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ABSTRACT

Data from a random sample of North Dakota full-time farm operators were used to determine the influence of farmers' financial circumstances on their geographic mobility intentions. Telephone interviews in the spring of 1985 obtained 933 useable questionnaires for a response rate of 77%. The study explored the magnitude of financial strain faced by North Dakota farmers, the relationship between farmers' economic stress and their perceived ability to remain in farming, and farmers' mobility intentions in the context of their financial situation. Mobility was defined to encompass both migration and commuting, and mobility intentions were determined by responses to a question which asked farm operators where they would look for jobs if they were to quit farming. Discriminant analysis was used to explore how effective various measures of financial strain and characteristics of the farm operators were in distinguishing mobility intentions. No significant relationship was found between financial strain and mobility intentions among farmers. The variables which best distinguished between farmers' mobility intentions were residential size and years of residence in community. Cultural, ethnic, and family background considerations may be key variables to investigate in order to better understand the relationship between financial strain and geographic mobility. (Author/JHZ)


# FINANCIAL STRAIN AMONG FARMERS AND ITS INFLUENCE ON THEIR GEOGRAPHIC MOBILITY

by

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# FINANCIAL STRAIN AMONG FARMERS AND ITS INFLUENCE ON THEIR GEOGRAPHIC MOBILITY


## Abstract

Data from a random sample of 1,206 North Dakota farm operators was used to determine the influence of farmer's financial circumstances on their geographic mobility intentions. The analysis explores (a) the magnitude of financial strain faced by North Dakota farmers, (b) the relationship between farmer's economic stress and their perceived ability to remain in farming, and (c) farmer's mobility intentions in the context of their financial situation. Discriminant analysis was used to explore how effective various measures of financial strain and characteristics of the farm operators were in distinguishing mobility intentions. Our analysis failed to find any statistically significant relationship between financial strain and mobility intentions among farmers. The variables which best distinguished between farmers' mobility intentions were residential size and years resided in community. We speculate that cultural, ethnic, and family background considerations are key variables to investigate in order to better understanding this issue.

# FINANCIAL STRAIN AMONG FARMERS AND ITS INFLUENCE ON THEIR GEOGRAPHIC MOBILITY

American farmers are currently experiencing a financial crisis unparalleled since the depression years of the 1930s[1]. High interest rates, low commodity prices, falling land values and unmanageable debt loads have placed numerous farmers in severe financial hardship. Estimates from the U.S. Department of Agriculture indicate that nearly one-third of the nation's commercial farms[2] are in considerable financial difficulty (Johnson, et.al., 1985). These economically stressed farmers are carrying more than 40 cents of debt for every dollar of their total assets. Economists believe that farmers with this debt level typically experience difficulty meeting repayment demands and current expenses.

The impact of these current economic conditions on shifts in the farm population is an unresolved issue. Debate centers on the relationship between financial strain and migration. Although economic opportunities historically have played a role in farm-to-nonfarm migration (Bowles, 1956; Albrecht, 1986), a correlation between economic distress and increased geographic mobility among farmers has not been established. Research along these lines indicates that farmers' migration patterns tend to be inconsistent with regard to changes in relative labor earnings (McDonald, 1955; Taueber, 1967). That is, movement away from the farm appears to be independent of income disparities between the farm and nonfarm sectors of the economy (Schultz, 1945; Parson, 1952).

The implications of this finding are far reaching. If farmers' motivations for moving (or staying) are not closely linked to relative income levels, then financial strain may not have an appreciable influence in the migration process. As a result, some economically distressed farmers may opt

not to relocate in spite of an eroding equity base and limited options for off-farm employment. This situation may lead farmers into economic tragedy as well as increase their likelihood of psychological distress, family violence, and suicide (Farmer 1986).

In an attempt to better understand this issue, we examined farmers' perceptions of geographic mobility in the context of their financial situation. The literature directs us to test the hypothesis that no statistically significant relationship exists between level of debt or cash flow and farmers' geographic mobility intentions. Our analysis is restricted to a single rural agricultural state. North Dakota, the state selected for investigation, had an average debt-to-asset ratio of over 33 percent in 1984, a rate twice the national average. Also, North Dakota had the second largest proportion of farm population (16 percent) for all states in 1980.

