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Leveling the Playing Field: A Regression Model for Comparing the Effectiveness of TANF Employment Services Across Minnesota Counties and Tribal Programs

Introduction

The Minnesota Family Investment Program (MFIP) and Diversionary Work Program (DWP) provide state supervised and county administered employment services to eligible adults. MFIP is Minnesota's family assistance program and DWP is an intensive employment program providing short-term assistance to divert families from MFIP. By design, the eighty-seven counties and five tribes have been given a great deal of flexibility to implement MFIP and DWP in ways that meet the particular needs of their caseloads. State statute specifies basic parameters for employment services, but the specific methods used are largely up to the counties.

The purpose of this report is to explain how we obtain the range of expected performance that makes it possible for the Self-Support Index to "level the playing field" for fairer comparisons across counties and tribes.

In addition to the variations in types of services offered by the counties, the economic and demographic characteristics of the counties are highly varied. Many counties have almost no racial diversity, whereas the non-white MFIP population is a majority of participants in the largest counties.

The availability of jobs varies greatly across Minnesota counties and from season to season. Parts of the state rely heavily on tourism as the mainstay of their economy. Other areas are largely farming regions. The metropolitan area is different from the non-metro area in most respects. Economic conditions around the state could not be more diverse.

Administrative procedures also vary widely across counties. Smaller counties tend to have a low case-to-worker ratio resulting in more personal attention. The large counties have a much higher case-to-worker ratio and a more standardized approach to services. Lake County, for example, recently had a total of 14 MFIP adults and one caseworker, whereas Hennepin County has more than 10,000 adults and hundreds of caseworkers.

The state, as supervisor of the MFIP and DWP programs, is charged with the challenging task of assessing the relative effectiveness of the varied county efforts to move recipients along the path to self-sufficiency. Given the variety of combinations of program components and the varying economic and demographic realities of the counties, comparisons across counties are very difficult.

Historically, the implicit working assumption – clearly false – has been that the environment in which the counties and the five tribal programs operate is constant across the state. Comparisons of performance across counties have been based on actual participant outcomes with no regard for the specific advantages or disadvantages that any county may have when trying to promote economic stability among its welfare recipients.

The need for a different way of measuring performance was clear. Recognizing this need, Minnesota’s Legislature instructed the Department of Human Services to develop a “proposal for assessing county performance using a methodology that controls for demographic, economic, and other variables that may impact county achievement of MFIP performance outcomes.” This paper outlines the process that was undertaken to meet the legislated mandate and the statistical procedures that were ultimately implemented.

Model Development¹

Definition of Performance A committee of MFIP stakeholders (county administrators, employment services providers, and state administrative staff) held a series of meetings starting in November 2001 to define “success” for an MFIP adult and develop a method to measure it. Numerous issues were debated at length before achieving consensus on the definition of success. Among the questions addressed were: What are the goals of the MFIP program? Is progress toward self-sufficiency, short of an actual exit from the program, success? Should becoming eligible for another program (primarily Supplemental Security Income (SSI)) or moving to another state be counted as a success? When should success, or lack of it, be assessed? How many measures of success should there be? Is there a way to give counties credit for the work that they have done, short of getting recipients off the program? Is there a way to give counties credit for the work that they have done in excess of the stated goal of getting recipients off the program?

The result of lengthy, productive debate was a compromise measure which combined the ultimate goal of exit from the program through increased earnings and the shorter-term goal of near full-time employment. By consensus, success in MFIP was defined as working in paid employment for an average of thirty or more hours per week or being off the cash

¹ For more information about the history and development of the Self-Support Index, see *Evaluation Notes Issue 15: Updated Information on the MFIP Self-Support Index*. St. Paul, MN: Department of Human Services. <http://edocs.dhs.state.mn.us/lfsrserver/Legacy/DHS-4064O-ENG>

portion of the MFIP program in the measurement quarter which is three years after the baseline measurement period.

For practical and political reasons, the group decided to combine the two positive outcomes (working 30 or more hours per week and off MFIP cash) into one measure.

