

Comparison of Dairy Farm Family Support Systems in New York and Ontario

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The debate over the efficiency and equity of agricultural policies continues in earnest today as their increasing policy costs meet the reality of budgetary constraints (Variyam et al. 1990). The debate has forced a re-examination of the objectives for agricultural and rural policy. A major purpose of agricultural policy is to improve the well-being for rural producers, where well-being is often measured by only financial indicators. However, monetary returns are not the only components of the quality of life, especially for farmers who tend to hold intrinsic values concerning work and independence.

The concept of overall well being is influenced by the quality of various life experiences including satisfaction with one's community which in turn is related to satisfaction with community services. Rojek et al. (1975), Christenson (1976) and Murdock and Schriener (1979) have examined contentment with local services

which they claim is a single but integral component of community satisfaction. Support for the view is provided by Allen et al. (1991) who found satisfaction with public services to be a strong predictor of satisfaction with one's community as an effective place to live.

Satisfaction with family support services not only affects quality of life directly but also indirectly through two impacts on financial well being. First, differences in farm productivity have been related to differences in community structural factors, such as educational resources, rather than just individual behaviour (Brown 1981; Cruise and Lyson 1991). Second, is the positive impact that quality of life, including satisfaction with community services, can have on rural business location decisions (Adamchak 1987; Gyouko and Tracy 1991; Johnson and Rasker 1995). Increased local business and therefore markets increases the opportunities for farm households to both enhance and diversify their incomes (Edmond et al. 1993). Thus, understanding the influences on community services contributes to understanding an individual's overall quality of life (Marans and Rodgers 1975).

Policy makers need information on the levels of satisfaction with family support services and the factors affecting satisfaction levels since such information is a determining criterion for public resource allocations (Cheng 1988). Proper allocation policies that improve well-being as defined more broadly require linking traditional objective measures of economic conditions and trends with subjective individual experiences such as satisfaction measures (Marans and Rodgers 1975). Measures of satisfaction with family support services are particularly important since the availability and quality of these services are determined largely by governments.

The purpose of this paper is to compare satisfaction of family services (medical, community and personal) by dairy farm households in New York and Ontario. The dairy sectors in these two neighbouring regions are especially suited for an examination of the relationship between government policy and farm family satisfaction with these services. Dairy farming is an important and large economic sector representing approximately 20% of total farm cash receipts in both regions and both areas contribute substantially to their nation's dairy sector. While dairying is important to each area and similar geographic conditions exist in both, farm support and social service policies differ. Ontario dairy farmers operate under a supply managed production system that guarantees them more stable and generally higher returns than their counterparts in New York. Infrastructure and systems for social services also differ particularly for health care that is provided freely to all Canadian residents in contrast to a user-pay system in the United States. Comparisons between politically different but geographically similar conditions and between different geographic regions within the same state/province permit the examination of the previously unaccounted influence of government policies on satisfaction with family services. Such comparisons, however, are consistent with the importance of examining the spatial context of social relationships noted by Lobao and

Schulman (1991). The differences in provision of health care services, in particular, provide some empirical evidence on the implications of declining government support for health care and rural services as suggested by Bell and Cloke (1989).

The paper proceeds with a brief discussion of the data followed by a discussion of the use and average satisfaction for the 15 family services considered. Analysis of the factors influencing satisfaction is largely based upon Marans and Rodgers' (1975) conceptual model of community satisfaction. Satisfaction depends partially on objective physical and economic attributes of the service such as the distance travelled and location variables reflecting policy regime and population density. However, the assessment is not only a function of these attributes; it ultimately depends upon how one perceives the service and the standard against which the service is judged. Components of the standard or reference level included in this study are objective measures such as the need for services and subjective measures such as assessment of service availability and attitudes toward farm life (values). Finally, personal characteristics are incorporated since these can have an effect directly on satisfaction with services and indirectly through their effect on an individual's standard of comparison. Personal characteristics hypothesized to have a positive effect on satisfaction include income, education and age since increases in these variables are expected to increase one's ability to control outcomes affecting his or her circumstances (Ladewig and McCann 1980). Goudy (1990) found a similar set of personal characteristics (systemic model) had a direct effect on community attachment.

