



A Bureau of Business Research Report
From the University of Nebraska—Lincoln

Final Report

The Annual Economic Impact of Businesses Supported by Nebraska Business Innovation Act Programs 2016 Update

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Executive Summary

The Nebraska Business Innovation Act was part of the Talent and Innovation Initiative passed by the Nebraska Legislature and signed into law in 2011. Like similar policies in other states, the initiative is designed to promote successful entrepreneurial firms by providing access to capital in early stages of product development. The Business Innovation Act provides such support through five primary programs: 1) the Pre-Seed Prototype grant program; 2) matching state support for Small Business Innovation Research (SBIR) grants; 3) the Academic Research and Development program; 4) the Seed/Commercialization program; and the 5) Microenterprise Loan and Technical Assistance Program. There are additional incentives for businesses involved in value-added agriculture. This study by the University of Nebraska-Lincoln Bureau of Business Research provides an economic impact assessment of Nebraska businesses that have been supported by Business Innovation Act programs.

The analysis finds that Nebraska businesses have attracted considerable investment in relation to support received from Business Innovation Act programs. Businesses receiving support have raised \$6.72 in capital for every \$1 of state funding, all of which has been raised after the required initial match. These investments take the form of equity, loans, grants, and other sources of capital, and help businesses throughout the product development process. Successful businesses will ultimately be funded through revenue from sales, and some Nebraska businesses have already advanced to the revenue-earning stage. In fact, the study found that participating businesses have already earned \$7.21 in revenue for every \$1 of state support. This figure is far greater than the \$2.32 in revenue that was estimated in a 2014 analysis of these programs.

The businesses participating in Nebraska Business Innovation Act programs have several direct economic impacts on Nebraska. In particular, these businesses have added 468 new jobs in the state with annual wages of \$26.36 million since initial participation in Business Innovation Act programs. These businesses also had a significant total economic impact and tax revenue impact. The total annual economic impact was \$188.46 million. The economic impact in terms of value-added is \$97.18 million. The annual economic impact in terms of employee compensation is \$52.07 million spread over 967 jobs. The state and local tax impact is estimated to have reached \$4.54 million annually; this figure will grow as businesses advance further through the development and commercialization process.

The study provides evidence that Nebraska firms are successfully leveraging the support received from Nebraska Business Innovation Act programs by attracting various forms of investment and by generating substantial streams of revenue. These activities are, in turn, resulting in the creation of jobs and wages that are further promoting economic development in the State of Nebraska.

Table of Contents

1. Introduction3

2. Methodology3

3. Economic Impact Estimates8

4. Conclusion13

Appendix 1: About the Bureau of Business and Principal Investigator15

Appendix 2: Nebraska Business Innovation Act Programs17

List of Tables and Figures

Table 1. Program Utilized by Responding Business9
Table 2. Follow-On Capital Raised by Nebraska Companies10
Table 3. Employees Added and Compensation11
Table 4. Annual Economic Impact Due to Growth.....12

Figure 1. The Economic Impact Process.....5
Figure 2. Annual Economic Impacts13

1. Introduction

This report provides an estimate of the economic impact of businesses that have been supported by Nebraska Business Innovation Act programs. Under the Act, part of the Nebraska Talent and Innovation Act adopted in 2011, the State of Nebraska provides support to businesses through five broad programs: 1) the Pre-Seed Prototype Grant program; 2) matching state support for federal Small Business Innovation Research (SBIR) grants; 3) the Academic Research and Development program; 4) the Seed/Commercialization program; and the 5) Microenterprise Loan and Technical Assistance Program.

The programs are designed to assist businesses, many of which are in the early stages of developing new products and technologies, in a variety of ways. For example, the programs allow small businesses to better leverage federal dollars received through the SBIR and other programs that invest in small business research and development. The programs also encourage collaborations between small businesses and university personnel in the development of new technologies and services. In these ways, the programs offered through Act have the potential to spur job creation and economic growth throughout the state.

