CAUSAL ATTRIBUTIONS FOR SUCCESS AND FAILURE IN FARMING AMONG UPLAND FARMERS IN BALINSASAYAO REGION, NEGROS ORIENTAL

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One hundred two upland farmers' attributions for success and failure in farming were assessed in terms of four attributional dimensions: locus of causality, stability, controllability, and generality. These four dimensions were correlated with farmers' success expectancy estimates and actual behavior of adopting new farm practices.

Results showed that the pattern of causal attributions for success in farming is significantly different from the nature of causal attributions for failure in farming. In general, farmers' ascriptions for success in farming can be characterized as internal, stable, controllable, and global. In failure conditions, farmers tend to assign external, unstable, uncontrollable, and global causes. Of the four dimensions, generality (Global-Specific dimension) of attributions in both success and failure conditions correlated significantly with farmers' success expectancy estimates. Assignment of global causes for farm success correlated significantly with the behavioral intention to adopt new farm practices. Significant correlations were also established between success expectancy estimates and adoption of innovation measures.

Our attempt to make sense of the world is the central focus of attribution theories. We try to find appropriate causal explanations for one another's behavior, and more generally, for any event in our social environment. An interest in how people in everyday life figure out what causes what led to several theorizing about attributions.

The literature in this area points to three fundamental assumptions. First, it is assumed that people invest considerable energy in searching for causal explanations for their behavior (Heider, 1958). It is not necessary that these explanations be accurate. As long as we believe in the explanations given, these attributions represent the basis for our motivated behavior (Klein, 1982). Second, the assignment of causes for events is systematic and is influenced by some specific factors (Jones & Davis, 1965; Antaki, 1982; Jones & Nisbett, 1976). Third, and perhaps most significant of the three assumptions, the causal explanations have consequences for our feelings and behaviors (Weiner, 1974, 1979; Weiner et al. 1971). Depending on how we interpret an event, we may like or dislike, accept or reject, approach or avoid the persons, events, ideas or innovations presented.

The variety of causes to explain people's success or failure on achievement outcomes may be classified into four dimensions: locus of causality, stability, controllability, and generality. Locus of causality differentiates causes in terms of their being internal or external to the person (Heider, 1958; Rotter, 1966). The second dimension differentiates causes in terms of their stability or relative endurance over time. Causes can be considered unstable because they may be believed to fluctuate over time while other causes can be considered stable since they may be perceived not to change over time (Fontaine, 1974; McMahan, 1973; Weiner, Nierenberg & Goldstein, 1976). The third dimension dif-

ferentiates causes in terms of controllability. While some causes may be believed to be under the volitional control of the person, other causes may be believed not to be under the person's control (Weiner, 1979; Wortman & Dintzer, 1978). The fourth dimension, generality, refers to the range and extent of the causal ascriptions made. Causes may be perceived to be specific to an event or may be seen as applicable to all life events (Abramson et al. 1978).

The dimensions described in the models of Weiner (1974) and Abramson, Seligman and Teasdale (1978) have important consequences. They are related to individuals' cognitive reactions (such as their expectations regarding future outcomes), to their affective reactions (such as self-esteem changes), and to their behavioral reactions (such as achievement-related behavior).

Utilizing this attributional framework, an investigation was conducted among upland farmers in a rainforest in Negros Oriental. The research attempted to answer the following questions:

(1) What is the nature of attributions farmers assign to experiences of success and failure in farm work?

(2) Which of the dimensions of attribution best influence farmers' success expectancy estimates and decisions to engage in new farming practices?

(3) Do farmers' estimates of future success correspond with their actual adoption (or nonadoption) of new farming practices?

METHODOLOGY

Background and Setting

The approach taken here was a one-group correlational study design conducted among farmers in an upland farm environment. The respondents were engaged in forest-land cultivation in and around the rainforest of Balinsasayao, a central mountain range in the island of Negros. A nonprobability sample of 102 farmers were contacted for interviews in June and July, 1986.

