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An Agent Allocation System for the West Virginia University Extension Service

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Abstract

Extension recognizes the importance of data in guiding programing decisions at the local level. However, allocating personnel resources and specializations at the state level is a more complex process. The West Virginia University Extension Service has adopted a data-driven process to determine the number, location, and specializations of county agents across the state. While local desires will always be part of the process, new metrics and methods encourage discussion and guide those decisions. The expected result is an improved matching of agents with local needs, thus improving the ability of Extension to fulfill its service mission statewide.

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Introduction

The West Virginia University Extension Service has adopted a data-driven process to more effectively allocate personnel resources and specializations statewide. Determining how many Extension agents should be placed around the state, where they should be located, and what specializations they should have are not easy tasks. Balancing local desires, statewide priorities, and university goals is challenging at best. Complicating matters has been the limited data available on which to base these decisions.

Extension has long recognized the importance of data in guiding programing decisions. Preston (1982) notes that the future of effective Extension programming rests on program leaders' ability and willingness to anticipate changing local conditions. Meadowbrook and Fletcher (1988) and Jacob, Israel, and Summerhill (1998) highlighted the use of demographic data as a tool to evaluate county level program coverage, identify new audiences, and better match Extension's clientele reach with county-level demographic trends. More recently Curtis, Veroff, Rizzo, and Beaudoin (2012) described how to use demographic data to understand community needs and uncover

community assets and deficits.

The West Virginia University Extension Service serves all 55 counties in the Mountain State with 118 county-based agents statewide. Each county has one agent paid for solely with state funds. Many counties have more than one agent paid for through a combination of state and local funds and assigned depending upon population and needs. A small number of agents have multi-county responsibilities; however, the vast majority are assigned to a single county. These agents are also assigned to a programmatic unit for their primary responsibility and evaluation—4-H and Youth Development; Agriculture and Natural Resources (ANR); Community, Economic, and Workforce Development (CEWD); and Families and Health.

Given the complexity of this situation, the Extension administration sought an empirical method to aid in the agent allocation process. Two specialists outlined a method for allocating agents across the state. They also created a set of indexes to compare the relative needs for each program area in a particular county. Combined, this system demonstrated how many and what type of agent might best serve each county.

Creating Allocation Indexes

Traditionally, agents were allocated to counties based upon the long-time standard metrics put forward by the U.S. Department of Agriculture: total population and number of farms. The assignments to program areas were based on local needs as perceived by the County Extension Service Committee with some minor consideration given to state Extension initiatives. The updated method represented an attempt to incorporate a breadth of empirical data into the decision-making process. While local desires will always be part of the process, these metrics were designed to create discussion and guide those decisions.

The initial task was to determine the appropriate distribution of agents to the counties. As with the previous formula, population remained a driving metric for agent allocation. Assessed property valuations were also included to represent a county's ability to contribute resources for salaries, work space, etc. These two equally weighted variables were used to allocate one, two, or three agents to each county, based on the current practice where every county is guaranteed to have at least one agent and no county has more than three agents. The new allocation method was compared to the current distribution of agents to indicate which counties may presently be understaffed (or overstaffed). Additional scenarios addressing optimal distribution in times of budget austerity (100 agents statewide), and surplus (150 agents statewide) were also examined.

Next, an optimal agent assignment profile was developed for each county. Potential index variables reflecting the goals and programing efforts of each of the four units were initially selected by the specialists. These metrics were reviewed by unit directors and revised through an iterative process until each index produced reliable results (ones that matched qualitative information about each county and each program) and met with the approval of the appropriate program unit director.

Indexes were constructed for each program unit that incorporated the multiple measures and expressed the variables relative to the state average. The index for agriculture and natural resources used the number of farms as its primary variable. Other indicators were considered, such

as conservation grants, farm transfer payment, types of farm products, and value of farm sales, but they did not provide meaningful results. The index for 4-H and youth development combined variables quantifying youth population and at-risk populations, such as poverty, juvenile delinquency, college going rates. The index for families and health consisted of various indicators that examined health, healthy behaviors, food security, and access to health care. The index for community and economic development examined employment rates, small business development, and tax capacity.