This study represents the second effort to examine the annual economic impact of the businesses that have been supported through such programs. The first study completed in 2014 demonstrated that the incentives offered through the Business Innovation Act yielded a number of direct and indirect benefits to the State of Nebraska. In particular, businesses receiving support through the Act to promote product development were successful at attracting investment from a variety of sources, and were able to generate considerable amounts of revenue in relation to the dollars received from the State of Nebraska. Further, companies receiving support were able to create a large number of jobs in the state, with a considerable amount of total compensation and benefits. Economic modeling was used to estimate the indirect impacts that job creation and salaries; estimates showed that jobs and salaries created as a result of state investment generated considerable indirect impacts through additional job creation and through federal, state, and local taxes.

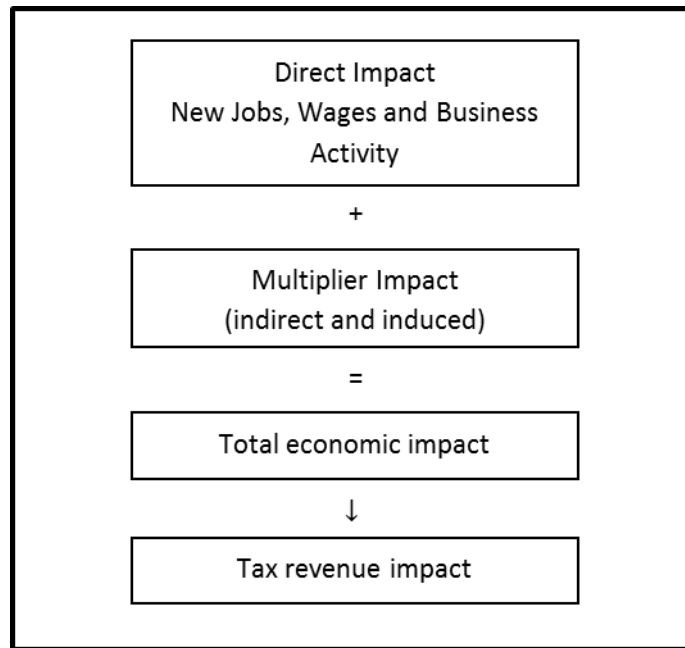
2. Methodology

Data for the present report were derived from three sources. First, a questionnaire was delivered to Nebraska firms that had taken advantage of one of the programs offered through the Business Innovation Act in the past. The survey was delivered to companies in early October, 2016. Personnel from the Nebraska Department of Economic Development were responsible for the delivery of the survey. Two attempts to follow up with firms receiving assistance were made in mid- and late-October,

2016. In total, 182 businesses were invited to participate in the questionnaire; 72 businesses provided responses. The questionnaire asked participants to state the total amount of spending in 2014 and 2015, list the number of employees added since receiving assistance, the average salary of new hires, the amount of capital raised, and how that capital had been spent. Second, administrative data were collected from the Invest Nebraska Corporation (INC). Data from INC pertained to Nebraska companies in the Commercialization program that had received startup support from INC through a loan, equity investment, or convertible debt. Data from INC also included information about the number of employees at each company, the total amount of salary paid by each company, the total amount and type of follow-on capital raised by each company, and the total amount of revenue generated. In total, data on 11 Nebraska businesses were derived from INC records. Third, researchers examined records from the 2014 economic impact analysis to determine whether any non-respondents to the 2016 survey had provided earlier responses to the 2014 survey. When possible, researchers pulled records from these companies to supplement data from the 2016 survey and the INC records. An additional 29 records were added to the dataset via this method. In total, data on 112 firms was used to conduct the economic impact analysis.

Using information from the surveys and administrative data allowed investigators to compute the direct effects of investment through the Nebraska Business Innovation Act programs. In particular, it was possible to compute direct economic impact through new jobs, wage, and business activity. This information was then used to estimate the “multiplier” effects which capture the additional economic activity that takes place as companies grow, and as employees support other local businesses. For example, growing firms make additional purchases of supplies and services from other businesses within the state, supporting sales, wages and employment at these businesses. This is known as the indirect impact. In addition, the new employees of firms spend their paychecks on ordinary household items such as housing (mortgage payment or rent), food, retail items, entertainment, insurance, health care, or transportation. This spending supports other businesses throughout the state and is known as the induced impact. The indirect and induced impacts together form the multiplier impact, which is the additional economic activity in the state which results from the initial direct impact when businesses expand. The total economic impact is the sum of the direct impact and the multiplier impact, as seen in Figure 1 below.