The greatest number of farmers moved up to this forest within the past 30 years. Increase in the population among original upland settlers and the inland push of lowland farmers have led to rapid conversion of remaining forest stands into agricultural lands. The Philippine National Oil Corporation (PNOC) classified the region as a critical watershed since this area forms part of the ground-water system that feeds a geothermal plant under the PNOC's administration. Presently, forest guards patrol the area and prohibit new entrants to the place. Opening new fields is likewise prohibited. No one has legal title to the land but property rights are recognized and respected by farmers in the locality (Abregana, 1984). Two major programs have been introduced to the target communities. A government-sponsored program under the Ministry of Agriculture was launched in the late 70s. Some farmers, especially those in the lower part of the mountain range, engaged in backyard goat- or cattle-raising. In 1981, Silliman University initiated an agroforestry program to settlers within and adjacent to the remaining forest buffer zone. Underlying the program implementation was a concern with and commitment to the task of forest preservation, with consideration given both to the immediate needs of settlers and protection of the watershed.

At present, several soil erosion control techniques and contouring measures were adopted by some households. Some farmers volunteered to be cooperators in the management and maintenance of demonstration plots to show the effectiveness of terracing

and various crop combinations on erosion control. Other households adopted proper tree-crop mix in their forest farms. By tending some cash crops, several families went above subsistence levels. Some families, however, continued to play the role of bystanders and passive observers. Some continued to engage in age-old farm practices and manifested less enthusiasm in initiating or effecting change.

Procedures

The strategies of *pakikipagsalamuha* and *pagtatanong-tanong* facilitated entry into the community. Moreover, the good reputation of Silliman University in the area contributed to the ease in gaining the target respondents' acceptance.

Orientation and training of interviewers were conducted before actual field work. To ensure uniformity in style and approach in data gathering, mock interviews were done by interviewers during training. Translation of the interview schedule into the Cebuano dialect was done using the translation-back translation method.

Measures. To tap the local system of beliefs, free replies to the question "To what would you attribute your success (failure) in farming?" were recorded. Respondents were asked to rank the responses according to how applicable the replies were to their own experiences. First-ranked responses served as basis for an exploration into the dimensions of attribution.

The four attributional dimensions of externality, stability, controllability, and generality were measured using 5-point rating scales. Success expectancy estimates were determined by asking "How well do you expect to succeed in upland farm work?" A 5-point scale was used with 1-Cannot succeed at all to 5-Can always succeed.

Both subjective and objective measures were used to determine respondents' adoption of new farm practices. Measures for behavioral intention or the tendency to adopt an innovation could be categorized as subjective measures. Following Rogers' (1962) measure for the subjective, cognitive element of the adopter category, the respondents were asked "In adopting new farm practices, into which group would you belong? (1) Among the first to join, (2) among the second group, (3) among the third, (4) among the second to the last group, or (5) among the last?" Codes were reversed in processing the replies for analysis. Other measures, adapted from Wicker (1971), included the farmers' perceived consequences of innovation adoption, evaluation of community participation in the innovation, and the judged influence of extraneous events on adoption of innovation. Five-point rating scales were utilized. The objective, behavioral measure for adoption of innovation was the farmers' actual participation in farm programs based on project records.

Data processing. In keeping with the emic approach, culture-specific responses to open-ended questions were processed and coded using the frame elicitation technique (Agar, 1980). Respondents' answers to the question "To what would you attribute your success (failure) in farming?" were typed on 3" x 5" index cards and numbered. When identical responses were given by different respondents, only one card was typed and the frequency of the response given was noted. The stack of numbered cards was given to three sorters who were based in the area. One sorter was the head of the local upland farmers' association and the other two were community workers. They were asked to sort the cards into piles. To place two or more cards into the same pile, they had to be "different ways of saying the same thing." The investigator noted the agreement or the equivalent responses among the three inde-

pendent sorts. In case of ambiguities in the sort, the sorters were asked to resolve the inconsistencies. In this way, categories of responses were defined in the informants' terms, rather than by the categories of the investigator.