More specifically, an adult who was eligible for MFIP or DWP in any one of the three months during a baseline quarter (in this example, January through March 2005) was counted in the measure. They were counted as a success if they were working or off cash from either program in all three months of the measurement quarter, three years later (in this example, January through March 2008).² This three-year performance measure is called the “Self-Support Index.”

A three-year measurement point was chosen because, within the general parameters of the MFIP program specified in state statute, counties could offer up to two years of education and training. A measurement after three years allowed sufficient time for employment plans to be fully implemented before assessing performance.

Variable Selection The MFIP performance measure, the S-SI, became the dependent variable for the analysis. Further meetings with the MFIP stakeholders identified many variables that might affect the S-SI. At this stage of the model development, no attention was given to concerns such as data availability, data privacy, statistical concerns, or other practical issues. The intent was to simply identify the factors that are beyond the control of the county programs but nevertheless have an impact on participants’ success in the MFIP program.

Since the purpose of the analysis was to devise a method that would allow meaningful comparisons of MFIP performance across counties by controlling for variables beyond a county’s control, MFIP program characteristics, which counties can generally control (e.g. sanction rate, staffing ratios, differing arrays of services) were excluded as variables. Theoretically, once all variables that are beyond the county’s control are accounted for in the model, the remaining differences across counties can then be attributed to differences in program design and implementation methods (and any remaining unexplained variance resulting from excluded variables or error).

The brainstorming process yielded approximately 100 potential variables. Some of the variables were similar to others to the point of redundancy (for example, age of the mother at the birth of the first child and age of mother at first welfare application). Further discussions identified the most useful single variable in groups of similar variables.

Lack of data availability further limited the list of potential independent variables. For example, it was generally agreed that recipient motivation and attitude are critical to success. However, no good measure of these characteristics is available.

² Two subgroups of people who are off cash assistance the entire measurement quarter are an exception to the basic rule: those who have reached the 60-month time limit and those who have received a 100% sanction in the previous nine months. To be considered a success, persons in either of these situations must also either have worked an average of 30 hr/wk in one of the last three months before leaving cash assistance or they must have started receiving SSI.

Some variables were highly correlated with others – citizenship with immigrant status and out-of-wedlock birth rate with the child poverty rate are two examples. When two or more variables were correlated above 0.70, only one variable of the pair was chosen for entry into the model.

Approximately 30 conceptually unique variables with readily available data sources survived this screening process. For the January through March 2008 measurement period, the variables in Table 1 were used. In the table, they are categorized in two dimensions: person vs. county-level, and continuous vs. discrete. (See the appendix for detailed definitions and theoretical expectations.)

Table 1. Regression variables by level and type - January through March 2008

	Person-level variables:	County-level variables:
Discrete variables:	<ul style="list-style-type: none"> •Ever married •High school or more •Immigrant •Needs an interpreter •Serious mental illness diagnosis •Chemical dependency diagnosis •Moved during the observation period •Came from another state •SSI adult in the case •SSI child in the case •Adult is a student •Two-adult case •African American •American Indian •Hispanic •Hmong •Non-Hmong Asian •Somali •Non-Somali Black immigrant 	<ul style="list-style-type: none"> •County in metro area of 250,000 to 1 million population •County in metro area of fewer than 250,000 population •Non-metro county with urban population of 20,000 or more, adjacent to a metro area •Non-metro county with urban population of 20,000 or more, not adjacent to a metro area •Non-metro county with urban population of 2,500-19,999, adjacent to a metro area •Non-metro county with urban population of 2,500-19,999, not adjacent to a metro area •Non-metro county all rural or less than 2,500 urban population, adjacent to metro area •Non-metro county all rural or less than 2,500 urban population, not adjacent to metro area
Continuous variables:	<ul style="list-style-type: none"> •Age of the youngest child •Age of the adult •Number of children •Average child support received •Number of months of shelter subsidy (shelter) 	<ul style="list-style-type: none"> •Child poverty rate in the county •Annual county unemployment rate

In order to provide reference groups, “white” was excluded from the set of race and ethnicity indicator variables and “Beale code 1” (County in metro area with 1 million population or more) was excluded from the population variables.