Figure 1. The Economic Impact Process



The multiplier impact is estimated using the IMPLAN model. IMPLAN is a widely used input-output analysis software package and database which provides a detailed picture of the economy for any state and sub-state region in the nation. Specifically, the IMPLAN model can be used to calculate the relationship between the direct economic and multiplier impact. For example, for each job created at a firm involved in a Nebraska Business Innovation Act program, the IMPLAN model will estimate the additional job or jobs in the Nebraska economy due to the multiplier impact. Direct, multiplier and total economic impacts will be prepared for each of four economic concepts: *output*, *value-added*, *proprietor and labor income and employment*.

- *Output* is equivalent to an increase in business activity.
- *Value-added* is analogous to gross domestic product and reflects the increase in labor income, proprietor profits, business taxes paid and capital consumption in the economy.
- *Employee compensation*, which includes proprietor and labor income, corresponds closely with personal income estimates maintained annually for state and local units of government by the U.S. Department of Commerce, Bureau of Economic Analysis.

- *Employment* is a critical measure to consider, and includes both full and part-time positions.

These economic impacts also imply tax impacts for the Nebraska economy. In particular, businesses receiving investments pay direct taxes to state and local government and to the Federal government. There are also additional tax revenue impacts beyond these direct payments. Employees receiving the newly created jobs pay income taxes on this income and sales taxes on their spending. Wages also support mortgage and rent payments, and therefore, local property taxes. At the same time business patronized by these employees pay property taxes. These additional state and local tax payments also must be included in any tax revenue estimates. For example, estimates of wages can be used to calculate estimates income taxes using the effective, or average, tax rate paid on income in the state. This effective income tax rate is 2.7 percent. Wages also lead to sales tax, depending on the percentage of income which is spent on taxable sales. In Nebraska, approximately 40 percent of income is spent on taxable sales. This formula can be applied to the total wage impact and multiplied by 7 percent to yield an estimate of state and local sales tax impact. Income also yields taxable property. There is approximately \$1.60 of taxable property in Nebraska for each \$1 of annual income. This rate can be applied to the total employee compensation impact and a weighted average state property tax rate of 2 percent to yield an estimate of the property tax impact.

A. Sources of Data

Data on business activity for firms participating in Nebraska Business Innovation Act programs were gathered from both administrative records and a business survey. Administrative records were available for 11 firms which participate in the Commercialization program, given that the Invest Nebraska Program invests in these firms. Surveys sent by Nebraska Department of Economic Development personnel yielded information on 72 of the approximately 182 other firms participating in the other Nebraska Business Innovation Act programs. Survey responses represent a response rate of just under 40 percent. For firms that did not respond to the survey invitation, records from 2014 were analyzed and incorporated where appropriate; 29 records were added via this approach.

While some firms received investments from multiple Nebraska Business Innovation Act programs, firms were sent only a single survey form. For example, firms might receive \$50,000 in funding for an initial Prototype program grant and as development proceeds also receive a Commercialization program investment. Similarly, firms may receive an initial \$5,000 grant for the SBIR 0 program, in order to

develop a SBIR I grant application for a Federal agency, and may later receive a SBIR 1 or SBIR 2 grant from the Federal government, and a matching grant from the State of Nebraska. This analysis focused on the most recent investment made in a company through the Nebraska Business Innovation program.

Participants in the Commercialization program or respondents to the survey provide data about their business including key measures of growth. In particular, businesses report growth in full- and part-time employment since their initial application to the Nebraska Business Innovation Act program and the average wages and benefits (i.e., employee compensation) of any new jobs. Application dates were a good measure because the start date of most projects is very close to the application date. Data on job growth and average wages and benefits were used to estimate the growth of businesses involved in the program. In particular, the research team measured cumulative job growth in each business. Reported wage and benefit data were used to estimate the cumulative growth in employee compensation. Estimates of value-added and output in each participating firm were estimated based on employee compensation, using industry averages.