FINDINGS

The farmers in this study may be classified into three groups: the Innovators, the Nonadopters, and the Uninitiated. The innovators or those who actually engaged in new farm practices numbered 40. Twenty-two respondents may be classified as nonadopters or those who were aware of farm programs introduced in the community but chose not to participate. Another 40 farmers were classified as the uninitiated since these were farmers who were unaware of new farm programs and were, therefore, nonparticipators.

Of the total 102 respondents, 78 were males and 24 were females. Eighty-six percent were married and the rest were either single or widowed. The mean number of years in school was 3. The ages ranged from 17 to 82 years, with a mean age of 42.

The dependency ratio between household head and total number of dependents per household was 1:5. The age-sex structure indicates that the rainforest dwellers can be characterized as a very young population. The respondents' households had an average of three children, with the most number in the 10-14 age bracket, closely followed by the 0-4 and 5-9 age groups.

All respondents had at least one farm plot to cultivate. In terms of total plot size, 41 farmers estimated having less than one hectare of land to till, 31 had one to less than two hectares, 12 had two to less than three, 7 had three to less than four, and 5 had six to less than seven hectares.

Majority of the forest farmers (60 %) worked on their farms without any assistance from outside the household. Of the 41 farmers who reported receiving or soliciting external assistance in farm activities, 34 engaged in contractual arrangement with payment of service either in cash or *alayon* system (a local arrangement where farmers engage in labor exchange).

In a strict legal sense, all the respondents are virtually squatters in the forest. By right of occupancy, however, swiddeners developed their own perception about ownership of forest land. About 55% believed that they own the land they till while 45 percent felt that they were not owners of the land they cultivate. Is perception of land ownership independent of the respondents' decision to adopt or not to adopt new farm practices? A contingency chi-square was run to answer the question. Table 1 displays the results.

Table 1. Chi-Square Between Perceived Land Ownership and Adoption of Innovation

Perceived land ownership Adopter Categories	Owner	Nonowner
Innovators	28	12
Nonadopters	6	16
Uninitiated	22	18

$X^2 = 10.466$, d.f. = 2, $p < .005$

There appears to be a relationship between perception of land ownership and adoption of new farm practices. A cursory examination of the discrepancy between the observed frequencies and expected frequencies (those figures in parentheses) shows that the Innovators perceive themselves as owners while Nonadopters generally perceive themselves as nonowners of land. The results in the Uninitiated group show a negligible difference between observed and expected frequencies of responses to perception of land

ownership.

Causal Attributions

Before an examination of the farmers' attributions for farm achievements is done, it is necessary that we first answer the question "What kind of success and failure experiences do they have in farming?" To most of the upland farmers, success in farming was related to experiences of having received higher income, having a good harvest, having healthy plants, and being able to sell more crops or products. Failure, on the other hand, was equated with experiences of getting low income, having a poor harvest, having unhealthy plants, and having an unfavorable weather. Given the farmers' actual experiences of success and failure, causal attributions for such experiences may be better understood.

Success in farming. Results of the frame elicitation technique revealed that the biggest number of responses had to do with personal efforts. Some of the specific responses were *atimanon, tikaron, trabaho'g maayo,* and *panglimbasog* which mean to care for, to cultivate, to work hard, and to strive, respectively. Farm practices as another general category for the causal ascriptions for success, referred to polycropping practice, regular weeding in farms, and burning of grass. Prayers and God's help, soil condition, favorable weather and absence of pest were identified as factors for success in farming.

Failure in farming. Similarity in the categories of responses was noted between the causal ascriptions for failure and those for success. Differences in the number of times a category is mentioned, however, could be observed. Also, depending on the nature of the ascribed factor, its presence or absence spells failure or success. Favorable weather, for instance, was cited as the fifth factor for success while bad weather was mentioned by most farmers as the leading reason for failure. Poor health is noted to be a cause for failure but good health is not mentioned under success condition. Apparently, good health is taken for granted as a factor for success in farm work.

Figure 1 illustrates the differential attributions made for success and those made for failure. To them, success was achieved primarily because of their personal efforts, their use of appropriate farm practices, prayers and God's help, good soil condition, favorable weather, and absence of pests. Causal ascriptions for failure centered on poor climatic conditions and, to a lesser extent, on pests, soil type, lack of personal efforts, fate, and health problems.