Statistical Analysis

Logistic regression analysis was indicated because the statutory requirement for this analysis was to control for the economic, demographic, and other variables across counties and the dependent variable (the Self-Support Index) is a dichotomous indicator (1=success, 0=not).

Multilevel issues The variables of interest are either characteristics of the county or person characteristics. Every MFIP or DWP-eligible adult in a given county receives the same value for each of the county-level variables. Using county values in a person-level model artificially limits the variation across individuals.

The bias that is introduced when data from more than one level are combined in a standard regression can be avoided by using multi-level regression techniques. For this reason, the initial analyses proceeded with multi-level modeling. However, the early models showed that the measure of whether using multiple levels would make a difference (the intra-class correlation) was extremely low, indicating that there would be no reason to do a multi-level analysis. We proceeded with a person-level logistic regression model.

Quarterly analysis Every quarter a new person-level regression analysis is performed, using data for the adults eligible on MFIP or DWP in the quarter three years before the measurement quarter. The predictors can vary from quarter to quarter. Over time, new predictors have been proposed and some that were both theoretically and practically feasible were added to the list, including moving across a county line, shelter subsidy, mental and chemical health indicators, and monthly county unemployment rate. Each regression selects the best set of predictors.

Person level The logistic regression for January through March 2008, using the population of all eligible MFIP adults in the baseline quarter, yielded the results shown in Table 2. The regression equation yields an expected probability of success for each person, based on their status on all of the predictors. Within each block of variables (continuous in the upper and discrete in the lower), the variables are listed in the order of their impact on MFIP success, from highest to lowest.

The odds ratio provides an intuitive interpretation of the results. The odds ratio is the probability of success (being coded '1' on the Self-Support Index) divided by the probability of failure. Using the mover variable as an example, one can say that, all other variables held constant, the odds of success for an MFIP adult who has moved to a different county within the past three years is 0.40 times the odds of success for an adult who did not move. Similarly, an adult in a two-adult case is 1.77 times as likely to be an MFIP success as is an adult in a one-adult case.

County level The regression analysis was conducted at the person level. However, the purpose of this analysis was to develop a method of comparison across counties. In order to assess performance by county, the person-level actual and expected values were each averaged across all persons within each county, creating an observed Self-Support Index (percentage successful) and an average expected performance level for each county.

For the January through March 2008 quarter, the correlation between the actual and mean predicted values for the Self-Support Index for the counties was 0.718 and the squared

Table 2. Regression results for all eligible MFIP adults in the baseline quarter three years earlier: January through March 2008

	Coefficient	Standard Error	Significance	Odds Ratio
Age of the youngest child	0.003	0.003	0.330	1.00
Age of the adult	0.001	0.002	0.532	1.00
Average child support received	0.001	0.000	0.004	1.00
Average annual unemployment rate	-0.013	0.021	0.533	0.99
Number of months of shelter subsidy	-0.019	0.001	0.000	0.98
County child poverty rate	-0.056	0.003	0.000	0.95
Number of children	-0.149	0.009	0.000	0.86
SSI adult in the case	1.020	0.188	0.000	2.77
Beale county code 8	0.843	0.107	0.000	2.32
Beale county code 9	0.755	0.100	0.000	2.13
Beale county code 7	0.637	0.055	0.000	1.89
Two-adult case	0.568	0.030	0.000	1.77
Beale county code 6	0.498	0.068	0.000	1.65
Beale county code 4	0.496	0.072	0.000	1.64
Moved during observation period	-0.920	0.028	0.000	0.40
Beale county code 5	0.421	0.074	0.000	1.52
Somali	0.372	0.091	0.000	1.45
Beale county code 3	0.360	0.051	0.000	1.43
High school or more	0.338	0.025	0.000	1.40
Beale county code 2	0.283	0.059	0.000	1.33
Non-Somali black immigrant	0.262	0.106	0.014	1.30
Hmong	0.256	0.093	0.006	1.29
Non-Hmong Asian	0.250	0.095	0.008	1.28
Ever married	0.242	0.029	0.000	1.27
Immigrant	0.202	0.079	0.011	1.22
Came from another state	0.165	0.027	0.000	1.18
Student	0.022	0.040	0.571	1.02
Hispanic	-0.038	0.056	0.504	0.96
Needs an interpreter	-0.095	0.058	0.101	0.91
Chemical dependency diagnosis	-0.161	0.046	0.000	0.85
Severe mental health diagnosis	-0.266	0.030	0.000	0.77
African American	-0.356	0.033	0.000	0.70
SSI child in the case	-0.528	0.045	0.000	0.59
American Indian	-0.574	0.044	0.000	0.56
Constant	1.859	0.108	0.000	6.42