Growth in employment, employee compensation, value-added and output is the measure of the direct economic impact of each participating business. Direct annual economic impacts were summed across businesses to yield the total economic impact from businesses participating in Nebraska Business Innovation Act programs. This focus on growth as a measure of economic impact was appropriate for multiple reasons. First of all, some businesses were established businesses with employees when applying to the program. The program helped these businesses to develop a new product or process and expand employment. The expansion of employment is the appropriate measure of impact for these firms. In many other cases, participating businesses were at a very early stage of development when applying for a grant with a Nebraska Business Innovation Act program. For these firms, growth in employment is essentially equivalent to current employment.

The point is that the focus on business growth better reflects the amount of business activity associated with Nebraska Business Innovation Act programs. The approach is superior to simply counting all employment, employee compensation and sales of firms which received funding, given that some firms already had significant levels of employment when first applying to a program.

Businesses responding to the survey also provided other key information. Most importantly survey respondents provided information about additional funds obtained in the period since applying to a Nebraska Business Innovation Act Program. In particular, survey respondents indicated: 1) how much additional funding that has been received from equity investments, loans, grants and other sources and 2) how much revenue, if any, has been earned by selling products and services. All of this information allows for an analysis of the return in addition investment and revenue for each dollar invested by the State of Nebraska in a SBIR, Prototype, Academic Research and Development and Commercialization programs. Further, this information also was available in the administrative records of firms involved in the Commercialization program. Administrative records were used to account total amount of support provided through the state, as well as the total amount of the initial match.

3. Economic Impact Estimates

Early stage investments of the type supported by the Nebraska Business Innovation Act programs take time to develop. Projects often do not immediately yield wage and salary employment or revenue. Further, prototype projects may need sufficient development to establish a proof of concept before being able to attract further investment. This implies that at any point in time the portfolio of funded projects will include both new projects which have not yet yielded employment or revenue, as well as completed projects which are already at the employment and revenue stage.

This section of the report examines the portfolio of funded projects using both survey and administrative data on businesses in the commercialization program and survey data on other businesses. Analyses consider the most recent programs utilized by participating business and the number of projects at various stages of completion. This reflects the fact that the Nebraska Business Innovation Act provides a suite of programs for businesses in the early stages of development including pre-seed funding as well as seed funding. For example, pre-seed funding includes the Prototype program in which firms may be involved in the development of a prototype of a new product or service requiring a proof of concept. There is also a SBIR Phase 0 grant where businesses receive funding to develop an SBIR Phase 1 proposal for submission to a Federal agency. Businesses which participate in these programs move on to later stage of development, when appropriate, and the Nebraska Business Innovation Act is able to help with funding through the Academic Research and Development program, matching grants for businesses which earn a Federal SBIR Phase 1 and 2 grant, and through the Commercialization program. Thus, Table 1 lists participating businesses, again, according to their current

or most recent program. For example, if a business participated in the Prototype program and through a successful effort was able to receive later stage funding through the Academic Research and Development Program, that businesses would be listed in the Academic Research and Development category in Table 1.

Results in Table 1 indicate that 50 percent of the responding businesses were involved in the Prototype grant program where the businesses developed a prototype for an innovative product or service. Businesses which develop such products often moved into a later stage of development and commercialization, sometimes utilizing additional services from Nebraska Business Innovation Act programs. Among remaining businesses, 19 received either an SBIR 0, 1, or 2 grant. Recall that SBIR 0 grants provide initial support to firms applying for SBIR 1 or SBIR 2 federal grants, while state SBIR 1 or 2 grants are used to supplement successful federal SBIR proposals. While not shown in Table 1, 10 firms received funding from a Federal government agency under the SBIR Phase 1 or 2 programs and a matching grant under the Nebraska Business Innovation Act; nine Nebraska firms received the SBIR Phase 0 grant that did not require a match. There were also 22 businesses that received support from either the Academic Research and Development 1 or Academic Research and Development 2 program. There were 15 businesses in the Commercialization program, accounting for about 13% of the businesses analyzed.

