in the analysis, and the scales set forth by Cohen (1988), the author deems the 1.27 effect size as very strong and meaningful. As a result, H_{02} is rejected. H_{02} stated that there is no difference in club members' perceived level of knowledge before and after their participation in their

marketing club.

Table 30
Pre-to-Post Change in Perceived Level of Knowledge for Marketing Club Members

Knowledge area, section and question number	Frequency	Pre	Post	Mean Diff. ^a	SD	d ^b	t-value	Sig.
Fundamental analysis (16)	392	3.16	4.74	1.58	1.19	1.33	26.32	<.01
Seasonal price analysis (18)	448	3.43	4.75	1.32	1.25	1.06	22.35	<.01
Technical price analysis (20)	392	2.67	4.13	1.45	1.34	1.08	21.53	<.01
Production risk mgmt (22)	391	3.81	4.91	1.10	1.42	0.77	19.13	<.01
Marketing tools (24)	393	3.17	4.70	1.53	1.23	1.24	24.63	<.01
Hedging with futures (26)	454	3.09	4.53	1.44	1.34	1.07	22.92	<.01
Hedging with options (28)	392	2.98	4.49	1.51	1.40	1.08	21.34	<.01
Overall knowledge scale	456	3.18	4.56	1.38	1.09	1.27	27.26	<.01

^a Mean difference = post response - pre response. Scale: 1-7, where 1 = Poor, 4 = Average, and 7 = Excellent.

^b Cohen's measure of effect size (.20 = small, .50 = medium, .80 = large)

Adoption of marketing and risk management practices data was captured in 12 questions found in Sections 2 (questions 7 - 13) and 3 (questions 17, 19, 21, 23, 25) of the marketing club questionnaire. Since each adoption question was of two-option (yes/no) response format, the responses were re-scaled to facilitate a single scale with which to measure participants' overall adoption of all practices addressed in the adoption questions. Pre-responses were summed as were post responses which generated a minimum pre-response of 0 (all no responses) and maximum of 12 (all yes responses). The resulting data was assumed to be distributed normally. Reliability of the adoption scales was analyzed using Cronbach's alpha. The scales for Sections 2 and 3 had an alpha level of 0.87 for the pre and 0.92 for the post. Table 31 contains the results of the paired samples *t*-test used to test for means difference in the adoption responses. A .05 level of significance was used. The overall scale showed a pre-mean score of 4.70, a

post-mean score of 6.96, and a change of 2.26. The 2-tailed level of significance for the overall adoption scale was less than 0.01. As a result, H_{04} is rejected. H_{04} stated that there was no change in club members' use (adoption) of marketing and risk management strategies from before to after participation in the program. The magnitude of the significance is deemed to be large given the effect size of 0.86.

Table 31
Pre-to-Post Change in Adoption of Marketing and Risk Management Practices for Marketing Club Members

	No.	Mean Diff. ^a	SD	d ^b	t-value	Sig.
Pre-Adoption Level	315	4.70	2.91			
Post-Adoption Level	315	6.96	2.96			
Adoption change (post - pre)	315	2.26	2.63	0.86	15.20	<.01

^a No = 0, yes = 1. Scale: 0-12 where 0 = all no responses and 10 = all yes responses to adoption questions

^b Cohen's measure of effect size (.20 = small, .50 = medium, .80 = large)

Information pertaining to price impacts and the number of respondents reporting price impacts for their crop and livestock enterprises can be found in Table 32. Price impacts for 6 crops, 2 livestock enterprises, and milk were reported by 407 respondents. A cotton price impact was indicated by 193 respondents with a mean price impact of \$0.011 per pound. The median price impact for cotton was \$0.00, the SD was \$0.02, and the minimum and maximum were -\$0.063 and \$0.076 respectively. This type of information is listed for the other five crops as well. The mean price impact was statistically significantly ($\alpha < .05$) different from zero (zero is no impact) for all crops except rice. The 180 respondents reporting a cattle price impact had a mean price impact of \$3.04 per pound, a median of \$0.00, and a SD of \$4.565. The minimum and

maximum were -\$8.00 and \$15.00 respectively. The cattle price impact was statistically significantly different from zero ($\alpha < .05$) while hogs and milk were not. While the price impact itself is extremely important for each commodity, this study focuses more on the total impact on gross income which takes into account the level of production for all commodities produced on a farm.

Table 32
Price Impacts Self-Reported by Marketing Club Respondents (n=407)

Crop	Frequency	Percent	Mean Price ^a	Median Price	SD	Min.	Max.
<u>Crops</u>							
Corn	109	26.8	\$0.057 ^b	\$0.055	\$0.090	-\$0.300	\$0.300
Wheat	178	43.7	\$0.068 ^b	\$0.000	\$0.105	-\$0.300	\$0.300
Milo	161	39.6	\$0.104 ^b	\$0.080	\$0.148	-\$0.450	\$0.450
Cotton	193	47.4	\$0.011 ^b	\$0.000	\$0.021	-\$0.063	\$0.076
Soybeans	32	7.9	\$0.083 ^b	\$0.055	\$0.108	-\$0.055	\$0.300
Rice	19	4.7	\$0.009	\$0.000	\$0.264	-\$0.900	\$0.460
<u>Livestock and Milk</u>							
Cattle	180	44.2	\$3.040 ^b	\$0.000	\$4.565	-\$8.000	\$15.000
Hogs	11	2.7	\$3.360	\$0.000	\$5.352	\$0.000	\$13.000
Milk	14	3.4	-\$0.063	\$0.000	\$0.333	-\$1.015	\$0.340
Total	407						

^aPrice units are: corn, wheat and soybeans are per bushels; cotton is per pound, and milo, rice, cattle, hogs, and milk are per hundred weight (cwt).

^bMean price is statistically significantly different from zero at $\alpha = .05$.

Percent totals more than 100% because most farms have more than one crop or livestock enterprise.

The impact on gross income for marketing clubs is presented in Table 33 which contains the frequency, percent, mean, SD, and significance test information for each commodity and for the total farm impact. Impacts are calculated only for respondents' farms that reported all of the following: price impact, yield, and crop acreage for crop

producers; and price impacts and number of head for livestock producers. Corn had the largest impact on gross income for crops with a mean of \$6,270 per farm and a SD of \$15,630. Cotton had the smallest mean impact at \$715 per farm. Cotton having the smallest impact is most likely due to the large number of cotton producers across the state that utilize cooperative marketing pools to market their cotton. With a marketing pool, the marketing pool managers market the cotton for the producers which prevents these producers from showing a price impact for cotton. While milk had the highest mean impact on gross income, only 5 respondents reported a milk impact. The SD for milk was very high at \$41,716. Cattle impacts, which were reported by 163 respondents, had a mean of \$8,112 and a SD of \$21,372. The total farm impact had a mean of \$12,361, a SD of \$26,874, and a median of \$2,580. The 2-tailed level of significance for the total farm impact was less than 0.01. As a result, H_{06} is rejected. H_{06} stated that there was no perceived mean economic impact per marketing club member as a result of participation in a marketing club. The magnitude of the significance is deemed to be small given the effect size of 0.46.

Table 33
Price Impacts on Gross Income for Marketing Club Respondents (n=333)

Commodity	Frequency	Percent	Mean Change in Gross Income	SD	d ^a	t-value	Sig. ^b
<u>Crops</u>							
Corn	81	24.3	\$6,270	\$15,630	0.41	3.61	<.01
Wheat	144	43.2	\$2,761	\$6,189	0.45	5.35	<.01
Milo	122	36.6	\$4,107	\$12,779	0.32	3.55	<.01
Cotton	172	51.7	\$7,154	\$19,971	0.36	4.69	<.01
Soybeans	20	6.0	\$1,643	\$2,333	0.70	3.15	<.01
Rice	11	3.3	\$3,396	\$14,274	0.24	0.78	0.44
<u>Livestock and Milk</u>							
Cattle	163	48.9	\$8,112	\$21,372	0.38	4.84	<.01
Hogs	11	3.3	\$1,068	\$2,941	0.36	1.20	0.25
Milk	5	1.5	\$14,952	\$41,716	0.36	0.80	0.46
Total farm impact	333		\$12,361	\$26,874	0.46	8.39	<.01

Valid % totals more than 100% because most farms have more than one crop.

^a Cohen's measure of effect size (.20 = small, .50 = medium, .80 = large)

^b 2-tailed

Research objective nine was aimed at determining the relationship between selected personal and business parameters, knowledge, adoption of practices, satisfaction, and the economic impact of marketing club members. Correlation coefficients (Pearson's product moment) were derived to identify the relationship between several personal and business parameters, and three dependent variables: *pre-knowledge*, *post-knowledge*, *overall knowledge change*, *overall adoption change*, and *economic impact*. The dependent variables are listed across the top of Table 34. The personal and business parameters selected were: *total crop acres*, *crop gross revenue*, *livestock gross revenue*, *total gross revenue*, *age of operator*, *years as principal*

operator, education level, change in percent of time spent on marketing (marketing time change), pre-marketing time (spent), post-marketing time (spent), post-use of a marketing plan, and post-use of a written marketing plan. These variables are listed down the left side of Table 34.

Independent variables that had a statistically significant correlation coefficient with one or more of the dependent variables were *total crop acres, gross crop revenue, livestock gross revenue, total gross revenue, age of operator, years as principal operator, education level, marketing time change, pre-marketing time, post-marketing time, post-marketing plan, and post-written marketing plan.* One difference between the marketing club results and the Master Marketer results is that *age of operator* was not statistically significant with Master Marketer graduates.