## Forces Behind Migration

Migration research frequently examines the decision making process of migrants. Some intriguing, unresolved questions in this research revolve around migrants' motivations for moving and their reasons for selecting their places of destination. Ironically, as our knowledge base expands in this area, so do the unanswered questions. In particular, we are still uncertain about how influential economic and social factors are in the decision to migrate.

Researchers have approached this issue from distinctly different vantage points. Economists, often assume that people who desire to remain in the labor force will seek to move toward perceived employment opportunities which maximize their economic circumstances. Labor mobility models have been used to investigate this contention, and to varying degrees they have found support for it (see Bowles, 1970; Harris, 1981; Greenwood, 1975). Studies focussing on farm-to-nonfarm migration offer similar conclusions. Employment

outside of agriculture was viewed as the catalyst for residential movement during the peak farm depopulation periods of the 1940s and 1950s (Schultz, 1945; Parson, 1952; Bowles, 1956) and in subsequent years (Beale, 1980; Hodge, 1981).

Several contradictions, however, cast doubt on the adequacy of employment opportunities as a sufficient explanation for farm-to-nonfarm migration. First, farm underemployment[3] persisted during times of near full employment in the overall national economy (McDonald, 1955). Union membership restriction and labor capacities have been rejected as possible explanations for this inconsistency (Johnson, 1953). Second, the concept of opportunity encompasses structural and noneconomic factors which create impediments or barriers to migration. Among these factors are 1) uncertainty pertaining to employment, 2) culture, 3) displacement from family and friends, 4) an accurate knowledge base concerning alternative employment, and 5) natural amenity considerations. Hence, the decision to migrate implicitly includes noneconomic dimensions. Ironically, economic and noneconomic considerations are treated separately in the literature and to some extent as incongruent.

Research focusing on noneconomic influences documents an important link between social factors and the migration process. Quality-of-life considerations, for example, have been found to be strong incentives affecting migration.[4] These noneconomic variables which include proximity to family and friends, natural amenities, and environment (e.g., concern for crime, pollution, congestion) were ranked above economic concerns by migrants in several research studies (see Williams and Sofranko, 1979; Voss and Fuguitt, 1979; U.S. Census, 1979). Although residential preferences emphasize noneconomic conditions (Zuiches, 1982), barriers to migration exist in terms of economic constraints. Carpenter (1977), for example, reported that migrants

opt for other than their first residential preference if the move results in a 10 percent or more reduction in their existing standard of living.

A lack of integration between economic and social dimensions in migration analysis is due, in part, to a theoretical void in the field (Mangalam and Schwarzweller, 1968). However, the recent proliferation of studies focussing on geographic mobility patterns of the 1970s (i.e., the population turnaround) has created an atmosphere conducive of formal theory building. For example, Wardwell (1980) has pointed us in the direction of investigating structural changes in our society as key elements to migration. He suggested that advances in technology, particularly in communications and transportation, are pivotal to explaining residential relocation. Campbell (1983) on the other hand, noted that we should not lose sight of the social and psychological dimensions of migration. His contention was that residential preferences are based on a cultural belief system. In the case of farmers, traditional attitudes of independence, agrarianism, and love for the land, allegiances passed on through generations, create deep-rooted attachments to rural living (Flinn, 1982; Gulley, 1974).

A linkage between these structural and social-psychological perspectives has been offered by Adamchak (1983). His treatise was that social scarcity--a restricted ability to achieve desired needs--determines migration patterns. The underlying theme in this approach is that ideologies, particularly those concerning well-being, are the key elements to migration. If well-being is measured in economic terms, then migration will be reflected in economic indicators such as employment opportunity or availability of goods and services. In contrast, if well-being is viewed in more human terms (i.e., quality of life considerations), then noneconomic motivations will dominate the decision to migrate.

The notion of social scarcity provides an interesting sociological framework from which to analyze migration intentions of farmers. On one end of the balance, financial strain functions as an economic force pushing farmers out of agriculture. This driving force is intensified by the integration of agriculture into the nation's larger industrial economy which acts as a pulling force redistributing labor (see Buttel, 1983; Deaton, 1986). On the other side of the scale, the more human dimensions (e.g., culture, ideology) act as barriers preventing farmers from leaving agriculture and to some extent pulling residents into agriculture or rural living (Flinn, 1982; Gulley, 1974).

