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Choice Dilemmas and Risk Management Education

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Choice Dilemmas and Risk Management Education

Abstract

Differences in attitudes toward risk may result in individuals making different, yet correct, decisions. This article illustrates how choice dilemmas, hypothetical life decision situations, can be used in Extension workshops to help individuals identify their own willingness to assume risk and demonstrate differences among individuals. The agriculturally adapted choice dilemmas also illustrate fundamental risk-return trade-offs and the diversity of risks faced by producers. The willingness to assume risk scale is useful in assisting producers to understand their own risk attitudes and provides a means of incorporating risk attitudes into risk management education programs.

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Introduction

Reaching the right decision for an individual requires consideration of several factors. One important, and often overlooked, factor is the individual's attitude toward risk. For example, differences in risk attitudes may result in agricultural producers preferring different risk management strategies. It often would be helpful if Extension educators and specialists could provide assistance in assessing individual risk preferences. However, risk preference concepts and measurement may be difficult to illustrate for individuals who have limited background with economics and statistics.

Choice dilemmas, hypothetical life decision situations, can be used to develop a scale that measures one's willingness to assume risk. The scale demonstrates differences in risk preferences among individuals and the potential impact of these preferences on decisions. These choice dilemmas, which take 30 to 45 minutes to administer and discuss in a workshop setting, also illustrate the fundamental risk-return trade-off and diversity of risks faced by agricultural producers. This article provides an overview of the scale development and use of the choice dilemmas in a risk management education situation.

Procedures

Originally developed by psychologists about 1960 (Kogan & Wallach, 1964; Wallach & Kogan, 1961), the willingness to assume risk scale was based on 12 decisions that people may face in life involving risk (e.g., investments, health, and career). An agricultural version involving farm management and marketing situations was developed (Patrick, Musser, & Ortmann, 1993). Currently, Cornbelt (Patrick & Musser, 2001) and horticultural (Musser & Patrick, 2001) versions have been developed. An example horticultural choice dilemma follows.

"Ms. Lynn P. is in the middle of fresh sweet corn harvest when her hydrocooler unit has a major breakdown and it begins to rain. Ms. P could purchase a new unit, which is currently available from a local dealer to be delivered and installed in the morning. On the other hand, Ms. P could arrange for the repair of her hydrocooler, which would be much less costly than a new unit. The repaired hydrocooler would have several years of life remaining after the repairs. However, the local dealer does not know when the required parts will be obtained and repairs can be completed. If Ms. P is unable to resume harvesting after the rain, there will be extra harvesting losses.

Imagine that you are advising Ms. P. Listed below are several probabilities or odds that the repairs will be completed before Ms. P would be able to resume harvesting and avoid extra harvest losses. Please check the lowest probability that you would consider acceptable for Ms. P to repair the old hydrocooling unit.

- Place a check here if you think that Ms. P should not consider repair of the old hydrocooling unit no matter what the probabilities.
- The chances are 9 in 10 that the unit will be repaired before harvesting can be resumed.
- The chances are 7 in 10 that the unit will be repaired before harvesting can be resumed.
- The chances are 5 in 10 that the unit will be repaired before harvesting can be resumed.
- The chances are 3 in 10 that the unit will be repaired before harvesting can be resumed.
- The chances are 1 in 10 that the hydrocooling unit will be repaired before harvesting can be resumed."

Each choice dilemma has two options. The option with the more desirable outcome, repairing the hydrocooler unit above, has a lower probability of success than the less desirable option, buying a new unit. Participants indicate the minimum odds of success required to choose the alternative with the more desirable outcome or they choose the less desirable option.

Scoring of the choice dilemmas is simple. Responses with a probability of one in ten are scored as a 1. Responses of three in ten are scored as a 3, and so on. The response that the risky choice should never be taken is scored as 10. The individual's responses to the 12 choice dilemmas are summed for a total score. The total score on the scale is emphasized rather than responses to specific choice dilemmas. With the 12 choice dilemmas, the maximum score is 120 (12 times 10) and the minimum score is 12 (12 times 1). A score of 120 indicates an unwillingness to take ANY risk, while a 12 indicates an extreme willingness to assume risk. Most people will be in the middle of this range. Relative position rather than the specific score should be considered.

In the setting of an educational risk management workshop, producers and family members can respond to the set of choice dilemmas individually. This typically requires 15 to 20 minutes. One workshop instructor can discuss the effects of risk preferences on decisions and risk management strategies, while another instructor tabulates the results. Overheads and other teaching suggestions are available (Musser, Patrick, & Ullerich, 2001). The group can review the choice dilemmas and identify whether production, marketing, financial, legal and environmental, and/or human sources of risk are involved. Both sets of choice dilemmas include all five sources of risk. This discussion can take another 20 to 25 minutes. Because the choice dilemmas are hypothetical, workshop participants often find that they are easier to discuss than personal situations.

Results and Implications

Table 1 summarizes the distributions of scores for Top Farmer Crop Workshop and horticultural in-service program participants. Although the majority of participants cluster between 60 and 89, there are a number of individuals with lower and higher scores. These distributions are similar and do show considerable variability among individuals in their willingness to assume risk.

Table 1.

Distribution of Total Scores of Top Farmer Crop Workshop and Horticultural In-Service Participants

Total Score	Top Farmer Crop Workshop N=103	Horticultural In-Service N=40
less than 50	3	3
50 to 59	8	4
60 to 69	27	11
70 to 79	26	13

80 to 89	27	6
90 to 99	10	2
100 or more	2	1

In a workshop setting, participants are asked to reflect on their own scores. Are their scores what they would have expected relative to others in the group? Individuals in similar situations with respect to age, education, family, and economic conditions may choose very different risk management strategies because their risk preferences are different. Do the family members have widely different scores? Is this reflected in difficulties in agreeing on risk management strategies? Extension educators and specialists will find this scale useful in assisting producers with these questions in risk management education workshops.

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