correlation (R^2) was 0.515. In other words, the mean predicted county performance (i.e., the model) can be said to explain 52 percent of the variance in the actual county performance (i.e., the Self-Support Index).

Confidence Intervals Aggregating the person-level results to the county level raised questions about the appropriate method for computing the confidence intervals around the expected values for the counties. No standard formula existed, so with the advice of Dr. Sanford Weisberg, Professor of Statistics at the University of Minnesota, DHS developed a bootstrap method to determine the 95 percent range of predicted values for each county. This is an empirical method of generating a distribution of predicted values of the Self-Support Index for each county and tribe.

The regression was run using a random sample of 50 percent of all MFIP adults (approximately 21,000). The expected performance for each adult, including those not sampled, was calculated. The average expected county performance was computed for the half of the population that was not sampled. This standard method of cross-validation – developing a regression equation on part of the group and applying it to the other part – minimizes capitalizing on chance, or fitting the model to error.

Each quarter, this procedure is repeated many times to get a distributions of predicted values for each county and each tribe (in practice, 8,000 repetitions were found to be necessary). The predicted values found at the 2.5 and 97.5 percentiles of the distribution for a county or tribe are used as the upper and lower bounds of the 95 percent confidence intervals around the predicted value.

Ultimately, it is these confidence intervals that “level the playing field.” For purposes of evaluating performance, we refer to the confidence interval as the “range of expected performance.” Counties are categorized as performing “above expectations,” “within expectations,” or “below expectations.”




Since performance is measured relative to other counties, improvements in any county’s performance increase the minimal standard of performance for all counties, theoretically resulting in an ever-increasing standard for performance.

The following table reports the bounds of the range of expected performance and the actual performance (the Self-Support Index) for each county or tribe for this quarter. An actual performance value highlighted in green indicates that the county or tribe is performing above expectation, blue indicates performance within the range of expectations, red indicates performance below expectations.

For the cohort from the first quarter of 2005, assessed three years later, the Self-Support Index was below the expected range of performance in 20 counties or tribes, above the expected range of performance in 28, and within the expected range of performance in 44. Note that people served by one of the tribal employment services providers are not included in the measure for their county of residence.