Institutional integration serves to tip the balance in favor of economically motivated decision making. That is, as farmers replace their traditional values of self-sufficiency and landed independence (i.e., use value production) with mutual dependence of economic processes based on the market place (i.e., exchange value production), their decision making process in terms of migration becomes more market oriented. Opportunity costs become viewed more in terms of economic considerations than noneconomic concerns. And, the decision to migrate rests more on employment or income incentives than social dimensions (i.e., proximity to family and friends or environmental preferences).

Part-time farming may be viewed as a partial integration of farmers into the larger industrial economy. It represents the movement of labor from agriculture to nonagricultural employment without residential relocation (Fuguitt, 1959; Bollman, 1981; Wimberley, 1983). This option, however, may not be open to all farmers due to limited job opportunities in rural areas.

The extent to which American agriculture has been institutionally integrated into the national economy is a debatable issue. Support for our

hypothesis would indicate that farmers' decisions concerning residential mobility are guided by the more human dimensions as opposed to economic considerations. If this is the case, then policies need to reflect adjustment strategies for financially strained farmers which will aid them in career readjustments or ease their transition into recognizing and coping with the potential need to relocate.

In this paper, we investigate the influence of farmers' financial circumstances on their mobility intentions in several ways. First, we explore the magnitude of financial strain faced by North Dakota farmers. This establishes a reference base for further analysis. Next, we examine the relationship between farmers' economic stress and their perceptions of their ability to continue farming. This relationship should offer insight into possible inconsistencies between farmers' perceived viability and that implied by economic indicators. Third, we explore farmers' mobility intentions in the context of their current financial situation. Additionally, we test how effective measures of economic stress along with various characteristics of the operator (i.e., age, years resided in county, size of place of residence, income, and organizational membership) are in distinguishing the mobility intentions of North Dakota farmers. Finally, we discuss the reasons farmers cite for their choice of possible employment locations.

## Data and Methods

Data for this study were obtained from a random telephone survey of North Dakota farmers conducted in the spring of 1985. The sample was obtained from a comprehensive list maintained by a government agency. A comparison of the data with the 1982 Census of Agriculture for North Dakota indicated that the sample was representative. Respondents were initially screened and interviews conducted with those who: a) were less than 65 years of age, b)

considered farming to be their primary occupation, and c) sold at least $2,500 of farm products in 1984. This procedure, we felt, narrowed the sample to full-time farmers with active careers. Telephone interviews were conducted with 1,206 farm operators. A total of 933 useable questionnaires were obtained for a response rate of 77 percent.

Our measure of financial strain was based on two indicators. First, we calculated a ratio of the farm operations' total debt to its total assets. In general, this measure offers an estimate of the overall liability of the operation relative to the ability to repay. The debt-to-asset ratio is a commonly used measure of financial health. As the ratio increases in size, the likelihood of the farm business surviving a distressed economic period decreases. Typically, commercial farmers experience difficulty in meeting principal repayment obligations at debt-to-asset ratios of about 40 percent (Johnson, et.al., 1985; Leholm, et.al., 1985). When the debt-to-asset ratio exceeds 70 percent, the ability of farmers to meet even their interest payments and other current expenses is in doubt.

Our second measure of financial strain was an estimate of net cash flow. Net cash flow[5] was determined by subtracting family living expenses[6] from a combined total of net cash farm income[7] and off-farm income. This indicator was a more sensitive measure of financial strain because it encompassed both debt liabilities and current expenses relative to current income.

The dependent variable analyzed in this study was mobility intentions. Mobility was broadly defined to encompass both migration and commuting. It was based on responses to a question which asked the farm operator where he/she would look for a job if he/she were to quit farming. A second open-ended question asked the respondent to identify the reason(s) for their selection.

We use discriminant analysis to explore what factors best predict farmers' mobility intentions. This approach is similar to conventional regression analysis except that it allows for nominal dependent variables. In brief, discriminant analysis uses weighted combinations of predictor variable values in assigning a score to the dependent variable. In our case the dependent variable is dichotomous--whether a farmer intends to be mobile or not. We display in the findings standardized discriminant function coefficients which are useful for relative comparisons, structure correlation coefficients which are pooled within group correlations used to rank the contribution of variables to the discriminant function, and two measures of association (i.e., Canonical Correlation and Wilks' Lambda) which indicate the amount of variation accounted for in the model. The centroids for the mobile and nonmobile groups are also provided to offer insight into the amount of overlap between the two groups. Finally, a summary classification table is presented which detail the prediction of farmers' mobility intentions based on the discriminant model and the corresponding actual intentions cited by farmers in the survey.