Methods

Data on satisfaction with family services were obtained through a survey mailed to dairy farm families in four nearby areas of New York and Ontario, with two regions in each state/province. After preliminary testing, the final version of the survey was mailed in May 1991. A random sample of 500 dairy farms from two regions in New York was provided by the New York Agricultural Statistical Services. The first region consisted of two counties in northern New York, Jefferson and St. Lawrence counties. The second region was comprised of eight western New York counties -- Cayuga, Genesee, Livingston, Ontario, Seneca, Tompkins, Wyoming and Yates. These two regions contain approximately 1400 dairy farmers and represent about 10% and 20% respectively, of total milk production in New York state. In order for valid comparisons to be made, the Ontario sample was drawn from regions agronomically similar to those in New York. The eastern Ontario region, corresponding to northern New York, consisted of Stormont, Dundas, Grenville, Leeds and Ottawa-Carleton counties which represent 10% of total milk production in Ontario. The counterpart to western New York was the southwestern Ontario region made up of Oxford, Middlesex and Perth counties. The random sample of 524 producers, 220 from

eastern Ontario and 304 from southwestern Ontario, was generated from the Ontario Milk Marketing Board's computerized data base.

In the New York portion of the sample, 147 of the 500 dairy farms sent surveys responded for a 29.4% response rate. The regional response was 25.6% for northern New York and 33.2% for western New York. In addition to the random sample of 524 Ontario dairy farms drawn for this study, the questionnaire was also mailed to the 164 Ontario Dairy Farm Accounting Project (ODFAP) farms of which 60 fit into the two selected regions. Including the total random sample and the 60 ODFAP producers within the areas of concern, the overall response rate for the Ontario farms sent surveys was 40.9% with regional response rates of 38.9% for eastern Ontario and 42.8% for southwestern Ontario.

Possible sample biases were examined by comparing characteristics of the respondents to those in other sources. In New York, farm characteristics from 1989 county census data were compared to survey respondent characteristics. The census data indicated that the average herd size was 65 cows and average milk production of 14,358 pounds per cow. In the study survey, the respondents had an average herd size of 81 cows and a milk yield of 15,080 pounds. These values are smaller than the average for the farms participating in Cornell's Dairy Farm Business Summary Report (Smith et al. 1990). Because the size and productivity variables are similar for survey and census sources, sample bias was not considered to be a problem for the New York data. In Ontario, the ODFAP annual reports were used as the basis of comparison. The random sample of ODFAP farms is used to determine the cost of producing milk, which is used to determine the price received by Ontario milk producers. The sample seems comparable to the ODFAP farms in terms of average herd size (48 vs. 43), tillable acres (220 vs. 204), average annual milk production (lbs.) per cow (13,997 vs. 13,795) and operator age (43.9 vs. 45). Thus, as in New York, there does not appear to be sample bias in Ontario.

Results

The 15 services comprising family services along with the average satisfaction level (number of responses per service) are listed in Table 1. These 15 services were grouped into medical, personal and community components on the basis of factor analysis loadings. Factor analysis finds the best linear combination among a set of variables for predicting the variance in the set itself making it a useful tool to summarize common links between variables (Marradi 1981). In this case, the groupings determined by factor analysis were based on similar degrees of satisfaction found for each service within a grouping and that the assessment was independent of expressions for services in other groupings. Rojek et al. (1975) used a similar procedure and obtained a similar clustering of community

services.¹

TABLE 1 Average Level of Satisfaction (Number of Responses per Question on Satisfaction) with Family Services