**Table 3. Actual Performance (Self-Support Index) and Expected Range of Performance
January - March 2008 Report**

<u>County/Tribe</u>	<u>Lower Bound</u>	<u>Actual Performance</u>	<u>Upper Bound</u>	<u>County/Tribe</u>	<u>Lower Bound</u>	<u>Actual Performance</u>	<u>Upper Bound</u>
Aitkin	73.9%	74.8%	80.7%	Mille Lacs	75.0%	77.5%	79.9%
Anoka	72.8	72.6	74.8	Morrison	76.0	80.6	80.8
Becker	71.9	77.2	76.6	Mower	77.9	85.7	82.6
Beltrami	65.2	69.5	69.2	Murray	82.6	96.2	90.0
Benton	74.7	76.2	79.1	Nicollet	76.3	78.1	81.4
Big Stone	79.4	70.0	87.3	Nobles	80.3	78.9	84.5
Blue Earth	75.5	78.7	80.4	Norman	81.1	82.1	87.6
Brown	83.3	82.1	87.3	Olmsted	82.2	82.6	84.8
Carlton	76.3	80.2	80.5	Otter Tail	76.7	84.8	80.6
Carver	74.3	84.2	78.9	Pennington	75.2	86.7	81.0
Cass	69.3	81.9	76.2	Pine	75.2	74.7	79.6
Chippewa	78.2	78.5	84.2	Pipestone	78.5	85.5	84.6
Chisago	76.0	78.8	79.7	Polk	74.8	79.4	78.9
Clay	74.7	79.4	78.6	Pope	76.5	67.4	85.4
Clearwater	71.5	78.8	80.9	Ramsey	61.4	62.0	63.1
Cook	73.0	69.2	88.3	Red Lake	80.5	79.5	87.5
Cottonwood	78.9	88.6	84.5	Redwood	78.5	84.8	83.7
Crow Wing	76.3	76.4	81.3	Renville	78.9	78.3	85.3
Dakota	71.5	70.8	73.7	Rice	79.6	81.0	84.1
Dodge	83.6	87.5	87.8	Rock	83.6	88.0	89.3
Douglas	79.0	82.6	83.3	Roseau	79.8	85.3	86.7
Faribault	79.9	91.7	85.1	St Louis	71.3	72.8	74.9
Fillmore	85.5	86.8	90.2	Scott	71.9	74.6	75.8
Freeborn	82.6	86.3	85.8	Sherburne	72.7	79.1	76.3
Goodhue	77.0	75.3	81.9	Sibley	82.4	84.6	88.1
Grant	76.9	82.1	86.1	Stearns	77.5	77.6	80.7
Hennepin	64.6	65.1	66.0	Steele	80.7	86.1	85.1
Houston	80.5	84.7	84.7	Stevens	75.0	100.0	86.7
Hubbard	72.8	79.6	78.3	Swift	79.2	76.9	85.7
Isanti	72.9	77.8	77.1	Todd	76.9	80.5	81.3
Itasca	74.3	75.2	78.5	Traverse	74.0	93.5	82.7
Jackson	74.1	84.1	83.7	Wabasha	78.6	87.8	84.0
Kanabec	75.4	80.0	80.6	Wadena	74.4	77.1	79.5
Kandiyohi	78.2	80.2	82.7	Waseca	81.3	89.2	85.2
Kittson	75.8	86.7	90.7	Washington	72.4	76.8	75.2
Koochiching	76.1	83.9	81.0	Watsonwan	79.6	83.6	84.6
Lac Qui Parle	82.7	78.6	92.2	Wilkin	79.3	81.0	87.7
Lake	77.5	82.4	84.3	Winona	77.6	82.2	82.4
Lake of the Woods	77.4	55.6	87.1	Wright	74.8	81.9	78.0
Le Sueur	78.9	76.5	83.0	Yellow Medicine	78.1%	69.2%	86.9%
Lincoln	82.1	86.7	91.0	White Earth Tribe	59.2%	62.0%	65.3%
Lyon	81.1	79.8	85.4	Minnesota Chippewa Tribe	58.8	61.7	64.0
Mcleod	82.3	82.9	86.6	Leech Lake Tribe	57.1	57.1	62.6
Mahnomen	55.8	72.2	68.8	Red Lake Tribe	56.9	53.3	61.7
Marshall	83.5	85.4	89.6	Mille Lacs Tribe	55.8%	50.6%	61.4%
Martin	80.5	82.1	84.2				
Meeker	81.9%	85.7%	85.7%	STATE		70.2%	

 = Below expected range of performance
 = Within expected range of performance
 = Above expected range of performance

Discussion and Conclusions

This model was developed to make meaningful comparisons across counties with respect to their MFIP programs. We have gone a long way toward “leveling the playing field.”

Theoretically, the intent was to explain all variation in success rates across counties that is attributable to variables that are beyond the control of the county. The remaining variation should then be, to a large but undetermined extent, the result of the program itself, that is, the variables that the county can control. In practice, we have explained 52 percent of the variation across counties for the quarter reported here.

The remaining 48 percent of the variation across counties is a combination of the employment services program effects, error, and still unexplained variation. The relative size of these three components is unknown. However, it seems reasonable to assume that the employment services effect accounts for a large portion of the unexplained variance. To assume otherwise would mean that either the programs do not influence success rates or that the programs are uniformly effective across counties.