## Findings

We first examined the distribution of net cash flow among farmers in North Dakota by subtracting family living expenses from total farm family income (i.e., the total of net cash farm income and all nonfarm income). As shown in Table 1, the average farm family income in North Dakota after deducting living expenses was slightly more than $10,000 in 1984. However, the distribution of income varied greatly depending upon farmer's debt-to-asset ratio. For example, farmers who were highly leveraged with debts exceeding 70 percent of their assets had an average negative cash balance of

$5,253. More than 60 percent of farmers in this situation could not meet family living expenses in 1984. In contrast, less than 20 percent of the farmers with no debt had negative cash balances after living expenses.

When one considers both living expenses and principal payment demands, the financial strain among North Dakota farmers becomes much more clear. For example, the average net farm income after living expenses and principal payments are met is a negative $2,075. Nearly 90 percent of the farmers with debt-to-asset ratios above 70 percent were unable to meet both living expenses and principal payments. Even those farmers in relatively stable financial positions with debt-to-asset ratios between 1 and 40 percent appear strained. The majority of these farmers (51%) could not meet both living expenses and principal payments in 1984.

Next, we estimated what proportion of farmers were contemplating a career shift. Respondents were asked to speculate whether they could survive in farming for at least three years. Their responses are displayed in Table 2. More than three in four farmers indicated that they were likely to remain in farming for at least three more years. Eighteen percent of the farm operators were uncertain of their future in farming while only 7 percent felt their ability to remain in farming was doubtful. Although the number of farmers who questioned their capability to remain in farming was relatively small, a negative relationship did appear to emerge between level of debt and their perception of viability in farming. That is, the greater the level of debt the less likely farmers perceived their chances of remaining in farming in the near future. This relationship was statistically significant.

An intriguing dimension to be addressed is why more farmers did not feel that their careers were in jeopardy. Many operators in North Dakota were being severely strained financially in 1984, yet only 7 percent felt that they would

be forced to leave farming in the near future. In fact, less than 20 percent of the most leveraged farmers, those with debt-to-asset ratios above 70 percent, doubted their ability to survive in farming.

The positive outlook farmers held toward continuing in agriculture in spite of economic adversity poses a second important issue. Does economic strain influence farmers' mobility intentions? We explored this issue by dichotomizing respondents based on where they would seek employment. Farmers who indicated they would look for employment in a place other than that of their present residence were viewed as mobile. Place of residence was defined as the town identified in their address (which for most respondents was the closest incorporated place where their post office box was located). All others were classified as not mobile. Of the 933 respondents in our study, 482 (52 percent) were defined as mobile. Farmers in relatively stable economic positions (debt-to-asset ratios below 25 percent) and those more highly leveraged indicated that they were more mobile than those in between. The same trend held for economic stress as measured by net cash flow. It should be noted, however, that the proportion of farmers in these categories did not differ significantly from the distribution of nonmobile farmers as indicated by the low chi square. This finding offers support for our hypothesis that the relationship between financial strain and geographic mobility intentions of farmers is not statistically significant.

To investigate whether the influence of financial strain on mobility was masked by other related variables, we explored which indicators best classified farmers by mobility intentions. Findings from discriminant analysis are reported in Table 4. A stepwise elimination process indicates that of the original eight predictor variables used in the model, only half were uniquely different in combination with the other independent variables in

discriminating between farmers' mobility intentions. The coefficients of these four variables (i.e., years resided in the community, size of place, off-farm employment, and organizational membership) are shown in parentheses. Neither measure of financial strain offered any important predictive power. The residential size of farmers' nearest city/town and the number of years they have lived in or near that community are highly correlated with farmers' mobility intentions. The large discriminate function coefficients for these two variables (.858 and .586, respectively) reflect the high degree to which they maximize the correlated linear combination of mobility intentions with the other independent variables while the large structure correlation coefficients (.817 and .440, respectively) indicate that each are highly correlated with mobility after controlling for the other independent variables.