	Number of Projects	Percent of Responding Projects	Amount Invested by Program
Prototype	56	50.0%	\$2,701,606
SBIR (0, 1 and 2)	19	17.0%	\$1,036,260
Academic R &D (1 and 2)	22	19.6%	\$2,591,228
Commercialization	15	13.4%	\$4,568,000
Total	112	100.0%	\$10,897,094

Businesses at the early stage of development are often pre-revenue and require investment spending to operate and hire any required workers. For this reason it is often critical for firms to obtain capital beyond the state funding which is provided, and the match which is required. Additional funding can be in the form of equity, loans, or grants. The survey which was sent to businesses inquired about additional funding from each source. Another issue is that businesses will eventually need to earn revenue from sales to support operations and to make new investments. The survey also asks about any

revenue earned by each business since the time of the application to a Nebraska Business Innovation Act program. The same information was available from administrative records for businesses in the Commercialization program.

As noted, all Business Innovation Act programs, with the exception of the SBIR Phase 0 program, require matching funds at the time of award. The analysis demonstrates that just over \$24.40 million in matching funds were generated by participating businesses. Table 2 summarizes the *additional* sources of follow-on investment obtained by businesses and the revenue earned from sales. Again, state support to businesses was just over \$10.89 million. Firms have raised over \$44.31 million in equity capital, which is 407 percent of state support. Support from loans totaled over \$17.74 million and is 163 percent greater than state support. Grant support was 76% of state support; and support from “Other” sources was only 26% of the amount of support provided via the state. In total, it appears that Nebraska businesses have successfully supplemented state sources of support, as the total capital raised is just under \$73.23 million, or 672% percent of the total amount of state support provided. In other words Nebraska businesses have raised about \$6.72 for every \$1 invested through the Nebraska Business Innovation Act programs. This ratio suggests that the programs are very efficient in helping firms obtain sufficient private capital to work through the development process. Note that the initial matching funds were not included as part of the total capital raised in Table 2, as the analysis was designed to assess the amount of follow-on capital raised after receiving award. However, when initial match funds are considered in conjunction with the total follow-on capital, it is clear that the Business Innovation Act programs are helping Nebraska businesses attract considerable amounts of capital.

	Total Funding	Relative to State Support
State Support	\$10,897,094	
Equity	\$44,311,210	407%
Loan	\$17,743,882	163%
Grants	\$8,300,343	76%
Other	\$2,874,579	26%
Total Capital Raised	\$73,230,014	672%
Revenue	\$78,562,116	721%

Businesses completing the development process ultimately will rely on revenue from sales to sustain and grow the business. While many participating businesses are in the pre-revenue phase, Table 2 shows that there was over \$78.56 million in revenue earned by firms since they began involvement with

a Nebraska Business Innovation Act program. This is 721 percent of state support indicating \$7.21 in revenue earned for each \$1 of state support. Earned revenue will likely grow as time passes and as more participating businesses proceed further into the development and commercialization process. Indeed, the \$7.21 return on the dollar represents a considerable increase over the \$2.32 return on the dollar in the previous analyses of Nebraska Business Act programs.

State support, additional investments, and revenue have supported new jobs and investment at businesses receiving support from Nebraska Business Innovation Act programs. These new jobs and associated employee compensation are summarized in Table 3. Table 3 shows the number of new jobs added by businesses since applying to a Nebraska Business Innovation Act program. These are the reported new jobs created as of mid-2016. Table 3 also shows the annual wages and benefits earned in these jobs (i.e., employee compensation), as reported by businesses either in administrative records or in response to the surveys. Table 3 shows that there were 468 jobs created with annual employee compensation of \$26.36 million. These figures reflect the direct annual economic impact in jobs and employee compensation for businesses participating in Nebraska Business Innovation Act programs. Notably, the 468 jobs created is more than 300 greater than was reported in the 2014 examination of the Business Innovation Act. This means that businesses receiving support from Business Innovation Act programs have generated an additional 300 jobs in the past two years.¹

Table 3. Employees Added and Compensation	
	Total
New Employees	468
Compensation and Benefits Combined (Millions \$)	\$26.36

As noted in the methodology section, these direct economic impacts also will yield multiplier impacts in the Nebraska economy; for example, as businesses make purchases of equipment and supplies and as owners and workers at businesses spend their income on all the elements of household spending. The magnitude of these multiplier impacts are estimated utilizing the IMPLAN model. The IMPLAN model is the most widely used model for calculating economic multipliers and can be used to calculate economic multipliers for hundreds of industries in states, counties, or combinations of states and counties. The

¹ While not presented here, it is also worth noting that businesses receiving support from Business Innovation Act programs reported spending a total of \$58.83 million on labor and other goods and services in 2014 and 2015. This means that local businesses have spent approximately \$36 million in goods and services, beyond labor, in the past two years.