Total crop acres was statistically significantly correlated with *economic impact*, meaning club members with higher crop acres tended to have a higher economic impact which would be expected because the per unit price impacts were multiplied by total production. *Crop gross revenue* was statistically significantly correlated with *pre-knowledge* and *economic impact*. A higher *crop gross revenue* usually led to a higher *economic impact* because club members with higher revenues would normally have a relatively high number of crop acres which would support a higher economic impact. This same rationale also applies to *livestock gross revenue* and *total gross revenue* in their relationship to *economic impact*. *Crop gross revenue* was not statistically significantly correlated with *knowledge change* as it was with Master Marketer graduates. However, *crop gross revenue* was statistically significantly correlated with

Table 34
Correlations of Selected Independent Variables to Knowledge, Adoption, and Economic Impact for Marketing Club Respondents

	Pre-Knowledge	Post-Knowledge	Overall Knowledge Change	Overall Adoption Change	Economic Impact
Total Crop Acres	.076 (n=132)	.125 (n=132)	.035 (n=132)	.069 (n=99)	.509** (n=116)
Crop Gross Revenue	.125* (n=305)	.104 (n=305)	-.044 (n=305)	.013 (n=251)	.336** (n=284)
Livestock Gross Revenue	-.009 (n=209)	-.065 (n=209)	-.053 (n=209)	-.102 (n=172)	.252** (n=191)
Total Gross Revenue	.066 (n=351)	.026 (n=351)	-.050 (n=351)	-.045 (n=288)	.308** (n=322)
Age of Operator	.061 (n=415)	-.046 (n=415)	-.116 (n=415)	-.160** (n=294)	-.104 (n=316)
Years as Principal Operator	.117* (n=390)	-.063 (n=390)	-.197** (n=390)	-.270** (n=280)	-.074 (n=310)
Education Level	.120* (n=437)	.061 (n=437)	-.076 (n=437)	-.059 (n=305)	.042 (n=320)
Marketing Time Change	-.131** (n=397)	.055 (n=397)	.208** (n=397)	.358** (n=315)	.133* (n=333)
Pre-Marketing Time	.260** (n=397)	.194** (n=397)	-.102* (n=397)	-.118* (n=315)	.096 (n=333)
Post-Marketing Time	.120* (n=397)	.192** (n=397)	.057 (n=397)	.110 (n=315)	.166** (n=333)
Post-Marketing Plan	.148** (n=421)	.347** (n=421)	.186** (n=375)	.339** (n=315)	.160** (n=313)
Post-Written Marketing Plan	.019 (n=375)	.172** (n=375)	.155** (n=375)	.270** (n=315)	.125 (n=319)

* correlation is significant at .05 level

** correlation is significant at .01 level

pre-knowledge, as it was in the Master Marketer data. *Age of operator* was statistically significant and was negatively correlated *overall adoption change*. The older the marketing club member was, the less likely they were to change their adoption of marketing practices. *Years as principal operator* was significantly correlated with *pre-knowledge*, meaning respondents that had been the principal operator longer tended to report a higher *pre-knowledge* level. *Years as principal operator* was negatively correlated with *overall knowledge change* and *overall adoption change*. The longer club members had been the principal operator, the less of a change they experienced in knowledge and adoption of marketing practices. This is consistent with the Master Marketer data, and the results reported by Kistler (2002, p. 70) in a study of Texas Cooperative Extension's Ranch to Rail program, except that the change in adoption coefficient was not significant in Kistler's study.

The only dependent variable that had a statistically significant correlation with *education level* was *pre-knowledge*. Another independent variable that was statistically significant was *marketing time change*, the difference between the percent of time spent on marketing activities before the program and after the program. Participants who reported a high level of *pre-knowledge*, a large change in knowledge, adoption of marketing practices, and economic impact tended to also report a large change (increase) in time spent on marketing. *Pre-marketing time* was statistically significantly correlated with both *pre-knowledge* and *post-knowledge*, meaning the more time spent on marketing before the program, the more knowledge they tended to report having both before and after participating in the marketing club. *Pre-marketing time* had a

statistically significantly negative correlation to *knowledge change*, meaning the higher portion of their time spent on marketing before the program, the less change in knowledge they reported. This is most likely explained by these participants having hands on experience with these marketing concepts, and thus had a relatively high level of knowledge before attending the program. *Post-marketing time* was statistically significantly correlated to *pre-knowledge*, *post-knowledge* and *economic impact*. The more time club members reported spending on marketing after the program, the more likely they were to report having a high level of knowledge before and after the program, and an economic impact. With the Master Marketer data, *post-marketing time* was also correlated with *overall adoption change*.

Post-marketing plan was positively correlated to *pre-knowledge*, *post-knowledge*, *overall knowledge change*, *overall adoption change*, and *economic impact*. With the Master Marketer data, the correlation coefficient for *post-marketing plan* and *overall knowledge change* was not statistically significant. Club members who had a marketing plan after the program tended to indicate a higher pre-and-post knowledge, change in knowledge, adoption of marketing practices, and an economic impact. *Post-written marketing plan* was statistically significantly correlated with *post-knowledge*, *overall knowledge change* and *overall adoption change*. Participants that had a written marketing plan after the program tended to report a higher level of *post-knowledge*, change in knowledge, and adoption of marketing practices. Having a written marketing plan after the program was not statistically significantly correlated with having an economic impact, which is consistent with Master Marketer data.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The primary purpose of the study was to determine the change in knowledge, adoption of practices, and economic impact of the Master Marketer program and marketing clubs. The following research objectives and hypotheses were developed to aid in answers the questions addressed in the study:

1. Determine the change in knowledge of commodity marketing and risk management experienced by graduates of the Master Marketer program.
2. Determine the change in knowledge of commodity marketing and risk management experienced by marketing club members.
3. Determine the change in adoption of commodity marketing and risk management strategies for Master Marketer graduates.
4. Determine the change in adoption of commodity marketing and risk management strategies for marketing club members.
5. Determine the economic impact the Master Marketer program had on graduates.
6. Determine the economic impact that marketing clubs had on club members.
7. Determine the number of marketing clubs started by Master Marketer graduates.

8. Determine the relationship between selected personal and business parameters, and knowledge, adoption of practices, satisfaction, and the economic impact of Master Marketer graduates.
9. Determine the relationship between selected personal and business parameters, and knowledge, adoption of practices, and the economic impact of marketing club members.

The following null hypotheses were tested:

- H₀₁: There was no change in Master Marketer graduates' perceived knowledge of price and production risk management strategies from before to after participation in the program.
- H₀₂: There was no change in marketing club members' perceived knowledge of price and production risk management strategies from before to after participation in the program.
- H₀₃: There was no change in Master Marketer graduates' use (adoption) of price risk management strategies from before to after participation in the program.
- H₀₄: There was no change in marketing club members' use (adoption) of price risk management strategies from before to after participation in the program.
- H₀₅: There was no perceived mean economic impact per graduate of the Master Marketer program as a result of participation in the program.
- H₀₆: There was no perceived mean economic impact per marketing club member as a result of participation in a marketing club.

A census was used to gather data from participants of both the Master Marketer program and marketing clubs. From the first 11 Master Marketer programs, 520 graduates were surveyed and 326 usable questionnaires were returned, yielding a return rate of 62.7%. For marketing clubs, the accessible frame consisted of 1,060 names and addresses. From the accessible population, 407 usable responses were received for a response rate of 38.4%. Additionally, 62 usable non-response questionnaires (12.25%) were received from non-responders. These were pooled together with the responses received from the initial survey process.

Conclusions

Research objective one and hypothesis one were aimed at determining whether there was a perceived change in knowledge of Master Marketer graduates from before to after the program. There were 12 knowledge questions on the instrument with the response scale comprised of a 1 (poor) to 7 (excellent) Likert scale. The overall scale showed a pre-to-post change in mean score of 2.06. A paired samples *t*-test was used in this analysis with a .05 level of significance. The 2-tailed level of significance for the overall knowledge scale, as well as all individual items, was less than 0.01. This significance is important as reflected in the large effect size of 1.91. As a result, we reject H_{01} that there is no difference in Master Marketer respondents' perceived level of knowledge before and after their participation in the program.

Research objective two and hypothesis two were aimed at determining the change

in knowledge of commodity marketing and risk management experienced by marketing club members. There were 7 knowledge questions on the instrument with the response scale comprised of a 1 (poor) to 7 (excellent) Likert scale. The overall scale showed a pre-to-post change in mean score of 1.38. A paired samples *t*-test was used in this analysis with a .05 level of significance. The 2-tailed level of significance for the overall knowledge scale, as well as all individual items, was less than 0.01. This significance is important as reflected in the large effect size of 1.27. As a result, we reject H_{02} that there is no difference in marketing club respondents' perceived level of knowledge before and after their participation in the program.

Research objective three and hypothesis three were aimed at determining the change in adoption of commodity marketing and risk management strategies for Master Marketer graduates. Adoption of marketing and risk management practices data was captured in 12 questions on the instrument. The overall scale, which ranged from 0 to 12 due to summing the two-option response format (0/1), showed a pre-mean score of 3.15, a post-mean score of 6.61, and a change of 3.46. The 2-tailed level of significance for the overall adoption scale was less than 0.01. As a result, we reject H_{03} that stated there was no change in Master Marketer Graduates' use (adoption) of marketing and risk management strategies from before to after participation in the program. The magnitude of the significance is deemed to be large given the effect size of 1.39.

Research objective four and hypothesis four were aimed at determining the change in adoption of commodity marketing and risk management strategies for marketing club members. Adoption of marketing and risk management practices data

was captured in 12 questions on the instrument. The overall scale, which ranged from 0 to 12 due to summing the two-option response format (0/1), showed a pre-mean score of 4.70, a post-mean score of 6.96, and a change of 2.26. The 2-tailed level of significance for the overall adoption scale was less than 0.01. As a result, we reject H_{04} that stated there was no change in marketing club members' use (adoption) of marketing and risk management strategies from before to after participation in the program. The magnitude of the significance is deemed to be large given the effect size of 0.86.

