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Perceptions of Marketing Strategies: Producers vs. Extension Economists

Joseph L. Parcell, Ted C. Schroeder, Terry L. Kastens, and Kevin C. Dhuyvetter*

Extension marketing economists commit substantial resources to outlook and market analysis. Producers demand this information and use it to make marketing decisions. This study analyzes responses to a marketing question survey of producers and Extension marketing economists to discern similarities and differences in their perceptions regarding market timing, futures market efficiency, and risk management. Producer and Extension perceptions are consistent with regards to several marketing issues, although they are not always consistent with published research results. Also, Extension marketing economists misperceive producers' goals of risk reduction in marketing strategies. Results suggest the need for increased collaboration between research and Extension economists.

Introduction

A recent survey indicated university Extension marketing economists spend 74% of their time informing and educating producers regarding outlook, market analysis, and price risk management (Anderson and Brorsen). The survey further revealed that many Extension marketing economists perceive producer-clientele can use Extension price forecasts to make money trading futures. However, considerable research suggests commodity futures markets are generally efficient, or that inefficiencies are not large enough for producers to profit from by arbitraging, which raises questions regarding Extension specialists' perceptions. Extension economists also felt market timing strategies are available that would increase producer selling prices, though research generally does not support this contention.

Producers have demonstrated interest in attending commodity outlook and price risk management seminars. Given Extension marketing economists' perceptions about futures markets, price forecasts, and market timing strategies, what are producers' perceptions regarding these same issues? Since Extension marketing economists have considerable direct contact with agricultural producers, and because they are a major source of market information for producers, the two groups might be expected to have similar biases regarding marketing strategies. Two possible scenarios prevail. If producers accept Extension economist's biases, both groups would have similar perceptions about futures markets, price forecasting, and market timing signals. Alternatively, if producers' perceptions are not consistent with Extension, one has to wonder why. Is it because producers know differently, or is it because Extension is ineffective at

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disseminating information? The objective of this paper is to test whether producer perceptions about futures markets, price forecasting, market risk management, and market timing signals are consistent with those determined by Anderson and Brorsen in their survey of Extension marketing economists. Also, implications are drawn regarding whether producers' perceptions are more or less consistent with the body of scholarly published research.

To accomplish this objective, survey data were collected from a group of producers attending an Agricultural Land Value Extension conference held at Kansas State University during August 1996. Producers were presented with a set of questions about futures markets, price forecasting, market risk management, and market timing signals similar to those posed to Extension economists by Anderson and Brorsen. Producers' responses to the survey questions are evaluated and statistically compared with Extension economists' responses.

Results of this study are important for several reasons. First, if producers agree with Extension economists, both of whom disagree with research results, it is imperative this educational gap be better understood and eventually filled. Is the research correct? Or, are assumptions made in conducting marketing research too rigid and oversimplified to provide meaningful results, as suggested by some Extension economists (Anderson and Mapp)? If we accept the research results, can practitioner attitudes also be correct or should greater effort be made to change them? If Extension and producer attitudes need to be changed, are researchers equipped to accomplish this? Can they first change the attitudes of Extension, who then changes the attitudes of producers? Second, if producers' and Extension economists' perceptions differ, we need to explore which are more consistent with published research and why. If Extension perceptions are more consistent with research, then the issue is one of education and research dissemination: researchers teach Extension, who teach producers. If producer perceptions are more consistent with research, Extension should question its own understanding of futures markets, price forecasts, and market timing. On the other hand, differences in producer marketing goals and Extension economists' perceptions of those goals may contribute to divergence in attitudes regarding specific marketing strategies among the two groups.

Survey Data

Data from two separate surveys were compiled to compare Extension economists' and producers' perceptions regarding price forecasts and risk management. The Extension economist information was obtained from surveys completed by Anderson and Brorsen. They attempted to survey all marketing Extension economists in the U.S. during the spring of 1996, resulting in a sample size of 78 of which 65 responded. Of the 65 respondents, 5 were incomplete and not used and 26 worked primarily with commodities not having futures contracts. Since our focus is on futures market strategies, and all producers in our survey produced crops (and/or livestock) having futures markets, survey responses of Extension economists that work primarily in commodities without active futures markets (e.g., fruits, vegetables, and dairy) were not used here. This resulted in 34 usable Extension economist completed surveys from Anderson and Brorsen. The average appointment of these 34 economists was 70.7% Extension marketing, 16.1% other

Extension, 7.9% research, and 5.3% teaching. The greatest average commodity responsibility area represented by these 34 economists was corn (16.5%), followed by feeder cattle, slaughter cattle, wheat, soybeans, and hogs.