Service	Overall		Ontario		New York	
	ONT (n=239)	NY (n=147)	SWO (n=143)	EO (n=96)	WNY (n=83)	NNY (n=64)
<i>Medical Services</i>						
Routine Med. Care	4.16 (227)	3.88 (124)	4.17 (138)	4.16 (89)	3.94 (69)	3.80 (55)
Emerg. Med. Care	3.95 (148)	3.62 (88)	3.93 (91)	3.98 (57)	3.84 (50)	3.34 (38)
Routine Dental Care	3.94 (213)	3.95 (115)	4.08 (128)	3.73 (85)	3.99 (65)	3.90 (50)
Counselling	3.67 (48)	3.30 (23)	3.68 (31)	3.65 (17)	3.67 (9)	3.07 (14)
Elderly Care	3.82 (55)	3.33 (24)	3.81 (37)	3.83 (18)	3.61 (13)	3.00 (11)
<i>Community Services</i>						
Pri. & Sec. Edu.	3.93 (148)	3.94 (78)	3.87 (92)	4.02 (56)	3.87 (40)	4.00 (38)
Public Library	4.05 (141)	4.22 (63)	4.09 (87)	3.98 (54)	4.13 (37)	4.35 (26)
Police Protection	3.81 (86)	4.17 (47)	3.82 (56)	3.80 (30)	4.04 (28)	4.37 (19)
Fire Protection	4.29 (87)	4.40 (50)	4.21 (56)	4.42 (31)	4.43 (26)	4.37 (24)
<i>Personal Services</i>						
Gas & Electric	3.88 (206)	3.50 (131)	3.83 (125)	3.96 (81)	3.64 (72)	3.34 (59)
Newspaper	3.65 (204)	3.74 (117)	3.47 (120)	3.90 (84)	3.82 (63)	3.65 (54)
Televis. (incl. cable)	3.41 (196)	3.39 (100)	3.31 (118)	3.55 (78)	3.39 (51)	3.39 (49)
Child Care	3.14 (58)	3.65 (23)	3.12 (40)	3.17 (18)	3.64 (11)	3.67 (12)
Food Shopping	4.00 (209)	3.99 (123)	4.07 (125)	3.90 (84)	4.10 (70)	3.85 (53)
Clothes Shopping	3.67 (207)	3.75 (122)	3.70 (125)	3.62 (82)	3.87 (68)	3.59 (54)

- Note:
1. Satisfaction level measured on a Likert scale with 1 = very dissatisfied and 5 = very satisfied.
 2. Number of responses in parentheses.
 3. ONT= Ontario, NY = New York, SWO = Southwestern Ontario, EO = Eastern Ontario, WNY = Western New York and NNY = Northern New York.

Respondents did not generally indicate their level of satisfaction with services that were not used or were not available in their community.² As a result, the response rate per question was used to group the services into high, moderate or low usage. Routine medical care, emergency medical care and routine dental care along with gas and electric, television, food shopping and clothes shopping appear as high usage items. Most families would view these as basic essential services. Primary and secondary education, public library, police protection and fire protection could be classified as moderate usage because a large number of families need and use the services frequently but not necessarily on a regular we-

1. Rojek et al. (1975) obtained four clusters of community services: medical, public, educational and commercial. These services grouped as community in this study are essentially the same as those in the public and educational clusters of Rojek et al. (1975). Similarly, the commercial services grouping in the latter study are much the same as those in the personal services here.
2. Glasgow (1988) examined whether the use of services differs between recent retirement age immigrants to rural counties and long-term county residents of the same age group.

ekly/monthly basis. Counselling, elderly care, and child/day care services, which cater to specific groups in the community, would be classified as a low use item.

Service Satisfaction Levels

For each of the 15 family services, households were asked about their level of satisfaction using a Likert scale with 1 being very dissatisfied and 5 representing very satisfied. The resulting average satisfaction levels are reported by region in Table 1. The satisfaction levels ranged from a high of 4.42 for fire protection in eastern Ontario (EO) and western New York (WNY) to a low of 3.00 for elderly care in northern New York (NNY). In general, dairy farm families in all areas appeared satisfied with family services (such as, mean values > 3.0). Satisfaction tended to be highest on average for community services and lowest for personal services. However, there were regional differences which are discussed below.

Regional Differences in Satisfaction Levels

Average levels of satisfaction by dairy farm families for family services (Table 1) were tested for statistical differences by region using a Kruskal-Wallis one-way ANOVA which is the appropriate test statistic if the objective is to compare two or more populations using ranked data (Keller and Warrack 1997). Regional differences are reported in Table 2 with the sign indicating which area had the higher level of satisfaction. For example, the 0.28 value for medical services between Ontario and New York (ONT-NY) represents the difference in average satisfaction level for this service reported in Ontario (4.16) and New York (3.82) as given in Table 1. The positive (negative) value indicates that the first region listed at the top of the column had a higher (lower) level of satisfaction than the second region listed.