Although our findings suggest that measures of financial strain are not very useful in predicting farmers' mobility intentions, the alternative indicators which we used for comparative purposes were similarly inadequate. The four-variable model which was derived from our discriminate analysis left nearly 85 percent of the variance in farmers' mobility intentions unaccounted for as indicated by the score for Wilks' Lambda. This may, in part, reflect one drawback of using a dichotomous variable in that much of the variance is statistically deflated. Nonetheless, the distribution of discriminant scores for mobile and nonmobile farmers appears to be fairly distinct as described by the distance between their centroids noted in Table 4. This suggests that key explanatory variables are missing from the analysis. This is further varified by the poor predictive power of the model noted in Table 5. Only 66.3 percent of the farmers were accurately classified into mobile or nonmobile categories based on size of place, years resided in community, organizational

memberships, and off-farm employment. This finding may reflect the difficulty and discouragement many rural North Dakota farmers have in obtaining off-farm employment. Only 20 percent of the farmers in North Dakota worked more than 100 days off the farm in 1982 compared to 43 percent nationally (U.S. Bureau of Census, 1984).[8] The geographic size of the state (16th largest in the U.S.) and its relatively few urban centers, twenty-one in 1980, reduces commuting employment opportunities for many farmers. Additionally, a strained agricultural economy negatively impacts businesses in small rural communities further reducing off-farm employment opportunitie .

These intriguing findings pose an important question. What factors are farmer's considering when selecting alternative employment sites? We explored this issue by asking farmers the reason why they would seek employment in the various communities they selected. A summary of their responses are reported in Table 6. Less than 13 percent of those farmers who responded indicated that job availability was the primary reason for selecting a specific community to seek employment. The majority of respondents indicated that they selected that community either because they wanted to be close to home or simply did not want to move and preferred to commute to a different city.

## Discussion

The findings of this research raise several interesting and important concerns. First, our assumptions about the relationship between economic stress and mobility were supported. The level of financial strain on farmers offers little explanatory power regarding geographic mobility. The implications of this finding can be far reaching. Do economically distressed farmers accurately recognize their situation? There is evidence to suggest that many farmers deny their inability to survive in farming regardless of their financial position (Farmer, 1986). As a result, many farmers with

unrecoverable debt loads may lose established equity by waiting until foreclosure to quit farming. The ramifications of this denial process may include not only economic tragedy but also potential psychological distress, family violence, and suicide. Researchers and clinicians indicate that the number of farm families seeking professional counseling (traditionally an uncommon situation) has increased dramatically since 1980 (Hargrove, 1986).

A second intriguing question involves the reluctance of farmers to leave rural areas in search of employment. Our findings indicate that the majority of farmers reported that they preferred to remain within their substate area. An additional 29 percent stated that they wanted to stay within North Dakota. Similar findings were reported in Iowa (Otto, 1985). One explanation may be found in the ethnic composition of farming communities. In a study of Illinois farmers, Salamon (1984; 1985) found that ethnic values explained many of the strategies farmers used in their operations. For example, the Anglo-Saxon heritage fostered an aggressive entrepreneurial orientation to farming, unlike the Germanic and Scandinavian heritage which stressed communal obligations. To leave farming for the latter, therefore, was to violate strong cultural norms. As a result, some farmers would prefer to remain in close-knit communities regardless of the economic cost--a scenario contradictory to labor mobility models. German and Scandinavian ties in North Dakota are quite strong as measured by the number of residents who still speak the language at home. This may help explain our current findings. Additionally, our findings indicate that farmers, on the average, have lived in their county of residence for more than 39 years. Thus, their ties to the area are deep rooted. This is especially true when one considers that an overwhelming majority are at least second generation farmers.

If mobility intentions of farmers are influenced by cultural, ethnic, or family background considerations, it is critical for policymakers and extension personnel to initiate educational programs to aid economically distressed farmers. Programs which focus on stress, career opportunities, and urban life may be beneficial. This is especially true because studies indicate that farmers forced to relocate to urban areas have difficulty adjusting to urban lifestyles (see Farmer, 1986). Nonetheless, our understanding of what influences farmers' mobility, especially during this period of crisis, needs further investigation.