IMPLAN model was used to calculate economic multipliers for the Nebraska economy for the industry of each business participating in a Nebraska Business Innovation Act program.

Multiplier impacts show the additional economic activity for each unit of direct economic activity. For example, a job multiplier would show the additional jobs created in the economy for each 1 job created at a business participating in a Nebraska Business Innovation Act program. Multiplier impacts, once calculated, are added to direct economic impacts in order to estimate the total economic impact.

Tax impacts in turn are estimated based on the economic impact. Purchases associated with business expansion lead to taxable sales while the income of employees leads to taxable income. An estimate of tax revenue impacts therefore can be completed once the economic impact has been calculated.

Table 4 shows the total annual economic impact of businesses participating in Nebraska Business Innovation Act programs in terms of output, value-added, employee compensation and employment. The table also shows the estimated tax revenue impact for federal taxes but also state and local income, sales and property taxes, in aggregate. The annual economic impact is \$188.46 million while the economic impact in terms of value-added is \$97.18 million. Note that the value-added impact is a component of the output impact, implying that the two numbers should not be added together. The annual economic impact in terms of employee compensation is \$52.07 million. Note that this figure is nearly twice as large as the figure reported in Table 3, showing that there is a significant multiplier impact in the State of Nebraska. This employee compensation is a component of the value-added impact. There is an employment impact of 967 jobs. This suggests wages per job of \$53,836 including both the direct and multiplier employment. The state and local tax impact is \$4.54 million annually.

Table 4. Annual Economic Impact Due to Growth	
Impact Concept	Total Annual Economic Impact
Output (\$ millions)	\$188.46
Value-Added (\$ millions)	\$97.18
Employee Compensation (\$ millions)	\$52.07
Employment	967 jobs
Federal Taxes (\$ millions)	\$3.05
State and Local Taxes (\$ millions)	\$4.54