At the aggregate level, the results generally indicate that Ontario dairy farm families were more satisfied with medical services than their counterparts in New York, whereas the opposite is true for community services. Significant differences were noted for routine medical care, emergency medical care and elderly care. These services are available to all residents of Ontario at minimal expense. In contrast, the cost and availability of medical services and insurance have become a major policy issue in the U.S. with some groups advocating a model of medical insurance similar to the one existing in Canada. No significant differences were found between the two countries in terms of routine dental care and counselling. In contrast to the other three medical services, dental and counselling services are not included in Canada's government-sponsored health insurance program. The result provides an indication of the effect of declining government support for health care as suggested by Bell and Cloke (1989). It is also consistent with the findings of other studies such as Christensen (1976) and Ladewig and McCann

(1980) who found accessibility to be the most important subjective variable in determining an individual's level of satisfaction with their community.

Average satisfaction levels for community services tended to be higher for dairy farm families in New York than Ontario. The result is in contrast to medi-

TABLE 2 Differences in Average Level of Satisfaction with Family Services between Regions¹

Service	Overall	Geographically Similar		Politically Similar	
	ONT-NY	SWO-WNY	EO-NNY	SWO-EO	WNY-NNY
<i>Medical Services</i>					
Routine Medical Care	0.28**	0.23*	0.36**	0.01	0.14
Emergency Med. Care	0.33*	0.09	0.64**	-0.05	0.50*
Routine Dental Care	-0.01	0.09	-0.17	0.35**	0.09
Counselling	0.37	0.01	0.58	0.03	0.60
Elderly Care	0.49*	0.20	0.83*	-0.02	0.61
<i>Community Services</i>					
Primary & Sec. Edu.	-0.01	-0.00	0.02	-0.15	-0.13
Public Library	-0.17	-0.04	-0.37**	0.11	-0.22
Police Protection	-0.36*	-0.22	-0.57*	0.02	-0.33
Fire Protection	-0.11	-0.21	0.05	-0.21	0.05
<i>Personal Services</i>					
Gas & Electric	0.38**	0.19	0.62**	-0.13	0.30
Newspaper	-0.09	-0.35**	0.25	-0.43**	0.17
Television (incl. cable)	0.02	-0.08	0.16	-0.24	-0.00
Child Care (Daycare)	-0.51*	-0.52	-0.50	-0.05	-0.03
Food Shopping	0.01	-0.03	0.05	0.17	0.25
Clothes Shopping	-0.08	-0.17	0.03	0.08	0.28

Note: 1. Calculated by subtracting the average scores from different regions (as listed at top of column) found in Table 1.
2. * = Significant to 0.10 level (90% Confidence level) and ** = Significant to 0.05 level (95% Confidence level).

cal services that are provided by the province, rather than the community, in Ontario. However, the only significant difference in community services was found for police protection.

In terms of personal services, dairy households in Ontario had higher levels of average satisfaction with gas and electric services than those in New York. The opposite was found for child care services. It was interesting to note that despite the prevalence of cross-border shopping by Ontarians in New York at the time of the survey, there was no significant difference between Ontario and New York in the average satisfaction level of dairy farm families with food and clothes shopping services.³

The results at the aggregate level were confirmed when the analysis was conducted for geographically similar but politically different regions. Significant

3. The factors affecting shopping within the local community versus other communities was examined by Pinkerton et al. (1996). They found age most strongly related to in shopping but that community satisfaction also had a positive effect.

differences at the aggregate level were generally due to differences noted between eastern Ontario and northern New York (EO-NNY) which are less populated and where net farm income is lower on average than their western counterparts. For example, eastern Ontario dairy farm families tended to be more satisfied than those families in northern New York with routine and emergency medical care, elderly care, and gas and electric services while being less satisfied with the community services of the public library and police protection. In contrast, there were only two differences noted between southwestern Ontario and western New York (SWO-WNY). The higher level of satisfaction with routine medical care services in southwestern Ontario is likely due to differences in the health insurance system. The lower level of satisfaction with newspaper services in southwestern Ontario as compared to western New York is likely not the result of government policy differences given the results below.