The second survey data were obtained from a producer survey conducted at an Extension Agricultural Land Value conference held at Kansas State University during August 1996. A subset of the same marketing questions queried of the Extension economists by Anderson and Brorsen were posed to the producers.[1] A total of 120 individuals attended the conference and were asked to complete a survey; 24 surveys were not returned, 37 respondents were not producers (they were agribusiness managers and agricultural service professionals), and 4 producer surveys were incomplete. This resulted in 55 usable surveys where respondents identified their primary occupations as farming/ranching.

Given the nature of the conference these producers were attending (a registration fee of $150/person was charged), they do not represent a random sample of producers. Table 1 summarizes demographic information about the producer survey respondents. On average, they were 8 years younger, had 3 more years of formal education, and had much larger farm operations than typical Kansas producers (U.S. Department of Commerce; Goodwin and Schroeder). Most producers used computers and 35% had access to the Internet.

The producer survey respondents had much higher use of forward contracting and futures hedges and options than indicated by most previous studies (table 2). Forward contracting was used by 64% of the producers, which is similar to 74% of the 62 producers that attended a Top Farmer Crop Workshop at Purdue University in 1993 (Musser, Patrick, and Eckman). However, this is greater usage of forward contracting than others have found (table 2). Futures hedges were used by 45% and options by 56% of the producers responding to the survey, which is also considerably greater than found in previous surveys.

Table 3 summarizes producer survey responses to various marketing questions. Consistent with previous research (Goodwin and Schroeder), nearly all (91%) producer survey respondents typically used cash markets to price at least a portion of their crop sales. The average percentage of crops sold in the cash market was 53% (58% by just those who used the cash market for at least part of thier crop). In a broader survey Goodwin and Schroeder found that Kansas producers who sold grain in cash markets during 1990-93 typically sold more than 80% in this market. The generalization of this summary is that the 55 producers represented in the survey tend to use forward pricing, futures hedges, and options pricing more than typical

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[1]The wording of some questions and statements across the two surveys differed slightly to reduce chances of respondent confusion. For example, some questions in Anderson and Brorsen referred to how Extension economists perceived producers' perceptions whereas, the producers were responding with their own perceptions. Thus, some survey statements were modified accordingly.

producers. Therefore, they understand forward pricing and futures market alternatives and have experience-founded perceptions regarding how these markets operate.

If producers are likely to be influenced by Extension economists' perceptions of marketing, presumably they need to be exposed to Extension outlook. To discern producer exposure and familiarity with Extension outlook, producers were asked to rank the top five sources they use to formulate grain price expectations. The top five sources of price expectations were 1) marketing advisory services, 2) futures markets, 3) electronic information, 4) university outlook, and 5) farm magazines (table 3). These rankings were not entirely consistent with those of Schnitkey et al., where the top source of farm marketing information for Ohio producers was radio broadcasts (8th ranked in our survey), and where Cooperative Extension Ranked 12th of 16 sources. However, the question asked in our survey was specifically related to price expectations; whereas, the question surveyed by Schnitkey et al. related to marketing information in general and as such did not include futures markets. Batte, Schnitkey, and Jones (using survey data similar to Schnitkey et al.) found that the use of professional sources for marketing information was greater by producers below age 50, with a college education, and a farm size of 600 acres or more. These characteristics describe the producer group surveyed in our study. The importance of futures markets in producer price expectations is consistent with conclusions of Eales et al. who found that producer price expectations for corn and soybeans were consonant with futures prices. Notable is that both university Extension and futures markets were important sources of information used by these producers to formulate price expectations.

More than 70% of the producer survey respondents indicated they use price forecasts to make production, precise buy/sell timing, and forward pricing or hedging decisions (table 3). This suggests producers rely on price forecasts to help make decisions, which is consistent with what Extension economists' perceived regarding the primary reason producers attend outlook meetings (Anderson and Brorsen).

Comparison of Producer and Extension Economist Perceptions

Frequency distributions of producers' and Extension economists' responses to various marketing and futures market questions are provided in figures 1-10. Included with each figure are mean responses, a t-statistic testing the null hypothesis that the mean responses are the same, and a Chi-square statistic testing the null hypothesis that the response distributions are the same. Categorical responses to each statement are numerically coded with Strongly Agree (SA) valued as 1; Agree (A) valued as 2; Indifferent (I) valued as 3; Disagree (D) valued as 4; and Strongly Disagree (SD) valued as 5.