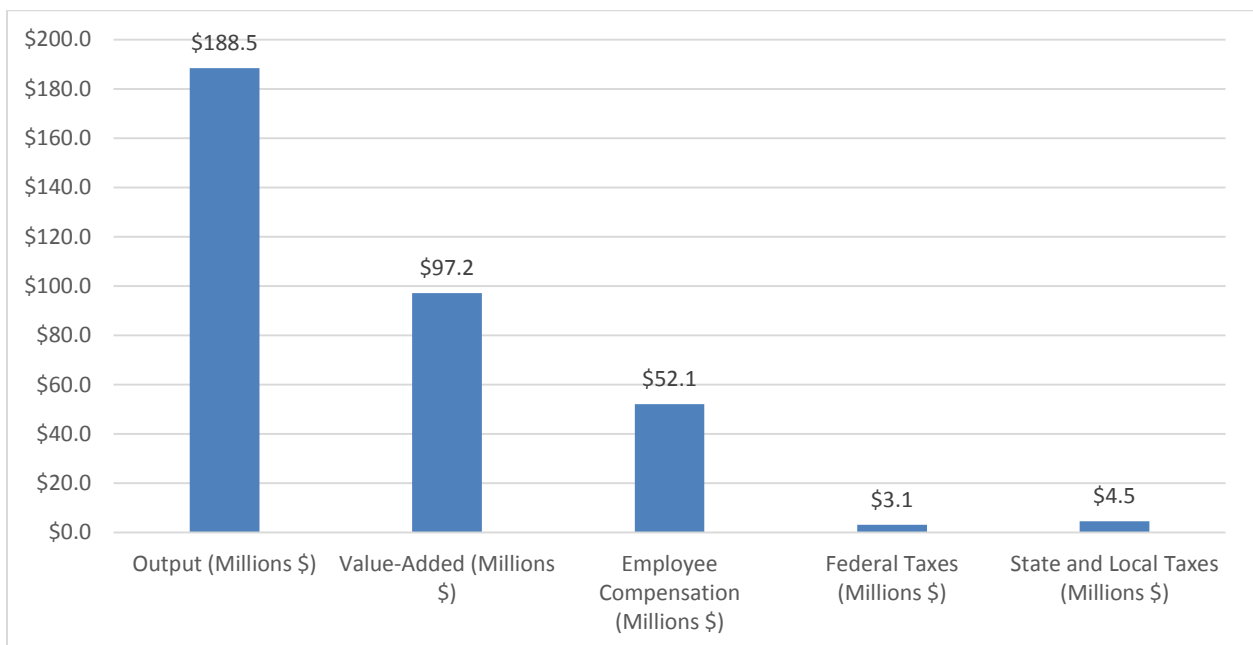
Source: BBR calculations

4. Conclusion

This study provides an economic impact assessment of Nebraska businesses which have participated in Nebraska Business Innovation Act programs. Specifically, the study summarizes the additional investments and revenues that businesses have attracted and earned after receiving funding from a Nebraska Business Innovation Act program. The study also examines employment growth at businesses which received funding from Nebraska Business Innovation Act programs, as well as the annual wages and benefits associated with these new jobs. The growth of these businesses and the resulting increase in direct annual economic activity is the basis for estimating economic impact. Multiplier impacts also are estimated and added to direct impacts to yield an estimate of the total annual economic impact.

One finding is that participating businesses received \$6.72 in additional investments through equity and other sources for each \$1 of initial support from a Nebraska Business Innovation Act program. Supported businesses also have earned \$7.21 in revenue from sales for each \$1 of such state support. Revenue from sales will continue to grow as more businesses complete the development and commercialization process. Businesses in the Commercialization program and businesses which responded to the survey have added 468 jobs since their initial involvement in a Nebraska Business Innovation Act program. These jobs had annual wages and benefits of \$26.36 million. These are direct economic impacts.

Figure 2. Annual Economic Impacts



Source: Bureau of Business Research Calculations

These businesses also had a significant total economic impact and tax revenue impact, which were presented in Figure 2. The total annual economic impact was \$188.46 million. The economic impact in terms of value-added is \$97.18 million. Note that the value-added impact is a component of the output impact, implying that the two numbers should not be added together. The annual economic impact in terms of employee compensation is \$52.07 million. The state and local tax impact is \$4.54 million annually.

While not shown in Figure 2, the employment impact is 967 jobs. These results suggest wages per job of \$53,836 including both the direct and multiplier employment. This finding implies that the innovative, growing businesses supported by Nebraska Business Innovation Act programs provide high wage employment.

Appendix 1: About the Bureau of Business and Principal Investigator

The Bureau of Business Research

The UNL Bureau of Business Research is a leading source for analysis and information on the Nebraska economy. The Bureau conducts both contract and sponsored research on the economy of Nebraska and its communities including: 1) economic and fiscal benefit analysis; 2) models of the structure and comparative advantage of the current economy; 3) economic, fiscal, and demographic outlooks, and 4) assessments of how economic policy affects industry, labor markets, infrastructure, and the standard of living. The Bureau also competes for research funding from federal government agencies and private foundations from around the nation and contributes to the academic mission of the University of Nebraska-Lincoln through scholarly publication and the education of students.

Dr. Eric Thompson – Principal Investigator

Dr. Eric Thompson is the principal investigator on this project. Dr. Thompson is the Director of the Bureau of Business Research and an Associate Professor of Economics at the University of Nebraska-Lincoln. Dr. Thompson has conducted a broad group of economic impact studies including impact studies of Nebraska agriculture, Sandhill Cranes migration, the Nebraska child care industry, the Omaha Zoo, the Nebraska horseracing industry, Husker Harvest Days, and the UNL Athletic Department. Dr. Thompson also works on demographic projections, and analyses of economic development programs for Nebraska and cities in Nebraska. He also has conducted numerous economic impact studies for the Lincoln Department of Economic Development, the Omaha Chamber of Commerce, the Nebraska Department of Economic Development, various Nebraska industries, and Nebraska tourism attractions. Dr. Thompson's research has received support from the United States Department of Labor, the Robert Wood Johnson Foundation, the Center for Economic Analysis, the Nebraska Health and Human Services System, as well as Lincoln, Omaha, and Nebraska organizations and agencies. In his previous employment, Dr. Thompson served as the Director of the Center for Business and Economic Research and a Research Associate Professor of Economics at the University of Kentucky. Dr. Thompson received his Ph.D. in agricultural economics from the University of Wisconsin-Madison in 1992. His research fields include regional economics, economic forecasting, and state and local economic development. His research has been published in *Regional Science and Urban Economics*, the *Journal of Regional Science*, the *American Journal of Agricultural Economics*, the *Journal of Cultural Economics*, and the *Economic Review of the Federal Reserve Bank of Cleveland*.