In terms of politically similar but geographically different regions, only three significant differences were found. Average satisfaction levels with newspaper services were higher on average for dairy farm families in eastern Ontario than in southwestern Ontario. As mentioned above, the relative level of dissatisfaction with newspapers in the Southwest appears to be a local effect rather than the result of policy pressures. In contrast, average satisfaction with routine dental care was higher in southwestern Ontario than in eastern Ontario. Western New York dairy farm families also tended to indicate higher levels of satisfaction with medical and personal services but the only significant difference was noted for emergency medical care. These results may be due to the higher probability of availability for medical services in the western regions of the province or state which are more heavily populated and nearer to larger metropolitan areas. The positive correlation between population density and availability of services and therefore quality is consistent with the findings of Christensen (1976). In contrast, there was no such pattern noted between politically similar but geographically different regions for personal services.

Family Services Needing Improvement

An investigation of desired improvements is important to determine which family services within a given area require the most attention. It also provides an alternative way to assess satisfaction. As a consequence, households were asked which of the 15 family services would they like to have improved. The services most frequently cited as needing improvement in New York were television at 19% and routine medical care, emergency medical care, and gas and electric at 18% of respondents (Table 3). The need appears to be particularly great with regard to medical services in northern New York where 20% of respondents stated that routine medical care needed improvement and 30% noted a need for improvement in emergency medical care. In addition, 25% of respondents in this region also expressed a need for improvement in gas and electric services.

Newspapers in southwestern Ontario also appeared to require improvement. In eastern Ontario, 15% indicated a need for improvement to routine dental care and primary and secondary education. The need for improvement in personal services tended to be greater than that for community services in both countries. These results are consistent with differences in mean satisfaction between regions.

TABLE 3 Frequency (and Percentage) of Respondents feeling Specific Family Services Need Improvement

Service	Overall		Ontario		New York	
	ONT	NY	SWO	EO	WNY	NNY
<i>Medical Services</i>						
Routine Med. Care	13 (5)	27 (18)	5 (4)	8 (8)	14 (17)	13 (20)
Emerg. Med. Care	19 (8)	26 (18)	11 (8)	8 (8)	10 (12)	19 (30)
Routine Dental Care	24 (10)	13 (9)	10 (7)	14 (15)	7 (8)	6 (9)
Counselling	7 (3)	4 (3)	2 (1)	5 (5)	1 (1)	3 (5)
Elderly Care	13 (5)	9 (6)	7 (5)	6 (6)	6 (7)	3 (5)
<i>Community Services</i>						
Pri. & Sec. Edu.	33 (14)	15 (10)	19 (13)	14 (15)	8 (10)	7 (11)
Public Library	12 (5)	4 (3)	6 (4)	6 (6)	3 (4)	1 (2)
Police Protection	20 (8)	4 (3)	9 (6)	11 (12)	2 (2)	2 (3)
Fire Protection	10 (4)	3 (2)	6 (4)	4 (4)	0 (0)	3 (5)
<i>Personal Services</i>						
Gas & Electric	21 (9)	26 (18)	13 (9)	8 (10)	10 (12)	16 (25)
Newspaper	30 (13)	13 (9)	23 (16)	7 (7)	5 (6)	8 (13)
Television	30 (13)	28 (19)	17 (12)	13 (14)	16 (19)	12 (19)
Child Care	22 (9)	2 (1)	15 (11)	7 (7)	0 (0)	2 (3)
Food Shopping	21 (9)	14 (10)	8 (6)	13 (14)	8 (10)	6 (9)
Clothes Shopping	25 (11)	19 (13)	12 (8)	13 (14)	10 (12)	9 (14)

Factors Affecting Satisfaction

In order to assess factors affecting satisfaction in addition to policy regime and geography, a regression analysis on the combined New York-Ontario data was performed for each of the three service groupings established by the factor analysis. The dependent variable for each of the three groupings (medical, community and personal) was the average level of satisfaction for all services within the corresponding group of services.

Three broad categories of explanatory variables based upon Marans and Rodgers' (1975) conceptual model of community satisfaction were used to explain the average level of satisfaction for each grouping;

- Objective attributes of the service environment,
- The standard against which the service is judged, and
- Personal characteristics that directly effect satisfaction assessment and indirectly through their effect on an individual's standard of comparison.