Producers and Extension economists both mostly disagreed that farmers will receive lower average prices by forward contracting (figure 1). Their mean responses and distributions of responses were not statistically different for this statement. This contrasts with research suggesting the reverse holds over time – forward contracting results in a lower price than cash sales (Brorsen, Coombs, and Anderson; Elam; Ward, Koontz, and Schroeder). This could be an

indication that Extension economists are effective at conveying their perceptions to producers. However, it could also be that this question was interpreted to imply that every year forward contract prices would be less than eventual cash price, which of course is not true. Thus, this result may suggest little regarding consistency or inconsistency of producer, Extension, and research results.

The second question (figure 2) discerned perceptions regarding whether hedging reduces risk and mean returns. Producers on average were indifferent about this, whereas, Extension economists tended to disagree with the statement. Both the means and distributions of producer and Extension economist perceptions were statistically different from each other. It is difficult to know why producers' and Extension economists' perceptions differ. Producers' perceptions are more consistent with theoretical and empirical research that indicates over long periods of time futures hedging reduces mean and variance of returns (e.g., Berck; Bond and Thompson; Kahl; McKinnon; Schroeder and Hayenga; Zulauf et al.). However, if respondents answered this question with regards to revenue risk, which includes production as well as price risk, more or less consistency with empirical research is indeterminable. That is, small amounts of hedging reduce risk, but large amounts increase risk (Lapan and Moschini). That may explain the bimodal response in figure 2. Further, respondents may believe, as Kolb found, that futures prices do not contain implicit risk premiums. Specifically, they may have ignored transactions costs and disagreed with the second clause of the question.

Both producers and Extension economists tend to perceive that market timing strategies exist that allow producers to increase prices received (figures 3 and 4). To be able to systematically profit from market timing strategies the forecaster must be able to forecast more accurately than the futures market. This contradicts the efficient market hypothesis that market price reflects all relevant information (Fama). Considerable research exists, especially for crops, supporting the efficient market hypothesis in agricultural commodity markets (Garcia, Hudson, and Waller; Kastens and Schroeder; Kolb). In addition, futures price forecasting accuracy generally exceeds that of Extension economists and large econometric models (Kastens, Schroeder, and Plain; Just and Rausser). Is the research wrong? Are assumptions so bad and models so inflexible that they fail to adequately capture the dynamics of commodity market timing used by practitioners? Are the survey questions merely misunderstood? Or, are Extension economists and producers misperceiving established facts?

Figures 5 and 6 counter observations from figures 3 and 4. That is, both producers and Extension economists believe selling multiple years' crops at one time is not necessarily recommended (figure 5). They also do not generally believe they make money on futures transactions using forecasts available to them (figure 6). However, somewhat alarming is that 32% of the Extension economists believed that producers make money from price forecasts they provide, while 36% disagreed with this statement. This suggests wide variation in the level of confidence Extension economists place on their own forecasts. Yet, most producers responded "indifferent," indicating they do not believe they can sort accurate from inaccurate forecasts.

Figures 7 and 8 suggest an important distinction between producers' and Extension economists' perceptions regarding marketing methods. Both groups largely disagree that farmers who do not use futures are poor marketers, indicating a producer's nonuse of futures markets does not imply the producer is a poor marketer (figure 7). However, Extension economists largely agree farmers who use futures markets are good marketers, whereas producers tend to disagree with this statement (figure 8). This means just because a producer uses futures markets, Extension economists are more likely to categorize that producer as a "good" marketer than are producers. Apparently, Extension economists place more weight on the use of futures markets in evaluating marketing programs than do producers. However, research suggests that the mix of marketing methods used, and how near to optimal that mix is depends upon risk aversion of the producer and types of risk faced by the producer (e.g., Lapan and Moschini). Thus, producers may be more in line with research on this issue if their degree of disagreement indicates they recognize "good" marketing is more complex than mere usage of futures markets.