Research objective five and hypothesis five were aimed at determining the economic impact the Master Marketer program had on graduates. Economic impact was measured in terms of participants' change in gross income that resulted from improved marketing of participants' crop and livestock commodities. Respondents to the questionnaire self-reported negative, no change, or positive changes in the price (\$/unit) they received for selected commodities since they completed the program. These price impacts were used in conjunction with each participant's crop acres, yields, and livestock production information to derive the change in gross income. All commodities produced on each farm were summed to obtain a total farm impact. The total farm impact had a mean of \$32,288 and a SD of \$62,960. The 2-tailed level of significance for the total farm impact was less than 0.01. As a result, we reject H_{05} that there was no perceived mean economic impact per graduate of the Master Marketer program as a result of participation in the program. The magnitude of the significance is deemed to be medium given the effect size of 0.51.

Research objective six and hypothesis six were aimed at determining the

economic impact that marketing clubs had on club members. Economic impact was measured using the same methodology used with the Master Marketer program. The total farm impact had a mean of \$12,361 and a SD of \$26,874. The 2-tailed level of significance for the total farm impact was less than 0.01. As a result, we reject H_{06} that there was no perceived mean economic impact per marketing club member as a result of participation in a marketing club. The magnitude of the significance is deemed to be medium given the effect size of 0.46.

Research objective seven was aimed at identifying the effectiveness of Master Marketer graduates in starting a marketing club. Analysis of the data indicates that 63 percent (199 of 316) of graduates had attempted to start a marketing club in their home area while 37 percent (117) indicated they had not. Of the respondents that attempted to start a club, 62.4 percent of them indicated their effort resulted in the successful creation of a marketing club. Based on the analysis of this data, there were 123 marketing clubs formed by Master Marketer graduates which is in sharp contrast to the 73 clubs identified based on preliminary records maintained by the Master Marketer Executive Committee and Marketing Club coordinator, and telephone interviews with selected County Extension Agricultural Agents.

Research objective eight was aimed at determining the relationship between selected personal and business parameters, and knowledge, adoption of practices, satisfaction, and the economic impact of Master Marketer graduates. Correlation coefficients (Pearson's product moment) were derived to identify the relationship between 14 personal and business parameters, and four dependent variables: *overall*

knowledge change, overall adoption change, satisfaction, and economic impact.

Independent variables that had a statistically significant correlation coefficient with one or more of the dependent variables were *on-farm grain storage, total crop acres, gross crop revenue, livestock gross revenue, total gross revenue, years as principal operator, marketing time change, pre-marketing time, post-marketing time, post-marketing plan, and post-written marketing plan.*

Correlation coefficients yielded several interesting findings. Participants with an on-farm grain storage facility tended to report a higher economic impact. *Crop gross revenue*, as well as *total gross revenue*, were negatively correlated with *knowledge change*, meaning the more crop gross revenue earned, the less change there was in knowledge. Operators of higher grossing farms tend to have been in business longer, and thus have acquired more experience and knowledge prior to participating in Master Marketer, which leads to experiencing a smaller change in knowledge.

Years as principal operator was also negatively correlated with *overall knowledge change*, and *overall adoption change*. The longer respondents' had been the principal operator, the less of a change they experienced in knowledge and adoption of marketing practices, which is consistent with results reported by Kistler (2002, p. 70).

Participants who reported a large change in knowledge tended to also report a large change (increase) in time spent on marketing. The more time participants reported spending on marketing after the program, the more likely they were to report an overall adoption of marketing strategies. Along the same lines, participants who spent more post-time on marketing tended to report having an economic impact.

Participants who had a marketing plan after the program were more likely to adopt the marketing practices, were satisfied with the program, and reported an economic impact. This was the only independent variable that had a statistically significant correlation with *satisfaction*. *Post-written marketing plan* was statistically significantly correlated with *knowledge change* and *adoption change*. Participants who had a written marketing plan after the program tended to report a change in knowledge, and adopt the marketing practices.

Research objective 9 was aimed at determining the relationship between selected personal and business parameters, and knowledge, adoption of practices, and the economic impact of marketing club members. Correlation coefficients were derived to identify the relationship between 12 personal and business parameters, and 3 dependent variables: *overall knowledge change*, *overall adoption change*, and *economic impact*.

Independent variables that had a statistically significant correlation coefficient with one or more of the dependent variables were *total crop acres*, *gross crop revenue*, *livestock gross revenue*, *total gross revenue*, *age of operator*, *years as principal operator*, *marketing time change*, *pre-marketing time*, *post-marketing time*, *post-marketing plan*, and *post-written marketing plan*. One difference between the marketing club results and the Master Marketer results is that *age of operator* was not statistically significant with Master Marketer graduates.

Correlation coefficients yielded several interesting findings. *Age of operator* was statistically significantly negatively correlated with *overall adoption change*. The older marketing club members were, the less likely they were to change their adoption of

marketing practices. *Years as principal operator* was also negatively correlated with *overall knowledge change* and *overall adoption change*. The longer club members had been the principal operator, the less of a change they experienced in knowledge and adoption of marketing practices. This is consistent with the Master Marketer data.

Participants who reported a large change in knowledge, adoption of marketing practices, and economic impact tended to also report a large change (increase) in the amount of time spent on marketing. *Pre-marketing time* had a statistically significantly negative correlation to *knowledge change*, meaning the higher portion of their time spent on marketing before the program, the less change in knowledge they reported.

Additionally, the more time club members reported spending on marketing after the program, the more likely they were to report having an economic impact. With the Master Marketer data, *post-marketing time* was also correlated with *overall adoption change*.

Marketing club members who had a marketing plan after the program tended to indicate a change in knowledge, adoption of marketing practices, and an economic impact. Participants who had a written marketing plan after the program tended to report a change in knowledge and adoption of marketing practices. Having a written marketing plan after the program was not statistically significantly correlated with having an economic impact, which is consistent with Master Marketer data.

Recommendations

Based on the results of this research project, recommendations were formulated in two areas. One area relates to the implementation and programmatic component of future programs, both Master Marketer and marketing clubs. A second area pertains to recommendations for future research related to this study.

Master Marketer Programmatic Recommendations

The following recommendations were developed for future Master Marketer programs:

- (1) Based on the statistically significant changes in perceived levels of knowledge, adoption of price risk management practices, and economic impact, the Master Marketer program should be continued.
- (2) Based on information about the Master Marketer program provided to the researcher, such as annual Master Marketer program evaluation and progress reports, the programs's goals and objectives are focused mostly on behavioral changes and economic impact. While this study indicates a very successful Master Marketer program, one area of improvement lies in developing more clearly defined learning objectives. Program coordinators should develop clearly defined learning objectives, spelling out specifically what participants should learn upon completion of the program. The TOP model, developed by Bennett and Rockwell and described in Chapter 2, could be used to develop learning objectives that are appropriate given the desired behavioral changes, economic impacts,

and the activities and resources used in the program.

- (3) It not realistic to expect program coordinators to track participants' marketing practices and the resulting net price received before and after the program for objective proof of the program's impact on the price participants receive. That is the precise reason why the self-report measure was used. As indicated in Chapter 4, the mean price impact reported by Master Marketer graduate respondents was \$0.126 per bushel for corn, \$0.091 per bushel for wheat, \$0.157 per hundred weight for milo, \$0.02 per pound for cotton, \$0.142 per bushel for soybeans, and \$4.24 per hundred weight for cattle. Program coordinators should try to work with a few participants in each class to estimate actual price impacts that could be compared to graduates' self-reported price impacts to provide some insight into the accuracy of these self-reported price impacts.
- (4) In addition to its current design that has demonstrated so much success, a Master Marketer program should be designed and offered in targeted locations that is specific to a commodity or group of similar commodities (e.g. feed grains, feeder cattle) and offered no more than once each year. As indicated in Chapter 4, of the eleven Master Marketer programs included in this study, six of them have been conducted in three locations in the Panhandle/South Plains region of the state: Amarillo (1996 and 1999), Lubbock (1997 and 2000), and Vernon (1998 and 2001). This has

resulted in 64.3% (334) of all graduates being from one region of the state and has led to a market-saturation effect. Program coordinators have indicated that this has made it more difficult to market the program in this region. In addition to this, the 2000 Farm Bill provided for improved price/income protection relative to the previous Farm Bill which may have given producers reason to believe that price risk management and marketing was less important than it previously was. As a result, some program design changes are necessary to meet the changing economic environment and market saturation effect that has occurred in the northwest area of the state.

Marketing Club Programmatic Recommendations

The following recommendations were developed for future marketing clubs:

- (1) The Agricultural Economics Extension Unit should create a position dedicated to supporting marketing clubs, e.g. a marketing club coordinator. From 2001 to 2004, the unit had such a position, but the position also performed tasks unrelated to marketing clubs. From an extension administrative and budget perspective, the beauty of marketing clubs is that they are an educational activity, yet require less resources of extension. Many clubs never take on life because of the numerous relatively minor obstacles that can derail the effort. A marketing club coordinator can provide the support necessary to breathe life into many

clubs that may not otherwise have gotten off the ground. After clubs get beyond the startup phase and are functioning, a marketing club coordinator can provide curriculum and teaching support in several forms, including using distance education technology.