The influence of objective attributes such as policy regime and geography have been partially addressed through Table 2 that compares the regional differences in satisfaction levels. The other objective attributes included in the regression analysis are frequency of use and distance travelled to obtain each service. It is hypothesised that use and availability (as partially reflected in distance) positively affect satisfaction. Components of the standard or reference level included in this study are objective measures of the need for services (such as, limiting health condition) and a number of subjective evaluations related to the availability and importance of services and attitudes toward farm life. It is assumed that need for a service and positive assessment of service characteristics and life in general increase satisfaction levels with services. Farm production variables and demographic measures such as age and education, are the personal characteristics included. Those variables that increase the control over one's circumstances are assumed to be positively related to service satisfaction. The complete list of variables for each of the three groupings of regressors is listed in Table 4 along with their summary statistics.

The regressions for factors affecting satisfaction with the groupings of family services explained 23% of the variation in the average satisfaction level for medical and community services and 18% of the variation for personal services (Table 5). Four explanatory variables generally had a significant influence in all three regression equations; frequency of use, assessment of service availability, need for service improvement, and satisfaction with farm life in general. Thus, objective attributes of the service and personal characteristics had little effect on satisfaction levels and the main determinant was measures of an individual's standard of comparison that is consistent with the findings of Marans and Rodgers (1975) and Ladewig and McCann (1980).

Of the objective service attribute measures, only the frequency of use (Use) had a significant influence on satisfaction with family support services. An increase in the number of services used in the past year within each grouping was found to increase the average level of satisfaction for each service grouping. The effect of frequency of use on satisfaction was strongest for medical services. Distance travelled to obtain a service (Distance) had the expected negative influence on average satisfaction with a service but the effect was only statistically significant for community services. The effect of household location on satisfaction with family services as analysed previously (Table 3) was reduced when other explanatory variables were considered. As noted above, there were only three individual services for which significant differences existed between politically similar but geographically different regions. Thus, it is not surprising that regional location was found to be statistically significant in the regression analysis. However, the estimated signs are consistent with the previous analysis in that households in eastern Ontario and northern New York tend to have higher levels of satisfaction for community and personal services and lower satisfaction for medical services than their counterparts in the western part of the province/state. The effects of country (policy regime) on satisfaction depended on

the individual service. As a result, this variable was also found to be statistically insignificant. However, the level of significance was largest for community and personal services that were found to have higher levels of satisfaction in western New York than southwestern Ontario. The negative sign on this variable (Country) is consistent with this result.

The variables with the most significant impact on satisfaction level with a service were those which attempted to measure an individual's standard of comparison against which the service is judged. Objective components of the

TABLE 4 Summary Statistics of Explanatory Variables Affecting Level of Satisfaction with Family Services

Variable	Definition	Mean	Std. Dev.
<i>Objective Attributes</i>			
Country	Country in which household is located (1=Canada, 0=U.S.)	0.62	0.49
Region	Region in province/state that household is located (1=west, 0=east/north)	0.59	0.44
Use	Number of services within each grouping used in the past year		
	-Medical	2.28	0.88
	-Community	1.19	1.02
	-Personal	4.59	0.96
Distance	Average distance travelled to obtain service (miles)		
	-Medical	11.98	8.39
	-Community	6.90	4.77
	-Personal	12.06	8.45
<i>Level of Reference</i>			
Limit Health	Presence of a limiting health condition by a family member (1=yes, 0=no)	0.23	0.42
Special Service	Special services required by the household not presently available (1=yes, 0=no)	0.06	0.23
Available	Availability of services for family (Likert scale with 1=a problem, 5=not a problem)	4.33	0.86
Importance	Importance of services in decision to locate (Likert scale with 1=not important, 5=very important)	3.87	1.12
Improve	Number of services within each grouping for which improvement is desired		
	-Medical	0.39	0.73
	-Community	0.26	0.54
	-Personal	0.64	0.89
Farm Life	Family feeling about farm life in general (Likert scale with 1=strongly dissatisfied, 5=strongly satisfied)	3.50	1.16
<i>Personal Characteristics</i>			
Age	Age of operator (years)	45.73	11.95
Education	Education level of operator (1=grade school, 7=post graduate)	3.22	1.62
Family Size	Number in household	3.90	1.54
Gender	Sex of operator (1=female, 0=male)	0.11	0.31
Years	Years living in current location	33.66	16.82
Acres	Number of tillable acres ('00 acres)	2.52	1.83
Cows	Total number of milking cows	59.61	47.84
Milk/Cow	Milk production per cow ('000 lbs)	13.87	3.55
NFI	Net farm income ('000 \$US)	28.39	39.72
Debt/Asset	Debt to asset ratio	0.66	0.29