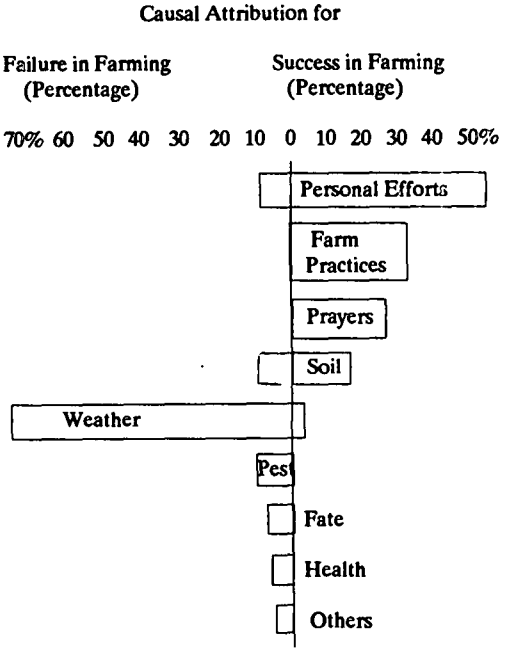

Figure1. Bar graph showing differences between causal attributions for success and attributions for failure.

Dimensions of Attribution

The respondents' were asked to assess

their individual ascriptions for success (and failure) in farming as to the dimensions of locus of causality, stability, generality, and controllability. These dimensions were measured by the use of 5-point rating scales. The rating scale for locus of causality dimension indicates that the lower the rating (i.e., towards a rating of 1) the more internal the farmer is in the assignment of causes for farm achievements. In the stability, controllability, and generality dimensions, higher ratings (i.e., towards a rating of 5) indicate that swiddeners ascribe stable, controllable, and global causes for farm outcomes.

Success in farming. In general, farmers' attributions for success in farming can be characterized as internal, stable, controllable, and global. Causal ascriptions for success in farming are viewed by the forest farmers to be determined by personal actions (Internal), by factors that are relatively enduring (Stable), by causes that are sometimes under one's volitional control (Controllable), and by reasons that may be applicable to general life situations, not just specific to farming (Global).

Failure in farming. Attributions for failure in farming tend to be external, unstable, uncontrollable, and global. Ascriptions for failure are considered generally to be caused by forces not within the person (External), by factors that are fluctuating over time (Unstable), by reasons that are sometimes beyond one's control (Uncontrollable), and by causes that are usually applicable to all life situations (Global).

As shown in Table 2, difference-of-means test demonstrates that the pattern of causal attributions for success in farming is significantly different from the nature of causal attributions for failure in farming.

Table 2. Comparison of Means Between Attributional Dimensions for Success in Farming and Failure in Farming

	External Causality	Stability	Control-lability	Gene-rality
Mean Ratings:				
Success	1.50	4.54	3.57	4.39
Failure	4.18	1.96	2.18	3.56
T	14.0411	16.5230	6.5717	4.6409
df = 101, p <	.0001	.001	.001	.001

Attributional Consequences

In line with the proposition that people's attributions for success and failure in an achievement-related task influence subsequent performances, specific attributional consequences were measured in this study. These measures included farmers' estimates of success expectancy, intention to adopt an innovation, and actual adoption of new farm practices.

Bivariate correlations between dimensions of attribution and success expectancy estimates, and between dimensions of attribution and the pooled subjective measures for adoption of innovation are shown in Table 3.

Table 3. Summary of Correlations Between Dimensions of Attribution and Success Expectancy/Adoption of Innovation

Dimension of Attribution	Success Expectancy Estimate	Adoption of Innovation (Pooled Measure)
A. *Success in Farming*		
1. Internal-External	-.03913	.02819
2. Stable-Unstable	.15993	-.04735
3. Control.-Uncontrol.	.05510**	.10249*
4. Global-Specific	.24706	.18110
B. *Failure in Farming*		
1. Internal-External	-.06942	.08712
2. Stable-Unstable	.07061	-.02518
3. Control.-Uncontrol.	.08293*	.14832
4. Global-Specific	-.18742	-.01089

*p = .05
**p = .01

Expectancy of success is not significantly correlated with the attributional dimensions of causality, stability, and controllability in both success and failure in farming. Instead, the generality dimension is found to be significantly correlated with success expectancy estimates. Under conditions of success, the wider the perceived range or extent of the ascribed factor, the higher the success expectancy estimates for future performances. Attributions for failure that are perceived to be applicable to general life situations (and not just specific to farming) bring about significantly low expectancy estimates of success. A positive correlation is also obtained between generality dimension in attributions for farm success and adoption of innovation.