- (2) The Master Marketer Executive Committee should initiate a tracking system to more accurately keep track of the number of clubs, names and addresses of club members, and when clubs start and end. This is the first step in evaluating marketing club members, and is therefore necessary to accomplish recommendation number 3. As indicated in Chapter 4, 199 (63%) Master Marketer graduate respondents indicated they had attempted to start a marketing club in their home area. Of these 199 respondents who indicated they had attempted to start a marketing club, 197 of them indicated their effort was successful. Of these respondents, 62.4 percent of them indicated their effort resulted in the successful creation of a marketing club. Based on the analysis of these data, there were 123 marketing clubs formed by Master Marketer graduates which is substantially higher than the 73 clubs located based on preliminary records maintained by the Master Marketer Executive Committee and Marketing Club coordinator, and telephone interviews with selected County Extension Agricultural Agents.
- (3) To measure the effectiveness of marketing clubs, an evaluation should be conducted annually or biennially. The marketing club questionnaire

could be used in this process. In Chapter II, three evaluation models were discussed, including the Kirkpatrick Model and its four levels - reaction, learning, behavior, and results. Bennett's Hierarchy model (1975), later revised and referred to as the TOP Model (Targeted Outcomes of Programs), is an evaluation tool and is based on seven criteria areas for evaluating extension programs. The third model described in Chapter II is the Logic Model which can serve the needs of both program development and program evaluation. As McCawley described, the Logic Model describes the relationships between program resources, activities, outputs, audiences, and short-, intermediate-, and long-term outcomes related to a specific problem or situation (McCawley, 2001, p. 1). This study shows that marketing clubs can be an effective way for extension to reach out to producers and teach agricultural marketing, and an evaluation of each club is pertinent to managing the continued effectiveness of marketing clubs.

Recommendations for Further Research

The following recommendations are for further research as it relates to this study:

- (1) The price impacts reported by participants of both the Master Marketer program and marketing clubs should be studied to identify any statistical relationships between them and relative price levels during the time period the price impact represents. One hypothesis is that during periods

of relatively high commodity prices, participants might be more inclined to report a higher price impact, and during periods of relatively low prices, participants might be more inclined to report a lower price impact.

- (2) The data should be studied to determine if the changes in knowledge, adoption of price risk management practices, and economic impact vary by farm type, and possibly even program location. Whether or not farms that are predominantly cotton farms, for example, benefit from the program more or less than do cow-calf operations, stocker calf operations, or diversified crop farms is important to know. And, the answer could lead to further questions such as: if stocker calf operators benefit more, is it because of program curriculum, delivery method, unique market conditions during the time period the data was collected, or some other factor.
- (3) An input-output model, such as IMPLAN, should be used to estimate the indirect and induced effects - sometimes referred to as multiplier effects - of the improved gross income on the state's economy.

REFERENCES

- Anderson, K. B., & Mapp H. P. (1996). Risk management programs in extension. *Journal of Agricultural and Resource Economics*, 21(1), 33-34.
- Bennett, C. (1975). Up the hierarchy. *Journal of Extension*, 13(2), 7-12.
- Bennett, C., & Rockwell, K. (undated). *Targeted outcomes of programs (TOP)*. Unpublished manuscript. Retrieved on January 5, 2003, from <http://citnews.unl.edu/TOP/english/index.html>
- Chizari, M., & Taylor, W. N. (1991). Agriculture teachers' perceptions of adult education programs: An examination of critical educational needs, obstacles faced, and support needed. *Journal of Agricultural Education*, 32(2), 23-28. Retrieved on January 16, 2005 from <http://pubs.aged.tamu.edu/jae/pdf/Vol32/32-02-23.pdf>.
- Clason, D. L., & Dormody, T. J. (1994). *Analyzing data measured by individual Likert-type items*. *Journal of Agricultural Education*, 35(4), 31-35. Retrieved on January 16, 2005 from <http://pubs.aged.tamu.edu/jae/pdf/vol35/35-04-31.pdf>.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Dillman, D. A. (2000). *Mail and Internet surveys: The tailored design method* (2nd ed.). New York: John Wiley & Sons, Inc.
- Fan, X. (2001). Statistical significance and effect size in education research: Two sides of a coin. *The Journal of Educational Research*, 94(5), 275-282.
- Ferris, J. N. (1998). *Agricultural prices and commodity market analysis*. Boston, MA: WCB McGraw-Hill.
- Garcia, P., Hudson, M. A., & Waller, M. L. (1988, July). The pricing efficiency of agricultural futures markets: An analysis of previous research results. *Southern Journal of Agricultural Economics*, 119 - 130.
- Hardaker J. B., Huirne, R.B.M., & Anderson, J.R. (1997). *Coping with risk in agriculture*. New York: CAB International.

- Haygood, J., Harman, A., Akers, C., & Thorvilson, H. (2003). *An assessment of programming needs among county agents in red imported fire ant quarantined counties in Texas*. Paper presented at the Southern Association of Agricultural Scientists: Agricultural Communications Section, Mobile, AL.
- Hieronymus, T. A. (1971). *Economics of futures trading: For commercial and personal profit*. New York: Commodity Research Bureau, Inc.
- Israel, G. D. (2001). *Using logic models for program development* (AEC 360). Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Retrieved on October 31, 2002, from http://edis.ifas.ufl.edu/BODY_WC041.
- Kirkpatrick, D. L. (1983). *A practical guide for supervisory training and development* (2nd ed.). Reading, MA: Addison-Wesley Publishing Company.
- Kirkpatrick, D. L. (1994). *Evaluating training programs: The four levels*. San Francisco, CA: Berrett-Koehler Publishers, Inc.
- Kistler, M. J. (2002). The Texas A&M Ranch to Rail Program: An evaluation of its impact on adult learning (Doctoral dissertation, Texas A&M University, 2002). *Dissertation Abstracts International*, 63, 2771, Feb 2003.
- Knowles, M. S. (1978). Androgogy: Adult learning theory in perspective. *Community College Review*, 5(3), 10.
- Knowles, M. S., Holton, E. F., III, & Swanson, R. A. (1998). *The adult learner: The definitive classic in adult education and human resource development* (5th ed.). Houston, TX: Gulf Publishing Company.
- Lafferty, C. K., & Mahoney, C. A. (2003). A framework for evaluating comprehensive community initiatives. *Health Promotions Practice*, 4(1), 31-44. Retrieved on March 1, 2005, from <http://hpp.sagepub.com/cgi/contents/refs/4/1/31>.
- Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 42(4), 43-53.
- McCawley, P. F. (2001). *The logic model for program planning and evaluation* (CIS 1097). University of Idaho Extension, Moscow, ID. Retrieved on October 31, 2002, from http://extension.ag.uidaho.edu/planning/downloads/all3_020602.pdf
- McNew, K., & Musser, W. N. (2002). Farmer forward pricing behavior: Evidence from marketing clubs. *Agricultural and Resource Economics Review*, 31(2), 200-209.

- Miller, L. E., & Smith, K. L. (1983). Handling nonresponse issues. *Journal of Extension*, 21(5), 48.
- National Agricultural Statistics Service (NASS) (2004a). 2002 census of agriculture - Texas state and county data (AC-02-A-43-A). Washington DC: United States Department of Agriculture. Retrieved June 28, 2004 from: <http://www.nass.usda.gov/census/census02/volume1/TXVolume104.pdf>
- National Agricultural Statistics Service (NASS) (2004b). 2002 census of agriculture - United States summary and state data (AC-02-A-51). Washington DC: United States Department of Agriculture. Retrieved June 28, 2004 from: <http://www.nass.usda.gov/census/census02/volume1/USVolume104.pdf>
- Olejnik, S., & Algina, J. (2000). Measures of effect size for comparative studies: Applications, interpretations, and limitations. *Contemporary Educational Psychology*, 25, 241-286.
- Patrick, G.F., Musser, W.N., & Eckman, D.T. (1998, Spring/Summer). Forward Marketing Practices and Attitudes of Large-Scale Midwestern Grain Producers. *Review of Agricultural Economics*, 20(1), 38 - 53.
- Popham, J. W (1993). *Educational evaluation* (3rd ed.). Needham Heights, MA: Allyn and Bacon.
- Rockwell, S.K., & Kohn, H. (1989). Post-then-pre-evaluation. *Journal of Extension*, 27(2). Retrieved on February 28, 2005 from: <http://www.joe.org/joe/1989summer/a5.html>.
- Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.
- Rohs, F. R. (1999). Response-shift bias: A problem in evaluating leadership development with self-report pretest-posttest measures. *Journal of Agricultural Education*, 40(4), 28-37. Retrieved on October 14, 2002 from <http://pubs.aged.tamu.edu/jae/pdf/Vol40/40-04-28.pdf>.
- Rohs, F. R. (2000). *Response shift bias: A problem in evaluating extension educational programs*. Paper presented at the American Evaluation Association International Conference, Honolulu, HI.
- Sartwelle, J., III, O'Brien, D., Tierney, W., Jr., & Eggers, T. (2000, April). The effect of personal and farm characteristics upon grain marketing practices. *Journal of Agricultural and Applied Economics*, 32(1), 95-111.

- Scriven, M. (1991). *Evaluation thesaurus*. 4th (ed.) Newbury Park, CA: Sage Publications.
- Tough, A. (1979). *The adult's learning projects*. Toronto: Ontario Institute for Studies in Education.
- Trede, D. L., & Whitaker, B. S. (2000). *Educational needs and perceptions of Iowa beginning farmers toward their education*. *Journal of Agricultural Education*, 41(1), 39-48. Retrieved on January 16, 2005 from: <http://pubs.aged.tamu.edu/jae/pdf/vol41/41-01-39.pdf>.
- Tuckman, B. W. (1999). *Conducting educational research*. 5th (ed.) Fort Worth, TX: Harcourt Brace College Publishers.
- Waller, M., Amosson, S., Smith, J., Bevers, S., & McCorkle, D. (2000). *1999/2000 Master Marketer program evaluation and progress report*. Unpublished manuscript. Texas Cooperative Extension, Dept. of Agricultural Economics, Texas A&M University, College Station, TX.
- Worthen, B. R., Sanders, J. R., & Fitzpatrick, J. L. (1997). *Program evaluation: Alternative approaches and practical guidelines* (2nd ed.). White Plains, NY: Longman Publishers U.S.A.

APPENDIX A

MASTER MARKETER QUESTIONNAIRE



Master Marketer Survey

Designed to assess the educational impact of the 1998 Master Marketer program at Vernon.

Your participation in this survey is voluntary, but essential to the future development of the Master Marketer program. All individual responses will remain confidential and will only be reported in summary form. **If you have any concerns or questions about this survey, please call Stan Bevers at (940) 552-9941.** Your participation in this survey effort is greatly appreciated.