Off-farm	Either the operator or the spouse had an off-farm job (1=yes, 0=no)	0.40	0.49
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TABLE 5 Regression Results Explaining Satisfaction with Family Services

Explanatory Variables	Family Services		
	Medical	Community	Personal
Intercept	2.505* (3.519)	3.882* (6.127)	1.894* (2.523)
<i>Objective Service Attributes</i>			
Country	-0.090 (-0.609)	-0.196 (-1.402)	-0.165 (-1.176)
Region	0.024 (0.192)	-0.102 (-0.902)	-0.049 (-0.403)
Use	0.189* (2.605)	0.119* (1.962)	0.092 (1.198)
Distance	-0.004 (-0.524)	-0.016 (-1.643)	-0.002 (-0.248)
<i>Level of Reference</i>			
Limit Health	0.027 (0.179)	0.042 (0.303)	-0.046 (-0.324)
Special Service	0.351 (1.306)	-0.379 (-1.479)	-0.046 (-0.324)
Available	0.196* (2.519)	0.158* (2.279)	0.179* (2.437)
Importance	0.024 (0.450)	0.014 (0.290)	0.075 (1.470)
Improve	-0.502* (-5.095)	-0.337* (-3.236)	-0.231* (-3.897)
Farm Life	0.098* (1.719)	0.082 (1.550)	0.115* (2.104)
<i>Personal Characteristics</i>			
Age	0.001 (0.124)	-0.001 (-0.152)	-0.001 (-0.139)
Education	-0.017 (-0.411)	-0.003 (-0.075)	-0.049 (-1.182)
Family Size	0.005 (0.111)	-0.048 (-1.240)	-0.001 (-0.027)
Gender	-0.120 (-0.457)	0.033 (0.136)	0.213 (0.848)
Years	0.005 (1.087)	-0.001 (-0.193)	0.001 (0.249)
Acres	-0.008 (-0.167)	-0.034 (-0.771)	-0.014 (-0.297)
Cows	0.0005 (0.241)	0.0029 (1.558)	0.0023 (1.184)
Milk/Cow	-0.011 (-0.556)	-0.031 (-1.733)	0.003 (0.182)
NFI	-0.0003 (-0.223)	0.0017 (-1.216)	-0.0003 (-0.216)
Debt/Asset	-0.091 (-0.423)	0.362* (1.870)	0.317 (1.558)
Off-farm	-0.025 (-0.192)	-0.357* (-2.912)	0.085 (0.681)
Adj. R ²	0.230	0.232	0.183
Root MSE	0.658	0.607	0.629
F Value	3.090	3.114	2.569

Note: 1. t values are in parentheses.
2. * = Significant to 0.10 level (90% Confidence level).

reference level had the hypothesised effect but the influence was statistically insignificant. The need for a service, due to a factor such as limiting health condition, increased the satisfaction with medical services but those individuals were likely to be less satisfied with other services. The latter could be related to the availability of community and personal services to people with disabilities. Indeed, perceived availability of the service (Available) had a statistically

significant positive impact in all three service groupings. The stronger the family's feeling that availability of a service was not a problem, the higher the average level of satisfaction with that service. The number of services within each grouping for which improvement is desired (Improve) was summed to form a variable to explain service satisfaction. As discussed earlier (Table 3), personal services were most likely and community services least likely to be cited as requiring improvement. It was found that an increase in the number of services for which improvement is desired by a household had a negative impact on the average satisfaction level of the service grouping by that household. The inverse effect was statistically significant, particularly for medical services. Another attitudinal variable that had a statistically significant effect on all services was the household's feeling about farm life. The more satisfied a family was about farm life in general (Farm Life) the higher the average level of satisfaction with services by that family. The strongest effect of this variable was on personal services.