Initially most counties supported this method of performance assessment. Presumably, high-performing counties believed that they were doing good work and that the model would only verify their success. On the other hand, poorly performing counties were likely to believe that the regression modeling would allow their good work with a more difficult caseload to be recognized.

In practice, counties and tribes with high Self-Support Index values relative to all others were generally within or above the expected range of performance and counties and tribes with low Self-Support Index values were most often within or below the expected range of performance. However, some counties with low actual performance scores were performing above expectations and some counties with high actual performance were performing below expectations. For example, the actual performance of Beltrami County (69.5 percent) is the twelfth lowest in the state for January through March 2008. However, when considered in the context of their range of expected performance, they are found to be performing above expectations. Conversely, Brown County, with an actual performance of 82.1 percent, is in the top 40 percent of all counties and tribes but is performing below expectations determined by the model for that quarter.

The Performance Measures model has greatly enhanced the legitimacy and accuracy of comparisons of the effectiveness of TANF employment services across counties. As a result, greater attention is now paid to differences across counties resulting in a sharpened focus on the success of MFIP participants.

The Self-Support Index has also been important in work on racial disparities³ in these programs. Counties in which the average SS-I for African American or American Indian MFIP or DWP adults is 5 percentage points or more below the average for Whites are required to submit a plan for disparity reduction.

³ *Evaluation Notes Issue 17: Racial disparities in the Minnesota Family Investment Program (MFIP)*. St. Paul, MN: Minnesota Department of Human Services. <http://edocs.dhs.state.mn.us/lfserver/Legacy/DHS-4064S-ENG>

Predictors included in the model

Variable: **Adult is or was married**

Theory: Adults who have ever been married have a demonstrated acceptance of at least one aspect of mainstream culture. We hypothesize that these individuals will be more likely to succeed.

Variable: **High School or more**

Theory: Adults with greater levels of education are generally more capable and thus more likely to find better jobs with a greater likelihood of exiting MFIP.

Variable: **Immigrant**

Theory: Many immigrants have cultural and language barriers which would be expected to be associated with reduced potential for success. Conversely, immigrants may be motivated by the opportunity of a new life in a new country. The expected effect on performance is uncertain.

Variable: **Needs an interpreter**

Theory: Inability to speak English would be expected to be associated with reduced potential for success.

Variable: **Adult had a serious mental illness diagnosis sometime during the first year of the observation period**

Theory: Adults with mental health problems are expected to be less able to obtain and retain employment and, therefore, less likely to become MFIP successes.

Variable: **Adult had a Chemical dependency diagnosis sometime during the first year of the observation period**

Theory: Adults with chemical dependency problems are expected to be less able to obtain and retain employment and, therefore, less likely to become MFIP successes.

Variable: **Moved across a county line during the 3-year observation period**

Theory: Moving may be an indication of instability and thus decreased likelihood of success. Conversely, the ability to plan and execute a move, especially to a better location may be an indicator of success. The effect is uncertain.

Variable: **Came from another state**

Theory: Moving from another state with children and with minimal resources requires a certain level of energy, determination, and, organization that will be associated with success in MFIP.

Variable: **SSI child in the case**

Theory: Disabled children create additional demands which may interfere with the adult's ability to move toward self-support.

Variable: **SSI adult in the case**

Theory: A second adult caregiver receiving SSI provides a steady source of income for the family.

Variable: **Adult is a student**

Theory: An active student is demonstrating personal initiative that is likely to be associated with MFIP success.

Variable: **Two-adult case**

Theory: Families with two adults have twice the opportunity to earn. Therefore, all other things being equal, an adult in a two-adult case is expected to be more successful than an adult in a one-adult case. However, MFIP program information indicates that two-adult cases are often particularly problematic. The net effect is uncertain.

Variable: **African American adult**

Theory: Racism/structural disadvantage is expected to result in poorer outcomes for the non-white MFIP population.

Variable: **American Indian adult**

Theory: Racism/structural disadvantage is expected to result in poorer outcomes for the non-white MFIP population.

Variable: **Hmong adult immigrant**

Theory: Racism/structural disadvantage is expected to result in poorer outcomes for the non-white MFIP population.