Section 1. Background of marketing practices

Your responses to the following questions should relate to your activities prior to attending the 1998 Vernon Master Marketer program and your activities since completing the program.

	Pre-Master Marketer		Post-Master Marketer	
	(circle one)		(circle one)	
1. Do you have a marketing plan?	Yes	No	Yes	No
2. Do you have a written marketing plan?	Yes	No	Yes	No
3. Do you share your marketing plan with someone else?	Yes	No	Yes	No
4. Do you determine costs of production for different commodities and use those costs to set price targets?	Yes	No	Yes	No
5. Do you build profit and/or growth needs into your price targets?	Yes	No	Yes	No

	Pre-Master Marketer		Post-Master Marketer					
6. Do you use a general marketing advisory newsletter (Doane's, ProFarmer, etc.)?	Yes	No	Yes	No				
7. Do you employ a market advisor (Brock, Gulke, etc.)?	Yes	No	Yes	No				
8. Since attending Master Marketer, have you sought further education on marketing tools or strategies or market information (either self-taught or from a professional source)?			Yes	No				
9. What is your overall rating of the educational quality of the Master Marketer program? (please circle one)								
Poor	1	2	3	4	5	6	7	Excellent

Section 2. Development of your personal market outlook.

These questions deal with the types of market analysis a producer might use to develop a personal market outlook. These questions relate to the types of market analysis you used prior to attending the 1998 Vernon Master Marketer program and the types of market analysis you have used since completing the program.

1. How would you rate your knowledge of fundamental analysis in developing your personal market outlook? (please answer both questions)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you use market fundamentals in developing your personal market outlook before attending the Master Marketer program?							Yes		No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Do you currently use market fundamentals in developing your personal market outlook?							Yes		No

2. How would you rate your knowledge of seasonal price analysis in developing your personal market outlook? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you use seasonal price information in developing your personal market outlook before attending the Master Marketer program?							Yes		No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Do you currently use seasonal price information in developing your personal market outlook?							Yes		No

3. How would you rate your knowledge of technical analysis in developing your personal market outlook? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you use technical analysis in developing your personal market outlook before attending the Master Marketer program?							Yes		No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Do you currently use technical analysis in developing your personal market outlook?							Yes		No

4. How would you rate your ability to develop your personal market outlook and apply the appropriate marketing tools? (please circle one)								
Pre-Master Marketer								
Poor	1	2	3	4	5	6	7	Excellent
Post-Master Marketer								
Poor	1	2	3	4	5	6	7	Excellent

Section 3. Risk management tools and strategies.

These questions relate to your ability to manage different types of agricultural risk and knowledge of risk management tools and strategies. Your responses should relate to how your abilities and knowledge changed from the time before attending the Master Marketer program to the time after you completed the program.

1. How would you rate your ability to manage price and production risk? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	

2. How would you rate your knowledge of production risk management tools (crop insurance, enterprise diversification, etc.)? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	

3. How would you rate your knowledge of marketing tools (futures, options, forward contracting, etc.)? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	

4. How would you rate your knowledge of forward cash contracting? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you know when the use of this tool was appropriate?								Yes	No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Since attending Master Marketer, do you know when the use of this tool is appropriate?								Yes	No

5. How would you rate your knowledge of basis contracts? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you know when the use of this tool was appropriate?								Yes	No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Since attending Master Marketer, do you know when the use of this tool is appropriate?								Yes	No

6. How would you rate your knowledge of minimum price contracts? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you know when the use of this tool was appropriate?								Yes	No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Since attending Master Marketer, do you know when the use of this tool is appropriate?								Yes	No

7. How would you rate your knowledge of hedging with futures? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you know when the use of this tool was appropriate?								Yes	No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Since attending Master Marketer, do you know when the use of this tool is appropriate?								Yes	No

8. How would you rate your knowledge of hedging with options? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you know when the use of this tool was appropriate?								Yes	No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Since attending Master Marketer, do you know when the use of this tool is appropriate?								Yes	No

9. How would you rate your knowledge of production contracts and/or marketing alliances? (please circle one)									
Pre-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Did you know when the use of this tool was appropriate?								Yes	No
Post-Master Marketer									
Poor	1	2	3	4	5	6	7	Excellent	
Since attending Master Marketer, do you know when the use of this tool is appropriate?								Yes	No

10. How would you rate your knowledge of post-harvest marketing strategies (sell crop, buy calls; sell crop, buy futures; store crop, buy puts; etc.)? (please circle one)								
Pre-Master Marketer								
Poor	1	2	3	4	5	6	7	Excellent
Did you know when the use of this tool was appropriate?							Yes	No
Post-Master Marketer								
Poor	1	2	3	4	5	6	7	Excellent
Since attending Master Marketer, do you know when the use of this tool is appropriate?							Yes	No
11. Do you participate in a marketing pool or cooperative marketing association?							Yes	No
If yes, what percent of your crop is marketed annually by the cooperative or pool?								
_____ <25% _____ 25 to 49 % _____ 50 to 74 % _____ 75 to 100 %								
Have you increased the percent of your crop production marketed by the cooperative or pool since attending the Master Marketer program?							Yes	No
12. Do you have on-farm grain storage?							Yes	No
If yes, what percent of your crop production can be stored on the farm?								
_____ <25% _____ 25 to 49 % _____ 50 to 74 % _____ 75 to 100 %								
Have you increased your on-farm storage capacity since attending the Master Marketer program?							Yes	No

Section 4. Marketing club experience.

Please read these questions carefully and relate your experiences in working with marketing clubs, if applicable.

Following your completion of the Master Marketer program, did you attempt to get a marketing club started?	Yes	No						
If no, why not? (please check all that apply)	___ Lack of time							
	___ Lack of producer interest							
	___ Lack of agent support							
	___ Lack of TAMU Specialist support							
	___ Other (specify) _____							
If you did attempt to get a club started, did the club actually get established?	Yes	No						
If no, why not? (please check all that apply)	___ Lack of time							
	___ Lack of producer interest							
	___ Lack of agent support							
	___ Lack of TAMU Specialist support							
	___ Other (specify) _____							
If yes, how many members were in your marketing club?	___members							
Of total membership, how many regularly attended meetings?	___members							
How long was your club operational?	_____years	___months						
Did your club trade in the futures/options market?	Yes	No						
If your marketing club did trade in the futures/options markets, how would you rate the educational value of trading? (please circle one)								
Poor	1	2	3	4	5	6	7	Excellent

<p>Following your completion of the Master Marketer program, did you attempt to get a marketing club started?</p>	<p>Yes</p>	<p>No</p>						
<p>If your marketing club was operational and it has already stopped meeting, how would you rate the club's effectiveness in meeting its objectives? (please circle one)</p>								
<p>Poor</p>	<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>	<p>5</p>	<p>6</p>	<p>7</p>	<p>Excellent</p>
<p>How would you rate the value of your experience in working with a marketing club? (please circle one)</p>								
<p>Poor</p>	<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>	<p>5</p>	<p>6</p>	<p>7</p>	<p>Excellent</p>

Section 5. Price impacts from Master Marketer education.

Please detail the impact your marketing education has had on prices received for the various commodities you produce. In this comparison, consider what you could have done with the marketing tools/strategies you employed **before** attending Master Marketer versus what you have done **since** your Master Marketer training.

CORN	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/bu
<input type="checkbox"/>	increased 21 to 30 ¢/bu
<input type="checkbox"/>	increased 11 to 20 ¢/bu
<input type="checkbox"/>	increased 1 to 10 ¢/bu
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/bu
<input type="checkbox"/>	decreased 11 to 20 ¢/bu
<input type="checkbox"/>	decreased 21 to 30 ¢/bu
<input type="checkbox"/>	decreased more than 30 ¢/bu

WHEAT	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/bu
<input type="checkbox"/>	increased 21 to 30 ¢/bu
<input type="checkbox"/>	increased 11 to 20 ¢
<input type="checkbox"/>	increased 1 to 10 ¢/bu
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/bu
<input type="checkbox"/>	decreased 11 to 20 ¢/bu
<input type="checkbox"/>	decreased 21 to 30 ¢/bu
<input type="checkbox"/>	decreased more than 30 ¢/bu

GRAIN SORGHUM	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 45 ¢/cwt
<input type="checkbox"/>	increased 31 to 45 ¢/cwt
<input type="checkbox"/>	increased 16 to 30 ¢/cwt
<input type="checkbox"/>	increased 1 to 15 ¢/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 15 ¢/cwt
<input type="checkbox"/>	decreased 16 to 30 ¢/cwt
<input type="checkbox"/>	decreased 31 to 45 ¢/cwt
<input type="checkbox"/>	decreased more than 45 ¢/cwt

COTTON	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 7.6 ¢/lb
<input type="checkbox"/>	increased 5.1 to 7.5 ¢/lb
<input type="checkbox"/>	increased 2.6 to 5.0 ¢/lb
<input type="checkbox"/>	increased .1 to 2.5 ¢/lb
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased .1 to 2.5 ¢/lb
<input type="checkbox"/>	decreased 2.6 to 5.0 ¢/lb
<input type="checkbox"/>	decreased 5.1 to 7.5 ¢/lb
<input type="checkbox"/>	decreased more than 7.6 ¢/lb

SOYBEANS	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/bu
<input type="checkbox"/>	increased 21 to 30 ¢/bu
<input type="checkbox"/>	increased 11 to 20 ¢/bu
<input type="checkbox"/>	increased 1 to 10 ¢/bu
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/bu
<input type="checkbox"/>	decreased 11 to 20 ¢/bu
<input type="checkbox"/>	decreased 21 to 30 ¢/bu
<input type="checkbox"/>	decreased more than 30 ¢/bu