The other explanatory variables measuring farm and personal characteristics were generally not statistically significant. Farm size had no influence on the average level of service satisfaction. An increase in tillable acres (Acres) was found to decrease the satisfaction with all three service groupings while the opposite was found for increases in herd size (Cows). However, the effect of both measures of farm size was not statistically significant. Milk production per cow (Milk/cow) and off-farm employment (Off-farm) were both found to have a negative influence on the average satisfaction level of community services. The latter result may be associated with an increased awareness for those working off the farm about the duties and performance of community services. Farm financial performance measures (NFI and Debt/Asset) had a weak negative influence on service satisfaction. None of the explanatory variables measuring various demographic factors appeared to have any significant influence on service satisfaction. The operator's sex, age, education level and years living in the area were all statistically insignificant across all three service groupings as was family size. The former variables were found by Goudy (1990) to be positively related to community attachment and suggested by Ladewig and McCann (1980) to also have a positive influence on community satisfaction. The insignificance of these characteristics is consistent with the findings of Marans and Rodgers (1975), Rojek et al. (1975) and Ladewig and McCann (1980).

Conclusions

Satisfaction with family services has been previously found to be a determinant of overall well-being for rural households. However, the impact of government agricultural and social policy on the level of satisfaction with family services has not been previously considered. This paper compared the satisfaction associated with 15 family services by dairy farm families in four nearby areas of New York

and Ontario composed of two regions within each state or province. In general, dairy farm families in all four areas appear satisfied with family services with the highest level of satisfaction on average for community services and the lowest for personal services. However, there were significant regional differences.

Dairy farm families in Ontario were significantly more likely to be satisfied than their counterparts in New York state with the three medical services included in Canada's government-sponsored health insurance program: routine medical, emergency medical and elderly care services. The greatest differences were noted between eastern Ontario and northern New York, which are less heavily populated and relatively less prosperous on average than the other two regions. There was no significant regional difference in the two medical services excluded from the insurance program (dental care and counselling), suggesting that government social policy and not just agricultural support policy can have a major impact on the perceived quality of life for farm families. Indeed, medical insurance and services have become a major policy issue in the United States.

In a comparison of regions within the same state or province, there were few significant differences in the proportions of dairy farm families satisfied compared to those dissatisfied with family services. The result again suggests government policies rather than geographic differences influence the level of satisfaction with family services. However, higher levels of satisfaction were found in southwestern Ontario and western New York that are more densely populated regions with more favorable agronomic conditions and thus where services are more likely to be available.

The impact of availability on satisfaction with particular services was confirmed in a regression analysis which found that distance travelled to obtain a family service generally had an inverse effect on average satisfaction while the opposite was true for perceived availability. In addition to accessibility, a related variable found to have a significant positive influence on service satisfaction by a household was the number of times the service was used. In contrast, an increase in the number of services for which improvement is desired had a negative effect on the average satisfaction level for that service. In general, personal services were most likely to be cited as requiring improvement and community services least likely. The final variable that was statistically significant across all three groupings of family services was the household's attitude about farm life. Families with positive attitudes tended to be more satisfied with family services. Personal and farm characteristics were found to have little influence on household satisfaction with family services.

Two major policy implications arise from the results. First, is the significant impact of availability on the satisfaction with family support services. Service availability can be controlled in part by government policies and recent efforts to reduce government deficits have led to cutbacks in the provision of services to rural areas in many countries. Health care is one of those services as discussed by Bell and Cloke (1989). The cuts plus the increasing dependence on

low-wage consumer service-sector employment and the subsequent inability of those workers to afford health insurance premiums appears to be causing particular hardship in nonmetropolitan regions (Kassab et al. 1995). Given that family service assessment is a component of overall well-being, the result finding that availability is related to service satisfaction, particularly for medical services, suggests that such a benefit should be included in the resource allocation decisions of governments.

The second implication, related to the above, is the importance of including variables other than only objective information to measure social conditions as suggested by Rojek et al. (1975). Personal characteristics and objective attributes of the service were found to have a modest effect on satisfaction with community services as demonstrated by a number of other studies such as Marans and Rodgers (1975) and Ladewig and McCann (1980). The finding is also consistent with Brown (1993) who found local economic and demographic factors were less important than general availability to residents of rural communities as they evolve from commercial to residential centres (consumer society). Thus, officials need to consider more than traditional objective measures if the desire of policy is to improve the quality of life. The assessment of family support services is an example of a valuable, subjective indicator of overall well being, and that indicator itself is determined in large part by the subjective assessed standard against which an individual judges the service.

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