The relationship between estimates of future success and the tendency to adopt an innovation is well established. Table 4 illustrates this clearly.

The aggregate sum of all the seven measures for the tendency to adopt an innovation is positively correlated with the success expectancy estimates of the respondents. As the estimates of success in future performances increase, the tendency to adopt an innovation also increases.

Four of the seven individual measures for adoption of innovation show significant correlations with SEE, the highest one being with INLD.

Table 4. Summary of Correlations Between Success Expectancy Estimates and Adoption of Innovation (Subjective Measures)

Adoption of Innovation Measures	Success Expectancy Estimates (SEE)
[ADIN] Willingness to adopt an innovation	.22372*
[GINN] Which group of innovators R would join	.17976
[INEX] Innovators as good example for others	.15367
[INPM] Rate of participation among other farmers	.13572
[INFOOD] Willingness to innovate among HHs with enough subsistence food supply	.23142
[INNOF] Willingness to innovate among farmers with off-farm income	.13179
[INLO] Willingness to innovate among those who do not own land	.26002**
Pooled measeure (Sum of all measures)	.30550**

* $r < .05$
** $r < .01$

This suggests that success expectancy estimates are highly correlated with farmers' intention to adopt new farm practices despite nonownership of land.

Farmers' estimates of success were found to be significantly associated with their actual behavior of adopting new farm practices. Farmers with high estimates of future success tend to be Innovators (30 out of 54) while farmers with low estimates of success tend to be Nonadopters or Uninitiated (32 out of 42; $x = 9.97$, $p < .006$).

DISCUSSION

Upland farmers ascribe the causes of success in farming to factors that are within the person (Internal), to forces that are relatively enduring (Stable), controllable, and global. The dynamics of attribution takes a different form when accounting for failure in farming. Farmers ascribe the causes of failure to forces that are external to them. In addition, they attribute failures to factors that are not within their control and to forces that fluctuate over time. Also, these perceived causes were considered to be applicable to all life situations, not just to farming.

Various attributional formulations of

achievement motivation (Weiner, 1974, 1979) do not account for possibilities of a "cognitive split" in viewing causes for success and those for failure. In fact, Western literature suggests that when one is Internal in success conditions, one is also Internal in failure conditions. This is not the case among the Balinsasayao upland farmers.

To Heider (1958), for an event to be seen as attributable to a given reason, "the reason has to fit the wishes of the person." It is also assumed in the attribution theories that "beliefs, no matter with what intensity they are held, need have no direct relationship with truth" (Scobie, 1975). In effect, what we believe, even when they may not be accurate, influence how we behave. In this sense, attribution has a self-serving bias.

Believing causes for success to be stable, controllable and global, in addition to being internal, gives individuals a sense of personal competence in handling their everyday farm responsibilities. Believing causes for failure to be external, unstable, uncontrollable, and global protects them from the burden of accepting personal responsibility and, thus, maintains their sense of personal capacity despite experiences of unavoidable failures in farming. This "cognitive split" in the attributional process becomes a social psychological mechanism that allows farmers to go on with their daily tasks despite the odds they face in a harsh rainforest environment.

Filipino literature on the consept of success and failure often point to *suwerte* as a common ascription for success and *malas* as a dominant theme in the attributions for failure (Bonifacio, 1977; Angeles, 1977). This point of view appears simplistic when applied to the present study. The farmers clearly ascribed their success to personal efforts and failure to the fluctuating, unpredictable weather condition in their forest farms.