CATTLE	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 15 \$/cwt
<input type="checkbox"/>	increased 11 to 15 \$/cwt
<input type="checkbox"/>	increased 6 to 10 \$/cwt
<input type="checkbox"/>	increased 1 to 5 \$/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 5 \$/cwt
<input type="checkbox"/>	decreased 6 to 10 \$/cwt
<input type="checkbox"/>	decreased 11 to 15 \$/cwt
<input type="checkbox"/>	decreased more than 15 \$/cwt

SUNFLOWER	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/cwt
<input type="checkbox"/>	increased 21 to 30 ¢/cwt
<input type="checkbox"/>	increased 11 to 20 ¢/cwt
<input type="checkbox"/>	increased 1 to 10 ¢/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/cwt
<input type="checkbox"/>	decreased 11 to 20 ¢/cwt
<input type="checkbox"/>	decreased 21 to 30 ¢/cwt
<input type="checkbox"/>	decreased more than 30 ¢/cwt

HOGS	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 15 \$/cwt
<input type="checkbox"/>	increased 11 to 15 \$/cwt
<input type="checkbox"/>	increased 6 to 10 \$/cwt
<input type="checkbox"/>	increased 1 to 5 \$/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 5 \$/cwt
<input type="checkbox"/>	decreased 6 to 10 \$/cwt
<input type="checkbox"/>	decreased 11 to 15 \$/cwt
<input type="checkbox"/>	decreased more than 15 \$/cwt

Section 6. Profile Information

Crop Enterprise	Non-Irrigated cropland		Irrigated cropland	
	Acres	Yield/acre	Acres	Yield/acre
Corn		bu		bu
Grain sorghum		cwt		cwt
Wheat		bu		bu
Cotton		lbs		lbs
Sunflower		cwt		cwt
Soybeans		bu		bu
Pinto beans		cwt		cwt
Hay, forages, silage		tons		tons
Improved pasture				
Native pasture				
Other _____				

Livestock Enterprise	Head
Cow-calf production	_____ # beef cows
Stocker cattle production	_____ # calves/year
Fed cattle production	_____ # cattle fed/year
Hog production, non-contract	_____ # hogs/year
Hog production, contract	_____ # hogs/year
Other (specify) _____	_____ #/year

Is your business vertically integrated (have you expanded into input supply such as seed production or custom work, do you participate in any value-added processing of farm production such as direct produce sales to consumers, or have you become involved with related businesses such as trucking, feedyards, or gins)?	Yes	No
--	-----	----

What range would typify your average annual gross receipts for crop and livestock sales? (please check one for crop sales and one for livestock sales)			
Crop sales		Livestock sales	
\$0 - \$49,999	___	\$0 - \$49,999	___
\$50,000 - \$99,999	___	\$50,000 - \$99,999	___
\$100,000 - \$174,999	___	\$100,000 - \$174,999	___
\$175,000 - \$249,999	___	\$175,000 - \$249,999	___
\$250,000 - \$374,999	___	\$250,000 - \$374,999	___
\$375,000 - \$499,999	___	\$375,000 - \$499,999	___
\$500,000 - \$749,999	___	\$500,000 - \$749,999	___
\$750,000 - \$999,999	___	\$750,000 - \$999,999	___
\$1,000,000 - \$1,749,999	___	\$1,000,000 - \$1,749,999	___
\$1,750,000 - \$2,499,999	___	\$1,750,000 - \$2,499,999	___
\$2,500,000 - \$3,749,999	___	\$2,500,000 - \$3,749,999	___
\$3,750,000 - \$4,999,999	___	\$3,750,000 - \$4,999,999	___
\$5,000,000 and up	___	\$5,000,000 and up	___

What is your age?	___ years
How long have you been a principal farm operator?	___ years

What is your highest education level completed? (please check one)	
Some high school	___
High school graduate	___
Vocational/technical school	___
Some college	___
Bachelor's degree	___
Some graduate school	___
Advanced or professional degree	___

What is the structure of your farm business? (please check all that apply)	
Sole proprietorship	___
Partnership	___
Corporation	___
Estate	___
Trust	___

APPENDIX B

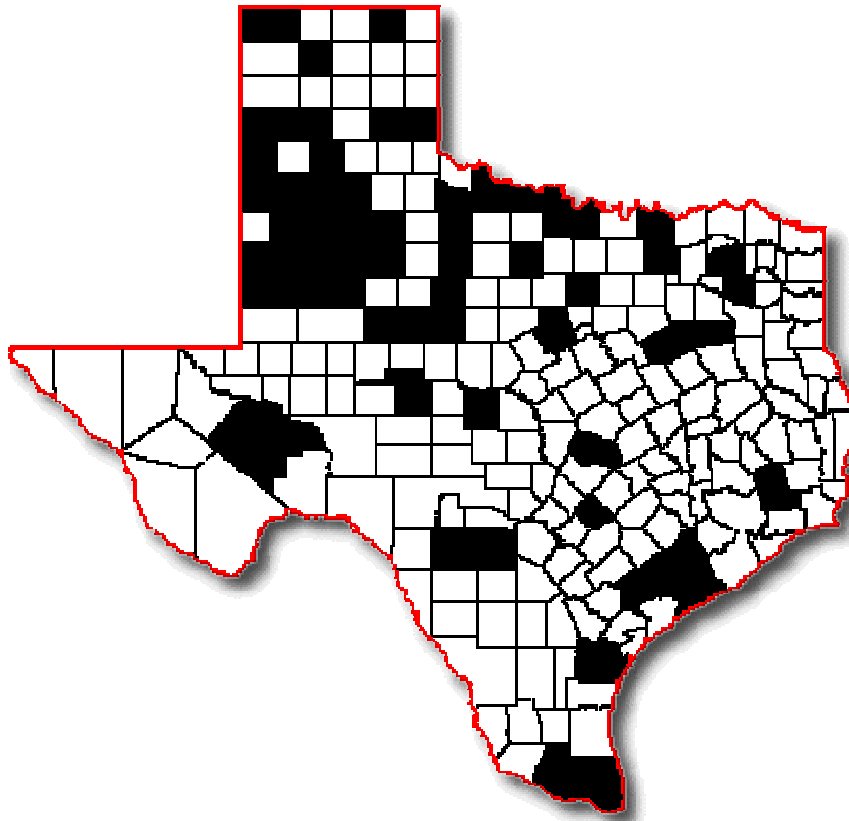
MARKETING CLUB QUESTIONNAIRE

Marketing Club Questionnaire

An Evaluation of the Effectiveness of Marketing Club Education
in Improving the Marketing Skills of Texas Producers

Estimated time to complete: 15 minutes

Your participation in this survey is voluntary, but essential to the future development of marketing clubs. All individual responses will remain confidential and will be reported in summary form only.
If you have any questions or concerns, please contact Rob Borchardt at (940) 552-9941 or Dean McCorkle at (979) 845-9589. Your participation in this survey effort is greatly appreciated!



Marketing clubs in Texas that functioned between 1980 and 2002



Section 1. Background Information

1. How would you characterize your attendance at the marketing club meetings?
(circle one)

- a) Regularly attended (more than 66% of the meetings)
- b) Occasionally attended (33% to 66% of the meetings)
- c) Rarely attended (less than 33% of the meetings)
- d) Never attended

2. If you answered c) or d) in question #1 above, please indicate why you rarely or never attended: **(circle all that apply)**

- a) Schedule conflicts
- b) Lack of interest
- c) Subject matter too complex
- d) Subject matter too basic
- e) Personality conflicts
- f) Other _____

3. How did you become aware that a marketing club existed in your county/area? **(circle one)**

- a) County Extension Agent
- b) Media (newspaper, radio, TV, etc.)
- c) Friend or neighbor
- d) I attended a Master Marketer Program and helped start a club
- e) Other _____

4. If you attended a Master Marketer Program, please indicate which program(s) you attended.

(check all programs that you attended)

- | | | |
|---------------------|---------------------|----------------------|
| Abilene 2001 _____ | Lubbock 2000 _____ | Waco 1998 _____ |
| Amarillo 1996 _____ | Uvalde 2000 _____ | Weslaco 2001 _____ |
| Amarillo 1999 _____ | Vernon 1998 _____ | Wharton 1997 _____ |
| Amarillo 2002 _____ | Vernon 2001 _____ | Did Not Attend _____ |
| Lubbock 1997 _____ | Victoria 1998 _____ | |

5. If you attended a Master Marketer Program, was it because of your prior involvement with a marketing club? **(circle one)**

- a) Yes
- b) No
- c) Did not attend a Master Marketer Program

6. Do you feel the club received adequate support from:

- | | | |
|---|-----|----|
| 6a) County Extension Agent
(circle one) | Yes | No |
| 6b) Extension Specialists
(circle one) | Yes | No |
| 6c) Interested producers
(circle one) | Yes | No |
| 6d) Marketing club leader
(circle one) | Yes | No |

Section 2. Adoption of Marketing Practices

Most of the following questions require two separate answers. *Please circle yes or no in response to each question **before** and **after** your involvement with a marketing club.*

	Before Marketing Club		After/During Marketing Club	
	Yes	No	Yes	No
7. Do you have a marketing plan?	Yes	No	Yes	No
8. Do you have a written marketing plan?	Yes	No	Yes	No
9. Do you share your plan with someone else?	Yes	No	Yes	No
10. Do you determine cost of production for each commodity and use those costs to set price targets?	Yes	No	Yes	No
11. Do you build profit and/or growth needs into your price targets?	Yes	No	Yes	No
12. Do you use a general marketing advisory information service? (Doane's, Pro Farmer, DTN, etc.)	Yes	No	Yes	No
13. Do you employ a market advisor? (Brock, Gulke, etc.)	Yes	No	Yes	No
14. Since participating in a marketing club, have you sought further education on marketing tools, strategies or market information (either self-taught or from a professional service)? XXXXXX			Yes	No
15. On average, what percent of your time did you spend on <u>each of the following</u> activities before and after attending a marketing club? (percentages should add to 100%)				
Production	_____		_____	
Farm/ranch management	_____		_____	
Marketing	_____		_____	
Off-farm employment	_____		_____	
Other _____	_____		_____	
Total		100%		100%