In addition to differences in perceptions regarding futures usage and marketing success, producers also have a different goal in their marketing strategies than Extension economists perceive. Producers indicate their primary marketing strategy is to reduce risk (figure 9), whereas, Extension economists were sharply divided on this. Considering the bimodal responses of Extension economists in figures 6 and 9, could it be that some economists focus on risk reducing, downplaying forecasting, while others concentrate on forecasting, believing gains to producers accrued from using their forecasts are more important than risk reduction? If that is true, Extension economists who focus on forecasting are either not making particularly accurate forecasts, or they are not convincing producers of the value of their forecasts.

Even though Extension economists were sharply divided on the importance of risk reduction in marketing strategies (figure 9), when focus turns to the long run (figure 10), they generally recognize the importance of risk reduction. Nonetheless, results in figure 10 are consistent with those in figure 9 in that producers place more emphasis on long term risk reduction than do Extension economists.

Implications for Extension and Research

Farm producers are avid attenders of Extension outlook meetings and users of Extension marketing information. Extension economists are revered as important authorities regarding market information. Therefore, perceptions of Extension economists regarding price forecasting, futures markets, market timing strategies, and price risk management influence producers' perceptions. In 6 out of 10 questions producers' and Extension economists' perceptions could not be statistically distinguished from each other. This indicates Extension delivery is generally working and is a tribute to Extension education. It also suggests that efforts to convey research results to producers do not have to focus on changing the educational format.

Extension economists and producers both have perceptions that are not supported by published research. They both believe preharvest hedging and market timing strategies exist that

allow producers to increase prices received. The efficient market hypothesis and a large body of supporting research refutes these contentions. Brorsen and Irwin suggest "We have oversold our ability to forecast prices and oversold the benefits of hedging and forward contracting" (p. 90). Perhaps we felt compelled to oversell some of this in order to encourage producers to challenge their own conventional methods.

Extension marketing economists generally perceive producers to have different marketing goals than producers themselves indicate. Producers indicated a preference to reduce risk; Extension economists perceived that this was not a primary goal. As such, marketing economists may focus on marketing programs that are not necessarily consistent with producer goals.[2] More attention needs to be given to developing marketing programs consistent with producers' goals. Armbruster argued, "Society is demanding better performance in solving problems and people percieve that Universities are responsible for providing such assistance" (p. 592). Extension programs must respond to assessed clientele needs.

Extension economists are sharply divided on whether their price forecasts can be traded profitably and on whether risk reduction is an important goal of marketing strategies. Although it is possible some economists are good forecasters and other are good risk reducers, producers do not generally believe forecasts they receive can be traded profitably. This implies forecasting economists should either make more accurate forecasts, do a better job conveying the value of their forecasts, or focus less on forecasting and more on risk management. Either way, the educational process could be improved with increased tracking of marketing recommendations. This would allow producers to sort the good forecasters from the not-so-good. It would also cause those forecasters who have little comparative advantage in that area to re-focus their efforts more in line with producer goals – in the direction of risk reduction.

Why are Extension economists marketing perceptions contrary with published research? In a survey of Extension economists, Anderson and Mapp found that many Extension economists are frustrated with research published in professional journals because they feel this research has little relevance to real world applications. Whether the body of published research regarding market timing and pricing efficiency is correct, appropriate, wrong, misguided, or irrelevant, Extension and research economists have the responsibility to work more closely together to make research methodology more appropriate and to improve the contributions of both programs. As scholars we cannot afford to have separate factions doing different things and aiming toward different objectives. The applied nature of agricultural economics research and the strong demand for in-depth information in the industry we serve necessitates closer research-Extension relationships.

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[2]One caveat to this is that the producer survey respondents represented larger than average operations and so may have different risk preferences and perceptions than producers with average-sized operations.

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Table 1. Kansas State Ag Land Values Conference Producer Demographic Information (55 Respondents).

Characteristic	Average	Minimum	Maximum
Age	45	25	69
Years of formal education[a]	16	12	21
Total acreage (crops and pasture)	2,982	420	22,260
Use computer	76%	-	-
Access to Internet	35%	-	-
Internet Access (times per month)[b]	12	1	50

[a] Years of formal education refer to 12=high school graduate, 16=college graduate, etc.
[b] For those that had access to the Internet.

