4-H Youth Development

Colorado State University Extension

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Economic Contribution of Colorado 4-H

Introduction:

4-H provides many benefits to the local economy, but it can be difficult to demonstrate that contribution. This study provides a quantitative analysis of the economic contributions of 4-H. These benefits include things like spending and revenue generation, as well as employment opportunities. This study on the Economic Contribution of Colorado 4-H utilizes record book data collected from 4-H participants in 2013 and The Impact Analysis for Planning (IMPLAN) software to assess the economic contributions of 4-H.

Background:

Historically 4-H has served as a valuable connection between Colorado State University and youth located in rural communities (Lamm and Harder, 2009), and has evolved into much more in its over 100 year existence in Colorado. Members' participation in 4-H clubs allows them to gain valuable life skills that foster their success as productive citizens. In 2011, Tufts University completed an eight-year national longitudinal study of positive youth development which compared 4-H with other youth serving organizations such as Boy Scouts, Girl Scouts, Boys and Girls Clubs, etc. Study findings show that compared to their non-4-H peers, young people in 4-H are:

- More likely to report better grades
- Less likely to engage in risky behavior
- More likely to pursue careers in science, engineering, and technology
- Two times more likely to plan to go to college
- 3.4 times more likely to contribute to their communities
- 2.3 times more likely to exercise and be physically active
- 3.4 times more likely to delay sexual activity by grade 12

Through unique projects and their associated record books, 4-H facilitates the learning of life skills as well as preparing members for future workforce participation. Youth learn to manage both time and money, organize and maintain information as well as apply technology to different tasks. In addition, the adults who support 4-H through volunteer work gain training in youth development, leadership, event coordination, and other areas of technical expertise which can be applied to their occupation and provide positive skills to their employers. While the above benefits are important, it is also important to look at the economic contributions of 4-H. Economic benefits include the money that is generated through 4-H and how that money ripples through and grows the economy, as well as local jobs supported by 4-H spending. This report uses the Impact Analysis for Planning (IMPLAN) software to assess these economic contributions.

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"Economic benefits not only include direct 4-H spending, but also how that spending ripples through the economy."

IMPLAN Analysis:

4-H members invest money into the development of their projects, and these expenditures can provide a basis to begin to quantify some of the contributions of 4-H to the Colorado economy. Record book data was collected in 2013 on 4-H projects throughout Colorado to get an estimate of the direct spending of participants into the local economy. This direct spending typically came in the form of purchases of supplies for the projects such as livestock, feed, and craft materials. The IMPLAN software was utilized to analyze the contributions of these direct purchases, as well as 4-H organizational effects on Colorado's economy.

Past studies have found that the IMPLAN software is an appropriate means of measuring the effects of 4-H on the economy (Harder and Hodges, 2011). IMPLAN provides an analytical framework to do economic analysis of changes in industry activity, income, household spending, or employment for any area of the United States (Minnesota IMPLAN Group, 2009)

The contribution of 4-H, or any other economic sector, is not limited to its own activities as the 4-H expenditures affect related sectors, such as suppliers of inputs into 4-H projects. Using IMPLAN *direct* spending information from member record books was used to estimate the following economic multiplier or "spinoff" effects:

- **Direct effects:** These effects are a result of the actual expenditures of 4-H members. These data were collected directly from 4-H members' record books. For example, if a participant purchases a $25 model rocket for their rocketry project, the $25 is a direct economic effect. *The direct output effect of Colorado 4-H is $22,280,000.*

- **Indirect effects:** These effects arise due to linkages in the supply chain, such as local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain. For example, the store from which a 4-H member purchases a model rocket kit will use part of that money elsewhere in the economy such as buying more inventories, paying rent or hiring an accountant to help them file their taxes. *The indirect output effect of Colorado 4-H is $14,704,800.*

- **Induced effects:** These effects are a result of employee household spending. For example, when the participant buys a model rocket kit, some small proportion of that expense goes to paying wages of the sales attendant, who then re-circulates those wages in the form of household purchases of clothing or groceries. *The induced output effect of Colorado 4-H is $8,020,800.*

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The IMPLAN analysis begins with the measurement of direct spending collected from the record books and uses these values to calculate the economic multiplier effects. For example, a purchase at a feed store will ripple through the economy differently than a purchase for a service such as veterinary care. The direct spending combined with the economic multipliers creates a better picture of the total economic contribution, which is displayed below. Note that the values reported in the tables below were estimated with simulations in IMPLAN and should be interpreted as estimates based on the available data.

Economic Contributions of Colorado 4-H	
Output (revenue)	$ 45,005,600
Indirect Business Tax	$ 715,990
Employment	241

"Colorado 4-H has an output multiplier of 2.02 - meaning that if Colorado 4-H was to expand output by $1 million the total economic contribution to the state would be $2.02 million dollars."

As seen in the above table, it is estimated that in 2013, Colorado 4-H generated more than $45 million in output (or sales) into the Colorado economy and created 241 jobs. This economic activity created by 4-H brought in $715,990 in indirect business taxes, including excise, sales and property taxes.

The table below displays output multipliers for Colorado 4-H. These multipliers describe the impacts on the Colorado economy associated with the 4-H program. Colorado 4-H has a total output multiplier of 2.02, meaning that if Colorado 4-H was to expand output (direct expenditures) by $1 million the total economic contribution could be as large as $2.02 million.

Output and Output Multipliers for Colorado 4-H		
	Output Multiplier	Output
Direct Effect	1	$22,280,000
Indirect Effect	0.66	$14,704,800
Induced Effect	0.36	$8,020,800
Total Effect	**2.02**	**$45,005,600**

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"4-H contributes over $45 million and 241 jobs to the Colorado Economy."

Conclusions:

Given the nature of 4-H, there are many social benefits such as the positive youth development and practical life skills that members gain. Past studies on 4-H program impact have focused on these positive social impacts. This report complements the past studies of positive youth development in 4-H by using an IMPLAN analysis to include the economic contribution of the program. We find that in addition to the valuable life skills members gain from their participation; in 2013, 4-H created 241 jobs in Colorado as well as contributed over $45 million dollars to the state's economy.

References:

Lerner, R. and Lerner, J. (2011). The Positive Development of Youth. Institute of Applied Research in Youth Development, Tufts University. Accessed online, http://www.colorado4h.org/research_impact/2012/PYD-TuftsStudy-Wave8.pdf

Harder, A. and Hodges, A. (2011). Economic Impact Analysis of 4-H Youth Livestock Projects Using IMPLAN. *Journal of Extension.* [on-line] 49(1) Article 1TOT3

IMPLAN software, version 3.0 created by the Minnesota IMPLAN group, Inc.

Lamm, A. and Harder, A. (2009). 4-H – Going Beyond Life Skills Development. *Journal of Extension* [on-line], 47(4) Article 4COM1

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