Section 3. Risk Management Knowledge and Adoption

Each of the following questions requires two separate answers. *Some questions require you to circle Yes or No, and some questions require you to circle a number between 1 (poor) and 7 (excellent). Your responses should relate to your activities prior to attending the marketing club and your activities after attending the marketing club.*

The definition of the 1 through 7 scale is:

	Poor 1	2	3	Average 4	5	6	Excellent 7									
								Before Marketing Club	After/During Marketing Club							
16. How would you rate your knowledge of <u>fundamental</u> analysis in developing your personal market outlook?	1	2	3	4	5	6	7	1	2	3	4	5	6	7		
17. Do you use market <u>fundamentals</u> in developing your personal market outlook?								Yes	No	Yes	No					
18. How would you rate your knowledge of <u>seasonal price</u> analysis in developing your personal market outlook?	1	2	3	4	5	6	7			1	2	3	4	5	6	7
19. Do you use <u>seasonal price</u> information in developing your personal market outlook?								Yes	No	Yes	No					
20. How would you rate your knowledge of <u>technical price analysis</u> in developing your personal market outlook?	1	2	3	4	5	6	7			1	2	3	4	5	6	7
21. Do you use <u>technical analysis</u> in developing your personal market outlook?								Yes	No	Yes	No					
22. How would you rate your knowledge of <u>production risk management</u> tools (crop insurance, enterprise diversification, etc.)?	1	2	3	4	5	6	7			1	2	3	4	5	6	7
23. Do you use any <u>production risk management</u> strategies in your operation?								Yes	No	Yes	No					

Section 3 (continued).

These instructions are the same as previous page → Each of the following questions requires two separate answers. *Some questions require you to circle Yes or No, and some questions require you to circle a number between 1 (poor) and 7 (excellent). Your responses should relate to your activities prior to attending the marketing club and your activities after attending the marketing club.*

The definition of the 1 through 7 scale is:

	Poor 1	2	3	Average 4	5	6	Excellent 7	
							Before Marketing Club	After/During Marketing Club
24. How would you rate your knowledge of <u>marketing tools</u> to manage price risk?	1	2	3	4	5	6	7	1 2 3 4 5 6 7
25. Do you use any <u>marketing tools</u> to manage price risk?	Yes		No					Yes No
26. How would you rate your knowledge of <u>hedging with futures</u> ?	1	2	3	4	5	6	7	1 2 3 4 5 6 7
27. Do you know when <u>hedging with futures</u> is appropriate?	Yes		No					Yes No
28. How would you rate your knowledge of <u>hedging with options</u> ?	1	2	3	4	5	6	7	1 2 3 4 5 6 7
29. Do you know when <u>hedging with options</u> is appropriate?	Yes		No					Yes No
30. Did your club trade as a group?	XXXXXX							Yes No
31. If you did trade as a group, how would you rate the educational value of trading as a group?	XXXXXX							1 2 3 4 5 6 7
32. In terms of benefits, please rate <u>each of the following</u> with regard to participating in a marketing club.								
Improvement in knowledge of marketing	XXXXXX							1 2 3 4 5 6 7
Improvement of net price	XXXXXX							1 2 3 4 5 6 7
Contacts with others and the sharing of ideas	XXXXXX							1 2 3 4 5 6 7
Overall value of marketing club experience	XXXXXX							1 2 3 4 5 6 7

Section 4. Price Impacts from Marketing Club Education

Please mark the relative price impact that marketing club education has had on the prices you received for each commodity you produce. Consider what price increase or decrease you received **since** your participation in the marketing club. This price increase or decrease should be relative to what you would have received without the knowledge and skills learned in the marketing club. This is intended to be an estimate of the average annual price impact for the period of time since you participated in the club.

CORN	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/bu
<input type="checkbox"/>	increased 21 to 30 ¢/bu
<input type="checkbox"/>	increased 11 to 20 ¢/bu
<input type="checkbox"/>	increased 1 to 10 ¢/bu
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/bu
<input type="checkbox"/>	decreased 11 to 20 ¢/bu
<input type="checkbox"/>	decreased 21 to 30 ¢/bu
<input type="checkbox"/>	decreased more than 30 ¢/bu

WHEAT	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/bu
<input type="checkbox"/>	increased 21 to 30 ¢/bu
<input type="checkbox"/>	increased 11 to 20 ¢
<input type="checkbox"/>	increased 1 to 10 ¢/bu
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/bu
<input type="checkbox"/>	decreased 11 to 20 ¢/bu
<input type="checkbox"/>	decreased 21 to 30 ¢/bu
<input type="checkbox"/>	decreased more than 30 ¢/bu

GRAIN SORGHUM	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 45 ¢/cwt
<input type="checkbox"/>	increased 31 to 45 ¢/cwt
<input type="checkbox"/>	increased 16 to 30 ¢/cwt
<input type="checkbox"/>	increased 1 to 15 ¢/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 15 ¢/cwt
<input type="checkbox"/>	decreased 16 to 30 ¢/cwt
<input type="checkbox"/>	decreased 31 to 45 ¢/cwt
<input type="checkbox"/>	decreased more than 45 ¢/cwt

COTTON	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 7.6 ¢/lb
<input type="checkbox"/>	increased 5.1 to 7.5 ¢/lb
<input type="checkbox"/>	increased 2.6 to 5.0 ¢/lb
<input type="checkbox"/>	increased .1 to 2.5 ¢/lb
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased .1 to 2.5 ¢/lb
<input type="checkbox"/>	decreased 2.6 to 5.0 ¢/lb
<input type="checkbox"/>	decreased 5.1 to 7.5 ¢/lb
<input type="checkbox"/>	decreased more than 7.6 ¢/lb

Section 4. Price Impacts from Marketing Club Education (continued)

SOYBEANS	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/bu
<input type="checkbox"/>	increased 21 to 30 ¢/bu
<input type="checkbox"/>	increased 11 to 20 ¢/bu
<input type="checkbox"/>	increased 1 to 10 ¢/bu
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/bu
<input type="checkbox"/>	decreased 11 to 20 ¢/bu
<input type="checkbox"/>	decreased 21 to 30 ¢/bu
<input type="checkbox"/>	decreased more than 30 ¢/bu

CATTLE	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 15 \$/cwt
<input type="checkbox"/>	increased 11 to 15 \$/cwt
<input type="checkbox"/>	increased 6 to 10 \$/cwt
<input type="checkbox"/>	increased 1 to 5 \$/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 5 \$/cwt
<input type="checkbox"/>	decreased 6 to 10 \$/cwt
<input type="checkbox"/>	decreased 11 to 15 \$/cwt
<input type="checkbox"/>	decreased more than 15 \$/cwt

SUNFLOWER	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/cwt
<input type="checkbox"/>	increased 21 to 30 ¢/cwt
<input type="checkbox"/>	increased 11 to 20 ¢/cwt
<input type="checkbox"/>	increased 1 to 10 ¢/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/cwt
<input type="checkbox"/>	decreased 11 to 20 ¢/cwt
<input type="checkbox"/>	decreased 21 to 30 ¢/cwt
<input type="checkbox"/>	decreased more than 30 ¢/cwt

HOGS	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 15 \$/cwt
<input type="checkbox"/>	increased 11 to 15 \$/cwt
<input type="checkbox"/>	increased 6 to 10 \$/cwt
<input type="checkbox"/>	increased 1 to 5 \$/cwt
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 5 \$/cwt
<input type="checkbox"/>	decreased 6 to 10 \$/cwt
<input type="checkbox"/>	decreased 11 to 15 \$/cwt
<input type="checkbox"/>	decreased more than 15 \$/cwt

Section 5. Production Information

Please write in your normal or average acreage and budgeted yields (estimated yields) for each of the crops you produce. Please note that there is a section for non-irrigated crops and irrigated crops.

Crop Enterprise	Non-Irrigated Cropland		Irrigated Cropland	
	Acres	Yield/ac	Acres	Yield/ac
Corn		bu		bu
Grain sorghum		cwt		cwt
Wheat		bu		bu
Cotton		lbs		lbs
Rice				cwt
Soybeans		bu		bu
Hay, forages, silage		tons		tons
Improved pasture				
Native pasture				
Other _____				

For each livestock enterprise listed below, please write in the number of head you normally have.

Livestock	Head
Cow-calf production	_____ # beef cows
Stocker cattle production	_____ # calves/year
Fed cattle production	_____ # cattle fed/year
Hog production, non-contract	_____ # hogs/year
Hog production, contract	_____ # hogs/year
Other (specify) _____	_____ #/year

Section 6. Sales Information

What range would typify your average annual gross receipts for crop and livestock sales? (please check one for crop sales and one for livestock sales)			
Crop sales		Livestock / Milk sales	
\$0 - \$49,999	___	\$0 - \$49,999	___
\$50,000 - \$99,999	___	\$50,000 - \$99,999	___
\$100,000 - \$174,999	___	\$100,000 - \$174,999	___
\$175,000 - \$249,999	___	\$175,000 - \$249,999	___
\$250,000 - \$374,999	___	\$250,000 - \$374,999	___
\$375,000 - \$499,999	___	\$375,000 - \$499,999	___
\$500,000 - \$749,999	___	\$500,000 - \$749,999	___
\$750,000 - \$999,999	___	\$750,000 - \$999,999	___
\$1,000,000 - \$1,749,999	___	\$1,000,000 - \$1,749,999	___
\$1,750,000 - \$2,499,999	___	\$1,750,000 - \$2,499,999	___
\$2,500,000 - \$3,749,999	___	\$2,500,000 - \$3,749,999	___
\$3,750,000 - \$4,999,999	___	\$3,750,000 - \$4,999,999	___
\$5,000,000 and up	___	\$5,000,000 and up	___

Section 7. Demographic Information

What is your highest education level completed? (Please check one)		What is the structure of your farm/ranch business? (Please check all that apply)	
Some high school	___	Sole proprietor	___
High school graduate	___	Partnership	___
Vocational/technical school	___	Corporation	___
Some college	___	Estate	___
Bachelor's degree	___	Trust	___
Some graduate school	___	What is your age?	___ years
Advanced or professional degree	___	How long have you been a principal farm operator?	___ years

APPENDIX C

MARKETING CLUB QUESTIONNAIRE PRE-NOTICE LETTER

December 31, 2002

[address
town, zip]

Dear

The purpose of this letter is to inform you that Texas Cooperative Extension is conducting a statewide survey of marketing club members. You are receiving this letter because of your current or prior involvement in a marketing club. ***In the next several days, you will receive a questionnaire and postage paid return envelope. We would be very appreciative if you would take a few minutes to fill out the questionnaire and return it to us.***

Over the past twenty years in Texas, there have been more than 1,000 producers who have been involved in over 75 marketing clubs that have had varying degrees of success. Whether your club is still meeting or if it's been 15 years since your club last met, and whether you went to all the club meetings or very few of them, *we want to hear from you.*

While we believe that marketing club education has been a very effective way to inform and educate producers on management and marketing concepts and strategies, your response is the only way we can measure that effectiveness. This information is extremely important to the mission of Texas Cooperative Extension's Department of Agricultural Economics and to the producers we serve. Therefore, your participation and response to this questionnaire is greatly appreciated and highly valued.