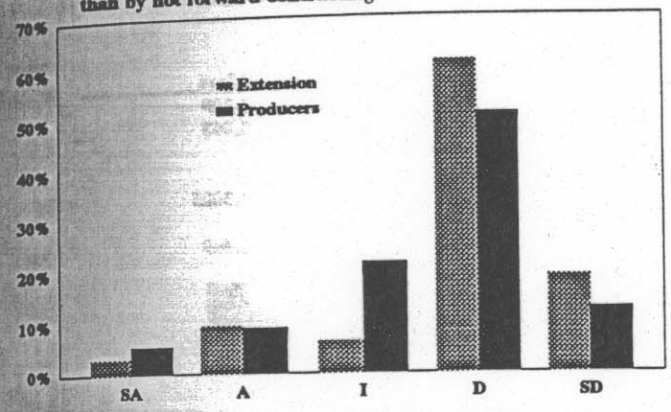
Table 2. Summary of Producer Marketing Methods Across Studies.

	Asplund, Forster, & Stout	Goodwin & Schroeder	Musser, Patrick, & Eckman	Shapiro & Brorsen	Present Study
Year	1987	1992	1993	1985	1996
Forward Contract (%)	42	45	74	na	64
Hedge (%)	7	11	53	63	45
Options (%)	na	19	35	na	56
Respondents	353	537	62	41	55
Farm Type	Grain	Grain & Livestock	Grain	Grain	Grain & Livestock
Location	Ohio	Kansas	Indiana	Indiana	Kansas

Table 3. Kansas State Ag Land Values Summary Statistics of Producer Marketing Methods, Sources of Marketing Information, and Use of Price Forecasts (55 respondents).

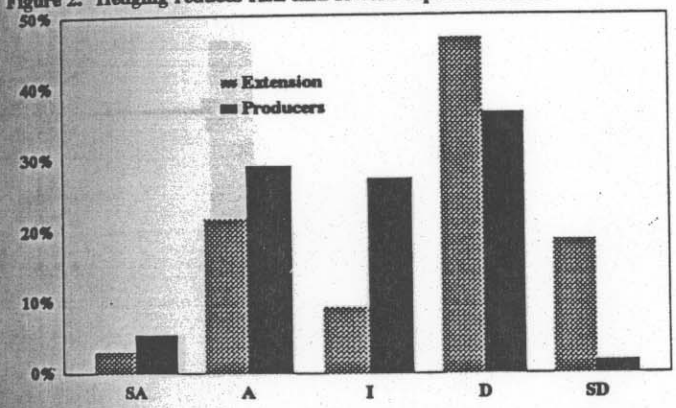
	Percent of Total or Average Ranking	
Approximately what percentage of your crop production do you typically price using:		%using method
Cash sale only	53%	91%
Forward contracting	17%	64%
Futures options	14%	56%
Futures hedging	8%	45%
Feed to own livestock	7%	29%
Other	1%	4%
Rank the top **five** sources you use to formulate grain price expectations from (1=most important to 5=least important)		
Marketing advisory services, newsletters	3.1	
Futures markets	3.3	
Electronic information provider (DTN, etc.)	4.3	
University outlook meetings/newsletters	4.4	
Farm magazines	6.4	
Peers (farmers, businessmen)	6.7	
Commodity merchants (grain buyers)	6.9	
Radio/T.V. commentators	6.9	
Commodity Brokers	7.1	
None, I sell at harvest no matter the price	8.3	
Other	8.7	
I use price forecasts to help make production decisions.	80%	
I use price forecasts to determine precise timing of cash buy/sell decisions.	73%	
I forward price or hedge based on price forecasts.	71%	

Figure 1. Farmers will receive a lower average price by forward contracting than by not forward contracting.



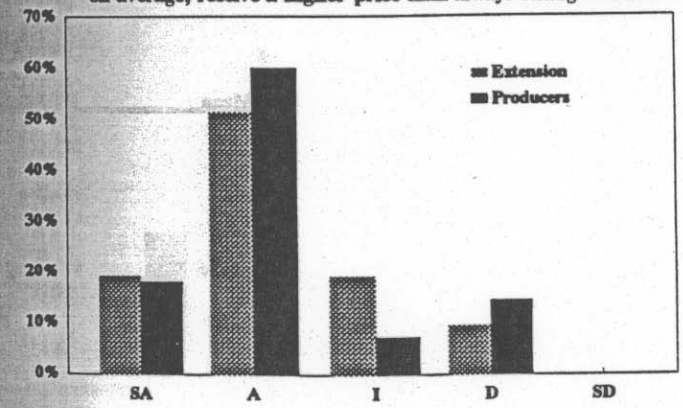
	Mean	Number of Respondents
Producer	3.564	55
Extension	3.839	31
		p-value
t-stat:	1.23	0.223
Chi-square :	4.062	0.398

Figure 2. Hedging reduces risk and lowers expected returns.