## Notes

1. The financial conditions among farmers are unequally strained throughout the United States. Areas with high concentrations of farm-dependent counties (see Johnson et al. 1985) are most severely impacted. For example, the average debt-to-asset ratio in the Northern Plains is nearly twice the national average. The Corn Belt states and the Great Lakes region of the country also have markedly higher debt-to-asset ratios than the national average. In contrast, states in the Appalachian region and the southern tier of the United States are less severely affected by the current farm crisis.

2. Commercial farms are defined as those with total annual sales over $40,000. These farms represent only 34 percent of all farms in the United States but account for 90 percent of total farm sales.

3. Estimates of farm underemployment have been questioned from a conceptual standpoint (Bishop 1954). Economists would suggest that underemployment exists when real return on labor is less than real labor returns which could be obtained from a comparable position elsewhere. What is overlooked are social costs (e.g., breaking ties with family or friends), imperfect knowledge of employment alternatives, and barriers to mobility (e.g., cost of migration).

4. Research by Swanson and colleagues (1980) suggests that those who actually migrate may differ distinctly from those who only suggest they may move. Their analysis indicated that many social factors thought to be restraints limiting migration were not found to significantly affect migration. They concluded that people who want to remain in the labor force move toward opportunities which maximize their economic gain.

5. Depreciation costs were not included in our analysis, thus our calculations are only general estimates of cash flow.

6. Family living expenses were self-reported. Responses which were not given or were unrealistically low were estimated based on current poverty thresholds. For example, living expenses for a single individual were estimated at $6,000, a two-person household was estimated at $8,000, while a three- or more person household was estimated at $12,000.

7. Net cash farm income is gross farm income less gross cash farm expenses and depreciation.

8. A more in-depth discussion of regional disparities of off-farm income earnings by farm families may be found in a report by Jim Johnson, Kenneth Baum, and Richard Prescott entitled Financial Characteristics of U.S. Farms, 1985. Agricultural Information Bulletin No. 495, Washington, D.C.: USDA, Economic Research Service, 1985.

TABLE 1. TOTAL FARM FAMILY INCOME DISTRIBUTION WHEN FAMILY LIVING EXPENSES AND PRINCIPAL PAYMENTS ARE DEDUCTED BY DEBT-TO-ASSET RATIO FOR NORTH DAKOTA FARMERS

| Total Farm Family Income | Units | Debt-to-Asset Ratio | | | | |
|---|---|---|---|---|---|---|
| | | No Debt | 1% to 40% Debt | 41% to 70% Debt | Over 70% Debt | Total |
| Less family living expense: | | | | | | |
| Average | Dollars | 30,023 | 13,243 | 701 | -5,258 | 10,102 |
| Distribution: | | | | | | |
| Less than -$4,999 | Percent | 11.6 | 24.8 | 38.5 | 48.4 | 29.3 |
| -$4,999 to 0 | Percent | 8.2 | 11.1 | 15.1 | 11.7 | 11.7 |
| 0-$4,999 | Percent | 10.2 | 16.0 | 13.2 | 10.2 | 13.5 |
| $5,000 to $19,999 | Percent | 25.2 | 21.0 | 22.0 | 21.9 | 22.1 |
| $20,000 and over | Percent | 44.9 | 27.1 | 11.2 | 7.8 | 23.5 |
| Less family living expense and principal payments: | | | | | | |
| Average | Dollars | 30,023 | 4,909 | -19,510 | -31,496 | -2,075 |
| Distribution: | | | | | | |
| Less than -$4,999 | Percent | 11.6 | 38.0 | 72.[illegible] | 83.6 | 48.3 |
| -$4,999 to 0 | Percent | 8.2 | 13.2 | 8.3 | 5.5 | 9.9 |
| 0-$4,999 | Percent | 10.2 | 11.9 | 7.3 | 2.3 | 9.2 |
| $5,000 to $19,999 | Percent | 25.2 | 16.7 | 7.8 | 7.0 | 14.7 |
| $20,000 and over | Percent | 44.9 | 20.3 | 4.4 | 1.6 | 18.0 |