Of the four dimensions of attribution, stability is considered in the literature to be closely related to expectancy of success (e.g., Fontaine, 1974; McMahan, 1973; Weiner et al. 1976). If the causes assigned to success or failure conditions are expected to remain the same, then the results experienced on past occasions will be expected to happen again. In the present study, however, the stability factor did not come out to be correlated with expectancy of success in future farm activities.

Wortman and Dintzer (1978), in a critique of the Abramson-Seligman-Teasdale attributional reformulation of the learned helplessness model, suggested that personal evaluation of the controllability dimension may be of utmost importance in predicting the nature and magnitude of subsequent deficits in performance. This contention, however, does not find support in the present field study. Experiences with controllable or uncontrollable events would not necessarily result in a high or low anticipation of success in future opportunities for achievement.

Rather, the generality dimension is found significantly related to the expectancy of subsequent success. Specifically, the results demonstrate that a global orientation for farm success yields high success expectancy while a global orientation for failure brings about a low expectancy of success. On the one hand, belief that success is made possible by causes that apply to life events in general, not just specific to farming, makes farmers anticipate success in future performances. On the other hand, belief that causes for failure apply to practically all life events produces low estimates of future success. This is not surprising because in the respondents' own forest world the concepts "general life events" and "specific farming activities" are phenomenologically similar, if not the same. To the forest farmers, farming is life and life is farming.

Under circumstances characterized by erratic climatic conditions, cyclical nature of farm activities, and disturbances due to pests, soil erosion, or even theft, farmers can hardly be expected to base their success expectancy estimates on the stability and controllability dimensions. The social-environmental influences are fluctuating over time and are not within farmers' volitional control. It is therefore logically appropriate for upland farmers to anchor their expectations of success on the attributional dimension of generality. If causes for success are considered to be applicable to general life events in the forest, then the same causes are espected to bring about success in farming. Conversely, if causes for failure are considered to be true to all life events then the same causes are expected to bring about failure in farm work. Success expectancy founded on the generality factor serves as an adaptive strategy – a psychological mechanism to regulate an otherwise unpredictable, fluctuating environmental forces.

This alternative explanation may be better appreciated if we consider the situational context and subjects of earlier attributional studies on achievement outcomes. Most of the literature of attributional studies on achievement motivation had used high school or college students (e.g., Mischel et al. 1974; Watkins & Astilla, 1980, 1981). In teaching-learning situations, the conditions for success (such as learning task, teachers' role) in school setting can be stable or unchanging over a definite period of time. And even then, other researchers have produced contradictory evidences (e.g., Riemer, 1975; Langer & Roth, 1975; Fontaine, 1974).

Aside from the generality dimension and its relationship with success expectancy estimates, part of the results demonstrates the specific relationship between globality in failure and adoption of innovation. Recall that globality in success correlates positively with estimates of success expectancy while globality in failure correlates negatively with success expectancy estimates. The findings also show that globality in success correlates positively with adoption of innovation while globality in failure does not correlate significantly with (and therefore, may or may not lead to) adoption of innovation.

To illustrate, if successes in the past are perceived to have been caused by, let us say, personal efforts, then farmers are likely to expect success in farming when the same efforts are expended. With high success estimates, farmers are likely to adopt an innovation introduced in the community. If failures in the past are ascribed to adverse weather conditions, for instance, then farmers are likely to have low expectancy of success when faced with the same condition. Under this circumstance, farmers may or may not be willing to adopt an innovation.

Given an understanding of the situational determinants or environmental conditions and how upland farmers have to contend with these realities, it would be reasonable to expect that the pattern of attributions among our upland Filipino farmers may well be different from the results of Western studies. The study suggests that the attributional framework is cross-culturally applicable but that the pattern and nature of attributions call for culture- or location-specific considerations.

This study of attribution among Negros farmers reinforces the importance of understanding the farmer and how he views the world in development-oriented programs and studies. If man is to be the subject as well as the object of development (Licuanan, 1985), it is necessary for development planners to build upon culture-specific data and to respect the wisdom of the farmers (cf. Brokensha et al. 1980). This study takes a step in that direction.

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