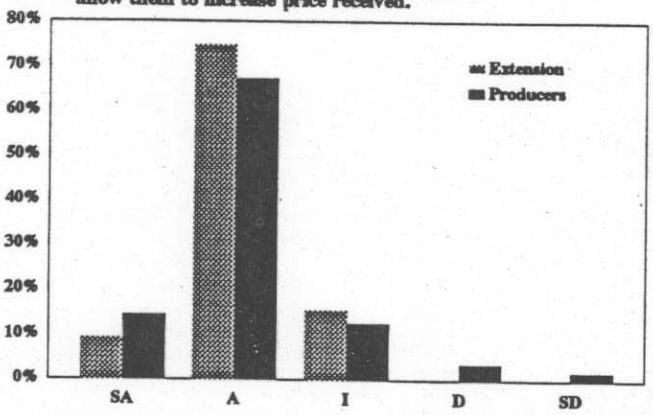
	Mean	Number of Respondents
Producer	3	55
Extension	3.563	32
		p-value
t-stat:	2.434	0.017
Chi-square :	11.533	0.021

Figure 3. Pre-harvest hedging strategies are available which allow farmers to, on-average, receive a higher price than always selling at harvest.



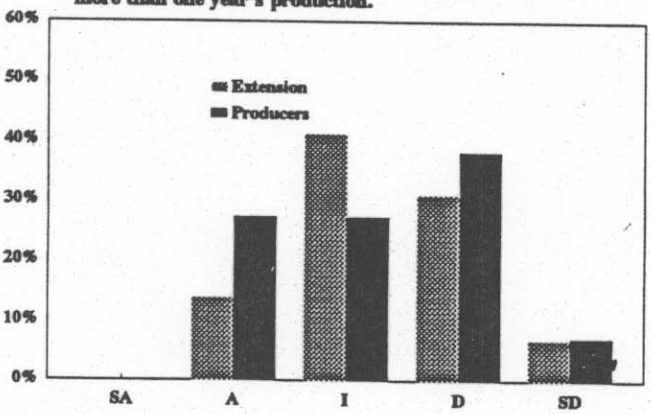
	Mean	Number of Respondents
Producer	2.182	55
Extension	2.194	31
		p-value
t-stat:	0.059	0.954
Chi-square :	3.116	0.374

Figure 4. There are market timing strategies available to farmers which allow them to increase price received.



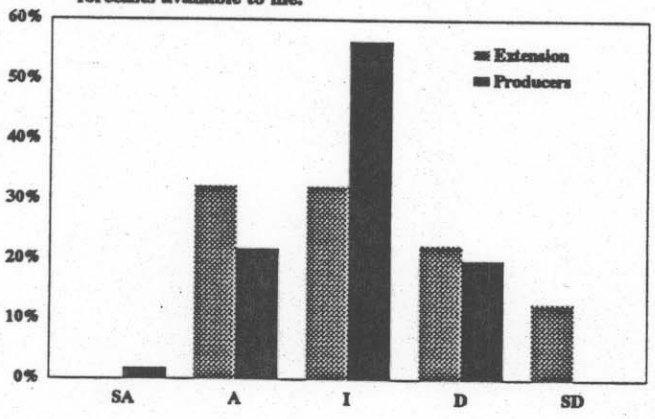
	Mean	Number of Respondents
Producer	2.109	55
Extension	2.063	32
		p-value
t-stat:	0.3085	0.759
Chi-square :	2.469	0.65

Figure 5. When prices are above the five-year average, a farmer should sell more than one year's production.



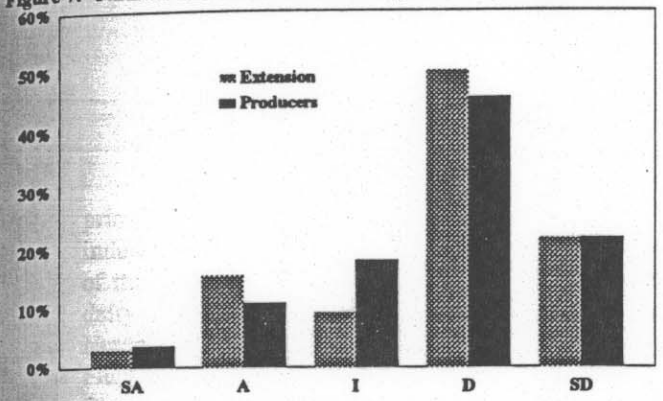
	Mean	Number of Respondents
Producer	3.255	55
Extension	3.31	29
		p-value
t-stat:	0.27	0.788
Chi-square :	4.227	0.238

Figure 6. I make money on futures transactions using price forecasts available to me.