TABLE 2. NORTH DAKOTA FARMERS' OPINIONS OF THEIR ABILITY TO CONTINUE FARMING FOR AT LEAST THREE YEARS BY DEBT-TO-ASSET RATIO CATEGORIES

| How Likely | No Debt | | 1% to 40% Debt | | 41% to 70% Debt | | Over 70% Debt | | Row Total and Percent | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Very likely | 89 | 27.55 | 164 | 50.77 | 50 | 15.48 | 20 | 6.19 | 323 | 100.00 |
| Likely | 46 | 13.29 | 173 | 50.00 | 81 | 23.41 | 46 | 13.29 | 346 | 100.00 |
| Don't know | 8 | 5.13 | 53 | 33.97 | 56 | 35.90 | 39 | 25.00 | 156 | 100.00 |
| Unlikely | 3 | 6.82 | 5 | 11.36 | 16 | 36.36 | 20 | 45.45 | 44 | 100.00 |
| Very unlikely | 1 | 7.14 | 4 | 28.57 | 4 | 28.57 | 5 | 35.71 | 14 | 100.00 |
| Total | 147 | 16.65 | 399 | 45.19 | 207 | 23.44 | 130 | 14.72 | 883 | 100.00 |

Note: $X^2 = 140.18$ and $P < .05$.

TABLE 3. MOBILITY INTENTIONS OF FARMERS IN NORTH DAKOTA IF THEY WERE TO QUIT FARMING BY MEASURES OF ECONOMIC STRESS

| Measure of Economic Stress | Mobility Intentions | |
|---|---|---|
| | Mobile | Not Mobile |
| Debt-to-asset ratio | | |
| under 25% | 42.5% | 43.4% |
| 25-49% | 23.9% | 29.4% |
| 50% or over | 33.6% | 27.3% |
| TOTAL | 100.0% | 100.0% |
| N | 318 | 143 |
| $X^2 = 2.438$ | | |
| P = .296 | | |
| Net cash flow | | |
| negative | 36.2% | 27.6% |
| $1-$9,999 | 26.7% | 32.8% |
| $10,000 or over | 37.1% | 39.6% |
| TOTAL | 100.0% | 100.0% |
| N | 307 | 134 |
| $X^2 = 3.399$ | | |
| P = .183 | | |

TABLE 4. DISCRIMINANT ANALYSIS SUMMARY STATISTICS FOR MOBILITY INTENTIONS AND SELECTED PREDICTOR VARIABLES

| Predictor Variables | Standardized Discriminant Function Coefficients | Structure Correlation Coefficients |
|---|---|---|
| Age | .194 | .386 |
| Years resided in community | .493<br>(.586)* | .432<br>(.440) |
| Size of place of residence | .843<br>(.858) | .800<br>(.817) |
| Net cash flow | .075 | .003 |
| Operator or spouse have worked off farm | .202<br>(.219) | .095<br>(.097) |
| Net farm income | -.150 | -.056 |
| Number of organizational memberships | -.186<br>(-.163) | -.118<br>(-.121) |
| Debt-to-asset ratio | .093 | -.148 |

Canonical Correlation = .381; $P \leq .00$
(.375); $\overline{P} \leq .00$

Wilks' Lambda = .854; $P \leq .00$
(.859); $\overline{P} \leq .00$

| Group | N | Centroid |
|---|---|---|
| Nonmobile intentions | 126 | .549<br>(.538) |
| Mobile intentions | 225 | -.308<br>(-.302) |

*Results of stepwise elimination in parentheses.

TABLE 5. CLASSIFICATION SUMMARY OF DISCRIMINANT ANALYSIS FOR MOBILITY INTENTIONS AND SELECTED VARIABLES (AFTER USE OF STEPWISE ELIMINATION)

| Actual Group | Predicted Group | |
|---|---|---|
| | Nonmobile Intentions | Mobile Intentions |
| Nonmobile intentions | 72 (50.7%) | 70 (49.3%) |
| Mobile intentions | 64 (25.1%) | 191 (74.9%) |
| Model correctly predicted 66.3% of cases | | |

TABLE 6. REASONS FOR RELOCATIONAL PREFERENCES OF NORTH DAKOTA FARM OPERATORS, 1984

| Reasons | Number Responding | Percentage |
|---|---|---|
| Close to home | 273 | 40.0 |
| Do not want to move | 125 | 18.3 |
| Like the climate | 105 | 15.4 |
| Jobs are there | 86 | 12.6 |
| Family lives there | 39 | 5.7 |
| Like size of city | 37 | 5.4 |
| Lived there before | 18 | 2.6 |
| Total | 683 | 100.00 |

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