Variable: **Non-Hmong Asian adult immigrant**

Theory: Racism/structural disadvantage is expected to result in poorer outcomes for the non-white MFIP population.

Variable: **Somali adult immigrant**

Theory: Racism/structural disadvantage is expected to result in poorer outcomes for the non-white MFIP population.

Variable: **Non-Somali Black immigrant adult immigrant**

Theory: Racism/structural disadvantage is expected to result in poorer outcomes for the non-white MFIP population.

Variable: **Hispanic adult**

Theory: Racism/structural disadvantage is expected to result in poorer outcomes for the non-white MFIP population.

Variable: **Age of the youngest child at baseline**

Theory: As children age the demands on the parents decrease. Child care becomes more acceptable to parents. Parents of school-age children have many hours available for activities other than child supervision. We expect that

the older the youngest child, the greater the probability of success in the MFIP program.

Variable: **Age of the adult at baseline**

Theory: Increasing age is likely to be associated with greater job experience, education, maturity, appeal to potential employers, etc., and therefore, greater probability of success.

Variable: **Number of children at baseline**

Theory: The more children in an MFIP case, the harder it is to attain a wage that will reach the MFIP exit threshold. The greater the number of children in the case, the greater the probability of having a very young child in the home. We expect that cases with more children will be less likely to succeed.

Variable: **Average child support received during baseline**

Theory: Greater support from the absent parent is likely to promote exit from MFIP.

Variable: **The number of months of shelter subsidy received during the observation period**

Theory: Stable housing promotes stability in other areas and will lead to more rapid MFIP exit.

Variable: **Adult lives in a county that is in the metro area and has a population of 250,000 to 1 million**

Theory: Urban centers generally offer more employment opportunities. Urban centers also suffer from a range of urban problems. The net expected effect is unclear.

Variable: **Adult lives in a metro county with a population of less than 250,000**

Theory: Urban centers generally offer more employment opportunities. Urban centers also suffer from a range of urban problems. The net effect is unclear.

Variable: **Adult lives in a non-metro county with an urban population of 20,000 or more adjacent to a metro area.**

Theory: Urban centers generally offer more employment opportunities. Urban centers also suffer from a range of urban problems. The net effect is unclear.

Variable: **Adult lives in a non-metro county with an urban population of 20,000 or more, not adjacent to a metro area**

Theory: Urban centers generally offer more employment opportunities. Urban centers also suffer from a range of urban problems. The net effect is unclear.

Variable: **Adult lives in a non-metro county with an urban population of 2,500 to 19,999 adjacent to a metro area**

Theory: Non-urban areas generally offer fewer employment opportunities but also suffer from fewer problems typically characteristic of urban centers. The net effect is unclear.

Variable: **Adult lives in a non-metro county with an urban population of 2,500 to 19,999 not adjacent to a metro area**

Theory: Non-urban areas generally offer fewer employment opportunities but also suffer from fewer problems typically characteristic of urban centers. The net effect is unclear.

Variable: **Adult lives in a non-metro county that is all rural or has an urban population of less than 2,500, adjacent to a metro area**

Theory: Non-urban areas generally offer fewer employment opportunities but also suffer from fewer problems typically characteristic of urban centers. The net effect is unclear.

Variable: **Adult lives in a non-metro county that is all rural or has an urban population of less than 2,500, not adjacent to a metro area**

Theory: Non-urban areas generally offer fewer employment opportunities but also suffer from fewer problems typically characteristic of urban centers. The net effect is unclear.

Variable: **County child poverty rate (2005)**

Theory: The county child poverty rate is an indicator of the economic conditions faced by families with children. Higher county child poverty is expected to be associated with lower county performance rates.

Variable: **The average annual county unemployment rate (2007)**

Theory: The higher the county unemployment rate, the less likely that MFIP adults will find employment.

Evaluation Notes is an occasional publication of the Program Assessment and Integrity Division, Minnesota Department of Human Services. This report was prepared by Mark Kleczewski. For questions on this report, please contact Mark at mark.kleczewski@state.mn.us or 651-431-3960.