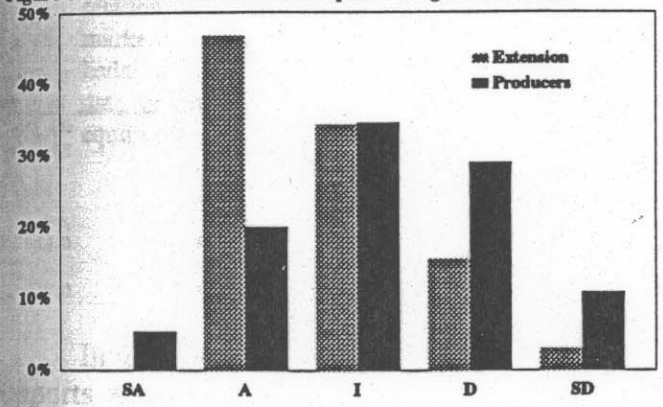
	Mean	Number of Respondents
Producer	2.945	55
Extension	3.161	31
		p-value
t-stat:	1.146	0.255
Chi-square :	10.985	0.027

Figure 7. Farmers who do not use futures/options are poor marketers.



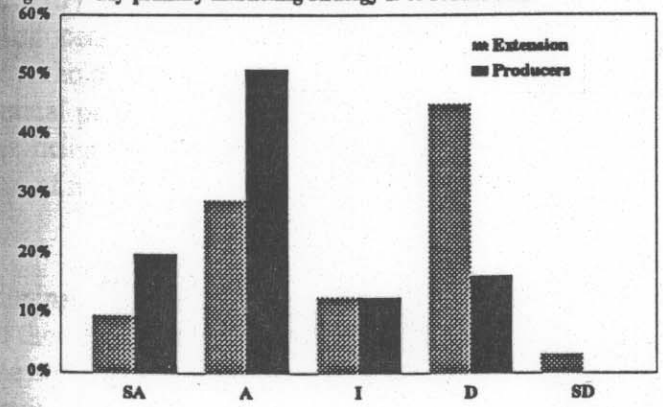
	Mean	Number of Respondents
Producer	3.709	55
Extension	3.719	32
		p-value
t-stat:	0.0409	0.9675
Chi-square :	1.51	0.825

Figure 8. Farmers who use futures/options are good marketers.



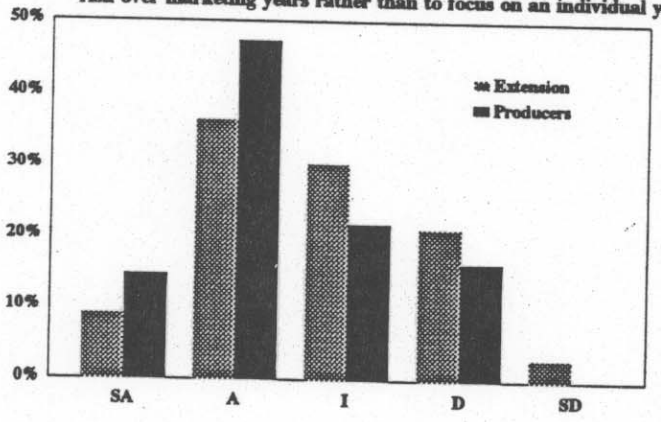
	Mean	Number of Respondents
Producer	3.2	55
Extension	2.75	32
		p-value
t-stat:	2.051	0.043
Chi-square :	9.678	0.046

Figure 9. My primary marketing strategy is to reduce risk.



	Mean	Number of Respondents
Producer	2.255	55
Extension	3.032	31
		p-value
t-stat:	3.357	0.001
Chi-square :	11.425	0.022

Figure 10. The goal of a marketing strategy should be to decrease long-tern risk over marketing years rather than to focus on an individual year.



	Mean	Number of Respondents
Producer	2.4	55
Extension	2.727	33
		p-value
t-stat:	1.544	0.126
Chi-square :	3.587	0.465