There is no need to respond to this letter. As previously mentioned, you will receive a questionnaire by mail in several days that we hope you'll fill out and return to us. If you have any questions regarding this process, please feel free to contact either of us.

Sincerely,

Rob Borchardt
Extension Specialist
Marketing Club Coordinator
P.O. Box 2159
Vernon, TX 76384-2159
(940) 552-9941

Dean McCorkle
Extension Specialist - Risk Management
403 Blocker, 2124 TAMU
College Station, TX 77843-2124
(979) 845-9589

APPENDIX D

MARKETING CLUB QUESTIONNAIRE COVER LETTER

January 7, 2003

[address
town/zip]

Dear

We are writing to ask for your help in an evaluation study of marketing clubs in Texas being conducted by Texas Cooperative Extension. The Departments of Agricultural Economics and Agricultural Education are directing this study which is very important to the future direction of the marketing club program. The purpose of this evaluation is to assess the educational effectiveness of marketing clubs, changes in marketing behavior, and economic impact. The results of the evaluation will be used to improve the marketing club experience of future club members across the state.

You were selected because of your participation in a marketing club. County extension agents and marketing club leaders were gracious enough to provide us with a list of 1,100 marketing club members across the state. We are earnestly requesting response to this questionnaire from all agricultural producers who have participated in marketing clubs in Texas.

Whether your club is still meeting or if it's been 15 years since your club last met, and if you attended very few of the meetings or all of the meetings, *we want to hear from you*. Also, if you participated in more than one marketing club, please base your responses on your most recent club experience.

All questionnaire responses are completely confidential and will be released in summary form only in which no individual's response can be identified. Upon receipt of your completed questionnaire, your responses will be associated with the hand-written, unique identification number on the back of your questionnaire, but not with your name. While this questionnaire is voluntary, your response is very important to us and future marketing club members. If for some reason, you choose not to respond, please let us know by simply returning the blank questionnaire in the enclosed postage-paid envelope.

This evaluation is considered a research study by Texas A&M and it has been reviewed and approved by the Institutional Review Board - Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Dr. Michael W. Buckley, Director of Support Services, Office of Vice President for Research at (979) 458-4067.

We would appreciate your response and please contact either of us if you have any questions.

Sincerely,

Rob Borchardt
Extension Specialist
Marketing Club Coordinator
P.O. Box 2159
Vernon, TX 76384-2159
(940) 552-9941
r-borchardt@tamu.edu

Dean McCorkle
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403 Blocker, 2124 TAMU
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(979) 845-9589
d-mccorkle@tamu.edu

Enclosures: (1) Marketing club questionnaire

APPENDIX E

MARKETING CLUB FOLLOW-UP LETTER

January 24, 2003

[address
town/zip]

Dear

Several weeks ago we sent a questionnaire to you that asked about your experience with your marketing club and the impact it has had on your farm or ranch operation. As of this writing, we have not received your questionnaire. If you recently mailed it back to us, please accept our sincere thanks. If you have not yet returned your questionnaire to us, we have enclosed a second copy of the questionnaire and a postage-paid return envelope in case you have misplaced the original. We would greatly appreciate it if you would complete the questionnaire and return it to us in the enclosed postage-paid envelope.

The responses of people who have already responded include a wide variety of changes in knowledge and marketing practices. We believe these results will be extremely useful in improving the marketing club program and we want your input to be included in this effort.

Just as a reminder, all responses are completely confidential and will be released in summary form only. Upon receipt of your completed questionnaire, your response will be associated with the identification number on the back of your questionnaire, but not with your name. Protecting the confidentiality of club members' responses is of utmost importance to us.

Again, your response is very important to us. If for some reason, you choose not to respond, please let us know by simply returning the blank questionnaire in the enclosed postage-paid envelope.

Sincerely,

Rob Borchardt
Extension Specialist
Marketing Club Coordinator
P.O. Box 2159
Vernon, TX 76384-2159
(940) 552-9941
r-borchardt@tamu.edu

Dean McCorkle
Extension Specialist - Risk Management
403 Blocker, 2124 TAMU
College Station, TX 77843-2124
(979) 845-9589
d-mccorkle@tamu.edu

Enclosures: (1) Marketing club questionnaire
(1) Postage-paid return envelope

APPENDIX F**MARKETING CLUB REMINDER POSTCARD**

Dear «First_Name»,

January 14, 2003

Last week you should have received a Marketing Club Questionnaire in the mail. As of today we have not yet received it. If you have already sent it, please accept our thanks and disregard this notice. If not, we would appreciate if you would complete and return the survey as soon as possible because your input is very valuable to the future development of marketing clubs. Thank you very much for your participation in the Marketing Club program. If you have any questions, please call (979) 845-9589.

Thanks again,

Dean McCorkle
Extension Economist
Texas Cooperative Extension



Extension programs serve people of all ages regardless of socioeconomic level, race, color, sex, religion, disability, or national origin. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating

APPENDIX G

MARKETING CLUB FOLLOW-UP (NON-RESPONDENTS) QUESTIONNAIRE

Marketing Club Follow-Up Questionnaire

July 9, 2003

1. How would you characterize your attendance at the marketing club meetings?
(circle one)

- a) Regularly attended (more than 66% of the meetings)
- b) Occasionally attended (33% to 66% of the meetings)
- c) Rarely attended (less than 33% of the meetings)
- d) Never attended

Instructions: Your responses to questions 2 – 6 should relate to your activities prior to attending the marketing club and your activities after attending the marketing club. Please circle yes or no for questions 2 and 4. For questions 3 and 5, circle a number between 1 and 7 with the scale defined as follows:

	Poor					Average		Excellent						
The scale is:	1	2	3	4	5	6	7							
						Before Marketing Club		After/During Marketing Club						
2. Do you have a marketing plan?						Yes	No	Yes	No					
3. How would you rate your knowledge of <u>seasonal price</u> analysis in developing your personal market outlook?	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Do you use <u>seasonal price</u> information in developing your personal market outlook?						Yes	No	Yes	No					
5. How would you rate your knowledge of <u>hedging with futures</u> ?	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Do you know when <u>hedging with futures</u> is appropriate?						Yes	No	Yes	No					

7. Price Impacts for Selected Crops

Instructions: Please mark the relative price impact that marketing club education has had on the prices you received for wheat and cotton, *if you typically produce these crops. If you do not, please skip ahead to question 9.* This increase or decrease in price should be relative to what you would have received without the knowledge and skills learned in the marketing club. This is intended to be an estimate of the average annual price impact.

WHEAT	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 30 ¢/bu
<input type="checkbox"/>	increased 21 to 30 ¢/bu
<input type="checkbox"/>	increased 11 to 20 ¢
<input type="checkbox"/>	increased 1 to 10 ¢/bu
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased 1 to 10 ¢/bu
<input type="checkbox"/>	decreased 11 to 20 ¢/bu
<input type="checkbox"/>	decreased 21 to 30 ¢/bu
<input type="checkbox"/>	decreased more than 30 ¢/bu

COTTON	
Relative change in price received	
<i>please check one</i>	
<input type="checkbox"/>	increased more than 7.6 ¢/lb
<input type="checkbox"/>	increased 5.1 to 7.5 ¢/lb
<input type="checkbox"/>	increased 2.6 to 5.0 ¢/lb
<input type="checkbox"/>	increased .1 to 2.5 ¢/lb
<input type="checkbox"/>	no change in price received
<input type="checkbox"/>	decreased .1 to 2.5 ¢/lb
<input type="checkbox"/>	decreased 2.6 to 5.0 ¢/lb
<input type="checkbox"/>	decreased 5.1 to 7.5 ¢/lb
<input type="checkbox"/>	decreased more than 7.6 ¢/lb

8. Acreage and Yields for Selected Crops

Instructions: Please write in your normal, or average, acreage and yields (budgeted yields) for wheat and cotton, if applicable. Please note that there is a section for non-irrigated crops and irrigated crops.

Non-Irrigated Cropland			Irrigated Cropland	
Crop Enterprise	Acres	Yield/acre	Acres	Yield/ac.
Wheat		bu		bu
Cotton		lbs		lbs

Highest education level completed? (Please check one)		Structure of your farm/ranch business? (Please check all that apply)	
Some high school		Sole proprietor	
High school graduate		Partnership	
Vocational/technical school		Corporation	
Some college		Estate	
Bachelor's degree		Trust	
Some graduate school		What is your age (years)?	
Advanced or professional degree		Length of time as a producer (years)?	

