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## Assessing Community Resources and Economic Development Programming Efforts Using a Modified Human Development Index

Joselito K. Estrada  
*University of Texas at Brownsville*, [jkestrada@utb.edu](mailto:jkestrada@utb.edu)



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## Assessing Community Resources and Economic Development Programming Efforts Using a Modified Human Development Index

### Abstract

Current outcomes measures of Extension Service base program effectiveness tend to be initiative specific. These diverse indicators do not provide an encompassing view of a base program's efficacy. This article proposes the use of an overall index that would incorporate existing outcomes measures to evaluate base program progress. Specific emphasis is placed on the development of an index for the community resources and economic development base program.

### Joselito K. Estrada

Assistant Professor, Department of Business Administration  
The University of Texas at Brownsville  
Brownsville, Texas  
[jkestrada@utb.edu](mailto:jkestrada@utb.edu)

### Introduction

As one of the base programs of the Cooperative Extension System, the goal of community resources and economic development is to provide research-based educational programs and technical assistance that lead to the long-term well-being of communities (CSREES, 2003). How do we measure an extensive goal such as community well-being?

At present, community well-being is measured within the confines of various programs of excellence such as workforce preparation, business retention and expansion, community planning, and small and/or home-based businesses (Southern Rural Development Center, 2004). Each of these programs of excellence has its own outcomes indicators. Workforce preparation may use indicators such as number of youth in the labor force or number of welfare recipients, while the small and/or home-based business program may use number of new business start-ups/expansions and number of jobs created from business start-ups/expansions. Although these indicators provide useful information regarding program efficacy, such measures do not necessarily provide an encompassing view of well-being.

This article presents a measure that would provide a holistic indicator of community resources and economic development's goal of community well-being. The proposed measure is based upon the United Nations' human development index (HDI).

### The Human Development Index

The United Nations Development Programme introduced the HDI, which has served as a composite measure of human development, in 1990 with the publication of the first Human Development Report (UNDP, 2001). At the heart of these human development reports is the promotion of an alternative means of viewing human development or well-being. These reports have called for a shift in the development paradigm from a focus on economic growth towards a more evenhanded interest in equity, sustainability, productivity, and empowerment.

In its original form, the HDI measures a nation's overall achievement based on three basic dimensions. The first dimension, which is *longevity*, is measured based on life expectancy. The second dimension, which is *knowledge*, is measured based on a set of variables pertaining to educational attainment. The final dimension, which is *decent standard of living*, is measured using adjusted income per capita in purchasing power parity U.S. dollars. Indexes are developed for each of these dimensions. The average of these dimension indexes forms the HDI. The resulting HDI

provides a value between zero and one. Nations with HDI values closer to one (zero) represent higher (lower) levels of development.

National, state/provincial, and local government decision makers have used results from the estimation of HDIs as policy assessment tools. Comparisons across borders and time have led to the appraisal and adjustment of policy initiatives towards human development.

While the initial applications of the HDI have been to compare achievements in human development among nations, a number of studies have been conducted using the HDI to compare achievements at the city level or county level (Agostini & Richardson, 1997; Felder, 2002; Hanham, Berhanu, & Loveridge, 2002). On the other hand, the HDI has been used to assess human development for population groups (Corrie, 1994).

Developing a Modified Human Development Index for Use in Program Evaluation: Evaluating the Impact of the Empowerment Zone Program

### Modified HDI

As a potential measurement tool for community resources and economic development programming at the county-level, a modified version of the HDI can be developed. Rather than utilize the original dimensions established by the United Nations, this modified index will incorporate dimensions or indicators that are program-specific. The general formulation of the index is as follows.

- County-Level Index =  $(X_i - \min X) / (\max X - \min X)$

Where

- $X_i$  - County's value for a specific indicator;
- $\min X$  - the lowest observed value among all counties for the indicator; and,
- $\max X$  - the highest observed value among all counties for the indicator.

### Use as a Program Evaluation Tool

Let us look at an example of how this index could be used as a program evaluation tool. Specifically, this example investigates the effects of the Empowerment Zone program on Cameron County, Texas (Estrada & Allen, 2004).

The Rio Grande Valley of Texas received a rural empowerment zone designation from the Federal Government in December 1994. In its application for designation, the empowerment zone corporation sought to improve the quality of life for valley residents by addressing a number of development concerns (RGVEZC, no date). Most notable of these concerns was the creation of sustainable jobs paying livable wages (economic opportunity); educational opportunities that lead to high skills training (education); and increased capacity in housing development (housing).