Dr. Mitchel Herian – Research Associate

Dr. Mitchel Herian serves as a Research Associate through the Bureau of Business Research. Dr. Herian also serves as a faculty fellow at the University of Nebraska Public Policy Center, and an adjunct professor in the Political Science department at UNL. Dr. Herian has conducted applied research for agencies such as the U.S. Army, the National Aeronautics and Space Administration (NASA), the Nebraska Supreme Court, the Nebraska Department of Education, and the Kansas Department of Corrections. His research has received support from agencies including the National Science Foundation and the National Institute of Justice. Dr. Herian's research has been published in a variety of peer reviewed journals including the *Journal of Public Administration Research and Theory*, *American Review of Public Administration*, *Policy Studies Journal*, *State and Local Government Review*, and *Ecology & Society*.

Appendix 2: Nebraska Business Innovation Act Programs

SBIR/STTR Program

The federal Small Business Innovation Research (SBIR) program and the federal Small Business Technology Transfer (STTR) program provides funding competitions in two phases that are relevant to the Nebraska SBIR/STTR Program. Phase 1- to conduct feasibility research; and Phase 2-to expand and develop Phase 1 results into commercially viable innovations. The federal SBIR program is administered by 11 federal agencies. Applicants for the federal funding programs compete by submitting proposals in response to solicitations issued by the participating federal agencies. The Nebraska SBIR/STTR Program establishes a financial assistance program to individuals and businesses with a principal place of business in Nebraska to support applications to the Federal SBIR Program solicitations.

Phase 0 Program – Provides funding up to \$5,000 to assist small businesses for the purposes of planning for an application under the federal programs.

Phase 1 Program – Nebraska small businesses that receive a federal notification of award for a Phase 1 federal SBIR/STTR grant will receive a state grant of 65% of the federal grant up to a maximum of \$100,000.

Phase 2 Program – Nebraska small businesses that receive a federal notification of award for a Phase 2 federal SBIR/STTR grant will receive a state grant of 65% of the federal grant up to a maximum of \$100,000.

Nebraska Prototype Program

Prototype Grant Program - provides financial assistance to individuals and businesses operating in Nebraska to support proof of concept activities. Helps businesses develop new technologies and leverage innovation to enhance quality job opportunities within the State. The grant is up to \$150,000 and must be matched 50% by the individual or business. If the project is a value-added agriculture project the match is 25%. Matching funds must come from non-state sources government.

Nebraska Innovation Commercialization/Seed Fund Program

Nebraska Commercialization/Seed Fund Program – provides financial capital to businesses in Nebraska for the purposes of commercializing a prototype of a product or process. The investment (equity or convertible debt held by Invest Nebraska) can be up to \$500,000 and must be matched 1:1 by non-state government sources. If the project is a value-added agriculture project the match is 25%.

Academic Research & Development Program

Academic R & D involves **applied** research, new product development, or new uses of intellectual property. The academic research and development being performed on behalf of the business must be directed toward: the commercialization of new products, the modification of existing products that lead to substantially improved marketability, or to the improvement of existing processes that will provide new sources of revenue to a Nebraska business. The business must use faculty or facilities of a public or private college or university in Nebraska.

First Phase – The grant amount is up to \$100,000 and must be matched 1:1 by the business with non-state government sources.

Second Phase – The grant amount is up to \$400,000 and must be matched 1:1 by the business with non-state government sources.

Microenterprise Loan and Technical Assistance Program

Microenterprise Loan and Technical Assistance Program – provides funding to microloan delivery organizations for technical assistance and loan assistance.