The development of an index is demonstrated for the 4-H and youth development unit. The allocation metrics included four measures: the county's population under 18, youth poverty rate, juvenile delinquency rate, and the college going rate (Table 1). First, each value for the county was divided by the value for the state and multiplied by 100 (Table 2). These adjusted values represented the county measure relative to the state measure. For example, an adjusted value of 110 meant that the county value was 10% above the state average, and an adjusted value of 90 meant that the county measure was 10% below the state average. The combined 4-H and youth development index for the county was the simple average of the four adjusted measures (population under 18, youth poverty rate, juvenile delinquency rate, and the college going rate).

Table 1.

4-H and Youth Development Variables

	Percent Poverty	**Youth Population (Aged 0-17)**	**Juvenile Delinquency (per 1,000)**	**College Going Rate**	**4-H Combined Index**
County A	34%	3,521	32.7	53.8%	109
County B	21%	26,168	7.1	60.9%	180
County C	27%	5,542	15.8	52.2%	96
State Average	26%	5,051 (median)	25.0	56.4%	

Table 2.

4-H and Youth Development Variables Index Values

	Percent Poverty	**Youth Population (Aged 0-17)**	**Juvenile Delinquency (per 1,000)**	**College Going Rate**	**4-H Combined Index**
County A	130	70	131	105	109
County	82	518	28	93	180

B					
County C	103	110	63	108	96
State Average	100	100	100	100	100

Once the indexes had been created and their scores calculated, the within unit results were ranked (Table 3). This ranking was important because the scores for each index used different basis and thus were not directly comparable. Instead, the rankings are used to indicate relative need of a particular specialty vis-à-vis all other counties in the state.

Table 3.

Ranked County Combined Index Scores by Unit

Rank	Agriculture & Natural Resources		Families & Health		4-H		CEWD	
1	County A	244	County D	172	County G	281	County J	184
2	County B	221	County E	164	County H	249	County K	169
3	County C	220	County F	149	County I	180	County L	159

These rankings can be used to allocate agents in two ways. For each specialization, the counties that are near the top of that index are those most in need of an agent from that program area. If new positions in a program unit become available, they can be assigned to counties with the greatest need. For example, a new ANR agent would be assigned to county A. Additionally, when a question arises regarding which type of agent is needed in a county, the rankings for each program unit can be compared. For example, if County G was a single-agent county and ranked first in its need for 4-H relative to other counties in the state, eighth in Families and Health, 43rd in ANR, and 49th in CEWD, priority would go to 4-H. Similarly, a three-agent county that ranks 7th in both 4-H and ANR, 48th in Families and Health, and 51st in CEWD would be allocated one 4-H agent, one ANR agent, and one Families and Health agent.

Using the System

Together, this system allows Extension administrators to know how many agents should be in each county and the counties' programmatic needs. This "ideal" allocation can be compared to current allocations to determine what changes might be suggested when vacancies occur. Additionally, the information can serve as a planning document if Extension experiences extreme changes—either positive or negative—in its funding. Although the West Virginia example is county based, all data

are from publically available sources (e.g., U.S. Census Bureau, Annie E. Casey Foundation, etc.) and are available at the county level. Therefore, they can be easily aggregated for states that employ a regional agent/educator model.

In the end, the hiring of an Extension agent is a joint decision of the local residents (represented by the Extension Service Committee) and Extension administration. In the past though, both parties only had their perceptions to help make their choices. This framework does not replace those deliberations. It does, however, provide guidance to inform the decision-making process. The improved methodology is currently in use and regarded as valuable by program unit directors and administrators. The expected end result of this new framework is an improved matching of agents with local needs, thus improving the ability of Extension to fulfill its service mission statewide.

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