In general, evaluating quality of life by using the indicators cited above could take on the form of presented in Table 1. While the data presented in the table provides useful information, it does not present an encompassing view of well-being in the county.

**Table 1.**  
2000 Socioeconomic Indicators for Cameron County, Texas

<b>Education Dimension Indicators</b>	<b>Variable Name</b>	<b>Value</b>
Percent of Persons Aged 25 and older who are High School Graduates	$\chi^{E1}$	55.2 %
Percent of Persons Aged 25 and Older who are College Graduates	$\chi^{E2}$	13.4 %
Percent of Total Population that are enrolled in Elementary and High School	$\chi^{E3}$	23.3 %
<b>Economic Opportunity Dimension Indicators</b>		
1999 Median Household Income	$\gamma^{E1}$	\$26,155

Percent of Families Living Below the Poverty Level in 1999	$\gamma^{E2}$	28.2 %
Average Monthly Unemployment Rate	$\gamma^{E3}$	8.7 %
<b>Housing Dimension Indicators</b>		
Total Number of Housing Units	$Z^{H1}$	119,654
Number of Owner-occupied Housing Units	$Z^{H2}$	65,875
Median Value of Owner-occupied Housing Units	$Z^{H3}$	\$53,000
Sources: Texas State Data Center & Texas Workforce Commission (2004).		

Using the index listed above, a series of dimension/indicator indexes could be developed to show how the county has progressed vis-à-vis other counties in the state. These indexes are calculated below.

- Education Index =  $(X^{E1} + X^{E2} + X^{E3}) / 3$

Where

- $X^{E1}$  Index =  $(X^{E1}_i - \min X^{E1}) / (\max X^{E1} - \min X^{E1})$
- $X^{E2}$  Index =  $(X^{E2}_i - \min X^{E2}) / (\max X^{E2} - \min X^{E2})$
- $X^{E3}$  Index =  $(X^{E3}_i - \min X^{E3}) / (\max X^{E3} - \min X^{E3})$

- Economic Opportunity Index =  $(Y^{E1} + Y^{E2} + Y^{E3}) / 3$

Where

- $Y^{E1}$  Index =  $(Y^{E1}_i - \min Y^{E1}) / (\max Y^{E1} - \min Y^{E1})$
- $Y^{E2}$  Index =  $1 - [(Y^{E2}_i - \min Y^{E2}) / (\max Y^{E2} - \min Y^{E2})]$
- $Y^{E3}$  Index =  $1 - [(Y^{E3}_i - \min Y^{E3}) / (\max Y^{E3} - \min Y^{E3})]$

- Housing Index =  $(Z^{H1} + Z^{H2} + Z^{H3}) / 3$

Where

- $Z^{H1}$  Index =  $(Z^{H1}_i - \min Z^{H1}) / (\max Z^{H1} - \min Z^{H1})$
- $Z^{H2}$  Index =  $(Z^{H2}_i - \min Z^{H2}) / (\max Z^{H2} - \min Z^{H2})$
- $Z^{H3}$  Index =  $(Z^{H3}_i - \min Z^{H3}) / (\max Z^{H3} - \min Z^{H3})$

- Overall Well-Being Index =  $(\text{Education Index} + \text{Employment Opportunity Index} + \text{Housing Index}) / 3$

The min (max) value for each variable represents values for counties in the state with the lowest (highest) value for the variable under consideration. Estimated values for these indexes are presented in Table 2.

**Table 2.**  
Dimension and Overall Well-Being Indexes for Cameron County

Dimension	Index	County Rank
Education	0.46	153
Economic	0.43	244
Housing	0.18	53

Overall Well-Being Index	0.35	218
<p>Source: Estrada &amp; Allen (2004).</p> <p>Note: The state of Texas is comprised of 254 counties. The County Rank column shows how Cameron County ranks in relation to other counties with respect to the dimensions listed above.</p>		

## Summary

In a period where accountability and effectiveness are imperative, outcomes measures of Extension Service education programs are crucial. Given the extensive nature of most Extension Service base programs, especially community resources and economic development, outcomes indicators tend to be program specific rather than encompassing.

This article has introduced the development of a measure, based on the human development index, that would allow for the evaluation of the effectiveness of the community resources and economic development base program in achieving its goal of improving community well-being. Rather than discarding existing outcomes indicators, these are utilized in the development of an overall index that could be used to assess community well-being. Similar indexes could be developed for other Extension Service base programs.

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